March 24, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 48th Release)
(As of 12:30 March 24th, 2011)

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

・ Lighting in the Central Operation Room of Unit 1 was recovered. (11:30 March 24th)
・ Seawater injection to the Spent Fuel Pool of Unit 3 via the Cooling and Purification Line was started, (Around 5:35 March 24th) and 4～5t of seawater was confirmed to be injected. (12:08 March 24th)

(Attached sheet)

1. The state of operation at NPS (Number of automatic shutdown units: 10)

- Fukushima Dai-ichi NPS, TEPCO
  (Okuma Town and FutabaTown, Futaba County, Fukushima Prefecture)

(1) The state of operation

Unit 1 (460MWe): automatic shutdown
Unit 2 (784MWe): automatic shutdown
Unit 3 (784MWe): automatic shutdown
Unit 4 (784MWe): in periodic inspection outage
Unit 5 (784MWe): in periodic inspection outage, cold shutdown at 14:30 March 20th
Unit 6 (1,100MWe): in periodic inspection outage, cold shutdown at 19:27 March 20th

(2) Major Plant Parameters (As of 11:00 March 24th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.533(A) 0.502(B)	-0.034(A) 0.063(B)	0.137(A) 0.002(C)	—	0.108	0.109
CV Pressure (D/W) [kPa]	400	110	107	—	—	—
Reactor Water Level*2 [mm]	−1,700(A) −1,700(B)	−1,150(A) Not available(B)	−1,900(A) −2,300(B)	—	1,925	2,360
Suppression Pool Water Temperature (S/C) [℃]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	395	down scale	199	—	—	—
Spent Fuel Pool Water Temperature [℃]	—	47	—	Incorrect Indictation	47.2	26.0
Time of Measurement	11:00 March 24th	09:00 March 24th	10:20 March 24th	11:00 March 24th	11:00 March 24th	11:00 March 24th

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Situation of Each Unit

<Unit 1>

- TEPCO reported to NISA the event (Inability of water injection of the Emergency Core Cooling System) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (16:36 March 11th)
- Operation of Vent (10:17 March 12th)
- Seawater injection to the Reactor Pressure Vessel (RPV) via the Fire Extinguish Line started. (20:20 March 12th)
  →Temporary interruption of the injection (01:10 March 14th)
- The sound of explosion in Unit 1 occurred. (15:36 March 12th)
- The amount of injected water to the to the Reactor Core was increased by utilizing the Water Supply Line in addition to the Fire Extinguish Line. ($2m^3/h \rightarrow 18m^3/h$).(02:33 March 23rd) Later, it was switched to the Water Supply Line only (around $11m^3/h$). (09:00 March 23rd)
- Lighting in the Central Operation Room was recovered. (11:30 March 24th)
- Seawater injection to RPV continues. (As of 12:30 March 24th)

<Unit 2>

- TEPCO reported to NISA the event (Inability of water injection of the Emergency Core Cooling System) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (16:36 March 11th)
- Operation of Vent (11:00 March 13th)
- The Blow-out Panel of reactor building was opened due to the explosion in the reactor building of Unit 3. (After 11:00 March 14th)
- Reactor water level tended to decrease. (13:18 March 14th) TEPCO reported to NISA the event (Loss of reactor cooling functions) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (13:49 March 14th)
- Seawater injection to RPV via the Fire Extinguish line was ready. (19:20 March 14th)

- Water level in RPV tended to decrease. (22:50 March 14th)
- Operation of Vent (0:02 March 15th)
- A sound of explosion was made in Unit 2. As the pressure in Suppression Chamber decreased (06:10 March 15th), there was a possibility that an incident occurred in the Chamber. (About 06:20 March 15th)
- Electric power receiving at the emergency power source transformer from the external transmission line was completed. The work for laying the electric cable from the facility to the load side was carried out. (As of 13:30 March 19th)
- Injection of 40t of Seawater to the Spent Fuel Pool was started.(from 15:00 till 17:20 March 20th)
- Power Center of Unit 2 received electricity (15:46 March 20th)
- White smoke generated. (18:22 March 21st)
- White smoke was died down and almost invisible. (As of 07:11 March 22nd)
- Injection of 18t of Seawater to the Spent Fuel Pool was carried out. (From 16:07 till 17:01 March 22nd)
- Seawater injection to RPV continues. (As of 12:30 March 24th)

<Unit 3>

- Operation of Vent (20:41 March 12th)
- Operation of Vent (09:20 March 13th)
- Fresh water started to be injected to RPV via the Fire Extinguish Line. (11:55 March 13th)
- Seawater started to be injected to RPV via the Fire Extinguish Line. (13:12 March 13th)
- Seawater injection for Units 1 and 3 was interrupted due to the lack of seawater in pit. (01:10 March 14th)
- Seawater injection to RPV for Unit 3 was restarted. (03:20 March 14th)
- Operation of Vent (05:20 March 14th)
- The pressure in Primary Containment Vessel (PCV) of Unit 3 rose unusually. (07:44 March 14th) TEPCO reported to NISA on the event falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (7:52 March 14th)
- In Unit 3, the explosion like Unit 1 occurred around the reactor building

(11:01 March 14th)

- The white smoke like steam generated from Unit 3. (08:30 March 16th)
- Because of the possibility that PCV of Unit 3 was damaged, the workers evacuated from the main control room of Units 3 and 4 (common control room). (10:45 March 16th) Thereafter the operators returned to the room and restarted the operation of water injection. (11:30 March 16th)
- Seawater was discharged 4 times to Unit 3 by the helicopters of the Self-Defence Force. (9:48, 9:52, 9:58 and 10:01 March 17th)
- The riot police arrived at the site for the water spray from the grand. (16:10 March 17th)
- The Self-Defence Force started the water spray using a fire engine. (19:35 March 17th)
- The water spray from the ground was carried out by the riot police. (From 19:05 till 19:13 March 17th)
- The water spray from the ground was carried out by the Self-Defense Force using 5 fire engines. (19:35, 19:45, 19:53, 20:00 and 20:07 March 17th)
- The water spray from the ground using 6 fire engines (6 tons of water spray per engine) was carried out by the Self-Defence Force. (From before 14:00 till 14:38 March 18th)
- The water spray from the ground using a fire engine provided by the US Military was carried out. (Finished at 14:45 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department (14 vehicles) arrived at the Main Gate (23:10 March 18th) and 6 vehicles of them entered the NPS in order to spray water from the ground. (23:30 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department carried out the water spray. (Finished at 03:40 March 20th)
- The pressure in PCV of Unit 3 rose (320 kPa as of 11:00 March 20th). Preparation to lower the pressure was carried. Judging from the situation, immediate pressure relief was not required. Monitoring the pressure continues (120 kPa at 12:15 March 21st).
- On-site survey for leading electric cable (From 11:00 till 16:00 March 20th)
- Water spray over the Spent Fuel Pool of Unit 3 by Hyper Rescue Unit of Tokyo Fire Department was carried out (From 21:39 March 20th till 03:58 March 21st).

- Works for the recovery of external power supply is being carried out.
- Grayish smoke generated from Unit 3. (At around 15:55 March 21st)
- The smoke was confirmed to be died down. (17:55 March 21st)
- Grayish smoke changed to be whitish and seems to be ceasing. (As of 07:11 March 22nd)
- Water spray (Around 180t) by Hyper Rescue Unit of Tokyo Fire Department was carried out. (from 15:10 till 15:59 March 22nd)
- Lighting was recovered in the Central Operation Room. (22:43 March 22nd)
- Injection of 35t of seawater to the Spent Fuel Pool via the Cooling and Purification Line was carried out. (From 11:03 till 13:20 March 23rd)
- Slightly blackish smoke generated from the reactor building. (Around 16:20 March 23rd) At around 23:30 March 23rd and around 4:50 March 24th, it was reported that the smoke seemed to cease.
- Seawater injection to the Spent Fuel Pool via the Cooling and Purification Line was started, (Around 5:35 March 24th) and 4～5t of seawater was confirmed to be injected. (12:08 March 24th)
- Seawater injection to RPV continues. (As of 12:30 March 24th)

<Unit 4>

- Because of the replacement work of the Shroud of RPV, no fuel was inside the RPV.
- The temperature of water in the Spent Fuel Pool at Unit 4 had increased. (84 ℃ at 04:08 March 14th)
- It was confirmed that a part of wall in the operation area of Unit 4 was damaged. (06:14 March 15th)
- The fire at Unit 4 occurred. (09:38 March 15th) TEPCO reported that the fire was extinguished spontaneously. (11:00 March 15th)
- The fire occurred at Unit 4. (5:45 March 16th) TEPCO reported that no fire could be confirmed on the ground.(At around 06:15 March 16th)
- The Self-Defence Force started water spray over the Spent Fuel Pool of Unit 4 (09:43 March 20th).
- On-site survey for leading electric cable (From 11:00 till 16:00 March 20th)
- Water spray over the Spent Fuel Pool of Unit 4 by Self-Defence Force was started. (From around 18:30 till 19:46 March 20th).
- Water spray over the Spent Fuel Pool by Self-Defence Force using 13

fire engines was started (From 06:37 till 08:41 March 21st).

- Works for laying electricity cable to the Power Center was completed. (At around 15:00 March 21st)
- Power Center received electricity. (10:35 March 22nd)
- Spray of around 150t of water using Concrete Pump Truck (50t/h) was carried out. (from 17:17 till 20:32 March 22nd)
- Spray of around 130t of water using Concrete Pump Truck (50t/h) was carried out. (From 10:00 till 13:02 March 23rd)

<Units 5 and 6>

- The first unit of Emergency Diesel Generator (B) for Unit 6 is operating and supplying electricity. Water injection to RPV and the Spent Fuel Pool through the system of Make up Water Condensate (MUWC) is being carried out.
- The second unit of Emergency Diesel Generator (A) for Unit 6 started up. (04:22 March 19th)
- The pumps for Residual Heat Removal (RHR) (C) for Unit 5 (05:00 March 19th) and RHR (B) for Unit 6 (22:14 March 19th) started up and recovered heat removal function. It cools Spent Fuel Pool with priority. (Power supply : Emergency Diesel Generator for Unit 6) (05:00 March 19th)
- Unit 5 under cold shut down (14:30 March 20th)
- Unit 6 under cold shut down (19:27 March 20th)
- Receiving electricity reached to the transformer of starter. (19:52 March 20th)
- Power supply to Unit 5 was switched from the Emergency Diesel Generator to external power supply. (11:36 March 21st)
- Power supply to Unit 6 was switched from the Emergency Diesel Generator to external power supply. (19:17 March 22nd)
- The pumps for Residual Heat Removal (RHR) was automatically stopped when the power supply was switched from the temporary to the permanent. (17:24 March 23rd)

<Common Spent Fuel Pool>

- It was confirmed that the water level of Spent Fuel Pool was maintained full at after 06:00 March 18th.

- As of 09:00 March 19th, the water temperature in the pool is 57℃.
- Water spray over the Common Spent Fuel Pool was started (From 10:37 till 15:30 March 21st)
- As of 16:30 March 21st, water temperature of the pool was around 61℃.
- As of 13:15 March 23rd, water temperature of the pool was around 57℃.

● Fukushima Dai-ni NPS (TEPCO)
(Naraha Town / Tomioka Town, Futaba County, Fukushima Prefecture.)

(1) The state of operation

Unit1 (1,100MWe): automatic shutdown, cold shut down at 17:00, March 14th

Unit2 (1,100MWe): automatic shutdown, cold shut down at 18:00, March 14th

Unit3 (1,100MWe): automatic shutdown, cold shut down at 12:15, March 12th

Unit4 (1,100MWe): automatic shutdown, cold shut down at 07:15, March 15th

(2) Major plant parameters (As of 12:00 March 24th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.15	0.12	0.11	0.14
Reactor water temperature	℃	30.3	28.0	34.3	29.6
Reactor water level*2	mm	9,196	10,296	8,450	8,785
Suppression pool water temperature	℃	25	24	27	28
Suppression pool pressure	kPa (abs)	108	106	104	105
Remarks		cold shutdown	cold shutdown	cold shutdown	cold shutdown

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

- TEPCO reported to NISA the event in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 1. (18:08 March 11th)
- TEPCO reported to NISA the events in accordance with the Article 10 regarding Units 1, 2 and 4. (18:33 March 11th)
- TEPCO reported to NISA the event (Loss of pressure suppression function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 1. (5:22 March 12th)
- TEPCO reported to NISA the event (Loss of pressure suppression function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 2. (5:32 March 12th)
- TEPCO reported to NISA the event (Loss of pressure suppression function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 4 of Fukushima Dai-ni NPS. (6:07 March 12th)

● Onagawa NPS (Tohoku Electric Power Co. Inc.)
(Onagawa Town, Oga County and Ishinomaki City, Miyagi Prefecture)

(1) The state of operation

Unit 1 (524MWe): automatic shutdown, cold shut down at 0:58, March 12th
Unit 2 (825MWe): automatic shutdown, cold shut down at earthquake
Unit 3 (825MWe): automatic shutdown, cold shut down at 1:17, March 12th

(2) Readings of monitoring post, etc.

