From: HOO Hoc
Sent: Friday, April 08, 2011 5:14 PM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: FYI -- FW: ACTION -- NEW NRC and USAID Contact Info -- NRC No Longer Staffing NRC Liaison Desks at USAID RMT Operations Center
Attachments: image001.jpg

Importance: High

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: 301-816-5100
Fax: 301-816-5151
email: hoo.hoc@nrc.gov
secure e-mail: hoo1@nrc.sgov.gov rel

U.S.NRC
United States Nuclear Regulatory Commission
Protecting People and the Environment

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Friday, April 08, 2011 5:13 PM
To: HOO Hoc
Subject: FYI -- FW: ACTION -- NEW NRC and USAID Contact Info -- NRC No Longer Staffing NRC Liaison Desks at USAID RMT Operations Center
Importance: High

From: RMTPACTSU_ELNRC
Sent: Friday, April 08, 2011 5:05 PM
To: RMT_PACTSU; DART_PACTSU; 'NITOPS@nnsa.doe.gov'; 'ann.heinrich@nnsa.doe.gov'; 'vince.mcclelland@nnsa.doe.gov'; 'steven.buntman@nnsa.doe.gov'; 'LIA06 Hoc (LIA06.Hoc@nrc.gov)'; 'LIA11.Hoc@nrc.gov'; 'LIA01.Hoc@nrc.gov'; 'LIA07.Hoc@nrc.gov'; 'LIA02 Hoc (LIA02.Hoc@nrc.gov)'; 'lia08.hoc@nrc.gov'; 'LIA12 Hoc (LIA12.Hoc@nrc.gov)'; 'holly.harrington@nrc.gov'; 'David.mcintyre@nrc.gov'; 'Scott.Burnell@nrc.gov'; 'et07.hoc@nrc.gov'
Cc: Jason.Kozal@nrc.gov; michael.dudek@nrc.gov; Trocine, Leigh
Subject: ACTION -- NEW NRC and USAID Contact Info -- NRC No Longer Staffing NRC Liaison Desks at USAID RMT Operations Center
Importance: High

Hello All,

After COB today (04/08/11), the Nuclear Regulatory Commission (NRC) will no longer be staffing the NRC liaison desks at the USAID Operations Center. Please continue the flow of information (i.e., by forwarding status reports, etc.) via the following routes:

- ***USAID Response Management Team (RMT)*** – If information is intended for the USAID RMT, please forward it to the Response Manager and Admin Coordinator at RMTPACTSU_RM@ofda.gov and RMTPACTSU_AC@ofda.gov),

0004 271

respectively. The main contact telephone number for the USAID RMT is 202-712-0039, and the main group email address for the RMP is RMT_PACTSU@ofda.gov. The group email for the Disaster Assistance Response Team (DART) is DART_PACTSU@ofda.gov.

- ***NRC*** – If information is intended for the NRC, please forward it to the NRC Federal Liaisons at LIA01.Hoc@nrc.gov and LIA11.Hoc@nrc.gov. The NRC Federal Liaisons can also be contacted at 301-816-5186. Jason Kozal will be acting as a backup, and he can be reached at Jason.Kozal@nrc.gov or 301-448-6627 (BB). As a third backup, you can also contact the main NRC Operations Center (which is staffed 24/7) at hoo.hoc@nrc.gov or 301-816-5100.

Thanks in advance for your cooperation and assistance. It's been a pleasure working with everyone!

Cheers,
NRC Liaisons at USAID Operations Center

From: PMT10 Hoc
Sent: Friday, April 08, 2011 6:13 PM
To: LIA08 Hoc
Cc: skeith@cdc.gov
Subject: CDC request for information

I would appreciate you helping me get the following information:

The current estimates of % core damage for units 1-3. We have seen 33% and 70% for unit 3, while a DOE SITREP mentions 33%.

Copy of the low power criticality paper, when available.

Thanks,
Sam Keith
CDC Liaison

0001272

From: ET07 Hoc
Sent: Friday, April 08, 2011 2:24 AM
To: Morris, Scott
Cc: McDermott, Brian
Subject: RE: Helpful summary of resource links on Fukushima event

Absolutely. I'll have Omar or Karen add it to the "Fukushima Links" board in the morning.

From: Morris, Scott
Sent: Friday, April 08, 2011 12:08 AM
To: ET07 Hoc
Subject: FW: Helpful summary of resource links on Fukushima event

Can we add this to WebEOC?

From: McDermott, Brian
Sent: Thursday, April 07, 2011 10:01 AM
To: LIA06 Hoc; LIA08 Hoc; Nelson, Robert; ET07 Hoc
Cc: Morris, Scott; Miller, Chris; Ross-Lee, MaryJane; Thaggard, Mark; Blount, Tom; Giitter, Joseph
Subject: FYI: Helpful summary of resource links on Fukushima event

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From: Deahl, Elizabeth
Sent: Thursday, April 07, 2011 9:37 AM
To: McDermott, Brian; Wright, Lisa (Gibney); Dudek, Michael
Cc: Lange, Walter; McGowan, Anna
Subject: information resources

Hello all,
Walter Lange suggested I share this document with you. The staff of the Technical Library have compiled this list of information resources about the recent Japan events. It covers general NRC information, links to other USG sites, international organizations, international news and local (Japan) information, and some material in the Technical Library. I know you have your own resources, but I am hoping you may find something useful here as well.

http://www.internal.nrc.gov/TICS/news/20110405_japan.html

Best regards,
Beth

Beth Deahl
Technical Information Center Section
NRC Office of Information Services
elizabeth.deahl@nrc.gov
301.415.5684

000273

From: PMT10 Hoc
Sent: Friday, April 08, 2011 1:05 PM
To: LIA08 Hoc
Subject: RE: rev 1 of RST assessment document

Perhaps there's a scanner we could use to produce a pdf file.

From: LIA08 Hoc
Sent: Friday, April 08, 2011 12:48 PM
To: PMT10 Hoc
Subject: RE: rev 1 of RST assessment document

When I find it electronically, I will. I also have a hard copy, but am still looking for an electronic copy. Jeff

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From: PMT10 Hoc
Sent: Friday, April 08, 2011 12:47 PM
To: LIA08 Hoc
Subject: RE: rev 1 of RST assessment document

Jeff, could you also send me a copy of the original assessment?

Thanks,
Sam Keith
CDC Liaison

From: LIA08 Hoc
Sent: Friday, April 08, 2011 12:46 PM
To: PMT10 Hoc
Subject: rev 1 of RST assessment document

aaa/274

From: ET02 Hoc
Sent: Friday, April 08, 2011 5:24 AM
To: ET07 Hoc
Subject: FW: Confirmation that TEPCO's position is that RPVs are "intact" (Task 4273)

From: ET01 Hoc
Sent: Friday, April 08, 2011 5:23:47 AM
To: ET02 Hoc
Subject: FW: Confirmation that TEPCO's position is that RPVs are "intact" (Task 4273)
Auto forwarded by a Rule

From: RST06 Hoc
Sent: Friday, April 08, 2011 5:23:44 AM
To: Virgilio, Martin; Brenner, Eliot; LIA06 Hoc; LIA08 Hoc; ET07 Hoc; ET01 Hoc
Subject: Confirmation that TEPCO's position is that RPVs are "intact" (Task 4273)
Auto forwarded by a Rule

We confirmed with the NRC site team in Japan that it is TEPCO's assessment that the RPVs are all "intact."

This completes RST action on Task Tracker 4273.

Fred Brown
On-sift RST Director.

aad/25

From: LIA07 Hoc
Sent: Friday, April 08, 2011 9:24 PM
To: Miller, Marie
Cc: LIA02 Hoc; LIA03 Hoc
Subject: RE: OUO -- Status Update - 1800 EDT, April 8, 2011

You're still in the "Liaison Japan" distribution group that OIS created for the travelers. I believe you'll be removed once you've returned. But we'll follow up with OIS on that.
-Sara

From: Miller, Marie
Sent: Friday, April 08, 2011 9:15 PM
To: LIA07 Hoc
Subject: RE: OUO -- Status Update - 1800 EDT, April 8, 2011

Please take me off distribution, I am heading home. I have confirmed that my replacement, Michel Call is now receiving this information.

From: LIA07 Hoc
Sent: Friday, April 08, 2011 5:55 PM
To: Liaison Japan
Subject: OUO -- Status Update - 1800 EDT, April 8, 2011

Attached is the latest Status Update.
Please let me know if you have any changes for the next issue (0430 EDT, April 9).
Thanks!
-Sara

aaa/276

News Release

経済産業省
Ministry of Economy, Trade and Industry

April 8, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 81st Release)
(As of 16:00 April 8th, 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

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(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 14:00 April 8th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.496(A) 0.894(B)	0.081(A) 0.081(D)	0.097(A) 0.022(C)	—	0.104	0.106
CV Pressure (D/W) [kPa]	185	100	105.2	—	—	—
Reactor Water Level*2 [mm]	-1,650(A) -1,650(B)	-1,500(A) Not available(B)	-1,850(A) -2,250(B)	—	1,644	1,668
Suppression Pool Water Temperature (S/C) [℃]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	155	down scale (under survey)	172.2	—	—	—
Spent Fuel Pool Water Temperature [℃]	Indicator Failure	53.0	Indicator Failure	Indicator Failure	34.7	30.5
Time of Measurement	12:00 April 8th	12:00 April 8th	12:00 April 8th	April 8th	14:00 April 8th	14:00 April 8th

*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 was 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 Reactor Core was increased by utilizing the Feedwater 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 Feedwater Line only (around $11m^3/h$). (09:00 March 23rd)
- Lighting in the Central Operation Room was recovered. (11:30 March 24th)
- Fresh water injection to RPV was started. (15:37 March 25)
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 Bq/cm^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 Bq/cm^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides.
- The pump for the fresh water injection to RPV of Unit 1 was switched from the Fire Pump Truck to the temporary motor-driven pump. (08:32 March 29th.)
- The Stagnant water on the basement floor of the turbine building was started to be transferred to the Condenser at around 17:00 March 24. As the Condenser was confirmed to be almost filled with water, pumping out of the water to the Condenser was stopped. (07:30 March 29th) In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the Condenser, the water in the Condensate Storage Tank started to be transferred to the Surge Tank of Suppression Pool Water (A) (12:00 March 31th), after switching the place where the water was to be transferred to the Surge Tank of Suppression Pool Water (B) (15:25 March 31th), the transfer was

restarted and finished. (15:26 April 2nd)

- Water spray of around 90t (fresh water) over the Spent Fuel Pool using Concrete Pump Truck was carried out. (From 13:03 till 16:04 March 31st) A test water spray using Concrete Pump Truck was carried out in order to confirm the appropriate position for water spray. (From 17:16 till 17:19 April 2nd)
- Lighting in the turbine building was partially turned on. (April 2nd)
- In order to switch the power supply to the motor-driven pump injecting fresh water to RPV from the temporary power supply to the external power supply, the injection to the reactor was temporarily carried out using the Fire Pump Truck. (10:42 to 11:52 April 3rd)
- The power supply for the fresh water injection to RPV was switched to the external power supply. (12:12 April 3rd)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building of Unit 1 to the Condenser, the transfer of the water in the Condenser to the Condensate Storage Tank was started. (13:55 April 3rd)
- Aiming at reducing the possibility of hydrogen combustion in the Primary Containment Vessel (PCV) of Unit 1, the operations for the injection of nitrogen to PCV were started. (22:30 April 6th)
- The start of nitrogen injection to PCV of Unit 1 was confirmed. (01:31 April 7th)
- White smoke was confirmed to generate continuously. (As of 06:30 April 8th)
- Fresh water injection to RPV is being carried out. (As of 16:00 April 8th)

<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 started. (16:34 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 Pool (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. (13:30 March 19th)
- Seawater injection of 40t to the Spent Fuel Pool was started. (From 15:05 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)
- Seawater injection of 18t to the Spent Fuel Pool was carried out. (From 16:07 till 17:01 March 22nd)
- Seawater injection to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line was carried out. (From 10:30 till 12:19 March 25th)
- Fresh water injection to RPV was started. (10:10 March 26th)
- Lighting of Central Operation Room was recovered (16:46 March26th)
- The pump for the fresh water injection to RPV of Unit 2 was switched from the Fire Pump Truck to the temporary motor-driven pump.(18:31 March 27th)
- Regarding the result of the concentration measurement in the stagnant water on the basement floor of the turbine building of Unit 2 of Fukushima Dai-ichi NPS announced by TEPCO on 27 March, TEPCO reported to NISA that as the result of analysis and evaluation through re-sampling, judging the measured value of ^{134}I (Iodine) was wrong, the concentrations of gamma nuclides including ^{134}I (Iodine) were less than the detection limit. (00:07 March 28).

- Seawater injection to the Spent Fuel Pool using the Fire Pump Truck was switched to the fresh water injection using the temporary motor-driven pump. (From 16:30 till 18:25 March 29th)
- As the malfunction of the temporary motor-driven pump, which had been injecting to the Spent Fuel Pool of Unit 2 since 09:25 March 30th, was confirmed at 09:45 March 30th, the injection pump was switched to the Fire Pump Truck. However, because cracks were confirmed in the hose (12:47 and 13:10 March 30th), the injection was suspended. Fresh water injection was resumed. (From 19:05 till 23:50 March 30th)
- Fresh water injection of around 70t to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line using the temporary motor-driven pump was carried out. (From 14:56 till 17:05 April 1st)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building of Unit 2 to the Condenser, the water in the Condensate Storage Tank was transferred to the Surge Tank of Suppression Pool Water. (From 16:45 March 29th till 11:50 April 1st)
- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) for laying electric cables, located near the Intake Channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed. (Around 09:30 April 2nd) In order to stop the outflow, concrete was poured into the pit. (16:25, 19:02 April 2nd)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building of Unit 2 to the Condenser, the transfer of the water in the Condenser to the Condensate Storage Tank was started. (17:10 April 2nd)
- The cameras for monitoring the water levels in the vertical part of the trench outside of the turbine building of Unit 2 and on the basement floor of the turbine building of Unit 2 were installed. (April 2nd)
- Lighting in the turbine building was partially turned on. (April 2nd)
- In order to switch the power supply to the motor-driven pump injecting fresh water to RPV from the temporary power supply to the external power supply, the injection to the reactor was temporarily carried out using the Fire Pump Truck. (From 10:22 till 12:06 April 3rd)

- The power supply for the fresh water injection to RPV was switched to the external power supply. (12:12 April 3rd)
- As the measure to prevent the outflow of the water accumulated in the Pits for Conduit in the area around the Inlet Bar Screen, the upper part of the Power Cable Trench for power source at Intake Channel was crushed and 20 bags of sawdust (3 kg/bag), 80 bags of high polymer absorbent (100 g/bag) and 3 bags of cutting-processed newspaper (Large garbage bag) were put inside. (From 13:47 till 14:30 April 3rd)
- Approximately 13kg of tracer (milk white bath agent) was put in from the Pit for the Duct for Seawater Pipe. (From 07:08 till 07:11 April 4th)
- Fresh water injection (Around 70t) to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line using the temporary motor-driven pump was carried out. (From 11:05 till 13:37 April 4th)
- The tracer solution was put in from the two holes dug around the Pit for the Conduit near the Inlet Bar Screen of Unit 2 and was confirmed to be flowed out from the crack to the sea. (14:15 April 5th) The coagulant (soluble glass) started to be injected from the holes around the Pit in order to prevent the outflowing of the water. (15:07 April 5th) The outflow of the water was confirmed to stop. (Around 05:38 April 6th) In addition, it was confirmed that the water level in the turbine building did not rise. Furthermore, the measurements to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (Finished at 13: 15 April 6th)
- One more pump for the transfer of the water in the Condenser of Unit 2 to the Condensate Storage Tank was installed. (Two pumps in total: 30 m^3/h) (Around 15:40 April 5th)
- Fresh water injection (Around 36t) to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line was carried out. (From 13:39 till 14:34 April 7th)
- White smoke was confirmed to generate continuously. (As of 06:30 April 8th)
- Fresh water injection to RPV is being carried out. (As of 08:00 April 8th)

<Unit 3>

- 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.

(05:10 March 13th)

- Operation of Vent (08:41 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)
- 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 carried out the water spray. (Finished at 03:40 March 20th)
- The pressure in PCV of Unit 3 rose (320 kPa at 11:00 March 20th). Preparation to lower the pressure was carried out. 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 21:30 March 20th till 03:58 March 21st).
- 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 Tokyo Fire Department and Osaka City Fire Bureau was carried out. (From 15:10 till 16:00 March 22nd)
- Lighting was recovered in the Central Operation Room. (22:43 March 22nd)
- Seawater injection of 35t to the Spent Fuel Pool via the Fuel Pool Cooling Line was carried out. (From 11:03 till 13:20 March 23rd) Around 120t of seawater was injected. (From around 5:35 till around 16:05 March 24th)
- 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.
- As the results of the survey of the stagnant water, into which workers who were laying electric cable on the ground floor and the basement floor of the turbine building of the Unit 3 walked, the dose rate on the water surface was around 400mSv/h, and as the result of gamma-ray analysis of the sampling water, the totaled concentration of each nuclide of the sampling water was around 3.9×10^{6} Bq/cm^{3}.
- Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department was carried out. (From 13:28 till 16:00 March 25th)
- Fresh water injection to RPV was started. (18:02 March 25th)

- Water spray of around 100t using Concrete Pump Truck (50t/h) was carried out. (From 12:34 till 14:36 March 27th)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water. (From 17:40 March 28th till around 8:40 March 31st)
- The pump for the fresh water injection to RPV was switched from the Fire Pump Truck to the temporary motor-driven pump. (20:30 March 28th)
- Fresh water spray of around 100t using Concrete Pump Truck (50t/h) was carried out. (From 14:17 till 18:18 March 29th)
- Fresh water spray of around 105t using Concrete Pump Truck (50t/h) was carried out. (From 16:30 till 19:33 March 31st)
- Fresh water spray of around 75t using Concrete Pump Truck (50t/h) was carried out. (From 09:52 till 12:54 April 2nd)
- Lighting in the turbine building was partially turned on. (April 2nd)
- The camera for monitoring the water level in the vertical part of the trench outside of the turbine building was installed. (April 2nd)
- In order to switch the power supply to the motor-driven pump injecting fresh water to RPV from the temporary power supply to the external power supply, the injection to the reactor was temporarily carried out using the Fire Pump Truck. (From 10:03 till 12:16 April 3rd)
- The power supply for the fresh water injection to RPV was switched to the external power supply. (12:18 April 3rd)
- Fresh water spray of around 70t using Concrete Pump Truck (50t/h) was carried out. (From 17:03 till 19:19 April 4th)
- Fresh water spray of around 70t using Concrete Pump Truck (50t/h) was carried out. (From 06:53 till 08:53 April 7th)
- White smoke was confirmed to generate continuously (As of 06:30 April 8th)
- Fresh water injection to RPV is being carried out. (As of 16:00 April 8th)

<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 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. (05:45 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-Defense 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 electric cable to the Power Center was completed. (At around 15:00 March 21st)
- Power Center received electricity. (10:35 March 22nd)
- Water spray of around 150t using Concrete Pump Truck (50t/h) was carried out. (From 17:17 till 20:32 March 22nd)
- Water spray of around 130t using Concrete Pump Truck (50t/h) was carried out. (From 10:00 till 13:02 March 23rd)
- Water spray of around 150t using Concrete Pump Truck (50t/h) was carried out. (From 14:36 till 17:30 March 24th)
- Water spray of around 150t using Concrete Pump Truck (50t/h) was carried out. (From 19:05 till 22:07 March 25th)
- Seawater injection to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line was carried out. (From 06:05 till 10:20 March 25th)
- Water spray of around 125t using Concrete Pump Truck (50t/h) was carried out. (From 16:55 till 19:25 March 27th)
- Lighting of Central Operation Room was recovered. (11:50 March 29th)
- Fresh water spray of around 140t using Concrete Pump Truck (50t/h) was carried out. (From 14:04 till 18:33 March 30th)
- Fresh water spray of around 180t using Concrete Pump Truck (50t/h) was carried out. (From 08:28 till 14:14 April 1st)
- Lighting in the turbine building was partially turned on. (April 2nd)

- From 2 April, the stagnant water in the Main Building of Radioactive Waste Treatment Facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from 3 April, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear. (09:22 April 4th)
- Fresh water spray of around 180t using Concrete Pump Truck (50t/h) was carried out. (From 17:14 till 22:16 April 3rd)
- Fresh water spray of around 20t using Concrete Pump Truck (50t/h) was carried out. (From 17:35 till 18:22 April 5th)
- Fresh water spray of around 38t using Concrete Pump Truck (50t/h) was carried out. (From 18:23 till 19:40 April 7th)
- White smoke was confirmed to generate continuously. (As of 06:30 April 8th)

<Units 5 and 6>

- The first unit of Emergency Diesel Generator (D/G) (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 (D/G) (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 temporary pump for RHR Seawater System (RHRS) of Unit 5 was

automatically stopped when the power supply was switched from the temporary to the permanent. (17:24 March 23rd)

- Repair of the temporary pump for RHRS of Unit 5 was completed (16:14 March 24th) and cooling was started again. (16:35 March 24th)
- Power supply for the temporary pump for RHRS of Unit 6 was switched from the temporary to the permanent. (15:38 and 15:42 March 25th)
- The groundwater with low-level radioactivity in the Sub Drain Pit of Units 5 and 6 (Around 1,500t) was started to be discharged through the Water Discharge Canal to the sea. (21:00 April 4th)

<Common Spent Fuel Pool>

- It was confirmed that the water level of Spent Fuel Pool was maintained almost full at after 06:00 March 18th.
- Water spray over the Common Spent Fuel Pool was started. (From 10:37 till 15:30 March 21st)
- The power was started to be supplied (15:37 March 24th) and cooling was also started.(18:05 March 24th)
- As of 07:20 April 8th, water temperature of the pool was around 28℃.

<Other>

- As the result of nuclide analysis at around the Southern Water Discharge Canal, 7.4×10^{1}Bq/cm^3 of ^{131}I (Iodine) (1,850.5 times higher than the concentration limit in water outside the Environmental Monitoring Area) was detected. (14:30 March 26th)

  (As the result of measurement on 29 March, it was detected as 3,355.0 times higher than the limit in water (13:55 March 29th). On the other hand, as the result of the analysis at the northern side of the Water Discharge Canal of the NPS, 4.6×10^{1}Bq/cm^3 of ^{131}I (Iodine) (1,262.5 times higher than the limit in water) was detected. (14:10 March 29th)
- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench. The rate of the Unit 3's trench could not measure because of the rubble. (Around 15:30 March 27th) The collected water in the vertical part of the trench outside of the turbine building of Unit 1

was transferred to the storage tank in the Main Building of Radioactive Waste Treatment Facilities by the temporary pump. Thereafter the water level from the top of the vertical part went down from approximately -0.14m to approximately -1.14m. (From 09:20 till 11:25 March 31st)

- In the samples of soil collected on 21 and 22 March on the site (at 5 points) of Fukushima Dai-ichi NPS, ^{238}P (Plutonium), ^{239}P (Plutonium) and ^{240}P (Plutonium) were detected (23:45 March 28th announced by TEPCO). The concentration of the detected plutonium was at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- When removing the flange of pipes of Residual Heat Removal Seawater System outside the building of Unit 3, three subcontractor's employees were wetted by the water remaining in the pipe. However, as the result of wiping the water off, no radioactive materials were attached to their bodies. (12:03 March 29th)
- On March 28th, the stagnant water was confirmed in the Main Building of Radioactive Waste Treatment Facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^{1} Bq/cm^{3} in the controlled area and that of 2.2×10^{1} Bq/cm^{3} in the non-controlled area were detected in March 29th.
- As the result of nuclide analysis at around the Southern Water Discharge Canal, 1.8×10^{2} Bq/cm^{3} of ^{131}I (Iodine) (4,385.0 times higher than the concentration limit in water outside the Environmental Monitoring Area) was detected (13:55 March 30th).
- The barge (the first ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Maritime Self-Defense Force. (15:42 March 31st) The transfer of fresh water from the barge (the first ship) to the Filtrate Tank was started. (15:58 April 1st) Thereafter it was suspended due to the malfunction of the hose (16:25 April 1st), but was resumed on April 2nd. (From 10:20 till 16:40 April 2nd)
- The permanent monitoring posts (No.1 to 8) installed near the Site Boundary were recovered. (March 31st) They are measuring once a day.

- The spraying for test scattering of antiscattering agent was carried out in the area of about 500 m^2 on the mountain-side of the Common Pool. (From 15:00 till 16:05 April 1st)
- The barge (the second ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Maritime Self-Defense Force. (9:10 April 2nd)
- The freshwater was transferred from the barge (the second ship) of the US armed force to the barge (the first ship). (From 09:52 till 11:15 April 3rd)
- The stagnant water with low-level radioactivity in the Main Building of Radioactive Waste Treatment Facilities (Around 10,000t) was started to be discharged from the southern side of the Water Discharge Canal to the sea, using the first pump. (19:03 April 4th) Further, the discharge using 10 pumps in total was carried out. (19:07 April 4th)
- In the samples of soil (7 samples in total) collected on 25 March (at 4 points) and 28 March (at 3 points) on the site of Fukushima Dai-ichi NPS, ^{238}P (Plutonium), ^{239}P (Plutonium) and ^{240}P (Plutonium) were detected (18:30 April 6th announced by TEPCO). The concentration of the detected plutonium was, in the same as the last one (Announced on 28 March), at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- In order to prevent the outflow of the contaminated water from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS. (From 15:00 till 16:30 April 5th)
- The test scattering of antiscattering agent to prevents the radioactive materials on the ground surface from being scattered was carried out in the area of about 600 m^2 on the mountain-side of the Common Pool. (April 5th, 6th)

● 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 14:00 April 8th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.15	0.14	0.10	0.17
Reactor water temperature	℃	25.1	25.2	34.9	30.3
Reactor water level*2	mm	9,346	10,346	7,810	8,785
Suppression pool water temperature	℃	23	24	26	31
Suppression pool pressure	kPa (abs)	105	105	111	110
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) Situation of Each Unit

<Unit 1>

- Around 17:56 March 30th, smoke was rising from the power distribution panel on the first floor of the turbine building of Unit 1. However, when the power supply was turned off, the smoke stopped to generate. It was judged by the fire station at 19:15 that this event was caused by the malfunction of the power distribution panel and was not a fire.
- The Residual Heat Removal System (B) to cool the reactor of Unit 1 became to be able to receive power from the emergency power supply as well as the external power supply. This resulted in securing the backup power supplies (emergency power supplies) of Residual Heat Removal System (B) for all Units. (14:30 March 30th)

(4) 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 functions) 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 functions) 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)
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● 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 Northern End of Site Boundary)
Approx. 0.37 μ SV/h (16:00 April 7th) (Approx. 0.38 μ SV/h (16:00 April 6th))

(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 the Government Nuclear Emergency Response Headquarters and the Local Nuclear 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 the 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 Nuclear Emergency Response Headquarters

(March12th)

0:49 Regarding Units 1 TEPCO Fukushima Dai-ichi NPS, TEPCO recognized the event (Unusual rise of the pressure in PCV) in accordance with the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (Reported to NISA at 01:20)

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

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

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

20:05 Considering the Directives from the 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 was 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 was 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.

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 International Atomic Energy Agency (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 U.S. Nuclear Regulatory Commission (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, the 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 Nuclear Emergency Response Headquarters was moved to the Fukushima Prefectural Office.

11:00 The 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, the Minister of Economy, Trade and Industry issued the following direction.

For Unit 4: To implement the water injection 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 Nuclear 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, Minamisoma 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 Nuclear 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 Director-General of Local Nuclear 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 Director-general of the 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.

(March 25th)

NISA directed orally to the TEPCO regarding the exposure of workers at the turbine building of Unit 3 of Fukushima Dai-ichi Nuclear Power Station occurred on March 24th, to review immediately and to improve its radiation control measures from the viewpoint of preventing a recurrence.

(March 28th)

Regarding the mistake in the evaluation of the concentration measurement in the stagnant water on the basement floor of the turbine building of Unit 2 of Fukushima Dai-ichi NPS announced by TEPCO on 27 March, NISA directed TEPCO orally to prevent the recurrence of such a mistake.

13:50 Receiving the suggestion by the special meeting of Nuclear Safety Commission (NSC) (Stagnant water on the underground floor of the turbine building at Fukushima Dai-ichi Plant Unit 2), NISA directed TEPCO orally to add the sea water monitoring points and carry out the groundwater monitoring.

Regarding the delay in the reporting of the water confirmed

outside of the turbine buildings, NISA directed TEPCO to accomplish the communication in the company on significant information in a timely manner and to report it in a timely and appropriate manner.

(March 29th)

11:16 The report was received, regarding the accident and trouble etc. in Onagawa NPS of Tohoku Electric Power Co. Inc. (the trouble of pump of component cooling water system etc. in Unit 2 and the fall of heavy oil tank for auxiliary boiler of Unit 1 by tsunami), pursuant to the Article 62-3 of the Nuclear Regulation Act and the Article 3 of the Ministerial Ordinance for the Reports related to Electricity.

In order to strengthen the system to assist the nuclear accident sufferers, the "Team to Assist the Lives of the Nuclear Accident Sufferers" headed by the Minister of Economy, Trade and Industry was established and the visits, etc. by the team to relevant cities, towns and villages were carried out.