MP2 (Monitoring at the North End of Site Boundary)
approx. 1.4 μSV/h (16:00 March 22nd) → approx. 1.2 μSV/h (16:00 March 23rd)

(3) Report concerning other incidents

- Fire Smoke on the first basement of the Turbine Building was confirmed

to be extinguished. (22:55 on March 11th)

- Tohoku Electric Power Co. reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (13:09 March 13th)

2. Action taken by NISA

(March 11th)

14:46 Set up of the NISA Emergency Preparedness Headquarters (Tokyo) immediately after the earthquake

15:42 TEPCO reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

16:36 TEPCO recognized the event (Inability of water injection of the Emergency Core Cooling System) in accordance with the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Units 1 and 2 of Fukushima Dai-ichi NPS. (Reported to NISA at 16:45)

18:08 Regarding Unit 1 of Fukushima Dai-ni NPS, TEPCO reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

18:33 Regarding Units 1, 2 and 4 of Fukushima Dai-ni NPS, TEPCO reported to NISA in accordance with the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

19:03 The Government declared the state of nuclear emergency. (Establishment of Government Nuclear Emergency Response Headquarters and Local Emergency Response Headquarters)

20:50 Fukushima Prefecture's Emergency Response Headquarters issued a direction for the residents within 2 km radius from Unit 1 of Fukushima Dai-ichi NPS to evacuate. (The population of this area is 1,864.)

21:23 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayor of Okuma Town and the Mayor of Futaba Town were issued regarding the event occurred at Fukushima Dai-ichi NPS, TEPCO, in accordance with the Paragraph 3, the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:

- Direction for the residents within 3km radius from Unit 1 of Fukushima Dai-ichi NPS to evacuate
- Direction for the residents within 10km radius from Unit 1 of Fukushima Dai-ichi NPS to stay in-house

24:00 Vice Minister of Economy, Trade and Industry, Ikeda arrived at the Local Emergency Response Headquarters

(March12th)

05:22 Regarding Unit 1 of Fukushima Dai-ni NPS, TEPCO recognized the event (Loss of pressure suppression function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (Reported to NISA at 06:27)

05:32 Regarding Unit 2 of Fukushima Dai-ni NPS, TEPCO recognized the event (Loss of pressure suppression function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

05:44 Residents within 10km radius from Unit 1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Directive.

06:07 Regarding of Unit 4 of Fukushima Dai-ni NPS, TEPCO recognized the event (Loss of pressure suppression function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

06:50 In accordance with the Paragraph 3, the Article 64 of the Nuclear Regulation Act, the order was issued to control the internal pressure of PCV of Units 1 and 2 of Fukushima Dai-ichi NPS.

07:45 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayors of Hirono Town, Naraha Town , Tomioka Town and Okuma Town were issued regarding the event occurred at Fukushima Dai-ni NPS, TEPCO, pursuant to the Paragraph 3, the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:

- Direction for the residents within 3km radius from Fukushima Dai-ni NPS to evacuate
- Direction for the residents within 10km radius from Fukushima Dai-ni NPS to stay in-house

17:00 TEPCO reported to NISA the event (Unusual increase of radiation

dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

17:39 Prime Minister directed evacuation of the residents within the 10 km radius from Fukushima Dai-ni NPS.

18:25 Prime Minister directed evacuation of the residents within the 20km radius from Fukushima Dai-ichi NPS.

19:55 Directives from Prime Minister was issued regarding seawater injection to Unit 1 of Fukushima Dai-ichi NPS.

20:05 Considering the Directives from Prime Minister and pursuant to the Paragraph 3, the Article 64 of the Nuclear Regulation Act, the order was issued to inject seawater to Unit 1 of Fukushima Dai-ichi NPS and so on.

20:20 At Unit 1 of Fukushima Dai-ichi NPS, seawater injection started.

(March 13th)

05:38 TEPCO reported to NISA the event (Total loss of coolant injection function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS. Recovering efforts by TEPCO of the power source and coolant injection function and the work on venting were under way.

09:01 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

09:08 Pressure suppression and fresh water injection started for Unit 3 of Fukushima Dai-ichi NPS.

09:20 The Pressure Vent Valve of Unit 3 of Fukushima Dai-ichi NPS was opened.

09:30 Directive was issued for the Governor of Fukushima Prefecture, the Mayors of Okuma Town, Futaba Town, Tomioka Town and Namie Town in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity decontamination screening.

09:38 TEPCO reported to NISA that Unit 1 of Fukushima Dai-ichi NPS

reached a situation specified in the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

13:09 Tohoku Electric Power Co. reported to NISA that Onagawa NPS reached a situation specified in the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

13:12 Fresh water injection was switched to seawater injection for Unit 3 of Fukushima Dai-ichi NPS.

14:36 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 14th)

01:10 Seawater injection for Units 1 and 3 of Fukushima Dai-ichi NPS were temporarily interrupted due to the lack of seawater in pit.

03:20 Seawater injection for Unit 3 of Fukushima Dai-ichi NPS was restarted.

04:40 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

05:38 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

07:52 TEPCO reported to NISA the event (Unusual rise of the pressure in PCV) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS.

13:25 Regarding Unit 2 of Fukushima Dai-ichi NPS, TEPCO recognised the event (Loss of reactor cooling function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

22:13 TEPCO reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ni NPS.

22:35 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 15th)

00:00: The acceptance of experts from IAEA was decided. NISA agreed to accept the offer of dispatching of the expert on NPS damage from IAEA considering the intention by Mr. Amano, Director General of IAEA. Therefore, the schedule of expert acceptance will be planned from now on according to the situation.

00:00: NISA also decided the acceptance of experts dispatched from NRC.

07:21 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

07:24 Incorporated Administration Agency, Japan Atomic Energy Agency (JAEA) reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Nuclear Fuel Cycle Engineering Laboratories, Tokai Research and Development Centre.

07:44 JAEA reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Nuclear Science Research Institute.

08:54 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

10:30 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the directions as follows.

For Unit 4: To extinguish fire and to prevent the occurrence of re-criticality

For Unit 2: To inject water to reactor vessel promptly and to vent Drywell.

10:59 Considering the possibility of lingering situation, it was decided that the function of the Local Emergency Response Headquarters was

moved to the Fukushima Prefectural Office.

11:00 Prime Minister directed the in-house stay area.
In-house stay was additionally directed to the residents in the area from 20 km to 30 km radius from Fukushima Dai-ichi NPS considering in-reactor situation.

16:30 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

22:00 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following direction.
For Unit 4: To implement the injection of water to the Spent Fuel Pool.

23:46 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 18th)

13:00 Ministry of Education, Culture, Sports, Science and Technology decided to reinforce the nation-wide monitoring survey in the emergency of Fukushima Dai-ichi and Dai-ni NPS.

15:55 TEPCO reported to NISA on the accidents and failure at Units 1, 2, 3 and 4 of Fukushima Dai-ichi NPS (Leakage of the radioactive materials inside of the reactor buildings to non-controlled area of radiation) pursuant to the Article 62-3 of the Nuclear Regulation Act.

16:48 Japan Atomic Power Co. reported to NISA accidents and failures in Tokai NPS (Failure of the seawater pump motor of the emergency diesel generator 2C) pursuant to the Article 62-3 of the Nuclear Regulation Act.

(March 19th)

07:44 The second unit of Emergency Diesel Generator (A) for Unit 6 started up.
TEPCO reported to NISA that the pump for RHR (C) for Unit 5 started up and started to cooling Spent Fuel Storage Pool. (Power

supply: Emergency Diesel Generator for Unit 6)

08:58 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 20th)

23:30 Directive from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village) was issued regarding the change of the reference value for the screening level for decontamination of radioactivity.

(March 21st)

07:45 Directive titled as "Administration of the stable Iodine" was issued from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village), which directs the above-mentioned governor and the heads to administer stable Iodine under the direction of the headquarters and in the presence of medical experts, and not to administer it on personal judgements.

16:45 Directive titled as "Ventilation for using heating equipments within the in-house evacuation zone" was issued from the Head of Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village), which directs the above-mentioned governor and heads to publicly announce the guidance to the residents within the in-house evacuation zone, concerning the indoor use of heating equipments that require ventilation, in order to avoid poisoning from carbon monoxide and to reduce exposure.

17:50 Directive from the Head of Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi and Gunma was issued, which direct the above-mentioned governors to issue a request to relevant businesses and people to suspend shipment of spinach, *Kakina* (a green vegetable) and raw milk for the time being.

(March 22nd)

16:00 NISA received the response (Advice) from Nuclear Safety Commission Emergency Technical Advisory Body to the request for advice made by NISA, regarding the report from TEPCO titled as "The Results of Analysis of Seawater" dated March 22nd.

< Possibility on radiation exposure (As of 12:30 March 24th) >

1. Exposure of residents

(1) Including the about 60 evacuees from Futaba Public Welfare Hospital to Nihonmatsu City Fukushima Gender Equality Centre, as the result of measurement of 133 persons at the Centre, 23 persons counted more than 13,000 cpm were decontaminated.

(2) The 35 residents transferred from Futaba Public Welfare Hospital to Kawamata Town Saiseikai Kawamata Hospital by private bus arranged by Fukushima Prefecture were judged to be not contaminated by the Prefectural Response Centre.

(3) As for the about 100 residents in Futaba Town evacuated by bus, the results of measurement for 9 of the 100 residents were as follows. The evacuees, moving outside the Prefecture (Miyagi Prefecture), were divided into two groups, which joined later to Nihonmatsu City Fukushima Gender Equality Centre.

No. of Counts	No. of Persons
18,000cpm	1
30,000-36,000cpm	1
40,000cpm	1
little less than 40,000cpm*	1

very small counts	5

*(These results were measured without shoes, though the first measurement exceeded 100,000cpm)

(4) The screening was started at the Off site Centre in Okuma Town from March 12th to 15th. 162 people received examination until now. At the beginning, the reference value was set at 6,000cpm. 110 people were at the level below 6,000 cpm and 41 people were at the level of 6,000 cpm or more. When the reference value was increased to 13,000 cpm afterward, 8 people were at the level below 13,000 cpm and 3 people are at the level of 13,000 cpm or more.

The 5 out of 162 people examined were transported to hospital after being decontaminated.

(5) The Fukushima Prefecture carried out the evacuation of patients and personnel of the hospitals located within 10km area. The screening of all the members showed that 3 persons have the high counting rate. These members were transported to the secondary medical institute of exposure. As a result of the screening on 60 fire fighting personnel involved in the transportation activities, the radioactivity higher than twice of the back ground was detected on 3 members. Therefore, all the 60 members were decontaminated.

2. Exposure of workers

(1) As for the 18 workers conducting operations in Fukushima Dai-ichi NPS, results of measurements are as follows;

One worker: At the level of exposure as 106.3 mSv, no risk of internal exposure and no medical treatment required.

Other workers: At the level of no risk for health but concrete numerical value is unknown.

(2) As for the 7 people working at the time of explosion at around the Unit 3 of Fukushima Dai-ichi NPS who were injured and conscious, 6 out of 7 people were decontaminated by an industrial doctor of the clinic in Fukushima Dai-ni NPS, and confirmed to have no risk. The other one was decontaminated at the clinic and the medical treatment was completed.

3. Others

(1) Fukushima Prefecture has started the screening from 13 March. It is carried out by rotating the evacuation sites and at the 14 places (set up permanently) such as health offices. Up until March 21st, the screening was done to 75,429 people. Among them, 97 people were above the 100,000cpm, but when measured these people again without clothes, etc., the counts decreased to 100,000cpm and below, and there was no case which affects health.

(2) 5 members of Self-Defence Force who worked for water supply in Fukushima Dai-ichi NPS were exposed. After the work (March 14th), 30,000 cpm was counted by the measurement at Off site Centre. The counts after decontamination were between 5,000 and 10,000 cpm. One member was transferred to National Institute of Radiological Sciences. After the examination, judged that there were wounds but no risk for health from the exposure, the one was released from the hospital on March 17th. No other exposure of the Self-Defence Force member was confirmed at the Ministry of Defence.

(3) As for policeman, the decontaminations of two policemen were confirmed by the National Police Agency. Nothing unusual was reported.

<Directive of screening levels for decontamination of radioactivity>

(1) On March 20th, the Local Emergency Response Headquarters issued the directive to change the reference value for the screening level for decontamination of radioactivity as the following to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village).

Old : 40 Bq/cm^2 measured by a gamma-ray survey meter or 6,000 cpm

New : 1 μ Sv/hour (dose rate at 10cm distance) or 100,000cpm equivalent

<Directives of administrating stable Iodine during evacuation>

(1) On March 16th, the Local Emergency Response Headquarters issued "Directive to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefectural Governor and the

heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village).

(2) On March 21st, the Local Emergency Response Headquarters issued Directive titled as "Administration of the stable Iodine" to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village), which directs the above-mentioned governor and heads to administer stable Iodine under the direction of the headquarters and in the presence of medical experts, and not to administer it on personal judgements.

<Situation of the injured (As of 12:30 March 24th)>

1. Injury due to earthquake
   - Two employees (slightly)
   - Two subcontract employees (one fracture in both legs)
   - Two missing (TEPCO's employee, missing in the turbine building of Unit 4)
   - One emergency patient (According to the local prefecture, one patient of cerebral infarction was transported by the ambulance).
   - Ambulance was requested for one employee complaining the pain at left chest outside of control area (conscious).
   - Two employees complaining discomfort wearing full-face mask in the main control room were transported to Fukushima Dai-ni NPS for a consultation with an industrial doctor.

2. Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS
   - Four employees were injured at the explosion and smoke of Unit 1 around turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic.

3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS
   - Four TEPCO's employees
   - Three subcontractor employees

- Four members of Self-Defence Force (one of them was transported to National Institute of Radiological Sciences considering internal possible exposure. The examination resulted in no internal exposure. The member was discharged from the institute on March 16th.)