The Local Nuclear Emergency Response Headquarters issued the News Letter No.1 for the residents within the area from 20 km to 30 km radius.

(March 30th)

Directions as to the implementation of the emergency safety measures for the other power stations considering the accident of Fukushima Dai-ichi and Dai-ni NPSs in 2011 was issued and handed to each electric power company and the relevant organization.

(March 31st)

Regarding the break-in of the propaganda vehicle to Fukushima Dai-ni NPS on 31 March, NISA directed TEPCO orally to take the carefully thought-out measures regarding physical protection, etc.

NISA alerted TEPCO to taking the carefully though-out measures regarding radiation control for workers.

The Local Nuclear Emergency Response Headquarters issued the News Letter No.2 for the residents within the area from 20 km to 30 km radius.

(April 1st)

NISA strictly alerted TEPCO to taking appropriate measures concerning the following three matters regarding the mistake in the result of nuclide analysis.

- Regarding the past evaluation results on nuclide analysis, all the nuclides erroneously evaluated should be identified and the re-evaluation on them should be promptly carried out.
- The causes for the erroneous evaluation should be investigated and the thorough measures for preventing the recurrence should be taken.
- Immediate notification should be done in the stage when any erroneous evaluation results, etc. are identified.

(April 2nd)

Regarding the outflow of the liquid including radioactive materials from the area around the Intake Channel of Unit 2 of Fukushima Dai-ichi NPS, NISA directed TEPCO orally to carry out nuclide analysis of the liquid sampled, to confirm whether there are other outflows from the same parts of the facilities as the one, from which the outflow was confirmed around the Unit 2, and to strengthen monitoring through sampling water at more points around the facilities concerned.

(April 4th)

On the imperative execution of the discharge to the sea as an emergency measure, NISA requested the technical advice of NSC and directed TEPCO to survey and confirm the impact of the spread of radioactive materials caused by the discharge, by ensuring continuity of the sea monitoring currently underway and enhancing it (Increase of the frequency of measuring as well as the number of monitoring points), disclose required information, as well as to enhance the strategy to minimize the discharge amount.

(April 5th)

Directions as to the implementation of advance notification and contact to the local governments with regard to taking measures related to discharge of radioactive materials from Fukushima Dai-ichi NPS, which have a possible impact on the environment, was issued.

(April 6th)

On the implementation of the nitrogen injection to PCV of Unit 1, NISA directed TEPCO on the following three points. (12:40 April 6th) ① Properly control the plant parameters, and take measures appropriately to ensure safety in response to changes in the parameters. ②Establish and implement an organizational structure and so on that will ensure the safety of the workers who will engage in the operation. ③As the possibility of leakage of the air in PCV to the outside due to the nitrogen injection cannot be ruled out, through the judicious and further enhanced monitoring, TEPCO shall survey and confirm the impact of the release and spreading of radioactive materials due to the nitrogen injection, and strive to disclose information.

(April 7th)

The Local Nuclear Emergency Response Headquarters issued the News Letter No.3 for the residents within the area from 20km to 30km radius. (April 7th)

< Possibility on radiation exposure (As of 08:00 April 8th) >

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
18,000 cpm	1
30,000-36,000 cpm	1
40,000 cpm	1
little less than 40,000 cpm*	1
very small counts	5

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

(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 6,000 cpm. 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.

(6) Fukushima Prefecture has started the screening from 13 March. It is carried out by rotating the evacuation sites and at the 13 places (set up

permanently) such as health offices. Up until April 6th, the screening was done to 133,972 people. Among them, 102 people were above the 100,000 cpm, but when measured these people again without clothes, etc., the counts decreased to 100,000 cpm and below, and there was no case which affects health.

2. Exposure of workers

As for the workers conducting operations in Fukushima Dai-ichi NPS, the total number of people who were at the level of exposure more than 100 mSv becomes 21.

For two out of the three workers who were confirmed to be at the level of exposure more than 170 mSv on March 24, the attachment of radioactive material on the skin of both legs was confirmed. As the two workers were judged to have a possibility of beta ray burn, they were transferred to the Fukushima Medical University Hospital, and after that, on March 25th, all of the three workers arrived at the National Institute of Radiological Sciences in the Chiba Prefecture. As the result of examination, the level of exposure of their legs was estimated to be from 2 to 3 Sv. The level of exposure of both legs and internal did not require medical treatment, but they decided to monitor the progress of all three workers in the hospital. All the three workers have been discharged from the hospital around the noon on 28 March.

At around 11:35 April 1st, a worker fell into the sea when he went on board the barge of the US Armed forces in order to adjust the hose. He was rescued immediately by other workers around without any injury and external contamination. In order to make double sure, the existence of internal radionuclide contaminant is being confirmed by a whole-body counter.

3. Others

(1) 4 members of Self-Defence Force who worked in Fukushima Dai-ichi NPS were injured by explosion. 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.

(2) As for policeman, the decontaminations of two policemen were confirmed by the National Police Agency. Nothing unusual was reported.
(3) On March 24th, examinations of thyroid gland for 66 children aged from 1 to 15 years old were carried out at the Kawamata Town public health Center. The result was at not at the level of having harmful influence.
(4) From March 26th to 27th, examinations of thyroid gland for 137 children aged from 0 to 15 years old were carried out at the Iwaki City Public Health Center. The result was not at the level of having harmful influence.
(5) From March 28th to 30th, examinations of thyroid gland for 946 children aged from 0 to 15 years old were carried out at the Kawamata Town Community Center and the Iidate Village Office. The result was not at the level of having harmful influence.

<Directive of screening levels for decontamination of radioactivity>
(1) On March 20th, the Local Nuclear 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 Nuclear 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 Nuclear 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 08:00 April 8th)>

1. Injury in Unit 1 of Fukushima Dai-ichi NPS due to earthquake on 11 March
   - Two employees (slightly, have already gone back working)
   - Two subcontract employees (one fracture in both legs, be in hospital)
   - Two died (After the earthquake, two TEPCO's employees missed and had been searched continuously. In the afternoon of March 30th, the two employees were found on the basement floor of the turbine building of Unit 4 and were confirmed dead by April 2nd.)

2. Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS on 12 March
   - Four employees (two TEPCO's employees and two subcontractor's employees) were injured at the explosion and smoke of Unit 1 around the turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic. Two TEPCO's employees return to work again and two subcontractors' employees are under home treatment.

3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS on 14 March.
   - Four TEPCO's employees (They have already return to work.)
   - Three subcontractor employees (They have already return to work.)
   - 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 17th.)

4. Other injuries

- On the earthquake on 11 March, one subcontractor's employees (a crane operator) died in Fukushima Dai-ni NPS. (It seems that the tower crane broke and the operator room was crushed and the person was hit on the head.)
- One emergency patient on 12 March. (Cerebral infarction, transported by the ambulance, be in hospital)
- Ambulance was requested for one employee complaining the pain at left chest outside of control area on March 12. (Conscious, under home treatment)
- 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 on 13 March. (One employee has already returned to work and the other is under home treatment.)
- Two subcontractor's employees were injured during working at temporary control panel of power source in the Common Spent Fuel Pool, transported to where were industrial medical doctors the Fukushima Dai-ni NPS on 22 and 23 March. (One employee has already returned to work and the other is under home treatment.)
- On the afternoon of 7 April, a worker who was making sandbags at the soil disposal yard (spoil bank) on the north side of Fukushima Dai-ichi NPS got sick and was transported to J-Village for the body survey of contamination of radioactive materials. Being confirmed to be free from contamination, he was taken to the Iwaki City Kyouritsu Hospital by ambulance.

<Situation of resident evacuation (As of 08:00 April 8th)>

At 11:00 March 15th, the 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.
- On March 28th, Chief Cabinet Secretary mentioned the continuation of the limited-access within the area of 20 km from Fukushima Dai-ichi NPS. On the same day, the Local Nuclear Emergency Response Headquarters notified the related municipalities of forbidding entry to the evacuation area within the 20 km zone.

<Directives regarding foods and drinks>

Directive from the Director-General of the Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi, Gunma, and Chiba was issued, which directed above-mentioned governors to suspend shipment and so on of the following products for the time being.

The Government Nuclear Emergency Response Headquarters organized the thoughts of imposing and lifting restrictions on shipment as follows, considering the NSC's advice.

- The area where restrictions on shipment to be imposed or lifted could be decided in units of the area where a prefecture is divided into, such as cities, towns, villages and so on, considering the spread of the contamination affected area and the actual situation of produce collection, etc.
- The restriction on shipment of the item, of which the result of the sample test exceeded the provisional regulation limits, shall be decided by judging in a comprehensive manner considering the regional spread of the contamination impact.
- Lifting the restrictions on shipment shall be implemented when a series of three results of nearly weekly tests for the item or the area falls below the provisional regulation limits, considering the situation of the Fukushima Dai-ichi NPS.
- However, the tests shall be carried out nearly weekly after the lifting, while the release of the radioactive materials from the NPS continues.

(1) Items under the suspension of shipment and restriction of intake (As of 16:00 April 8th)

Prefectures	Suspension of shipment	Restriction of intake
Fukushima Prefecture	Non-head type leafy vegetables, head type leafy vegetables , flowerhead brassicas (Spinach, Cabbage, Broccoli, Cauliflower, *Komatsuna**, *Kukitachina**, *Shinobufuyuna**, Rape, *Chijirena, Santouna**, *Kousaitai**, *Kakina**, *etc.*), Turnip, Raw milk (Except Kitakata-City, Bandai-Town, Inawashiro-Town, Mishima-Town, Aizumisato-Town, Shimogo-Town and Minamiaizu-Town)	Non-head type leafy vegetables, head type leafy vegetables, flowerhead brassicas (Spinach, Cabbage, Broccoli, Cauliflower, *Komatsuna**, *Kukitachina**, *Shinobufuyuna,* Rape, *Chijirena, Santouna**, *Kousaitai**, *Kakina**, *etc.*)
Ibaraki Pref.	Spinach, *Kakina**, Parsley, Raw milk	
Tochigi Pref.	Spinach, *Kakina**	
Chiba Pref.	- Spinach from Katori City and Tako Town - Spinach, Qing-geng-cai, Garland chrysanthemum, Sanchu Asian lettuce, Celery and Parsley from Asahi City	

*a green vegetable

(2) Request for restriction of drinking for tap-water (As of 16:00 April 8th)

Scope under restriction	Water service (Local governments requested for restriction)

All residents	None
Babies ・Water services that continue to respond to the directive	<Fukushima Prefecture> Iitate small water service (Iitate Village, Fukushima Prefecture)
・Tap-water supply service that continues to respond to the directive	Non

<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 Director-General of Local Nuclear 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)
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Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (As of 6:00, April 8th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 6 m^3/h (As of 17:30, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water : 7 m^3/h (As of 19:00, April 7th) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m^3/h (As of 17:32, April 3rd) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 0:00, April 8th)	Fuel range A : -1,500mm (As of 3:00, April 8th)	Fuel range A:-2,000mm Fuel range B:-2,250mm (As of 1:30, April 8th)	#2	Shutdown range measurement 1,669mm (As of 6:00, April 8th)	Shutdown range measurement 1,691mm (As of 6:00, April 8th)
Reactor pressure	0.390MPa g(A) 0.788MPa g(B) (As of 0:00, April 8th)	-0.011MPa g (A) -0.016MPa g (D) (As of 3:00,April 8th)	-0.002MPa g (A) -0.081MPa g (C) (As of 1:30, April 8th)	#2	0.002MPa g (As of 6:00, April 8th)	0.003MPa g (As of 6:00, April 8th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	33.2℃ (As of 6:00, April 8th)	22.1℃ (As of 6:00, April 8th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 260.7℃ Temperature at the bottom head of RPV: 118.6℃ (As of 0:00, April 8th)	Feedwater nozzle temperature: 143.0℃ Temperature at the bottom head of RPV: #1 (As of 3:00, April 8th)	Feedwater nozzle temperature: 88.2℃ (under survey) Temperature at the bottom head of RPV: 110.8℃ (As of 1:30, April 8th)	Unit 4 No heating element (fuel) inside the reactor Unit 5,6 Monitoring by the reactor water temperature		
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.180MPa abs S/C: 0.150MPa abs (As of 3:00, April 8th)	D/W: 0.100MPa abs S/C:Down scale (under survey) (As of 3:00, April 8th)	D/W: 0.1061MPa abs S/C: 0.1726MPa abs (As of 1:30, April 8th)	#2		
CAMS*3	D/W: 1.00×10^{2}Sv/h S/C: 1.27×10^{1}Sv/h (As of 0:00, April 8th)	D/W: 3.00×10^{1}Sv/h S/C: 7.72×10^{-1}Sv/h (As of 3:00,April 8th)	D/W: 1.90×10^{1}Sv/h S/C: 7.48×10^{-1}Sv/h (As of 1:30, April 8th)	#2		
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	#2		
D/W*1 maximum operating pressure	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)			
Spent Fuel Pool water	#1	63.0℃ (As of 3:00, April 8th)	#1	#1	34.8℃ (As of 6:00, April 8th)	28.0℃ (As of 6:00, April 8th)
FPC skimmer level	4,500mm (As of 0:00, April 8th)	5,500mm (As of 3:00, April 8th)	#1	4,950mm (As of 1:30, April 8th)	#2	
Power supply	Receiving external power supply (P/C*4 2C)		Receiving external power supply (P/C4D)		Receiving external power supply	

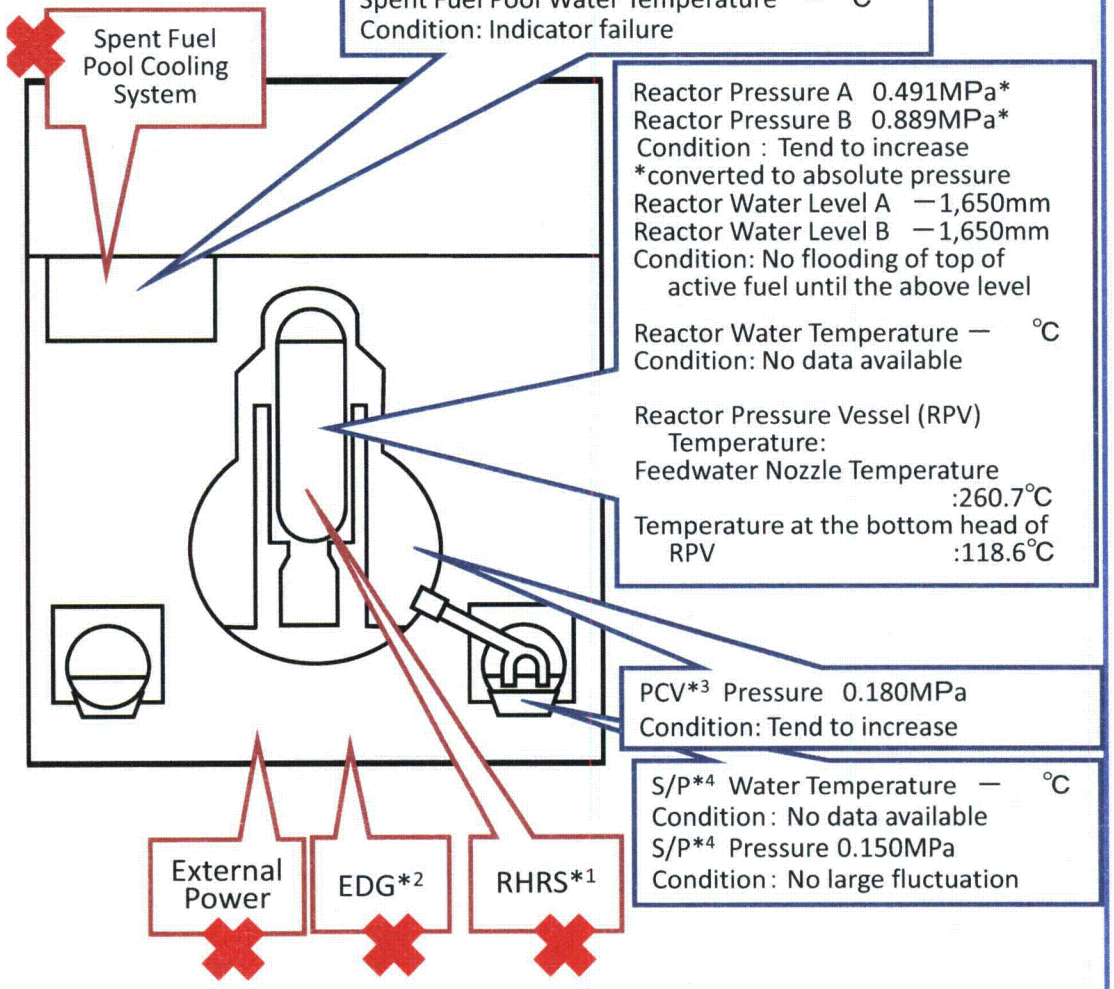
Other information	Unit2: Confirmed the indicated value of S/C Pressure but continuing to survey the transition of condition Unit3: Collecting the data of RPV temperature and continuing survey for transitional situation	Common pool: about 28 ℃ (As of 7:45, April 7th)	Unit5: SHC*5 mode (From 19:20 April 7th)	Unit6: SHC*5 mode (From 10:16 April 7th)

Pressure conversion	Gauge pressure (MPa g) = Absolute pressure (MPa abs) – Atmospheric pressure (Normal atmospheric pressure 0.1013MPa) Absolute pressure (MPa abs) = Gauge pressure (MPa g) + Atmospheric pressure (Normal atmospheric pressure 0.1013MPa)

*1 D/W : Dry Well
*2 S/C : Suppression Chamber
*3 CAMS : Containment Atmospheric Monitoring System
*4 P/C : Power Center
*5 SHC : Shutdown Cooling

#1 : Measuring instrument malfunction
#2 : Except from data collection

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1
(As of 6:00 April 8th, 2011)



Spent Fuel Pool Water Temperature — ℃
Condition: Indicator failure

Reactor Pressure A 0.491MPa*
Reactor Pressure B 0.889MPa*
Condition : Tend to increase
*converted to absolute pressure
Reactor Water Level A −1,650mm
Reactor Water Level B −1,650mm
Condition: No flooding of top of active fuel until the above level

Reactor Water Temperature — ℃
Condition: No data available

Reactor Pressure Vessel (RPV) Temperature:
Feedwater Nozzle Temperature :260.7℃
Temperature at the bottom head of RPV :118.6℃

PCV*3 Pressure 0.180MPa
Condition: Tend to increase

S/P*4 Water Temperature — ℃
Condition : No data available
S/P*4 Pressure 0.150MPa
Condition : No large fluctuation

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

Major Events after the earthquake

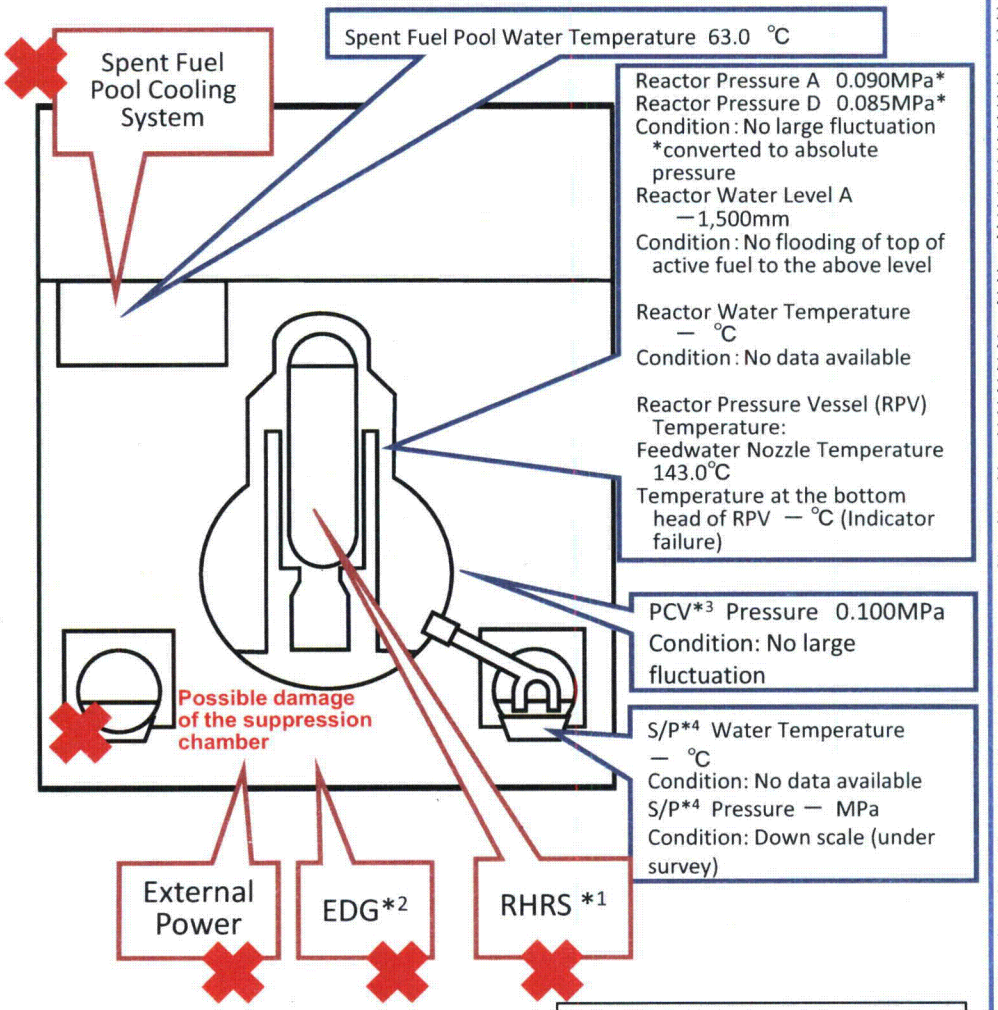
- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 12th 01:20 Occurrence of the Article 15 event (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 the Feedwater Line in addition to the Fire Extinguish Line. ($2m^3/h \rightarrow 18m^3/h$) 09:00 Switched to the Feedwater Line only.($18m^3/h \rightarrow 11m^3/h$)
- 24th 11:30 Lighting in the Central Control Room was recovered.
- 25th 15:37 Started fresh water injection.
- 29th 08:32 Switched to the water injection to the core using the temporary motor-driven pump.
- 31st 12:00 ～2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- 31st 13:03～16:04 Water spray by Concrete Pump Truck (Fresh water)
- 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- 3rd 13:55 Started to transfer the water from the condenser to CST.
- 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- 7th 01:31 Confirmed starting the injection of nitrogen to PCV.

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

（As of 6:00 April 8th, 2011）



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

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

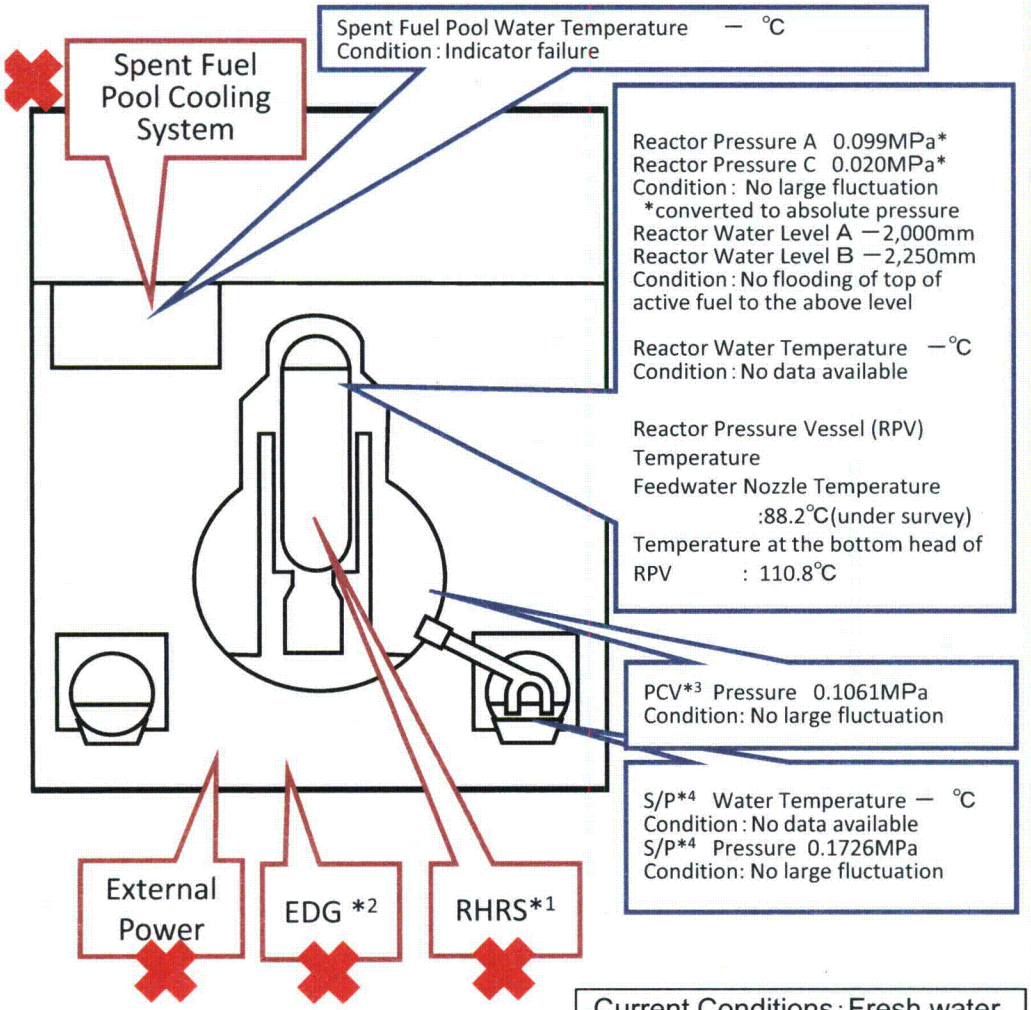
Major Events after the earthquake

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 seawater to the Reactor Core.
14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
15th 00:02 Started to vent.
15th 06:10 Sound of explosion
15th around 06:20 Possible damage of the suppression chamber
20th 15:05～17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (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 SFP
25th 10:30～12:19 Sea water injection to SFP via FPC
26th 10:10 Started to inject fresh water to the Reactor Core.
26th 16:46 Lighting in the Central Control Room was recovered.
27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
29th 16:30～18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
29th 16:45～1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
30th 9:25～23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
1st 14:56～17:05 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
2nd around 9:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.
2nd 17:10 Started to transfer the water from the condenser to the Condensate Storage Tank (CST).
3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
3rd 13:47～14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.
4th 7:08～7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
4th 11:05～13:37 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea.
15:07 Started to inject coagulant.
6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
7th 13:29～14:34 Freshwater injection to SFP via FPC (Around 36 ton)

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

（As of 6:00 April 8th, 2011）



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

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

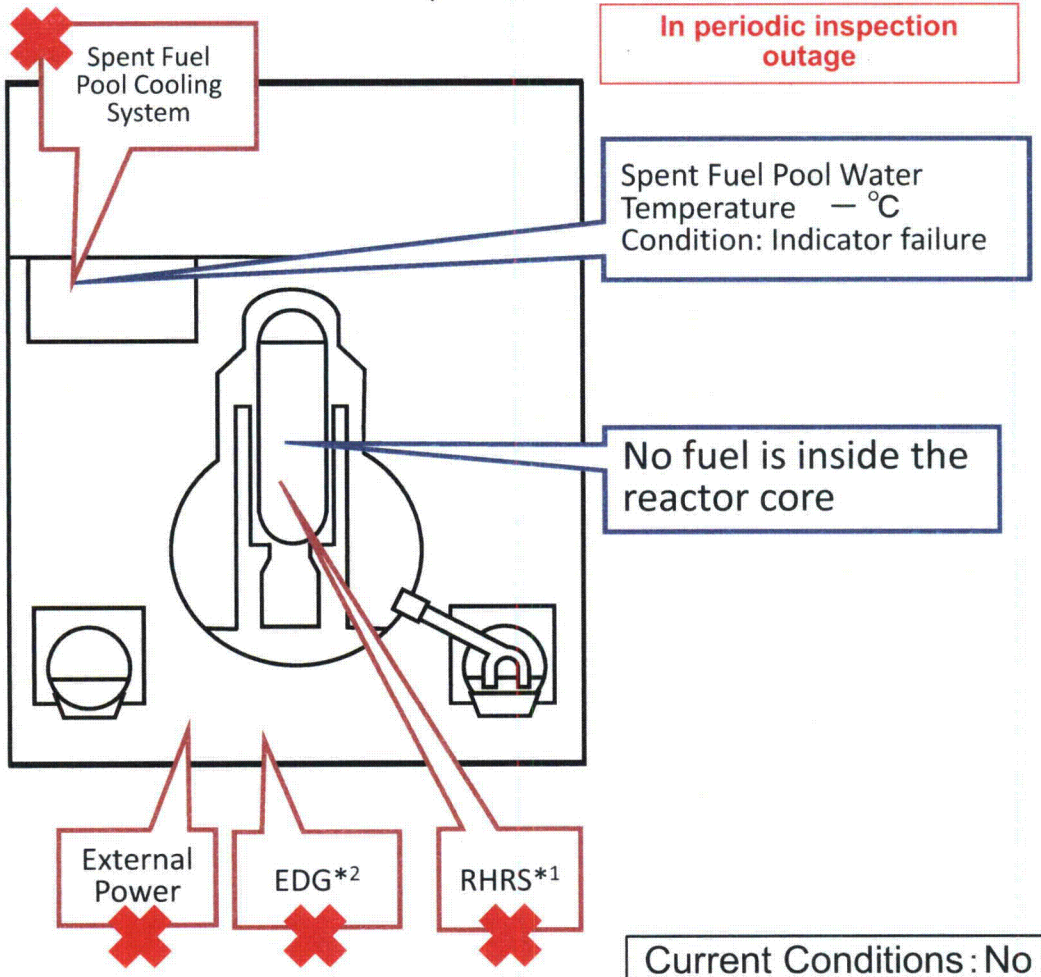
Major Events after the earthquake

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)
13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
13th 08:41 Started to vent.
13th 13:12 Started to inject seawater and borated water to core.
14th 05:20 Started to vent.
14th 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
14th 11:01 Sound of explosion
16th around 08:30 White smoke generated.
17th 09:48～10:01 Water discharge by the helicopters of Self-Defense Force
17th 19:05～19:15 Water spray from the ground by High pressure water-cannon trucks of Police
17th 19:35～20:09 Water spray from the ground by fire engines of Self-Defense Force
18th before 14:00～14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
18th ～14:45 Water spray from the ground by a fire engine of the US Military
19th 00:30 ～01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
19th 14:10 ～ 20th 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
20th 21:36 ～ 21st 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
21st around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
22nd 15:10 ～16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
22nd 22:46 Lighting 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 Fuel Pool Cooling Line (FPC)
23rd around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24th 04:50.
24th 05:35～16:05 Approximately 120 ton sea water injection to SFP via FPC
25th 13:28～16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
25th 18:02 Started fresh water injection to the core.
27th 12:34～14:36 Water spray by Concrete Pump Truck
28th 17:40～31st around 8:40 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
28th 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
29th 14:17～18:18, 31st 16:30～19:33, 2nd 09:52～12:54, 4th 17:03～19:19 Water spray by Concrete Pump Truck (Fresh water)
3rd 12:18 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
7th 06:53 ～08:53 Water spray by Concrete Pump Truck (Fresh water) (Around 70 ton)