4. Other injuries
   - A person who visited the clinic in Fukushima Dai-ni NPS from a transformer sub-station, claiming of a stomach ache, was transported to a clinic in Iwaki City, because the person was not contaminated.

<Situation of resident evacuation (As of 12:30 March 24th)>

At 11:00 March 15th, Prime Minister directed in-house stay to the residents in the area from 20 km to 30 km radius from Fukushima Dai-ichi NPS. The directive was conveyed to Fukushima Prefecture and related municipalities.

Regarding the evacuation as far as 20-km from Fukushima Dai-ichi NPS and 10-km from Fukushima Dai-ni NPS, necessary measures have already been taken.

- The in-house stay in the area from 20 km to 30 km from Fukushima Dai-ichi NPS is made fully known to the residents concerned.
- Cooperating with Fukushima Prefecture, livelihood support to the residents in the in-house stay area are implemented.

<Directive regarding foods and drinks>

On March 21st, Directive from the Head of Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi and Gunma was issued, which directs above-mentioned governors to issue a request to relevant businesses and people to suspend shipment of the following products (①, ②) for the time being.

① Spinach and *Kakina* (a green vegetable) produced in Fukushima, Ibaraki, Tochigi and Gunma Prefectures
② Raw milk produced in Fukushima Prefecture

<Directive regarding the ventilation when using heating equipments in the

aria of indoor evacuation >

On March 21st, Directive titled as "Ventilation for using heating equipments within the in-house evacuation zone" from the Head of Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village) was issued, which directs those governor and heads to publicly announce the guidance to the residents within the in-house evacuation zone, concerning the indoor use of heating equipments that require ventilation, in order to avoid poisoning from carbon monoxide and to reduce exposure.

< Fire Bureaus' Activities>

- From 11:00 till around 14:00 on March 22nd, Niigata City Fire Bureau and Hamamatsu City Fire Bureau gave guidance to TEPCO as to the set up of large decontamination system.
- From 8:30 till 9:30, from 13:30 till 14:30 on March 23rd, Niigata City Fire Bureau and Hamamatsu City Fire Bureau gave guidance to TEPCO as to the operation of large decontamination system.

(Contact Person)
Mr. Toshihiro Bannai
Director, International Affairs Office,
NISA/METI
Phone:+81-(0)3-3501-1087

News Release
Extract

経済産業省
Ministry of Economy, Trade and Industry

March 24, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 47th Release)
(As of 08:00 March 24th, 2011)

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

<Situation of Water Injection and Water Spray>

- At around 23:30 March 23rd and around 4:50 March 24th, it was reported that the smoke generated from the reactor building of Unit 3 seemed to cease.
- Seawater injection to the Spent Fuel Pool of Unit 3 via the Cooling and Purification Line was started. (Around 5:35 March 24th)
- The pumps for Residual Heat Removal was automatically stopped when the power supply was switched from the temporary to the permanent. (17:24 March 23rd)

< Possibility on radiation exposure>

- Fukushima Prefecture is carrying out the screening at 14 places (set up permanently) such as health offices. Up until March 21st, the screening was done to 75,429 people. Among them, 97 people were above the 100,000cpm, but when measured these people again without clothes, etc., the counts decreased to 100,000cpm and below.

News Release
Extract

経済産業省
Ministry of Economy, Trade and Industry

March 23, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 46th Release)
(As of 19:00 March 23rd, 2011)

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

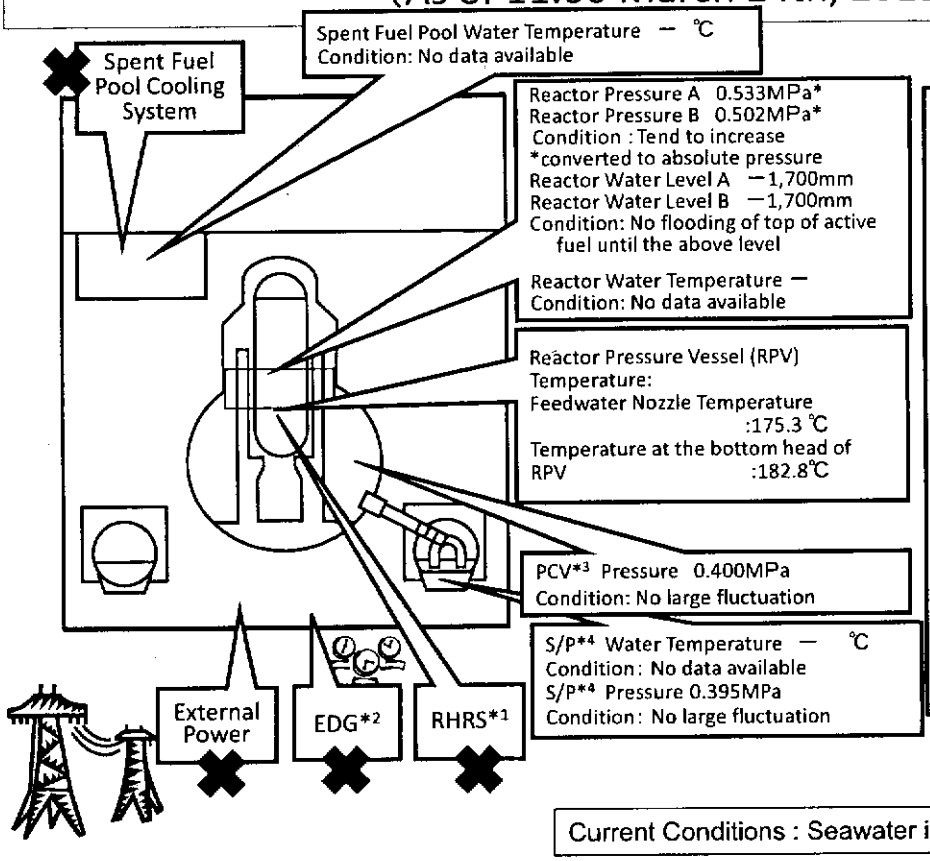
<Situation of Water Injection and Water Spray>

- Spray of around 130 t of water for Unit 4 by Concrete Pomp Truck (50t/h) was carried out. (From 10:00 till 13:02 March 23rd)
- Injection of 35 t of seawater to the Spent Fuel Pool of Unit 3 via the Cooling and Purification Line was carried out. (From 11:03 till 13:20 March 23rd)
- Slightly blackish smoke generated from the reactor building of Unit 3. (Around 16:20 March 23rd)

< Fire Bureaus' Activities>

- From 8:30 till 9:30, and from 13:30 till 14:30 on March 23rd, Niigata City Fire Bureau and Hamamatsu City Fire Bureau gave guidance to TEPCO as to the operation of large decontamination system.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1
(As of 11:00 March 24th, 2011)



Major Events after the earthquake

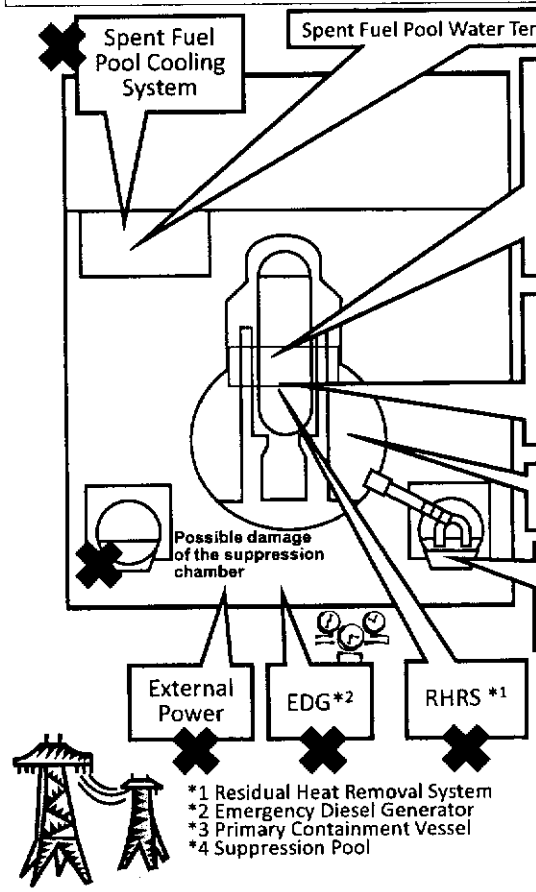
- 11th 14:46 : Under operation, Automatic shutdown by the earthquake
- 11th 15:42 : Report based on the Article 10 (Total loss of A/C power)
- 11th 16:36: Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 12th 1:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- 12th 10:17 Started to vent
- 12th 15:36 Sound of explosion
- 12th 20:20 Started to inject seawater and borated water to core
- 23rd 02:33 The amount of injected water to the Rector Core was increased utilizing water supply line in addition to the Fire Extinguish line. ($2m^3/h \rightarrow 18m^3/h$)
  09:00 Switched to water supply line only.($18m^3/h \rightarrow 11m^3/h$)
- 24th 11:30 Lightening in the Central Control Room was recovered.

*1 Residual Heat Removal System
*2 Emergency Diesel Generator
*3 Primary Containment Vessel
*4 Suppression Pool

Current Conditions : Seawater is being injected to the core

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2
(As of 11:00 March 24th, 2011)



Major Events after the earthquake

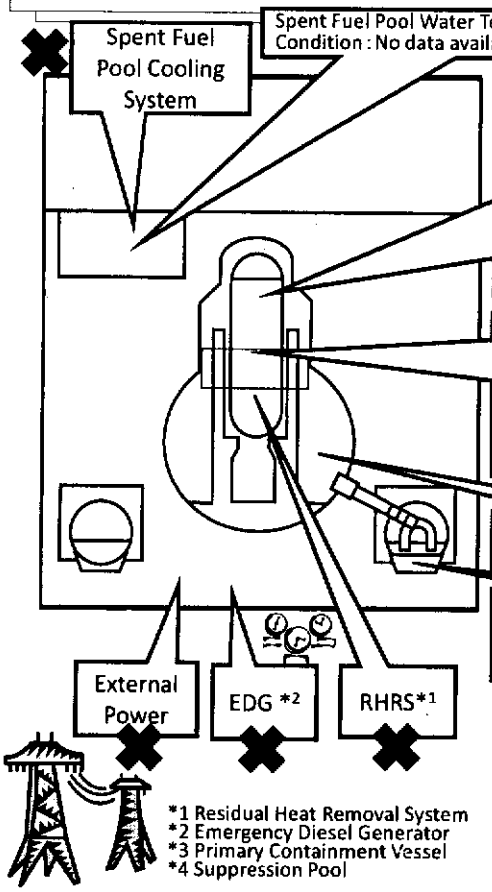
- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 13th 11:00 Started to vent
- 14th 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- 14th 16:34 Started to inject water to the Reactor Core
- 14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- 15th 0:02 Started to vent
- 15th 6:10 Sound of explosion
- 15th around 6:20 Possible damage of the suppression chamber
- 20th 15:05～17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via Fuel Pool Cooling System (FPC)
- 20th 15:46 Power Center received electricity.
- 21st 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22nd.
- 22nd 16:07 Injection of around 18 tons of seawater to the Spent Fuel Pool

*1 Residual Heat Removal System
*2 Emergency Diesel Generator
*3 Primary Containment Vessel
*4 Suppression Pool

Current Conditions : Water is being injected to Spent Fuel Pool and seawater is being injected to the core

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3
(As of 11:00 March 24th, 2011)



*1 Residual Heat Removal System
*2 Emergency Diesel Generator
*3 Primary Containment Vessel
*4 Suppression Pool

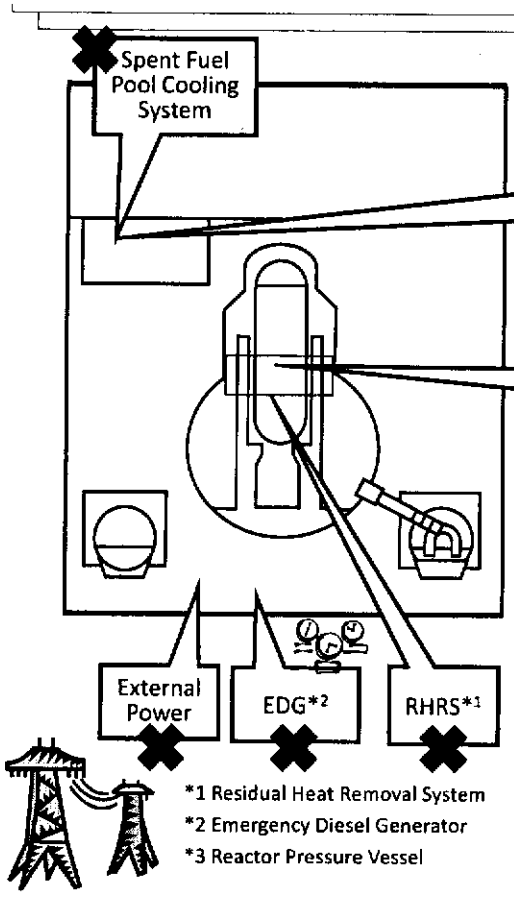
Major Events after the earthquake

11th 14:46 Under operation, Automatic shutdown by the earthquake
11th 5:42 Report based on the Article 10 (Total loss of A/C power)
12th 20:41 Started to vent
13th 5:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
13th 9:20 Started to vent
13th 13:12 Started to inject seawater and borated water to core
14th 5:20 Started to vent
14th 7:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
14th 11:01 Sound of explosion
16th around 8:30 White smoke generated.
17th 9:48~10:01 Water discharge by the helicopters of Self-Defense Force (4 times)
19:05~20:07 Water spray from the ground by High pressure water-cannon trucks (Police: once, Self-Defense Force: 5 times)
18th before 14:00~14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
~14:45 Water spray from the ground by a fire engine of the US Military
19th 0:00 ~01:00 Water spray by Tokyo Fire Department
19th 14:10 ~ 20th 3:40 Water spray by Tokyo Fire Department
20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
20th 20:39 ~ 21st 3:58 Water spray by Tokyo Fire Department
21st about 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
22nd 15:10 ~15:59 Water spray by Tokyo Fire Department
22nd 22:43 Lightening in the Central Control Room was recovered.
23rd 11:03 ~13:20 Injection of about 35ton of sea water to the Spent Fuel Pool (SFP) via the Cooling and Purification Line (FPC)
23rd around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24th 4:50.
24th 5:35 Injection of sea water to SFP via FPC
(12:08 Confirmed the injection of 4~5t/h)

Current Conditions : Water spray to Spent Fuel Pool and sea water injection to the Reactor Core

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4
(As of 11:00 March 24th, 2011)



*1 Residual Heat Removal System
*2 Emergency Diesel Generator
*3 Reactor Pressure Vessel

Major events after the earthquake

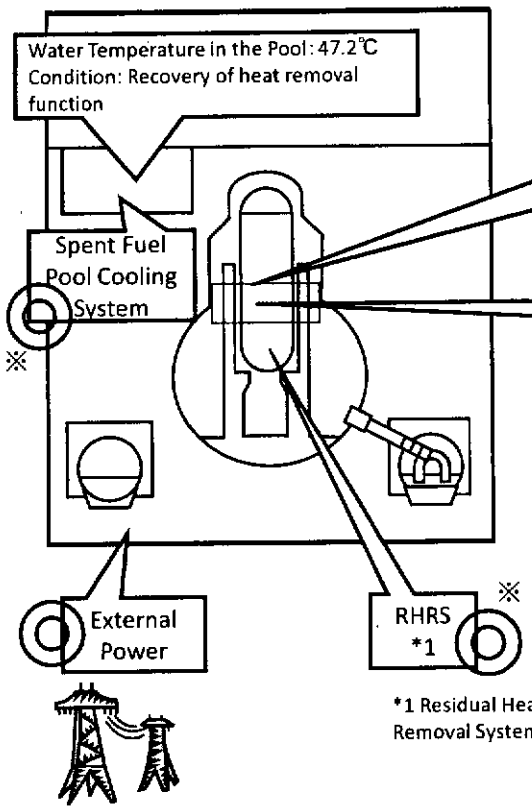
In periodic inspection outage when the earthquake occurred.
11th 15:42 Report based on the Article 10 (Total loss of A/C power)
14th 4:08 Water temperature in the Spent Fuel Pool, 84℃
15th 6:14 Partial damage of wall in the 4th floor confirmed
15th 9:38 Fire occurred in the 3rd floor. (12:25 extinguished)
16th 5:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (6:15)
20th 8:21~9:40 Water spray over the Spent Fuel Pool by Self-Defense Force
20th around 18:30~19:46 Water spray over the Spent Fuel Pool by Self-Defense Force
21st 6:37~8:41 Water spray over the Spent Fuel Pool by Self-Defense Force
21st about 15:00 Work for laying cable to Power Center was completed.
22nd 10:35 Power Center received electricity
22nd 17:17~20:32 Water spray by Concrete Pump Track
23rd 10:00~13:02 Water spray by Concrete Pump Track

Current Conditions : No fuel is in RPV*3.
Water spray to Spent Fuel Pool

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5
(As of 11:00 March 24th, 2011)

In periodic inspection outage



※Heat removal was carried out alternately with the water in the Reactor Core and in the Spent Fuel Pool.

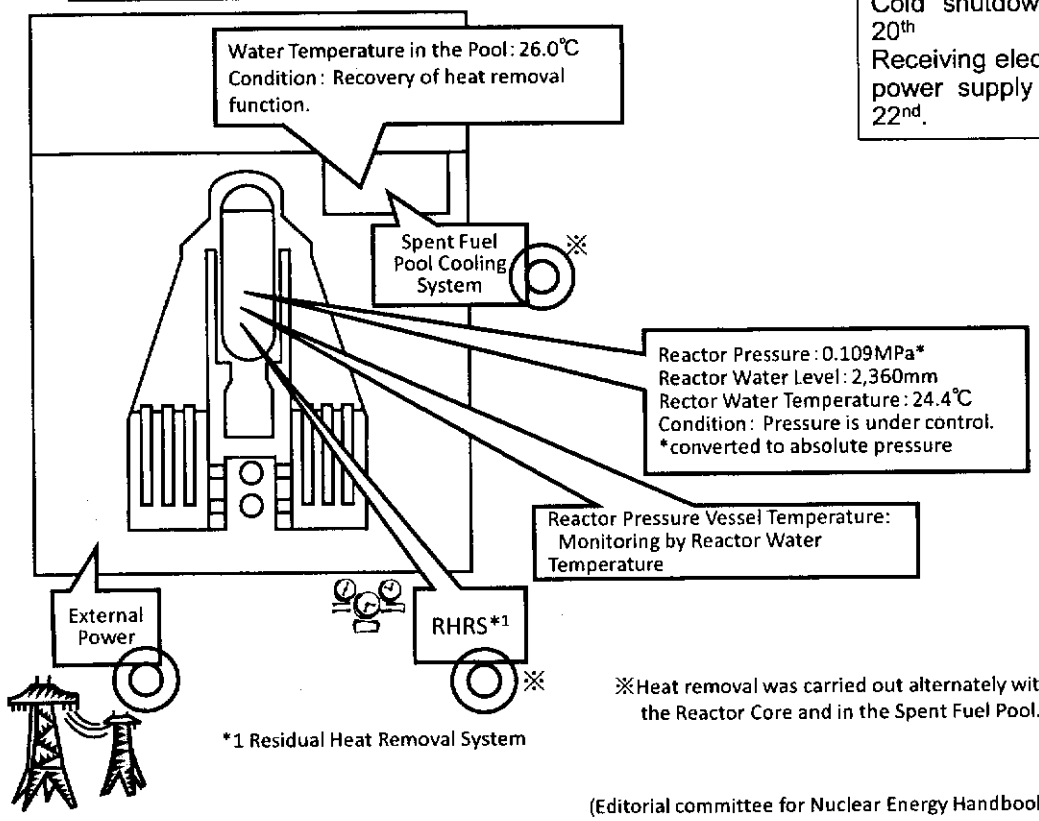
Current Conditions:
Cold shutdown at 14:30 March 20th.
Receiving electricity from external power supply from 11:36 March 21st.
Seawater pump for Residual Heat Removal (RHR) was automatically stopped when the power supply was switched from the temporary to the permanent at 17:24 March 23rd.

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6
(As of 11:00 March 24th, 2011)

In periodic inspection outage

Current Conditions:
Cold shutdown at 19:27 March 20th
Receiving electricity from external power supply from 19:17 March 22nd.



※Heat removal was carried out alternately with the water in the Reactor Core and in the Spent Fuel Pool.

(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

March 24th, 2011

Fukushima Dai-ichi
Monitoring points

① North side of main office building(approx. 0.5km from Unit 2 in northwest direction)
② Near Gymnasium(East side of MP-5) (approx. 0.9km from Unit 2 in westnorthwest direction)
③ Near West Gate (near MP-5) (approx. 1.1km from Unit 2 in west direction)
④ Front of near Main Gate (near MP-6) (approx. 1.0km from Unit 2 in westnorthwest direction)

Monitoring points	④																							
monitoring car	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
Reading(μSv/h)	222.3	222.0	221.8	221.5	221.7	221.0	220.6	220.4	220.0	219.7	219.2	219.2	218.9	218.7	217.5	217.2	216.8	216.6	216.6	216.5	216.2	215.5	215.7	215.4
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	S	N	W	WNW	WNW	WNW	WNW	NW	N	NW	W	WNW	WNW	WNW	WNW	W	WSW	W	WSW	SW	SW	W	W
wind speed (m/s)	0.3	0.4	0.5	1.2	1.3	1.4	1.6	1.6	1.3	0.8	0.6	0.8	1.3	1.7	1.6	1.2	1.0	0.5	1.0	0.9	0.6	0.7	0.9	1.0

Monitoring point	④																							
Monitaring car	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
Reading(μSv/h)	215.1	215.0	214.7	214.5	214.7	214.3	214.4	214.0	213.6	213.8	216.2	213.6	212.8	212.8	214.7	230.9	213.7	212.3	212.2	212.0	211.8	211.9	211.9	211.7
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wing direction	WMW	N	S	N	NNW	W	SE	SSE	S	ESE	SW	W	N	N	SSE	ESE	WSW	WNW	NW	W	W	SE	S	S
wind speed(m/s)	0.5	0.6	0.3	0.2	1.2	1.2	0.9	0.7	0.6	0.8	0.8	0.7	0.4	0.7	0.5	0.8	0.7	0.7	0.9	1.1	0.8	1.2	1.0	0.8

Monitoring point	④																							
Monitaring car	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50
Reading(μSv/h)	211.6	211.6	211.6	211.2	211.5	211.1	210.1	210.8	210.8	210.7	210.6	210.5	210.1	210.0	209.7	209.7	209.5	209.6	209.3	209.2	209.5	209.5	209.6	209.1
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wing direction	SW	S	S	SE	SE	SE	SE	ESE	SE	ESE	SSE	SE	SE	SE	SSE	ESE	SE	SE	S	S	ESE	S	ESE	SSE
wind speed(m/s)	0.8	1.2	1.2	1.7	1.7	1.5	1.8	2.5	2.2	2.5	2.3	2.2	2.6	2.7	2.4	2.7	2.4	2.8	2.5	2.8	2.7	2.5	2.7	2.9

Monitoring point	④																							
Monitaring car	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50
Reading(μSv/h)	209.4																							
neutron	N.D																							
wing direction	S																							
wind speed(m/s)	3.0																							

March 23rd, 2011

Fukushima Dai-ichi
Monitoring points

① North side of main office building (approx. 0.5km from Unit 2 in northwest direction)
② Near Gymnasium (East side of MP-5) (approx. 0.9km from Unit 2 in westnorthwest direction)
③ Near West Gate (near MP-5) (approx. 1.1km from Unit 2 in west direction)
④ Front of near Main Gate (near MP-6) (approx. 1.0km from Unit 2 in westnorthwest direction)

Monitoring points	④																							
monitoring car	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
Reading(μ Sv/h)	233.4	233.3	232.3	231.6	230.1	229.4	227.5	227.4	227.2	226.8	226.8	226.7	226.7	226.9	227.1	227.1	227.2	227.3	227.6	228.5	228.7	228.8	228.8	229.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	NW	NNW	W	NW	NE	N	NE	NNW	NNW	NNW	N	N	N	NW	N	N	NW	NNW	N	NNW	NNW	N	NW
wind speed (m/s)	1.8	1.8	2.6	4.3	2.5	5.5	2.4	6.5	6.0	4.2	3.4	3.3	3.2	2.8	2.8	2.9	3.0	3.1	2.9	2.2	2.3	2.3	2.6	2.2

Monitoring points	④																							
monitoring car	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
Reading(μ Sv/h)	229.1	229.1	229.4	229.3	229.5	229.5	229.5	229.3	229.6	229.5	229.5	229.7	229.6	229.6	229.4	229.6	229.5	229.5	229.3	229.5	229.3	229.5	229.0	229.3
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	N	NW	NNW	NW	NNW	N	N	N	NNW	NW	NNW	NW	NNW	NNW	NW	NNW	NW	NNW	NNW	NNW	NNW	NNW	N	N
wind speed (m/s)	2.1	2.1	2.4	1.7	1.8	2.1	2.1	1.8	2.2	2.1	2.2	2.4	2.5	2.5	2.6	2.7	2.4	2.1	2.7	2.4	2.6	2.8	3.0	2.5