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4

（As of 6:00 April 8th, 2011）



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

Major events after the earthquake

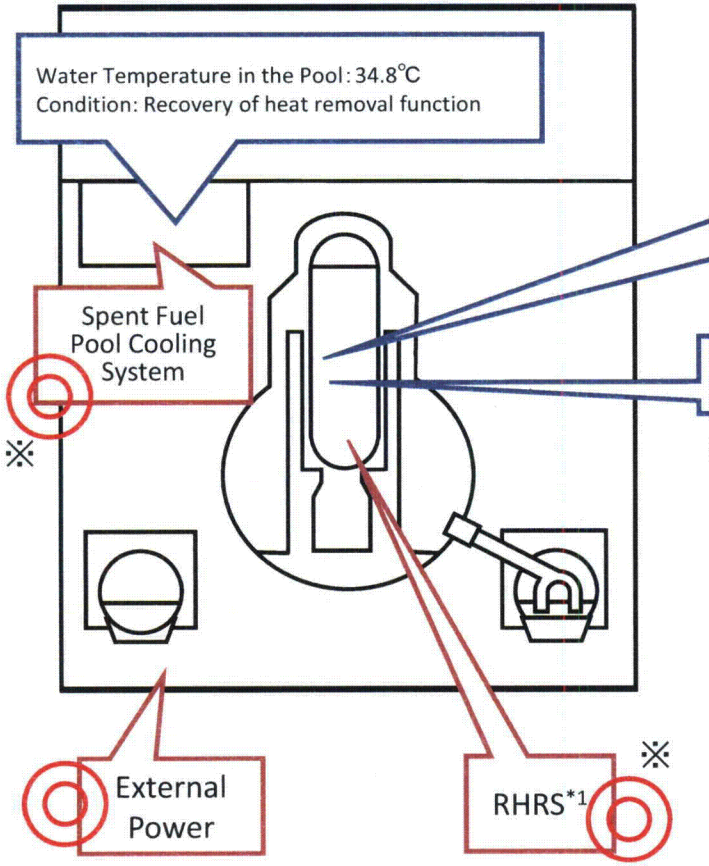
In periodic inspection outage when the earthquake occurred
14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84℃
15th 06:14 Confirmed the partial damage of wall in the 4th floor.
15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)
16th 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)
20th 08:21～09:40 Water spray over SFP by Self-Defense Force
20th around 18:30～19:46 Water spray over SFP by Self-Defense Force
21st 06:37～08:41 Water spray over SFP by Self-Defense Force
21st around 15:00 Work for laying cable to Power Center was completed.
22nd 10:35 Power Center received electricity.
22nd 17:17～20:32, 23rd 10:00～13:02, 24th 14:36～17:30, 25th 19:05～22:07, 27th 16:55～19:25 Water spray by Concrete Pump Truck
25th 06:05～10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)
29th 11:50 Lighting in the Central Control Room was recovered.
30th 14:04～18:33, 1st 8:28～14:14, 3rd 17:14～22:16, 5th 17:35～18:22, 7th 18:23～19:40 Water spray by Concrete Pump Truck (Fresh water)

Current Conditions: No fuel is in RPV*3.
Fresh water is being injected to the Spent Fuel Pool.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5
（As of 6:00 April 8th, 2011）

In periodic inspection outage



*1 Residual Heat Removal System

Reactor Pressure: 0.103MPa*
Reactor Water Level: 1,669mm
Reactor Water Temperature: 33.2℃
Condition: Pressure is under control.
*converted to absolute pressure

Reactor Pressure Vessel Temperature:
Monitoring by Reactor Water Temperature

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

Current Conditions:

20th 14:30 Cold shutdown

21st 11:36 Receiving electricity from external power supply

23rd 17:24 Pump for Residual Heat Removal Seawater System (RHRS) was automatically stopped when the power supply was switched from the temporary to the permanent.

24th 16:14 Repair of the RHRS pump was completed.

24th 16:35 Started to cooling.

4th 21:00 Started to discharge the groundwater with low-level radioactivity in the Sub Drain Pit to the sea.

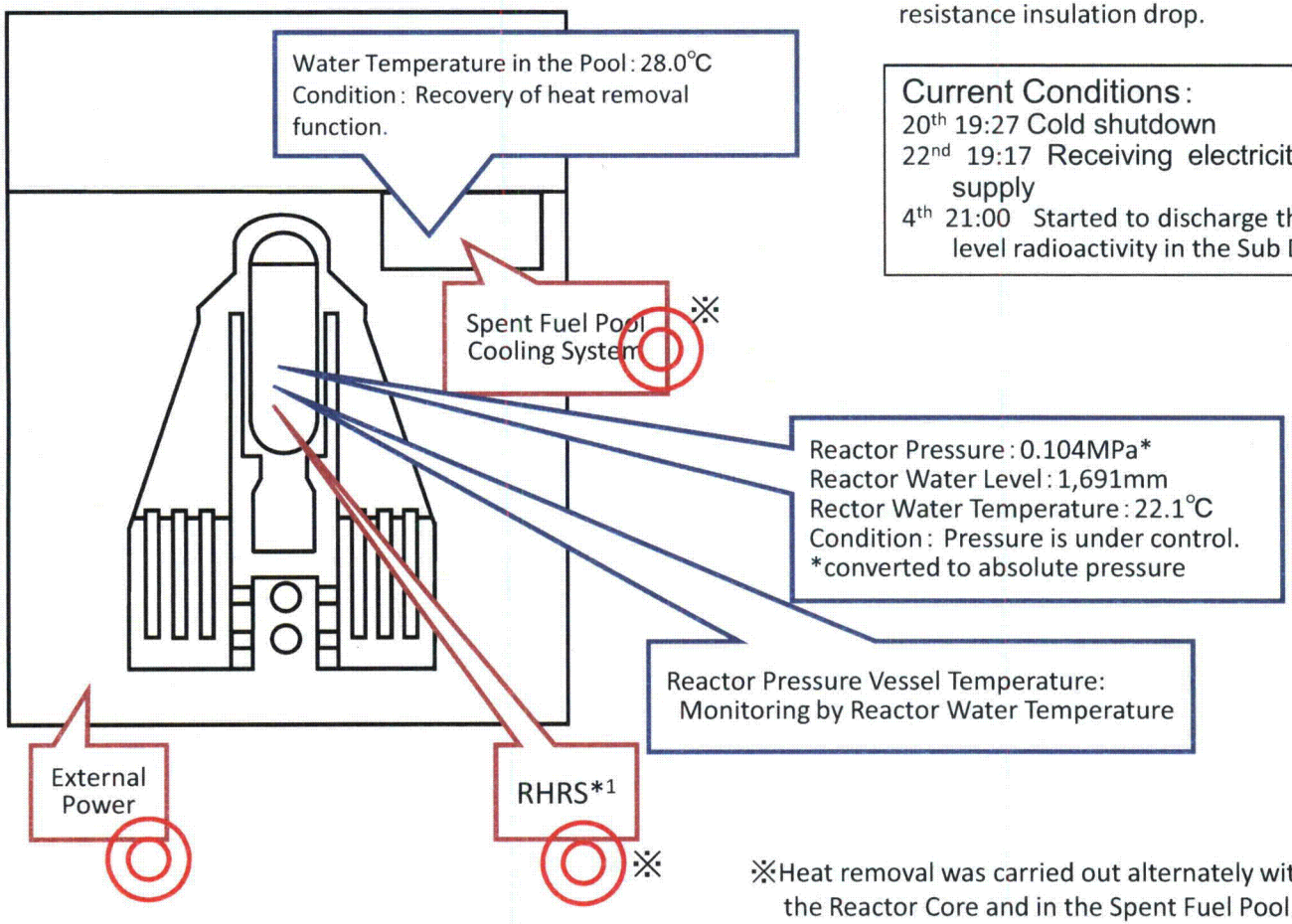
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6
（As of 6:00 April 8th, 2011）

In periodic inspection outage

The Emergency Diesel Generator (D/G) 6A was excluded from standby because of insulation resistance insulation drop.

Current Conditions:
20th 19:27 Cold shutdown
22nd 19:17 Receiving electricity from external power supply
4th 21:00 Started to discharge the groundwater with low-level radioactivity in the Sub Drain Pit to the sea



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

*1 Residual Heat Removal System

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

Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (As of 6:00, April 7th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 6 m^3/h (As of 17:30, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water : 8 m^3/h (As of 12:12, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m^3/h (As of 17:32, April 3rd) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 6:00, April 7th)	Fuel range A : -1,500mm (As of 6:00, April 7th)	Fuel range A:-1,850mm Fuel range B:-2,250mm (As of 6:00, April 7th)	#2	Shutdown range measurement 1,822mm (As of 6:00, April 7th)	Shutdown range measurement 1,866mm (As of 6:00, April 7th)
Reactor pressure	0.363MPa g(A) 0.758MPa g(B) (As of 6:00, April 7th)	-0.018MPa g (A) -0.025MPa g (D) (As of 6:00,April 7th)	0.002MPa g (A) -0.079MPa g (C) (As of 6:00, April 7th)	#2	0.002MPa g (As of 6:00, April 7th)	0.005MPa g (As of 6:00, April 7th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	34.8℃ (As of 6:00, April 7th)	48.1℃ (As of 6:00, April 7th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 216.3℃ Temperature at the bottom head of RPV: 116.2℃ (As of 6:00, April 7th)	Feedwater nozzle temperature: 144.2℃ Temperature at the bottom head of RPV: #1 (As of 6:00, April 7th)	Feedwater nozzle temperature: 83.4℃ (under survey) Temperature at the bottom head of RPV: 115.8℃ (As of 6:00, April 7th)	Unit 4 No heating element (fuel) inside the reactor Unit 5,6 Monitoring by the reactor water temperature		
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.155MPa abs S/C: 0.155MPa abs (As of 6:00, April 7th)	D/W: 0.100MPa abs S/C:Down scale (under survey) (As of 6:00, April 7th)	D/W: 0.1075MPa abs S/C: 0.1729MPa abs (As of 6:00, April 7th)	#2		
CAMS*3	D/W: 3.08×10^{1}Sv/h S/C: 1.29×10^{1}Sv/h (As of 6:00, April 7th)	D/W: 3.06×10^{1}Sv/h S/C: 8.01×10^{-1}Sv/h (As of 6:00,April 7th)	D/W: 1.96×10^{1}Sv/h S/C: 7.77×10^{-1}Sv/h (As of 6:00, April 7th)	#2		
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	#2		
D/W*1 maximum operating pressure	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)			
Spent Fuel Pool water	#1	48.0℃ (As of 6:00, April 7th)	#1	#1	34.8℃ (As of 6:00, April 7th)	21.5℃ (As of 6:00, April 7th)
FPC skimmer level	4,500mm (As of 6:00, April 7th)	5,600mm (As of 6:00, April 7th)	#1	4,950mm (As of 6:00, April 7th)	#2	
Power supply	Receiving external power supply (P/C*4 2C)		Receiving external power supply (P/C4D)		Receiving external power supply	

Other information	Unit3: Collecting the data of RPV temperature and continuing survey for transitional situation Unit2: Confirmed the indicated value of S/C Pressure but continuing to survey the transition of condition	Common pool: about 27 ℃ (As of 8:00, April 6th)	Unit5: SHC*5 mode (From 19:15 April 6th)	Unit6: Supplemental Fuel Pool Cooling mode (From 17:10 April 6th)