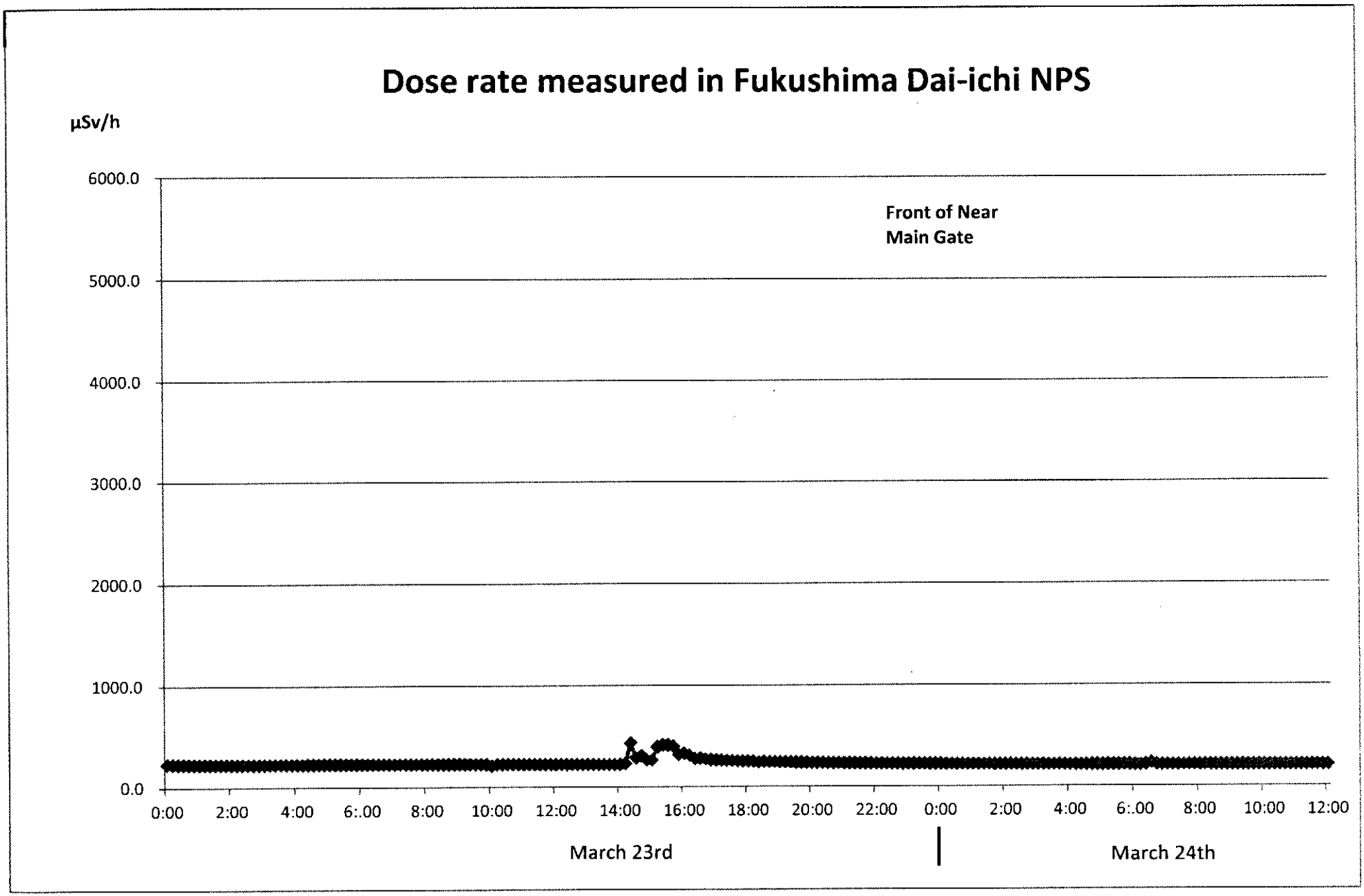
Monitoring points	④																							
monitoring car	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50
Reading(μ Sv/h)	229.4	229.5	229.2	229.4	229.1	229.1	229.1	228.7	227.6	226.9	228.6	227.6	211.4	227.7	227.2	227.3	227.1	227.2	227.0	226.8	226.8	226.3	225.7	226.3
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	N	N	NNW	NNW	NNW	NNW	N	NNE	N	N	NNE	NNE	N	N	NNE	N	NNW	N	NNW	N	NNE	NNE	N	N
wind speed (m/s)	3.1	3.2	3.5	3.9	4.4	3.1	3.5	3.3	2.9	3.4	2.5	3.1	2.6	2.7	3.1	2.9	2.9	3.1	3.0	2.6	2.5	2.1	2.2	1.5

Monitoring points	④																							
monitoring car	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50
Reading(μ Sv/h)	225.2	226.0	224.8	224.9	224.7	224.8	225.4	224.8	225.7	224.1	223.7	222.7	222.4	231.1	435.0	288.7	309.7	267.8	265.4	396.0	415.6	414.7	401.6	318.4
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NNW	NNE	W	W	WNW	E	E	ESE	N	N	NE	NW	N	NE	ESE	E	ESE	ESE	NE	N	E	SSE	ESE	ESE
wind speed (m/s)	1.6	2.6	1.6	1.6	1.5	1.4	1.2	1.9	2.0	1.5	1.3	1.2	1.4	1.0	1.6	0.9	1.6	1.7	1.6	1.5	1.3	1.0	1.1	0.7

Monitoring points	④																							
monitoring car	16:00	16:10	16:20	16:30	16:40	16:50	17:00	17:10	17:20	17:30	17:40	17:50	18:00	18:10	18:20	18:30	18:40	18:50	19:00	19:10	19:20	19:30	19:40	19:50
Reading(μ Sv/h)	331.5	313.4	280.9	283.7	274.4	269.3	265.1	262.1	259.5	257.0	255.8	254.2	253.0	251.3	241.2	249.0	246.9	245.8	244.6	243.5	242.1	241.0	240.2	237.6
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	E	S	SE	SSW	SSE	SW	N	E	NNW	NW	W	WNW	NW	NNW	N	NW	NNW	NE	N	N	N	NNE	W	WSW
wind speed (m/s)	0.9	0.9	1.3	1.0	0.8	0.9	0.5	0.6	2.1	2.2	2.7	2.0	1.5	0.9	2.3	2.1	2.3	1.7	1.2	1.4	0.8	0.4	0.4	0.8

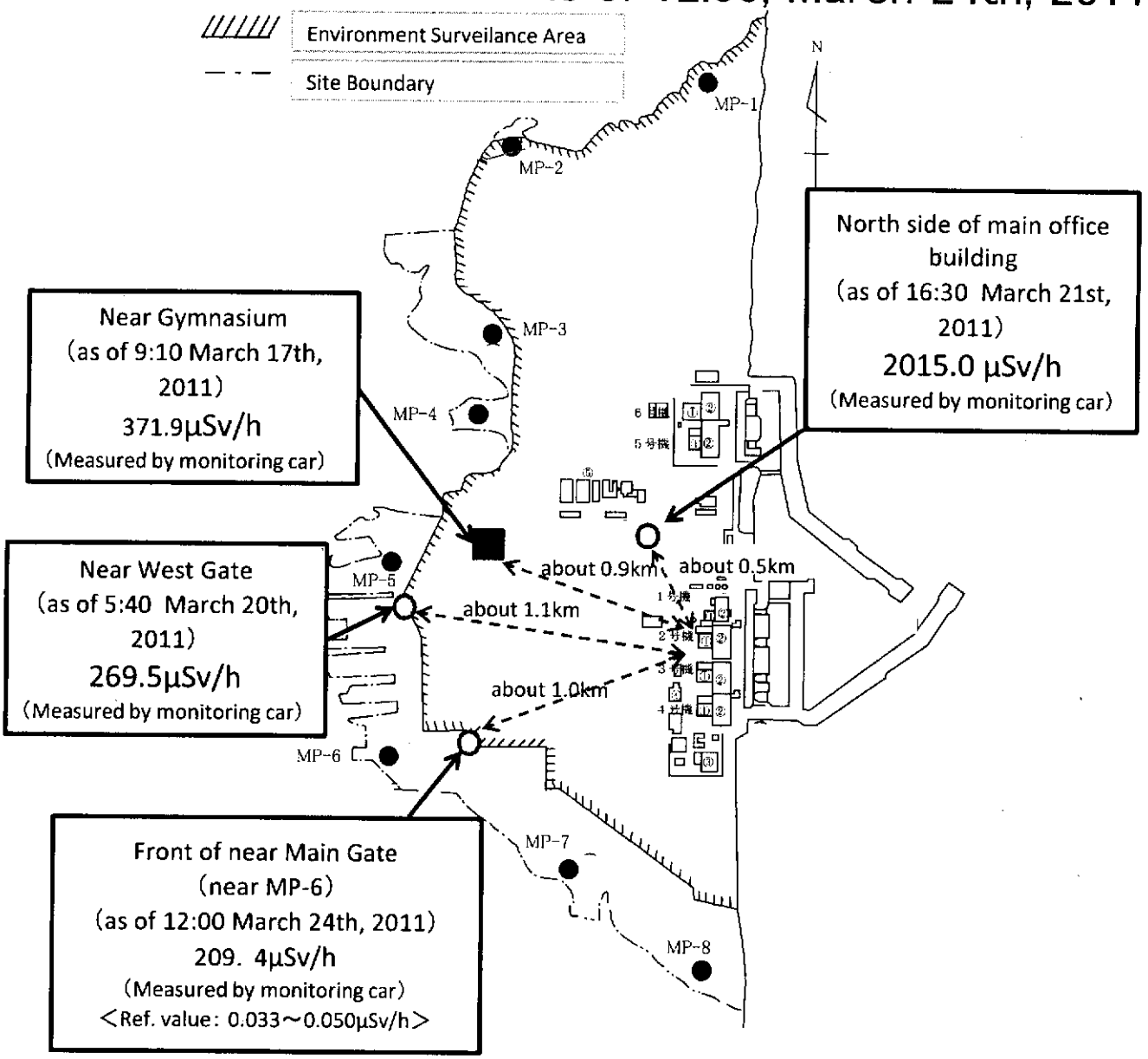
Monitoring points	④																							
monitoring car	20:00	20:10	20:20	20:30	20:40	20:50	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50
Reading(μ Sv/h)	236.5	235.8	235.3	234.3	233.2	232.8	232.3	231.5	230.6	230.2	229.5	228.8	228.3	227.3	226.8	226.5	225.8	225.4	224.9	224.7	224.3	224.0	223.0	223.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NNE	E	SW	SW	E	E	WSW	SE	SSE	SW	W	WSW	W	W	W	W	WNW	WNW	W	NW	W	W	SW	SE
wind speed (m/s)	0.2	0.2	0.3	0.3	0.5	0.3	0.3	0.5	0.3	0.4	0.4	0.4	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.5	0.5	0.6	0.5	0.4

Dose rate measured in Fukushima Dai-ichi NPS



Fukushima Dai－ichi NPS

ıs of 12:00, March 24th, 2011



Fukushima Dai-ni (TEPCO's Monitoring Post)

2011/3/24

March 24th, 2011																								
Monitoring Posts	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
MP1(μSv/h)	13.693	13.730	13.647	13.653	13.610	13.613	13.583	13.630	13.580	13.600	13.527	13.540	13.540	13.473	13.480	13.513	13.497	13.487	13.473	13.427	13.393	13.410	13.417	13.337
MP2(μSv/h)	8.103	8.047	8.117	8.117	8.070	8.080	8.050	8.007	8.047	8.027	8.017	8.040	7.997	7.993	7.973	7.967	7.987	7.987	7.973	7.967	7.943	7.927	7.920	7.927
MP3(μSv/h)	13.350	13.320	13.300	13.323	13.287	13.257	13.257	13.207	13.230	13.217	13.257	13.177	13.160	13.127	13.097	13.143	13.103	13.107	13.123	13.120	13.087	13.017	13.073	13.037
MP4(μSv/h)	10.477	10.460	10.460	10.463	10.420	10.443	10.433	10.403	10.410	10.377	10.403	10.390	10.347	10.350	10.323	10.327	10.303	10.263	10.267	10.297	10.250	10.277	10.267	10.250
MP5(μSv/h)	9.827	9.800	9.800	9.800	9.800	9.800	9.700	9.800	9.747	9.700	9.700	9.693	9.720	9.700	9.700	9.700	9.680	9.600	9.653	9.607	9.600	9.600	9.607	9.600
MP6(μSv/h)	11.013	11.017	10.940	10.970	10.943	10.927	10.910	10.917	10.940	10.863	10.860	10.860	10.827	10.827	10.853	10.837	10.797	10.810	10.750	10.770	10.773	10.747	10.690	10.740
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NW	WNW	NW	WNW	WNW	WNW	NW	NNW	NNW	NNW	NW	WNW	WNW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NW	WNW
Wind speed(m/s)	5.0	3.6	3.0	3.0	5.3	6.9	4.7	4.1	3.8	2.8	2.9	4.6	3.2	1.8	4.1	4.4	3.7	3.1	2.6	2.0	3.0	3.2	2.6	3.4

March 24th, 2011																								
monitoring point	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
MP1(μSv/h)	13.407	13.360	13.367	13.323	13.353	13.303	13.307	13.323	13.283	13.253	13.253	13.237	13.240	13.193	13.257	13.240	13.200	13.177	13.210	13.200	13.143	13.127	13.163	13.157
MP2(μSv/h)	7.913	7.897	7.883	7.880	7.900	7.873	7.860	7.837	7.837	7.833	7.827	7.790	7.823	7.810	7.843	7.803	7.757	7.807	7.777	7.793	7.770	7.777	7.763	7.723
MP3(μSv/h)	13.023	13.013	13.007	12.997	12.967	12.947	12.978	12.987	12.957	12.923	12.963	12.923	12.950	12.880	12.857	12.883	12.897	12.867	12.817	12.823	12.847	12.810	12.807	12.810
MP4(μSv/h)	10.230	10.230	10.227	10.230	10.170	10.187	10.190	10.153	10.133	10.193	10.143	10.133	10.100	10.127	10.093	10.110	10.100	10.053	10.053	10.037	10.050	10.050	10.040	10.023
MP5(μSv/h)	9.600	9.607	9.580	9.547	9.547	9.600	9.507	9.500	9.507	9.507	9.507	9.507	9.427	9.507	9.400	9.407	9.407	9.407	9.407	9.407	9.407	9.407	9.407	9.407
MP6(μSv/h)	10.717	10.727	10.687	10.677	10.680	10.650	10.667	10.640	10.650	10.630	10.603	10.603	10.617	10.610	10.560	10.587	10.560	10.560	10.527	10.540	10.553	10.523	10.510	10.517
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	NW	NW	N	NW	W	NNW	S	SW	SW	SW	SSW	WSW	W	WNW	WNW	N	NNW	W	W	W	SSW	SW	SSW
wind speed (m/s)	3.3	2.4	1.9	1.9	1.1	0.6	0.1	0.4	1.2	1.9	2.2	1.9	2.7	1.1	1.0	1.2	0.4	0.4	3.0	9.4	3.3	0.6	2.1	1.9

March 24th, 2011																								
monitoring point	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50
MP1(μSv/h)	13.127	13.137	13.137	13.093	13.080	13.073	13.067	13.087	13.060	13.047	12.980	12.990	12.967	13.000	12.957	12.997	12.973	12.957	12.983	12.940	12.930	12.903	12.930	12.883
MP2(μSv/h)	7.747	7.753	7.750	7.740	7.743	7.733	7.697	7.707	7.720	7.680	7.710	7.680	7.677	7.643	7.637	7.650	7.647	7.670	7.617	7.630	7.620	7.590	7.600	7.610
MP3(μSv/h)	12.810	12.737	12.773	12.730	12.710	12.723	12.707	12.693	12.670	12.660	12.653	12.650	12.667	12.620	12.617	12.613	12.627	12.577	12.527	12.547	12.570	12.567	12.540	12.523
MP4(μSv/h)	10.013	10.007	9.980	9.967	9.983	9.960	9.963	9.923	9.960	9.907	9.880	9.903	9.873	9.850	9.813	9.863	9.847	9.827	9.823	9.817	9.790	9.783	9.753	9.797
MP5(μSv/h)	9.407	9.313	9.380	9.313	9.320	9.313	9.313	9.313	9.313	9.313	9.260	9.267	9.287	9.267	8.647	8.820	9.167	9.213	9.213	9.180	9.147	9.173	9.147	9.113
MP6(μSv/h)	10.497	10.490	10.470	10.480	10.453	10.463	10.437	10.447	10.420	10.407	10.427	10.410	10.427	10.393	10.350	10.427	10.373	10.380	10.343	10.297	10.333	10.347	10.337	10.330
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	SW	SSW	SSW	S	SE	SE	SE	S	SSE	S	SSE	SSE	SE	SE	SSE	SE	SSE	SSE	SSE	SSE	SSE	SE	SSE	SSE
wind speed (m/s)	2.1	1.5	2.3	2.5	3.2	3.9	4.1	4.1	3.8	3.6	4.7	4.3	4.2	3.9	4.6	5.0	5.3	4.5	4.3	5.3	6.1	5.1	5.7	6.5

Fukushima Dai-ni (TEPCO's Monitoring Post)

W: West E: East S: South N: North

March 24th, 2011																								
monitoring point	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50
MP1(μSv/h)	12.887																							
MP2(μSv/h)	7.603																							
MP3(μSv/h)	12.497																							
MP4(μSv/h)	9.737																							
MP5(μSv/h)	9.113																							
MP6(μSv/h)	10.337																							
MP7(μSv/h)	N.D																							
wind direction	SSE																							
wind speed (m/s)	6.9																							

Fukushima Dai-ni (TEPCO's Monitoring Post)

W: West E: East S: South N: North

March 23rd, 2011																								
monitoring point	12:00	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50
MP1(μSv/h)	15.023	14.927	14.853	14.873	15.750	20.500	17.983	20.920	17.483	17.703	17.797	17.530	17.373	17.117	16.940	16.823	16.710	16.590	16.517	16.447	16.133	16.013	15.907	15.813
MP2(μSv/h)	8.987	8.927	8.900	8.990	9.303	11.683	10.363	12.877	9.973	10.347	10.447	10.313	10.077	9.867	9.800	9.720	9.697	9.613	9.570	9.910	9.357	9.317	9.240	9.207
MP3(μSv/h)	15.070	15.007	14.930	14.987	15.350	17.373	16.193	17.070	16.417	16.213	16.297	16.117	16.047	15.883	16.010	15.663	15.630	15.617	15.513	15.763	15.167	15.083	15.050	14.963
MP4(μSv/h)	11.590	11.550	11.513	11.633	11.950	12.763	12.863	13.457	12.787	12.677	12.847	12.803	12.650	12.523	12.497	12.357	12.320	12.307	12.320	12.373	12.050	11.957	11.860	11.807
MP5(μSv/h)	10.973	10.973	10.880	10.913	11.140	12.053	12.287	12.300	12.127	11.853	12.147	12.093	12.000	11.853	11.760	11.660	11.660	11.660	11.660	11.660	11.393	11.213	11.167	11.073
MP6(μSv/h)	11.943	11.873	11.870	11.867	12.090	12.903	14.307	14.193	13.990	13.533	13.860	13.837	13.637	13.510	13.370	13.247	13.173	13.187	13.083	12.963	12.843	12.727	12.613	12.570
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	N	N	N	NNW	N	NE	NNE	NNE	NNE	NNE	NE	NE	NE	NNE	NNE	NE	ENE	ENE	ENE	NE	NE	NE	NNE	NNE
wind speed (m/s)	6.0	6.2	4.7	3.1	2.5	2.5	4.7	4.4	3.8	5.7	8.6	7.6	7.2	6.6	5.9	3.6	3.2	3.5	2.9	4.0	5.0	4.1	4.4	3.7

March 23rd, 2011																								
monitoring point	16:00	16:10	16:20	16:30	16:40	16:50	17:00	17:10	17:20	17:30	17:40	17:50	18:00	18:10	18:20	18:30	18:40	18:50	19:00	19:10	19:20	19:30	19:40	19:50
MP1(μSv/h)	15.727	15.600	15.443	15.383	15.313	15.277	15.267	15.210	15.163	15.110	15.030	14.883	14.830	14.773	14.653	14.730	14.613	14.563	14.547	14.513	14.443	14.437	14.403	14.337
MP2(μSv/h)	9.160	9.070	9.090	9.047	9.020	9.000	9.067	8.977	8.983	8.903	8.833	8.767	8.723	8.677	8.657	8.680	8.620	8.610	8.530	8.567	8.540	8.510	8.493	8.460
MP3(μSv/h)	14.920	14.833	14.773	14.657	14.733	14.707	14.760	14.770	14.557	14.497	14.397	14.343	14.257	14.260	14.173	14.157	14.103	14.087	13.990	14.007	13.940	13.933	13.860	13.867
MP4(μSv/h)	11.720	11.720	11.647	11.617	11.577	11.620	11.657	11.583	11.490	11.447	11.343	11.333	11.273	11.190	11.167	11.143	11.127	11.063	11.037	11.007	11.010	10.970	10.963	10.900
MP5(μSv/h)	11.047	11.067	10.973	10.920	10.880	10.873	10.900	10.873	10.860	10.827	10.707	10.587	10.587	10.527	10.487	10.433	10.420	10.380	10.387	10.387	10.367	10.293	10.287	10.233
MP6(μSv/h)	12.490	12.453	12.370	12.343	12.303	12.283	12.170	12.127	12.030	12.007	12.017	11.940	11.857	11.800	11.763	11.757	11.737	11.673	11.660	11.597	11.567	11.503	11.510	11.517
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NE	NE	NNE	NE	NE	NNE	NNE	N	N	NNE	NNW	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NW	NNW	NW
wind speed (m/s)	2.1	2.5	4.1	2.0	1.6	0.7	0.9	0.4	0.5	2.3	2.6	5.5	6.9	6.1	5.8	6.1	5.2	5.2	4.2	5.8	6.0	4.2	3.6	3.8

March 23rd, 2011																								
monitoring point	20:00	20:10	20:20	20:30	20:40	20:50	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50
MP1(μSv/h)	14.277	14.263	14.220	14.240	14.183	14.130	14.113	14.093	14.047	14.037	13.967	13.963	13.967	13.987	13.920	13.903	13.873	13.860	13.800	13.810	13.773	13.773	13.783	13.737
MP2(μSv/h)	8.437	8.423	8.367	8.380	8.357	8.380	8.357	8.323	8.310	8.300	8.293	8.287	8.233	8.253	8.237	8.220	8.203	8.220	8.207	8.140	8.170	8.120	8.157	8.133
MP3(μSv/h)	13.867	13.793	13.740	13.763	13.763	13.707	13.700	13.693	13.587	13.623	13.587	13.553	13.583	13.490	13.603	13.473	13.470	13.473	13.440	13.410	13.380	13.397	13.367	13.353
MP4(μSv/h)	10.897	10.883	10.843	10.830	10.797	10.820	10.763	10.733	10.737	10.703	10.707	10.667	10.700	10.640	10.633	10.610	10.577	10.570	10.543	10.557	10.533	10.523	10.480	10.507
MP5(μSv/h)	10.213	10.187	10.187	10.187	10.160	10.093	10.093	10.093	10.040	10.040	10.000	10.000	9.993	10.000	9.993	9.993	9.973	9.893	9.920	9.900	9.893	9.900	9.840	9.847
MP6(μSv/h)	11.447	11.443	11.420	11.407	11.363	11.330	11.280	11.280	11.293	11.230	11.217	11.233	11.197	11.180	11.170	11.170	11.147	11.123	11.107	11.077	11.053	11.040	11.007	11.007
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	NW	NW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	NW	NW	NNW	NW	NNW	NW	WNW	NW	NW	NW	NW
wind speed (m/s)	5.0	6.6	8.5	8.3	7.5	6.1	6.7	6.9	5.5	4.0	3.3	4.7	6.5	7.2	6.1	6.4	6.6	6.5	6.7	7.1	4.7	7.0	6.4	6.1

Fukushima Dai-ni (TEPCO's Monitoring Post)

W: West E: East S: South N: North

2011/3/23

March 23rd, 2011																								
monitoring point	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50
MP1(μSv/h)	16.337	16.260	16.067	16.060	15.887	15.700	15.660	15.570	15.537	15.470	15.393	15.410	15.290	15.243	15.180	15.190	15.103	15.083	15.000	14.953	14.953	14.953	14.907	14.873
MP2(μSv/h)	9.703	9.627	9.560	9.447	9.333	9.233	9.193	9.177	9.113	9.080	9.043	8.973	8.960	8.960	8.960	8.907	8.897	8.877	8.867	8.837	8.837	8.837	8.797	8.803
MP3(μSv/h)	15.347	15.200	15.130	15.047	14.967	14.833	14.790	14.803	14.737	14.650	14.603	14.570	14.540	14.500	14.490	14.517	14.477	14.433	14.383	14.350	14.350	14.350	14.310	14.360
MP4(μSv/h)	12.243	12.123	12.060	11.937	11.847	11.797	11.750	11.723	11.667	11.650	11.557	11.547	11.527	11.453	11.487	11.460	11.417	11.413	11.403	11.367	11.367	11.367	11.307	11.340
MP5(μSv/h)	11.467	11.367	11.267	11.167	11.040	10.973	10.880	10.873	10.873	10.780	10.760	10.680	10.680	10.680	10.680	10.680	10.673	10.627	10.593	10.580	10.580	10.580	10.580	10.587
MP6(μSv/h)	12.620	12.503	12.407	12.297	12.187	12.103	12.053	12.007	11.930	11.900	11.810	11.820	11.793	11.823	11.770	11.763	11.713	11.743	11.703	11.697	11.697	11.697	11.687	11.667
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NNW	NW	NNW	NW	NW	NNW	NNW	N	N	N	N	N	N	N	N	NNW	N	N	N	N	N	N	N	NNW
wind speed (m/s)	2.7	3.9	5.0	4.8	4.4	4.3	4.5	5.7	6.6	8.2	8.2	7.4	9.1	8.6	9.9	8.4	9.7	9.0	9.9	7.7	7.7	7.7	8.6	8.3

March 23rd, 2011																								
monitoring point	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
MP1(μSv/h)	14.860	14.797	14.773	14.723	14.740	14.713	14.630	14.670	14.593	14.577	14.553	14.423	14.520	14.507	14.460	14.450	14.467	14.400	14.403	14.380	14.347	14.390	14.343	14.337
MP2(μSv/h)	8.813	8.787	8.790	8.803	8.773	8.737	8.740	8.713	8.723	8.700	8.683	8.680	8.640	8.657	8.653	8.643	8.620	8.603	8.593	8.570	8.603	8.570	8.570	8.563
MP3(μSv/h)	14.293	14.317	14.250	14.260	14.260	14.213	14.227	14.223	14.170	14.117	14.173	14.167	14.123	14.133	14.093	14.080	14.060	14.027	14.057	14.053	13.987	14.007	14.017	13.983
MP4(μSv/h)	11.313	11.313	11.273	11.253	11.260	11.263	11.237	11.220	11.193	11.193	11.197	11.153	11.173	11.170	11.133	11.153	11.127	11.130	11.113	11.080	11.097	11.117	11.050	11.053
MP5(μSv/h)	10.587	10.587	10.587	10.587	10.480	10.520	10.480	10.480	10.480	10.480	10.487	10.480	10.433	10.480	10.480	10.427	10.387	10.407	10.380	10.387	10.387	10.387	10.380	10.387
MP6(μSv/h)	11.630	11.643	11.620	11.600	11.623	11.597	11.580	11.550	11.607	11.580	11.533	11.577	11.567	11.510	11.487	11.497	11.480	11.487	11.480	11.480	11.450	11.423	11.417	11.467
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
wind speed (m/s)	8.6	8.5	8.0	7.8	8.3	7.7	7.5	7.1	7.6	7.5	8.7	8.6	8.2	8.7	9.1	8.5	9.9	8.9	9.6	8.6	8.6	8.0	9.4	8.9