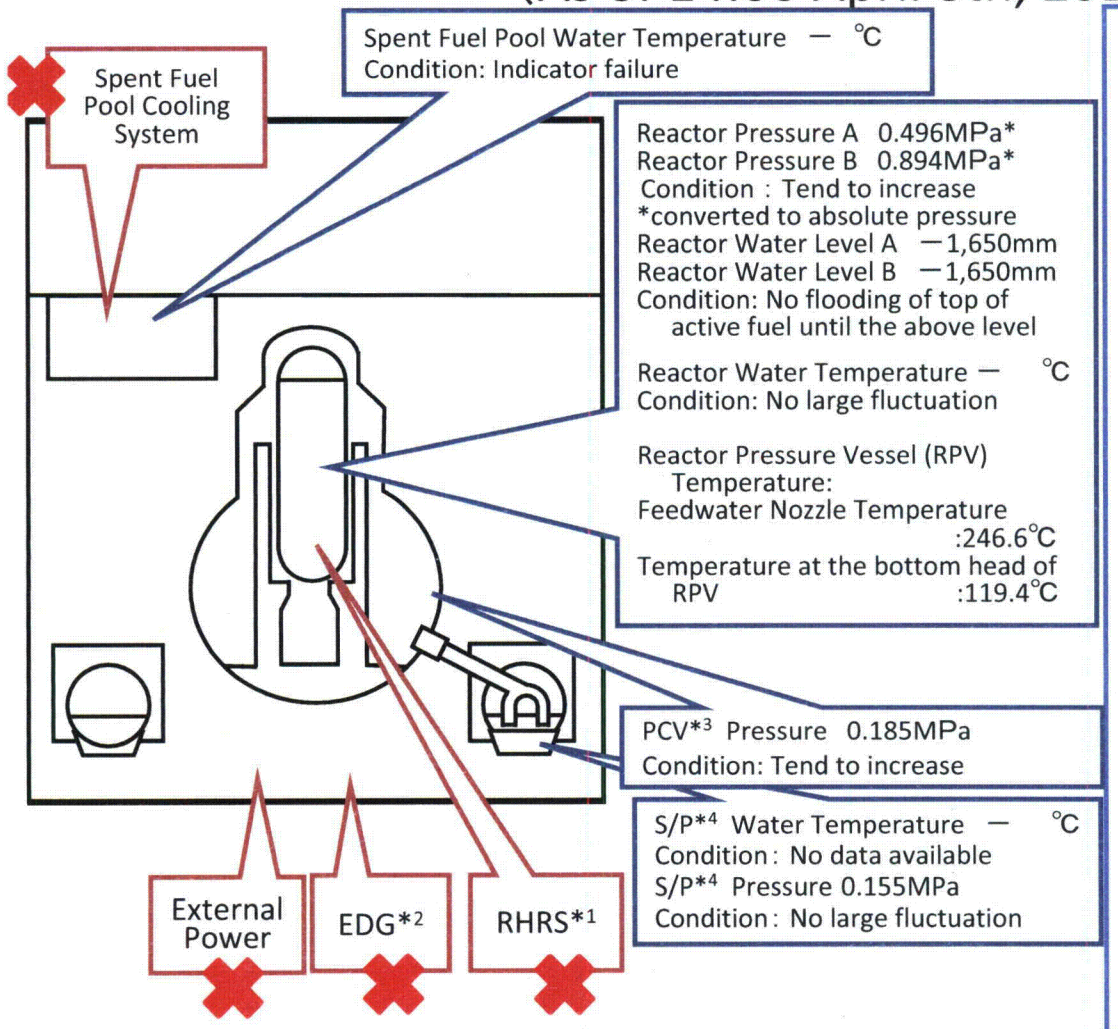
Pressure conversion	Gauge pressure (MPa g) = Absolute pressure (MPa abs) – Atmospheric pressure (Normal atmospheric pressure 0.1013MPa) Absolute pressure (MPa abs) = Gauge pressure (MPa g) + Atmospheric pressure (Normal atmospheric pressure 0.1013MPa)

(Notes) Concerning reactor pressure of Units 1 and 3, the rate of converting voltage measured by digital voltmeters into pressure has been corrected.
Please refer to the attached sheet of "Major Parameters of the Plant" as of 20:00 April 6th.

*1 D/W : Dry Well
*2 S/C : Suppression Chamber
*3 CAMS : Containment Atmospheric Monitoring System
*4 P/C : Power Center
*5 SHC : Shutdown Cooling

#1 : Measuring instrument malfunction
#2 : Except from data collection

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1
(As of 14:00 April 8th, 2011)



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

Major Events after the earthquake

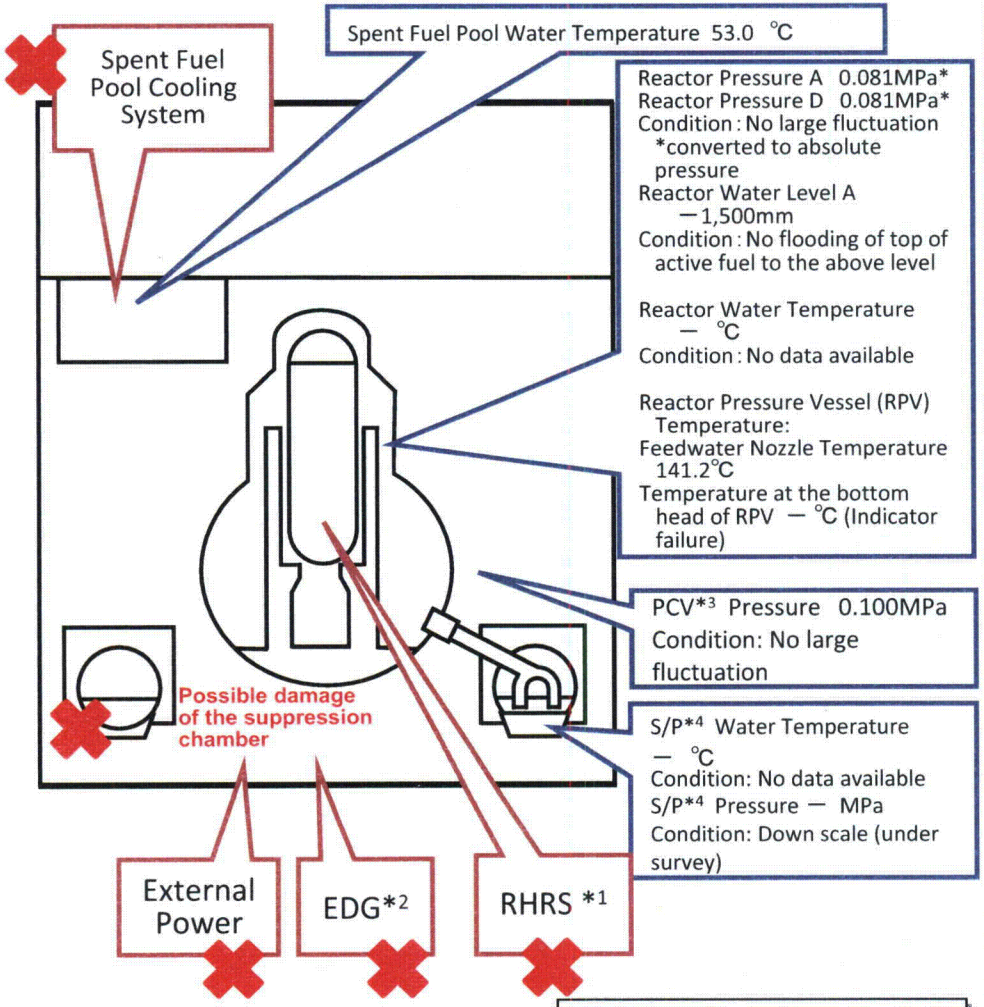
- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 12th 01:20 Occurrence of the Article 15 event (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 the Feedwater Line in addition to the Fire Extinguish Line. ($2m^3/h \rightarrow 18m^3/h$) 09:00 Switched to the Feedwater Line only.($18m^3/h \rightarrow 11m^3/h$)
- 24th 11:30 Lighting in the Central Control Room was recovered.
- 25th 15:37 Started fresh water injection.
- 29th 08:32 Switched to the water injection to the core using the temporary motor-driven pump.
- 31st 12:00 ～2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- 31st 13:03～16:04 Water spray by Concrete Pump Truck (Fresh water)
- 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- 3rd 13:55 Started to transfer the water from the condenser to CST.
- 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- 7th 01:31 Confirmed starting the injection of nitrogen to PCV.

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

（As of 14:00 April 8th, 2011）



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

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

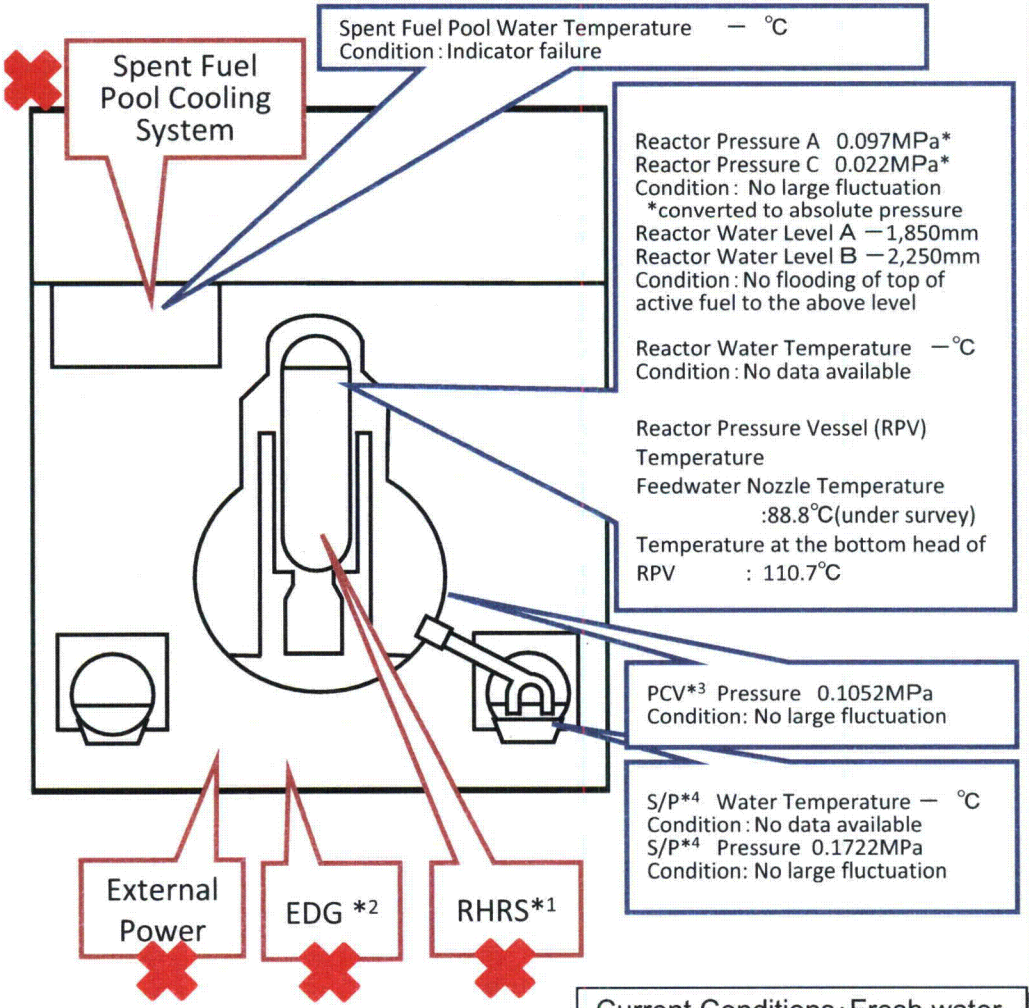
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

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 seawater to the Reactor Core.
14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
15th 00:02 Started to vent.
15th 06:10 Sound of explosion
15th around 06:20 Possible damage of the suppression chamber
20th 15:05～17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (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 SFP
25th 10:30～12:19 Sea water injection to SFP via FPC
26th 10:10 Started to inject fresh water to the Reactor Core.
26th 16:46 Lighting in the Central Control Room was recovered.
27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
29th 16:30～18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
29th 16:45～1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
30th 9:25～23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
1st 14:56～17:05 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
2nd around 9:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.
2nd 17:10 Started to transfer the water from the condenser to the Condensate Storage Tank (CST).
3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
3rd 13:47～14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.
4th 7:08～7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
4th 11:05～13:37 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea.
15:07 Started to inject coagulant.
6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
7th 13:29～14:34 Freshwater injection to SFP via FPC (Around 36 ton)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

（As of 14:00 April 8th, 2011）



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

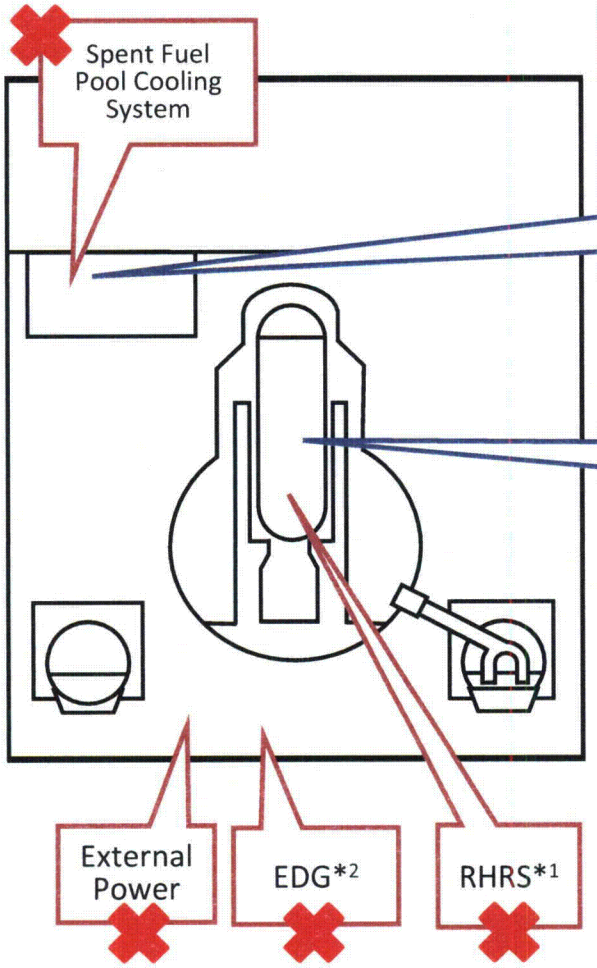
Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

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)
13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
13th 08:41 Started to vent.
13th 13:12 Started to inject seawater and borated water to core.
14th 05:20 Started to vent.
14th 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
14th 11:01 Sound of explosion
16th around 08:30 White smoke generated.
17th 09:48～10:01 Water discharge by the helicopters of Self-Defense Force
17th 19:05～19:15 Water spray from the ground by High pressure water-cannon trucks of Police
17th 19:35～20:09 Water spray from the ground by fire engines of Self-Defense Force
18th before 14:00～14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
18th ～14:45 Water spray from the ground by a fire engine of the US Military
19th 00:30 ～01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
19th 14:10 ～ 20th 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
20th 21:36 ～ 21st 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
21st around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
22nd 15:10 ～16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
22nd 22:46 Lighting 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 Fuel Pool Cooling Line (FPC)
23rd around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24th 04:50.
24th 05:35～16:05 Approximately 120 ton sea water injection to SFP via FPC
25th 13:28～16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
25th 18:02 Started fresh water injection to the core.
27th 12:34～14:36 Water spray by Concrete Pump Truck
28th 17:40～31st around 8:40 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
28th 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
<Water spray by Concrete Pump Truck (Fresh water)>
29th 14:17～18:18, 31st 16:30～19:33, 2nd 09:52～12:54, 4th 17:03～19:19, 7th 06:53 ～08:53
3rd 12:18 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4
（As of 14:00 April 8th, 2011）