March 23rd, 2011																								
monitoring point	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50
MP1(μSv/h)	14.307	15.697	16.200	19.693	17.380	17.463	16.780	16.483	16.347	16.143	16.010	15.917	15.783	15.657	15.590	15.533	15.453	15.407	15.323	15.187	15.380	15.260	15.133	15.073
MP2(μSv/h)	8.573	8.923	9.273	11.147	10.563	10.817	9.570	9.350	9.277	9.197	9.190	9.097	9.057	9.067	9.067	9.027	8.983	8.943	8.903	8.917	9.307	9.120	9.077	8.967
MP3(μSv/h)	13.953	13.980	14.407	15.590	17.423	18.627	17.130	16.520	16.220	16.110	15.933	15.813	15.693	15.613	15.510	15.453	15.397	15.447	15.227	15.357	15.853	15.540	15.277	15.163
MP4(μSv/h)	11.060	11.077	11.377	13.130	13.253	13.147	12.330	12.273	12.070	12.013	11.920	11.873	11.780	11.750	11.770	11.667	11.737	11.787	11.657	11.693	11.933	12.607	11.713	11.700
MP5(μSv/h)	10.380	10.380	10.613	13.813	12.420	12.147	11.567	11.620	11.367	11.367	11.213	11.167	11.153	11.113	11.073	11.073	11.053	11.173	10.920	11.220	11.287	11.713	11.153	11.067
MP6(μSv/h)	11.443	11.463	12.017	14.217	13.800	12.843	12.550	12.540	12.447	12.383	12.273	12.233	12.183	12.117	12.127	12.083	12.073	11.997	11.940	11.970	12.023	12.107	11.987	11.973
MP7(μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	N	N	N	N	N	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	NNE	N	NNE	NNE
wind speed (m/s)	7.7	8.1	7.9	7.4	7.2	7.7	9.0	8.9	10.2	10.3	8.2	8.2	9.2	10.1	7.5	7.0	7.7	8.0	7.4	7.1	8.6	6.0	5.4	6.5

Fukushima Dai-ni NPS

as of 12:00, March 24th, 2011

MP1 : 12. 887 μSv/h
(Ref. Value:0. 035～0. 054 μSv/h)

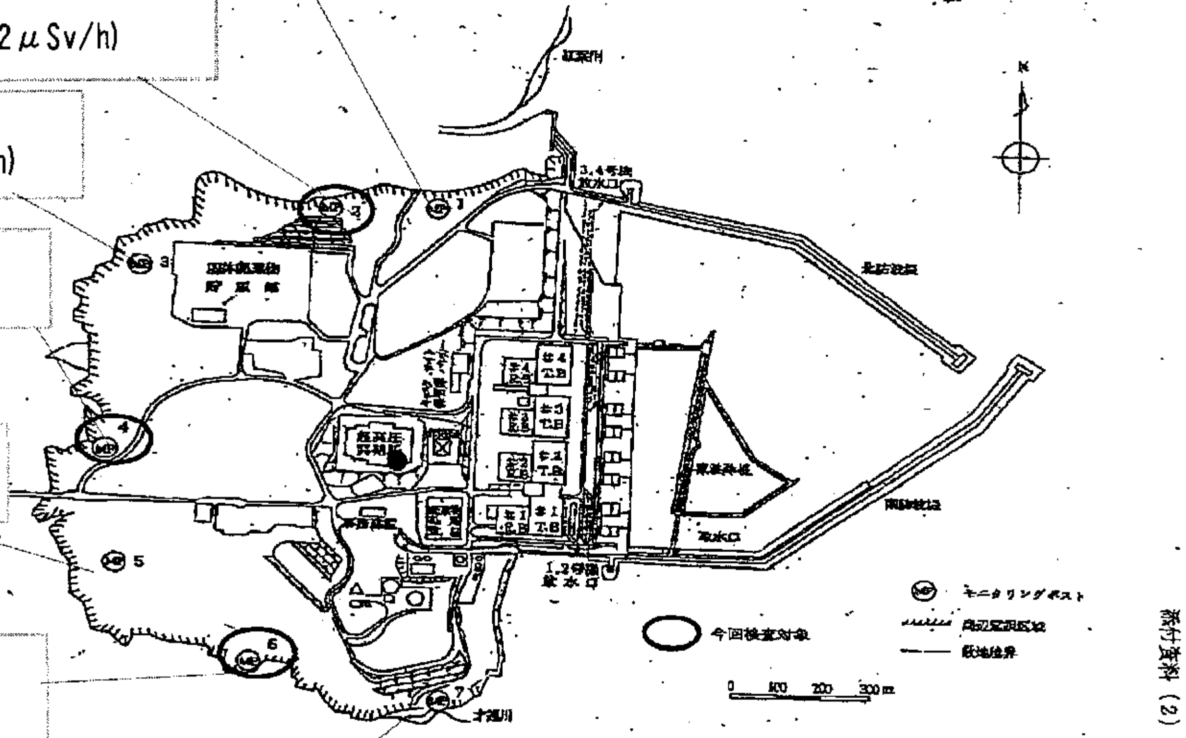
Location of Monitoring Post

MP2 : 7. 603 μSv/h
(Ref. Value:0. 042～0. 062 μSv/h)

MP3 : 12. 497 μSv/h
(Ref. Valur:0. 036～0. 052 μSv/h)

MP4 : 9. 737 μSv/h
(Ref. value: 0. 036～0. 052 μSv/h)

MP5 : 9. 113 μSv/h
(Ref. Value:0. 041～0. 058 μSv/h)



MP6 : 10. 337 μSv/h
(Ref. value:0. 044～0. 063 μSv/h)

MP7 : N. D
(Ref. Value: 0. 043～0. 062 μSv/h)

添付資料（2）

Results of envirinmental monitoring at each NPSs etc.

unit: μ Sv/h

Range of normal average value	Company	NPS	March 23rd, 2011											
			12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0.023～0.027	Hokkaido Electric Power Co	Tomari NPS	0.028	0.026	0.026	0.026	0.025	0.024	0.025	0.026	0.026	0.030	0.027	0.027
0.024～0.060	Tohoku Electric Power Co.	Onagawa NPS	1.30	1.30	1.30	1.30	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
0.012～0.060		Higashidori NPS	0.021	0.019	0.019	0.018	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.018
0.033～0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi※	225.2	225.4	222.4	265.4	331.5	265.1	253.0	244.6	236.5	232.3	228.3	224.9
0.036～0.052		Fukushima Dai-ni	15.070	16.193	16.047	15.513	14.920	14.760	14.257	13.990	13.867	13.700	13.583	13.440
0.011～0.159		Kashiwazaki kariwa NPS	0.064	0.065	0.064	0.065	0.065	0.065	0.066	0.064	0.064	0.064	0.066	0.065
0.036～0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	1.149	1.113	1.123	1.109	1.085	1.076	1.055	1.037	1.034	1.031	1.022	1.017
0.039～0.110		Tsuruga NPS	0.073	0.073	0.072	0.073	0.073	0.072	0.072	0.073	0.073	0.074	0.073	0.072
0.064～0.108	Chubu Electric Power Co.	Hamaoka NPS	0.085	0.084	0.084	0.084	0.084	0.084	0.083	0.084	0.084	0.084	0.084	0.084
0.0207～0.132	Hokuriku Electric Power Co	Shika NPS	0.032	0.032	0.032	0.032	0.032	0.033	0.032	0.033	0.032	0.032	0.032	0.032
0.028～0.130	Chugoku Electric Power Co	Shimane NPS	0.030	0.030	0.030	0.031	0.031	0.029	0.029	0.029	0.030	0.030	0.030	0.030
0.070～0.077	Kansai Electric Power Co.	Mihama NPS	0.073	0.072	0.071	0.071	0.074	0.071	0.072	0.073	0.073	0.072	0.071	0.074
0.045～0.047		Takahama NPS	0.042	0.043	0.043	0.042	0.043	0.042	0.043	0.043	0.042	0.042	0.043	0.042
0.036～0.040		Ooi NPS	0.000	0.000	0.000	0.000	0.000	0.000	0.034	0.035	0.033	0.034	0.035	0.035
0.011～0.080	Shikoku Electeic Power Co	Ikata NPS	0.014	0.014	0.014	0.014	0.014	0.014	0.013	0.013	0.014	0.014	0.014	0.014
0.023～0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.026	0.026	0.026	0.026	0.025	0.026	0.026	0.026	0.026	0.026	0.026
0.034～0.120		Sendai NPS	0.037	0.038	0.038	0.038	0.037	0.039	0.034	0.036	0.039	0.039	0.039	0.038
0.009～0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.018	0.017	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.026	0.020
0.009～0.071		Japan Nuclear Fuel Plant Disposal	0.022	0.021	0.020	0.020	0.019	0.020	0.020	0.020	0.020	0.020	0.033	0.025

※There could be small deviation on the monitoring time and area because of operational situation concerning with data of Fukushima Dai-ichi NPS

Range of normal average value	Company	NPS	March 24th, 2011											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.023～0.027	Hokkaido Electric Power Co	Tomari NPS	0.033	0.028	0.027	0.031	0.028	0.027	0.026	0.026	0.026	0.025		
0.024～0.060	Tohoku Electric Power Co.	Onagawa NPS	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20		
0.012～0.060		Higashidori NPS	0.018	0.018	0.020	0.022	0.021	0.026	0.023	0.019	0.018	0.019		
0.033～0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi※	222.3	220.6	218.9	216.6	215.1	214.4	212.8	212.2	211.6	210.1		
0.036～0.052		Fukushima Dai-ni	13.350	13.257	13.160	13.123	13.023	12.978	12.950	12.817	12.810	12.707		
0.011～0.159		Kashiwazaki kariwa NPS	0.066	0.065	0.066	0.065	0.066	0.066	0.065	0.065	0.065	0.066		
0.036～0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	1.007	1.006	1.003	0.996	0.990	0.989	0.990	0.983	0.983	0.978		
0.039～0.110		Tsuruga NPS	0.074	0.073	0.074	0.074	0.074	0.074	0.074	0.075	0.085	0.077		
0.064～0.108	Chubu Electric Power Co.	Hamaoka NPS	0.084	0.084	0.084	0.084	0.085	0.084	0.085	0.085	0.084	0.084		
0.0207～0.132	Hokuriku Electric Power Co	Shika NPS	0.032	0.032	0.032	0.032	0.033	0.033	0.033	0.041	0.042	0.037		
0.028～0.130	Chugoku Electric Power Co	Shimane NPS	0.031	0.030	0.030	0.030	0.030	0.030	0.030	0.033	0.032	0.030		
0.070～0.077	Kansai Electric Power Co.	Mihama NPS	0.072	0.073	0.073	0.072	0.073	0.073	0.074	0.073	0.074	0.073		
0.045～0.047		Takahama NPS	0.043	0.043	0.042	0.043	0.043	0.043	0.042	0.043	0.043	0.044		
0.036～0.040		Ooi NPS	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.036	0.037	0.036		
0.011～0.080	Shikoku Electeic Power Co	Ikata NPS	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.013	0.014	0.014		
0.023～0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.025	0.026	0.027	0.026	0.026	0.027	0.026	0.027	0.025		
0.034～0.120		Sendai NPS	0.036	0.037	0.037	0.040	0.037	0.039	0.038	0.037	0.039	0.037		
0.009～0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.018	0.018	0.017	0.020	0.023	0.017	0.016	0.016	0.016	0.016		
0.009～0.071		Japan Nuclear Fuel Plant Disposal	0.022	0.021	0.020	0.023	0.025	0.021	0.020	0.020	0.020	0.020		

※There could be small deviation on the monitoring time and area because of operational situation concerning with data of Fukushima Dai-ichi NPS

Results of Nuclide Analisis in TEPCO Fukushima Dai-ichi NPS

Sampling Method:Extraction of Dust by Monitoring Car
Measuring Method: Analysis of Samples by Ge-Semiconductor Nuclide Analizer in Fukushima Dai-ni NPS (once in a day)
Measuring time:500 seconds

Nuclide		March 19th, 2011 North of Main Building Sampling Time(11:53～12:13)＊Before Water Spraying Measurig Duration(14:12～)			March 20th, 2011 North of Main Building Sampling Time(1:41～2:01) Measuring Duration(13:28～)			March 21st, 2011 North of Main Building Sampling Time(10:19～10:39) Measuring Duration(13:28～)			③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	① Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	① Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	
Volitile	I-131	5.940E-03	3.374E-05	5.94	2.303E-03	1.256E-05	2.30	1.516E-03	1.134E-05	1.52	1.0E-03
	I-132	2.203E-03	8.816E-05	0.03	N.D			2.539E-04	2.702E-05	0.00	7.0E-02
	I-133	3.773E-05	2.861E-05	0.01	N.D			N.D			5.0E-03
In Particle	Cs-134	2.165E-05	1.692E-05	0.01	2.840E-05	4.755E-06	0.01	3.383E-05	5.364E-06	0.02	2.0E-03
	Cs-136	N.D			5.629E-06	5.447E-06	0.0005629	4.529E-06	3.321E-06	0.0005	1.0E-02
	Cs-137	2.437E-05	1.771E-05	0.01	2.892E-05	5.003E-06	0.01	3.801E-05	4.671E-06	0.01	3.0E-03

Nuclide		March 22nd, 2011 Main Gate Sampling Time(1:10～1:30) Measuring Duration(14:50～)			March 23rd, 2011 Main Gate Sampling Time(2:01～2:21) Measuring Duration(14:54～)						③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	① Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	① Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	
Volitile	I-131	2.239E-03	1.569E-05	2.24	6.7E-04	9.6E-06	0.67				1.0E-03
	I-132	N.D			N.D						7.0E-02
	I-133	N.D									5.0E-03
In Particle	Co-58	N.D			5.1E-06	5.1E-06	0.00				1.0E-02
	Cs-134	1.591E-05	5.853E-06	0.01	1.7E-05	4.2E-06	0.01				2.0E-03
	Cs-136	N.D			3.0E-06	2.7E-06	0.00				1.0E-02
	Cs-137	1.889E-05	5.295E-06	0.01	1.3E-05	4.2E-06	0.00				3.0E-03
Other	Te-129	N.D			2.3E-01	1.2E-01	0.58				4.0E-01
	Te-132	6.680E-05	1.116E-05	0.01	N.D	4.5E-06	0.06				7.0E-03
	Ce-144	N.D			1.3E-03	3.7E-04	1.86				7.0E-04

※Legal concentration limit provided to average density of three months of radionuclide in air that person breathes.