In periodic inspection outage

Spent Fuel Pool Water Temperature — ℃
Condition: Indicator failure

No fuel is inside the reactor core

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

Major events after the earthquake

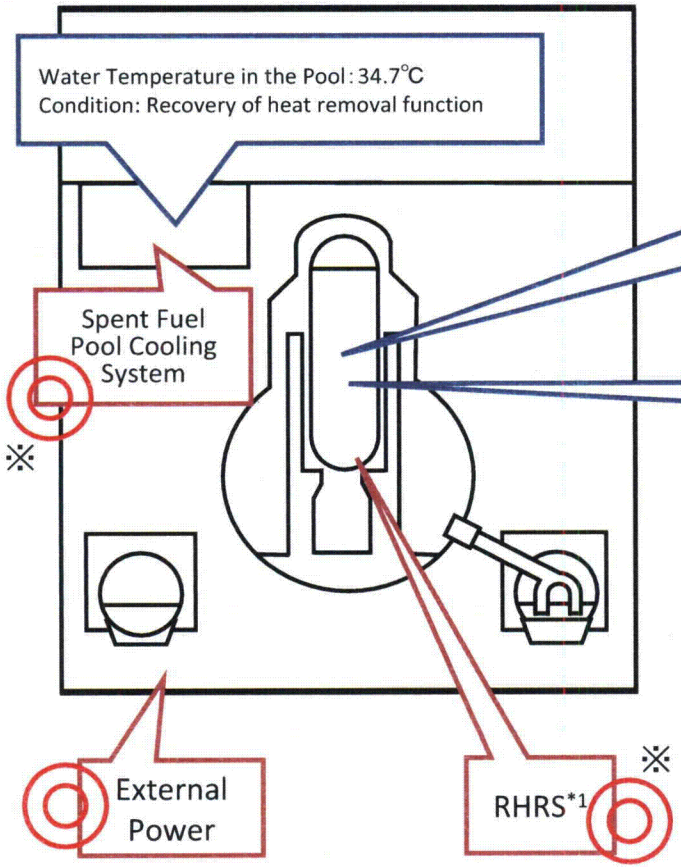
In periodic inspection outage when the earthquake occurred
14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84℃
15th 06:14 Confirmed the partial damage of wall in the 4th floor.
15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)
16th 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)
20th 08:21～09:40 Water spray over SFP by Self-Defense Force
20th around 18:30～19:46 Water spray over SFP by Self-Defense Force
21st 06:37～08:41 Water spray over SFP by Self-Defense Force
21st around 15:00 Work for laying cable to Power Center was completed.
22nd 10:35 Power Center received electricity.
<Water spray by Concrete Pump Truck>
22nd 17:17～20:32, 23rd 10:00～13:02, 24th 14:36～17:30, 25th 19:05～22:07, 27th 16:55～19:25
5th 06:05～10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)
29th 11:50 Lighting in the Central Control Room was recovered.
< Water spray by Concrete Pump Truck (Fresh water)>
30th 14:04～18:33, 1st 08:28～14:14, 3rd 17:14～22:16, 5th 17:35～18:22, 7th 18:23～19:40

Current Conditions: No fuel is in RPV*3.
Fresh water is being injected to the Spent Fuel Pool.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5
（As of 14:00 April 8th, 2011）

In periodic inspection outage



*1 Residual Heat Removal System

Reactor Pressure: 0.104MPa*
Reactor Water Level: 1,644mm
Reactor Water Temperature: 45.5℃
Condition: Pressure is under control.
*converted to absolute pressure

Reactor Pressure Vessel Temperature:
Monitoring by Reactor Water Temperature

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

Current Conditions:

20th 14:30 Cold shutdown

21st 11:36 Receiving electricity from external power supply

23rd 17:24 Pump for Residual Heat Removal Seawater System (RHRS) was automatically stopped when the power supply was switched from the temporary to the permanent.

24th 16:14 Repair of the RHRS pump was completed.

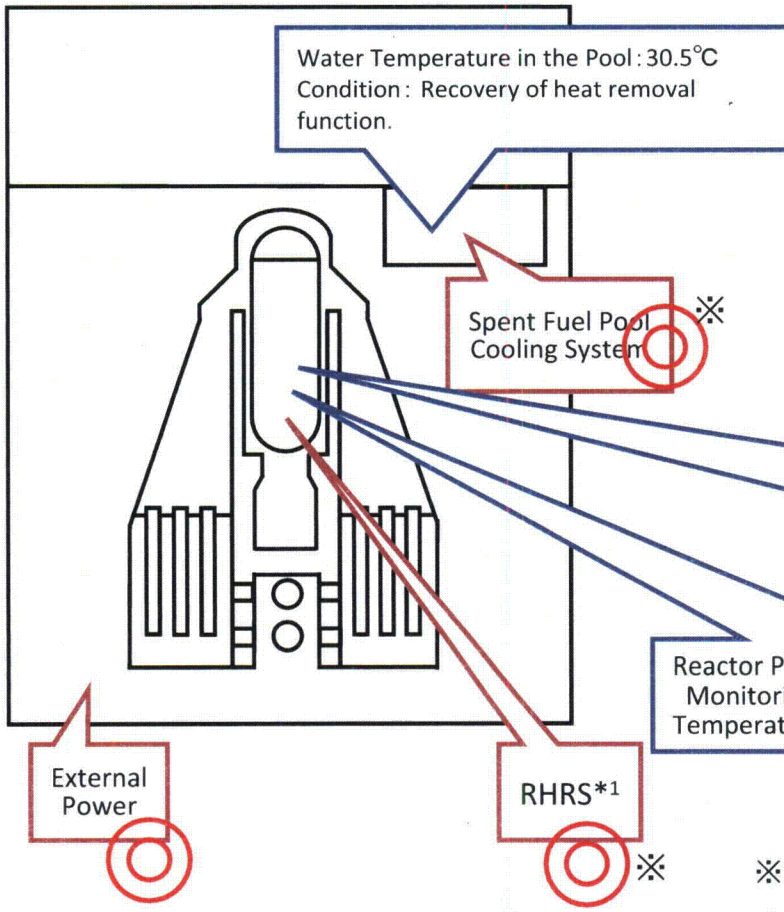
24th 16:35 Started to cooling.

4th 21:00 Started to discharge the groundwater with low-level radioactivity in the Sub Drain Pit to the sea.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6
(As of 14:00 April 8th, 2011)

In periodic inspection outage



Current Conditions :
20th 19:27 Cold shutdown
22nd 19:17 Receiving electricity from external power supply
4th 21:00 Started to discharge the groundwater with low-level radioactivity in the Sub Drain Pit to the sea

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

*1 Residual Heat Removal System

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

April 8th, 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 westsouthwest direction)
⑤ Front of Earthquake Isolation Building (approx. 0.5km from Unit2 in northwest dirction)
⑥ South side of main office building
⑦ Main Gate
MC: Monitoring Car TM: Transportable Monitoring post

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	56.0	56.0	56.1	56.1	56.2	56.0	56.0	55.7	55.7	55.6	55.5	55.6	55.5	55.6	55.6	55.6	55.5	55.4	55.4	55.4	55.3	55.3	55.3	55.2
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	681	-	-	683	-	-	685	-	-	684	-	-	675	-	-	682	-	-	679	-	-	679	-	-
	⑦MG(μSv/h)*2	99	-	-	97	-	-	97	-	-	98	-	-	97	-	-	98	-	-	97	-	-	97	-	-
	③WG(μSv/h)*3	43.3	-	-	43.5	-	-	43.4	-	-	43.1	-	-	43.1	-	-	43.4	-	-	43.2	-	-	43.2	-	-
wind direction		WNW	SW	SSE	W	W	W	W	WNW	N	N	WNW	W	W	N	SE	SSE	SE	SSE	SSE	SE	SSE	S	W	SE
wind speed (m/s)		0.4	0.6	0.4	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.5	0.8	0.9	0.9	1.0	1.0	0.4	0.5	0.5	0.4

*1: SMOB : South Side of Main Office Building
*2: MG: Main Gate
*3: WG:West Gate
*4: NM: Not measured due to the malfunction

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	55.2	55.2	55.3	55.3	55.3	55.1	55.2	55.2	55.1	55.1	55.1	55.1	55.1	55.0	55.0	55.1	55.1	55.1	55.0					
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
TM	⑥SMOB(μSv/h)*1	675	-	-	676	-	-	676	-	-	677	-	-	677	-	-	676	-	-	676					
	⑦MG(μSv/h)*2	95	-	-	97	-	-	97	-	-	96	-	-	97	-	-	97	-	-	96					
	③WG(μSv/h)*3	43.1	-	-	43.1	-	-	42.8	-	-	43.0	-	-	42.9	-	-	43.0	-	-	43.0					
wind direction		E	W	W	W	WNW	W	S	SSE	SE	S	SSE	SE	W	SSW	SE	ESE	SE	ESE	ESE					
wind speed (m/s)		0.3	0.8	0.8	0.6	0.6	0.7	0.7	0.8	1.0	0.6	1.0	0.7	0.5	0.6	0.7	0.9	0.9	1.3	1.5					

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)																								
	neutron																								
TM	⑥SMOB(μSv/h)*1																								
	⑦MG(μSv/h)*2																								
	③WG(μSv/h)*3																								
wind direction																									
wind speed (m/s)																									

April 7th, 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 westsouthwest direction)
⑤ Front of Earthquake Isolation Building (approx. 0.5km from Unit2 in northwest dirction)
⑥ South side of main office building
⑦ Main Gate
MC: Monitoring Car TM: Transportable Monitoring post

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	58.0	57.9	57.8	57.9	57.8	57.7	57.7	57.6	57.7	57.6	57.6	57.7	57.6	57.7	57.6	57.5	57.4	57.6	57.4	57.5	57.3	57.3	57.3	57.3
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	679	–	–	672	–	–	677	–	–	679	–	–	677	–	–	673	–	–	671	–	–	667	–	–
TM	⑦MG(μSv/h)*2	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4
TM	③WG(μSv/h)*3	44.2	–	–	43.8	–	–	43.8	–	–	43.5	–	–	43.7	–	–	43.4	–	–	43.0	–	–	42.9	–	–
wind direction		E	SE	NE	SE	E	E	E	E	E	E	E	ESE	E	E	NE	SE	E	SE	E	SE	ESE	E	E	E
wind speed (m/s)		1.8	1.8	2.3	2.2	1.8	1.6	1.6	1.5	1.6	2.1	2.2	2.1	1.9	1.8	1.8	1.6	1.5	1.9	1.5	2.6	2.6	2.9	2.0	2.2

*1: SMOB : South Side of Main Office Building
*2: MG: Main Gate
*3: WG:West Gate
*4: NM: Not measured due to the malfunction

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	57.1	57.2	57.1	57.1	57.1	57.1	56.8	57.0	56.9	56.7	56.9	56.8	56.8	56.9	56.8	56.8	56.7	56.7	56.6	56.8	56.7	56.7	56.7	56.7
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	671	–	–	668	–	–	665	–	–	667	–	–	669	–	–	668	–	–	676	–	–	675	–	–
TM	⑦MG(μSv/h)*2	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	101	–	–	98	–	–	99	–	–	100	–	–	101	–	–	98	–	–
TM	③WG(μSv/h)*3	43.0	–	–	42.7	–	–	42.6	–	–	42.6	–	–	42.3	–	–	42.8	–	–	42.8	–	–	42.7	–	–
wind direction		E	ESE	E	E	E	SE	E	ESE	W	S	E	N	E	S	SW	S	SW	NW	SSE	S	N	WNW	SSW	SSW
wind speed (m/s)		1.9	2.1	1.8	1.7	1.5	1.3	1.3	1.1	0.8	0.9	0.8	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.5	0.4	0.7	0.4	0.2	0.5

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	56.7	56.7	56.5	56.6	56.5	56.6	56.5	56.5	56.5	56.4	56.5	56.5	56.5	56.4	56.2	56.3	56.3	56.2	56.3	56.1	56.2	56.1	56.1	56.1
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	674	–	–	678	–	–	679	–	–	680	–	–	684	–	–	683	–	–	685	–	–	681	–	–
TM	⑦MG(μSv/h)*2	98	–	–	100	–	–	100	–	–	99	–	–	98	–	–	99	–	–	99	–	–	98	–	–
TM	③WG(μSv/h)*3	42.6	–	–	43.3	–	–	43.2	–	–	43.0	–	–	43.0	–	–	43.2	–	–	43.3	–	–	43.2	–	–
wind direction		WNW	SW	WNW	WNW	NW	ESE	N	WNW	E	SSW	WSW	WNW	W	WSW	ESE	S	WSW	SSW	WNW	W	WSW	W	SW	SSW
wind speed (m/s)		0.6	0.6	0.8	0.7	0.3	0.5	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.3	0.4	0.5	0.4	0.4	0.5	0.6	0.5

Monitoring Post (as of 15:00)

※Check readings once a day

Monitoring Poists	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
Reading (μSv/h)	15	45	47	47	95	140	280	230

※As for MP-1 and 2, readings were observed by human eyes (Coulc not be transmitted because of system trouble)
※As for MP-3 to 8, readings were transmitted by system