Sampling Method: Sampling by Pumping Seawater
Measuring Method: Analysis of 500 ml Seawater Sample by Ge-Semiconductor Nuclide Analizer in Fukushima Dai-ni NPS
Measuring time: 1000 seconds

Nuclide	as of 14:30, March 21st, 2011 Near south water discharge gate (Unit1-4 330m from water discharge gate in direction of			as of 06:30, March 22nd, 2011 Near south water discharge gate (Unit1-4 330m from water discharge gate in direction of			as of 08:50, March 23rd, 2011 Near south water discharge gate (Unit1-4 330m from water discharge gate in direction of			③Conc. Limit in Water outside Envronmental Monitaring Area
	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	① Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	① Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	
Co-58	5.955E-02	3.349E-02	0.1	1.668E-02	2.138E-02	0.0	5.0E-02	2.6E-02	-	1.0E+00
I-131	5.066E+00	4.245E-02	126.7	1.190E+00	2.293E-02	29.8	5.9E+00	3.6E-02	146.9	4.0E-02
I-132	2.136E+00	1.925E-01	0.7	1.362E+00	7.721E-02	0.5	5.4E+00	1.4E-01	1.8	3.0E+00
Cs-134	1.486E+00	4.030E-02	24.8	1.504E-01	1.769E-02	2.5	2.5E-01	2.7E-02	4.2	6.0E-02
Cs-136	2.132E-01	2.358E-02	0.7	2.350E-02	1.056E-02	0.1	2.5E-02	2.4E-02	0.1	3.0E-01
Cs-137	1.484E+00	4.204E-02	16.5	1.535E-01	1.626E-02	1.7	2.5E-01	2.7E-02	2.8	9.0E-02
Zr-95							2.3E-01	7.8E-02	0.3	9E-01
Ru-105							6.7E-01	6.2E-01	0.3	3E+00
Ru-106							3.7E-01	2.0E-01	3.7	1E-01
Te-129							4.0E+00	3.9E+00	0.4	1E+01
Te-132							4.0E+01	3.6E-02	200.5	2E-01
La-140							1.3E-02	1.0E-02	0.0	4E-01

Results of Nuclide Analisis in TEPCO Fukushima Dai-ni NPS

Sampling Method:Extraction of Dust by Monitoring Car
Measuring Method: Analysis of Samples by Ge-Semiconductor Nuclide Analizer in Fukushima Dai-ni NPS (twice in a day)

Nuclide		March 16th, 2011 East Side of Information Building Sampling Time (7:56～8:06) Measuring Duration(8:47～) 500 seconds			March 16th, 2011 st Floor Entrance of Earthquake Isolation Buildin Sampling Time (10:00～10:10) Measuring Duration(11:59～) 500 seconds			March 17th, 2011 MP-1 Sampling Time(13:50～14:00) Measuring Duration(22:01～) 1000 seconds			③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio o Conc.Limit i Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit i Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	
Volitile	I-131	3.432E-04	2.559E-05	0.34	6.889E-04	1.268E-05	0.69	9.432E-05	3.351E-06	0.09	1.0E-03
	I-132	1.149E-03	2.812E-05	0.02	7.528E-04	1.986E-05	0.01	N.D			7.0E-02
	I-133	3.448E-05	2.687E-05	0.01	4.395E-05	1.497E-05	0.01	3.304E-06	4.478E-06	0.00	5.0E-03
In Particle	Co-58	N.D			4.943E-05	2.685E-05	0.00	2.494E-05	2.061E-05	0.00	1.0E-02
	Cs-134	1.237E-04	1.449E-05	0.06	4.163E-04	2.459E-05	0.21	3.314E-04	1.680E-05	0.17	2.0E-03
	Cs-136	2.699E-05	9.412E-06	0.00	7.504E-05	1.495E-05	0.01	6.107E-05	1.296E-05	0.01	1.0E-02
	Cs-137	1.227E-04	1.311E-05	0.04	3.861E-04	2.057E-05	0.13	3.232E-04	1.702E-05	0.11	3.0E-03

Nuclide		March 18th, 2011 MP-1 Sampling Time (8:22～8:32) Measuring Duration(9:40～) 1000 seconds			March 18th, 2011 MP-1 Sampling Time (15:09～15:19) Measuring Duration(17:12～) 1000 seconds			March 19th, 2011 MP-1 Sampling Time (9:15～9:25) Measuring Duration(10:39～) 1000 seconds			③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	
Volitile	I-131	8.630E-04	3.145E-05	0.86	4.298E-03	4.993E-05	4.30	2.695E-04	5.585E-05	0.27	1.0E-03
	I-132	1.720E-03	3.821E-05	0.02	2.625E-03	9.359E-05	0.04	N.D			7.0E-02
	I-133	N.D			5.246E-05	4.213E-05	0.01	N.D			5.0E-03
In Particle	Co-58	3.080E-05	2.048E-05	0.00	1.578E-04	1.435E-05	0.02	N.D			1.0E-02
	Cs-134	3.345E-04	1.666E-05	0.17	4.863E-04	1.538E-05	0.24	N.D			2.0E-03
	Cs-136	5.882E-05	1.012E-05	0.01	8.416E-05	1.436E-05	0.01	N.D			1.0E-02
	Cs-137	3.147E-04	1.683E-05	0.10	4.306E-04	1.715E-05	0.14	N.D			3.0E-03

※Legal concentration limit provided to average density of three months of radionuclide in air that person breathes.

Nuclide		March 19th, 2011 MP-1 Sampling Time (18:18～18:28) Measuring Duration(19:08～) 1000 seconds			March 20th, 2011 MP-1 Sampling Time (11:27～11:37) Measuring Duration(16:17～) 500 seconds			March 20th, 2011 MP－1 Sampling Time (17:10～17:20) Measuring Duration (21:11～) 500 seconds			③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	
Volitile	I-131	2.513E-04	5.665E-05	0.25	5.254E-05	1.155E-05	0.05	2.230E-04	4.286E-05	0.22	1.0E-03
	I-132	1.229E-04	1.226E-04	0.00	N.D			N.D			7.0E-02
	I-133	N.D			N.D			N.D			5.0E-03
In Particle	Co-58	N.D			N.D			N.D			1.0E-02
	Cs-134	N.D			N.D			N.D			2.0E-03
	Cs-136	N.D			N.D			N.D			1.0E-02
	Cs-137	N.D			N.D			N.D			3.0E-03

Nuclide		March 21st, 2011 MP-1 Sampling Time(10:40～10:50) Measuring Duration(12:15～) 500 seconds			March 21st, 2011 MP-1 Sampling Time(18:11～18:19) Measuring Duration(19:00～) 500 seconds			March 23rd, 2011 MP-1 Sampling Time(16:06～16:14) Measuring Duration(17:38～) 500 seconds			③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Air (①/③)	
Volitile	I-131	2.250E-04	1.687E-05	0.23	1.580E-04	1.931E-05	0.16	2.1E-04	1.4E-05	0.21	1.0E-03
	I-132	2.420E-04	2.401E-05	0.00	8.097E-04	1.937E-05	0.01	2.8E-04	2.8E-05	0.00	7.0E-02
	I-133	N.D						N.D			5.0E-03
In Particle	Co-58	1.065E-05	1.138E-05	0.00	1.341E-05	9.886E-06	0.00	N.D			1.0E-02
	Cs-134	4.410E-05	9.294E-06	0.02	3.017E-05	1.005E-05	0.02	1.7E-05	8.5E-06	0.01	2.0E-03
	Cs-136	N.D			N.D			3.7E-06	5.2E-06	0.00	1.0E-02
	Cs-137	4.711E-05	7.959E-06	0.02	3.306E-05	9.703E-06	0.01	1.7E-05	6.9E-06	0.01	3.0E-03
Others	Te-129							9.3E-04	2.6E-04	0.93	1.0E-03
	Te-132							7.1E-04	6.5E-06	0.10	7.0E-03
	Ru-106							8.2E-05	5.7E-05	0.14	6.0E-04

※Legal concentration limit provided to average density of three months of radionuclide in air that person breathes.

Nuclide		March 22nd, 2011 MP-1 Sampling Time(10:40～10:50) Measuring Duration(12:15～) 500 seconds			March 22nd, 2011 MP-1 Sampling Time (16:43～16:51) Measureing Duration(17:32～) 500 seconds			March 23rd, 2011 MP-1 Sampling Time (16:06～16:14) Measureing Duration(17:38～) 500 seconds			③Conc. Limit in Air Breathed by Radiation Worker (Bq/cm^3)※
		①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Air (①/③)	
Volitile	I-131	1.416E-04	2.272E-05	0.14	1.349E-04	2.216E-05	0.13	2.1E-04	1.4E-05	0.21	1.0E-03
	I-132	N.D			N.D			2.8E-04	2.8E-05	0.00	7.0E-02
	I-133	N.D			N.D			N.D			5.0E-03
In Particle	Co-58	N.D			N.D			N.D			1.0E-02
	Cs-134	1.293E-05	9.474E-06	0.01	1.353E-05	9.812E-06	0.01	1.7E-05	8.5E-06	0.01	2.0E-03
	Cs-136	N.D			N.D			3.7E-06	5.2E-06	0.00	1.0E-02
	Cs-137	1.024E-05	8.838E-06	0.003	1.369E-05	8.361E-06	0.005	1.7E-05	6.9E-06	0.01	3.0E-03
others	Te-129	2.316E-03	1.784E-03	0.01	N.D			9.3E-04	2.6E-04	0.00	4.0E-01
	Te-132	2.191E-05	1.649E-05	0.003	N.D			7.1E-04	6.5E-06	0.01	7.0E-02
	Ru-106	N.D			N.D			8.2E-05	5.7E-05	0.14	6.0E-04

※Legal concentration limit provided to average density of three months of radionuclide in air that person breathes.

Sampling Method: Sampling by Pumping Seawater

Measuring Method: Analysis of 500 ml Seawater Sample by Ge-Semiconductor Nuclide Analizer

Measuring time: 1,000 seconds

Nuclide	as of 23:15, March 21st, 2011 Near north water discharge gate (water discharge gate of			as of 15:06, March 22nd, 2011 Near Iwasawa Seashore (around 7,000m from water			as of 0:38, March 22nd, 2011 Near mouth of Tomioka River (around 2,000m from water			③Conc. Limit in Water outside Envronmental Monitaring Area
	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Water (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	
Co-58	5.704E-03	7.570E-03	0.0	N.D	1.301E-02		1.028E-02	1.253E-02	0.0	1.0E+00
I-131	1.085E+00	1.284E-02	27.1	6.664E-01	1.862E-02	16.7	3.211E+00	1.694E-02	80.3	4.0E-02
I-132	1.597E-01	4.392E-02	0.1	N.D	7.915E-02		8.761E-01	4.236E-02	0.3	3.0E+00
Cs-134	4.815E-02	9.213E-03	0.8	3.925E-02	1.135E-02	0.7	7.535E-02	1.102E-02	1.3	6.0E-02
Cs-136	6.682E-03	4.722E-03	0.0	N.D	6.784E-03		1.159E-02	7.718E-02	0.0	3.0E-01
Cs-137	5.283E-02	8.822E-03	0.6	4.361E-02	1.129E-02	0.5	7.760E-02	1.186E-02	0.9	9.0E-02

Nuclide	as of 14:28, March 22nd, 2011 Near north water discharge gate (water discharge gate of			as of 13:51, March 23rd, 2011 Near Iwasawa Seashore (around 7,000m from water			as of 14:25, March 23rd, 2011 Near Iwasawa Seashore (around 7,000m from water			③Conc. Limit in Water outside Envronmental Monitaring Area
	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit In Water (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	①Conc. of Radioactivity (Bq/cm^3)	②Conc. of Detection Limit (Bq/cm^3)	Ratio of Conc.Limit in Water (①/③)	
Co-58	N.D	1.526E-02								1.0E+00
Ru-105				3.4E-02	2.5E-02		3.3E-02	2.8E-02	0.01	3E+00
Ru-106							1.2E-01	1.2E-01	1.25	1E-01
I-131	1.138E+00	1.993E-02	28.5	7.4E-01	2.7E-02	16.7	7.6E-01	2.7E-02	19.1	4.0E-02
I-132	N.D	8.791E-02		2.0E-01	5.8E-02		3.3E-01	5.3E-02	0.1	3.0E+00
Cs-134	4.631E-02	1.350E-02	0.8	5.1E-02	2.0E-02	0.7	3.3E-02	2.1E-02	0.5	6.0E-02
Cs-136	N.D	7.849E-03								3.0E-01
Cs-137	3.962E-02	1.406E-02	0.4	5.5E-02	2.0E-02	0.5	4.3E-02	2.1E-02	0.5	9.0E-02