April 7th, 2011

Fukushima Dai-ichi
Monitoring points

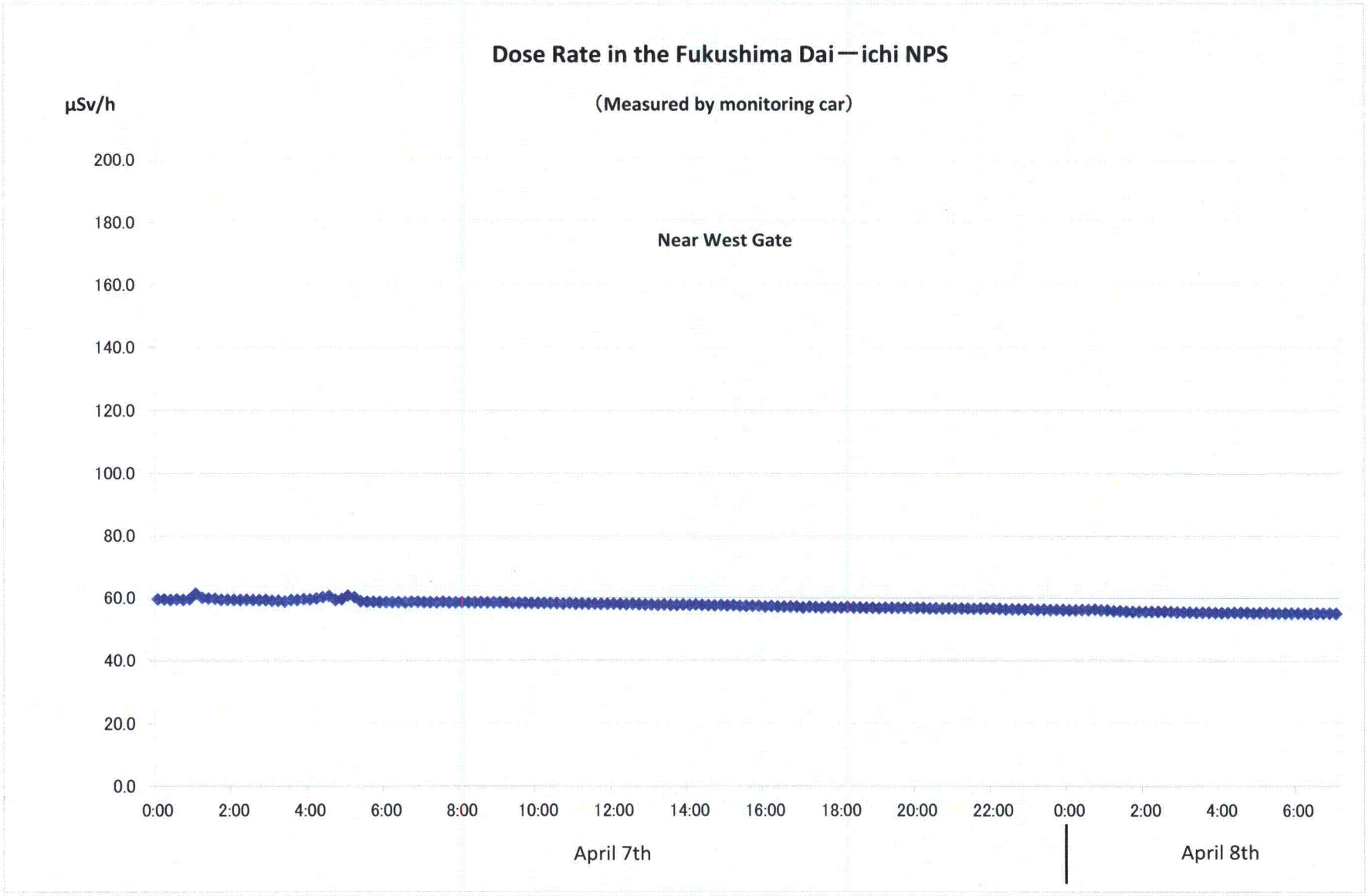
① North side of main office building(approx. 0.5km from Unit 2 in northwest direction)
② Near Gymnasium(East side of MP-5) (approx. 0.9km from Unit 2 in westnorthwest direction)
③ Near West Gate (near MP-5) (approx. 1.1km from Unit 2 in west direction)
④ Front of near Main Gate (near MP-6) (approx. 1.0km from Unit 2 in westsouthwest direction)
⑤ Front of Earthquake Isolation Building (approx. 0.5km from Unit2 in northwest dirction)
⑥ South side of main office building
⑦ Main Gate
MC: Monitoring Car TM: Transportable Monitoring post

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	59.4	59.4	59.3	59.4	59.3	59.5	61.3	59.9	59.7	59.6	59.3	59.3	59.3	59.2	59.3	59.2	59.2	59.2	59.0	59.0	58.7	59.2	59.2	59.5
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	713	-	-	716	-	-	709	-	-	712	-	-	710	-	-	709	-	-	712	-	-	708	-	-
	⑦MG(μSv/h)*2	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-
	③WG(μSv/h)*3	46.6	-	-	46.7	-	-	48.0	-	-	46.8	-	-	46.7	-	-	46.6	-	-	46.8	-	-	46.9	-	-
wind direction		NE	W	SE	WNW	E	W	W	W	SE	WNW	W	NW	WSW	WNW	WNW	N	NNW	NW	NE	SW	W	W	NNW	E
wind speed (m/s)		0.3	0.4	0.2	0.3	0.6	0.3	0.3	0.3	0.4	0.7	0.6	0.6	0.6	0.6	0.4	0.6	0.7	0.8	0.6	0.4	0.6	0.5	0.4	0.3

*1: SMOB : South Side of Main Office Building
*2: MG: Main Gate
*3: WG:West Gate
*4: NM: Not measured due to the malfunction

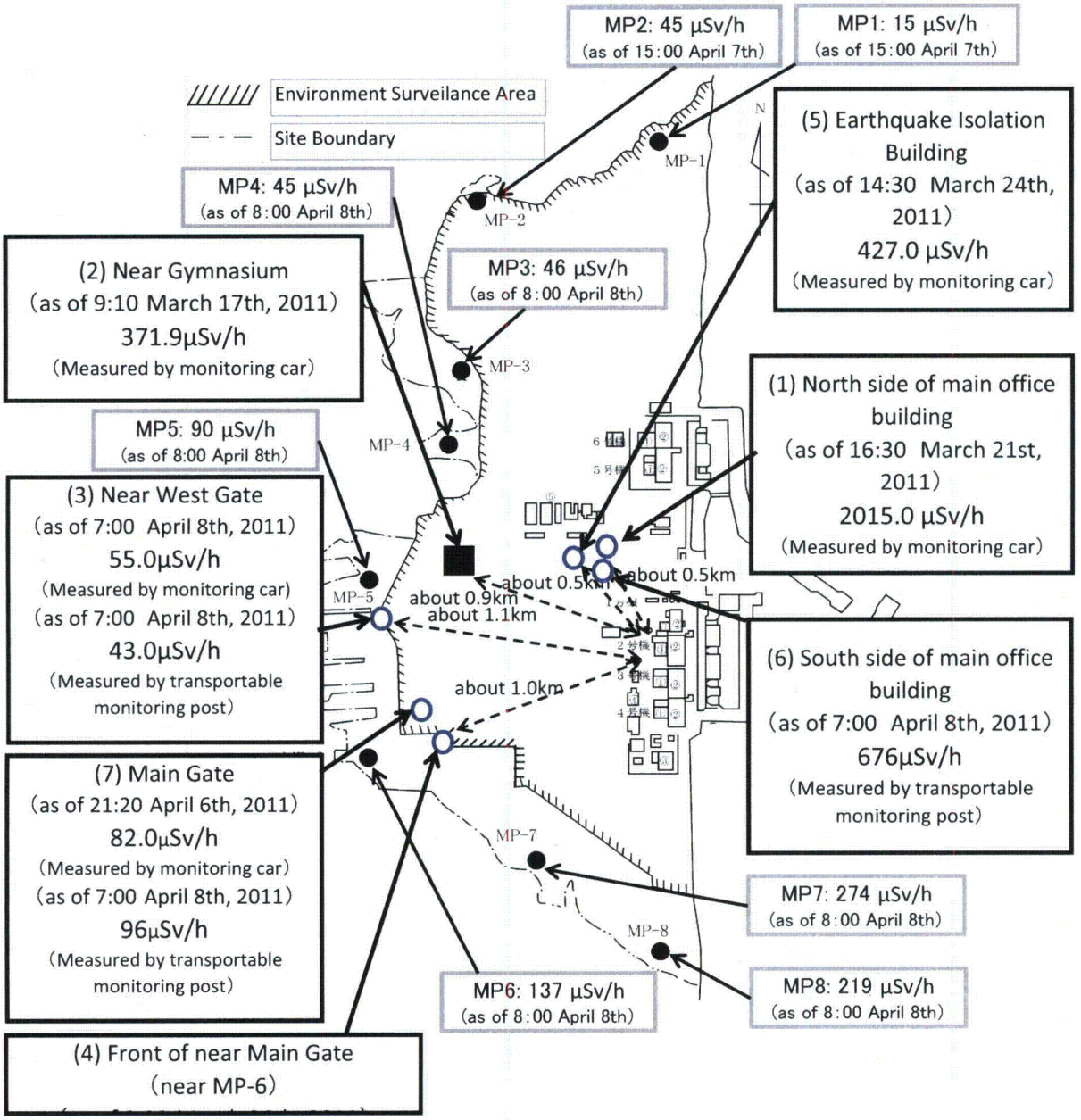
Monitoring points		③																							
Reading time		4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
MC	Reading(μSv/h)	59.4	59.7	60.1	60.5	59.2	59.5	60.6	60.1	58.8	58.6	58.6	58.5	58.5	58.5	58.5	58.4	58.6	58.6	58.5	58.5	58.4	58.6	58.4	58.4
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	708	-	-	712	-	-	711	-	-	708	-	-	709	-	-	708	-	-	706	-	-	709	-	-
	⑦MG(μSv/h)*2	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-
	③WG(μSv/h)*3	47.0	-	-	47.9	-	-	48.0	-	-	46.4	-	-	46.5	-	-	46.7	-	-	46.4	-	-	46.2	-	-
wind direction		SSE	WNW	W	SE	NE	N	NNE	W	W	W	SW	W	W	SW	W	W	WSW	SW	W	WSW	SW	SW	SE	ESE
wind speed (m/s)		0.5	0.4	0.2	0.6	0.4	0.4	0.3	0.5	0.5	0.6	0.4	0.7	0.8	0.6	0.5	0.5	0.5	0.2	0.4	0.4	0.4	0.5	0.7	0.8

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	58.5	58.5	58.4	58.5	58.4	58.4	58.4	58.4	58.3	58.3	58.3	58.2	58.2	58.2	58.2	58.2	58.0	58.2	58.0	58.1	58.0	58.0	57.9	57.9
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	710	-	-	706	-	-	700	-	-	698	-	-	692	-	-	689	-	-	685	-	-	684	-	-
	⑦MG(μSv/h)*2	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4
	③WG(μSv/h)*3	46.4	-	-	45.8	-	-	45.8	-	-	45.3	-	-	45.3	-	-	44.8	-	-	44.7	-	-	44.3	-	-
wind direction		S	SE	SSE	ESE	E	E	SE	SE	SSE	E	SE	SE	ESE	SE	E	SE	E	E	E	SE	SE	E	E	E
wind speed (m/s)		1.0	1.0	0.7	1.2	1.4	1.1	0.9	1.0	1.1	1.1	1.1	1.6	2.1	1.5	1.3	1.3	1.7	1.7	1.4	1.3	1.4	1.9	1.9	2.0


Dose Rate in the Fukushima Dai－ichi NPS
(Measured by monitoring car)
μSv/h
Near West Gate
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00
2:00
4:00
6:00
April 7th
April 8th

Fukushima Dai－ichi NPS

as of 10:00, April 8th, 2011



Fukushima Dai-ni (TEPCO's Monitaring Post)

April 8, 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)	3.690	3.683	3.675	3.695	3.685	3.686	3.680	3.676	3.684	3.684	3.672	3.680	3.675	3.669	3.681	3.657	3.663	3.669	3.668	3.677	3.665	3.661	3.668	3.656
MP2(μSv/h)	2.701	2.689	2.692	2.689	2.694	2.684	2.681	2.688	2.677	2.687	2.682	2.679	2.678	2.670	2.693	2.685	2.687	2.688	2.687	2.688	2.688	2.674	2.682	2.680
MP3(μSv/h)	3.966	3.980	3.976	3.976	3.964	3.961	3.959	3.977	3.962	3.974	3.955	3.951	3.958	3.947	3.944	3.947	3.948	3.950	3.961	3.940	3.957	3.953	3.946	3.936
MP4(μSv/h)	3.017	3.030	3.020	3.021	3.016	3.020	3.013	3.010	3.017	3.018	3.013	2.999	3.013	3.022	3.020	3.026	3.006	3.008	3.016	3.009	3.010	3.007	3.011	3.010
MP5(μSv/h)	2.979	2.971	2.979	2.982	2.965	2.986	2.962	2.963	2.973	2.967	2.974	2.974	2.957	2.961	2.954	2.950	2.958	2.968	2.968	2.952	2.965	2.965	2.957	2.943
MP6(μSv/h)	2.959	2.956	2.961	2.948	2.966	2.948	2.956	2.951	2.959	2.948	2.949	2.945	2.940	2.947	2.944	2.948	2.939	2.943	2.943	2.957	2.942	2.947	2.947	2.940
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	SW	SW	SW	WSW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW
wind speed (m/s)	8.0	6.6	5.1	4.4	6.9	8.6	7.1	6.5	6.7	6.0	5.1	5.2	5.3	5.2	6.3	7.6	8.9	6.5	8.3	8.0	8.4	7.9	5.0	6.1

*1: NM: Not measured due to the malfunction

April 8, 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)	3.670	3.659	3.667	3.653	3.648	3.653	3.658	3.657	3.661	3.661	3.657	3.658	3.654	3.665	3.656	3.653	3.655	3.658	3.643					
MP2(μSv/h)	2.685	2.691	2.689	2.676	2.681	2.678	2.670	2.660	2.675	2.688	2.672	2.669	2.680	2.677	2.678	2.673	2.669	2.683	2.679					
MP3(μSv/h)	3.946	3.947	3.929	3.942	3.951	3.931	3.950	3.934	3.927	3.954	3.935	3.919	3.934	3.935	3.939	3.916	3.924	3.927	3.914					
MP4(μSv/h)	2.994	3.013	2.999	3.002	3.001	2.992	3.000	3.002	2.996	2.991	2.993	3.005	2.979	3.000	2.988	2.999	2.987	3.001	2.999					
MP5(μSv/h)	2.952	2.958	2.936	2.969	2.951	2.949	2.935	2.935	2.945	2.950	2.951	2.947	2.947	2.944	2.952	2.944	2.934	2.941	2.948					
MP6(μSv/h)	2.946	2.936	2.920	2.941	2.934	2.943	2.935	2.931	2.924	2.931	2.935	2.931	2.920	2.942	2.930	2.928	2.929	2.923	2.928					
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1					
wind direction	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	S	S	S	S	S	S	S	S					
wind speed (m/s)	6.6	6.7	7.9	8.8	8.4	8.0	5.8	4.6	3.8	4.6	4.1	4.3	4.4	4.1	3.8	5.6	8.2	10.1	5.5					

April 8, 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)																								
MP2(μSv/h)																								
MP3(μSv/h)																								
MP4(μSv/h)																								
MP5(μSv/h)																								
MP6(μSv/h)																								
MP7(μSv/h)																								
wind direction																								
wind speed (m/s)																								

Fukushima Dai-ni (TEPCO's Monitaring Post)

April 7, 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)	3.821	3.795	3.789	3.775	3.785	3.780	3.793	3.780	3.775	3.788	3.810	3.781	3.794	3.797	3.785	3.776	3.785	3.771	3.785	3.770	3.765	3.763	3.742	3.741
MP2(μSv/h)	2.781	2.781	2.783	2.784	2.784	2.782	2.778	2.776	2.779	2.780	2.782	2.778	2.784	2.783	2.780	2.772	2.794	2.771	2.780	2.769	2.766	2.769	2.765	2.760
MP3(μSv/h)	4.079	4.085	4.080	4.072	4.091	4.079	4.060	4.057	4.079	4.071	4.063	4.076	4.079	4.079	4.077	4.069	4.068	4.074	4.089	4.063	4.072	4.080	4.050	4.051
MP4(μSv/h)	3.106	3.106	3.099	3.094	3.105	3.097	3.096	3.097	3.112	3.105	3.105	3.112	3.120	3.126	3.114	3.111	3.107	3.102	3.094	3.103	3.107	3.098	3.112	3.106
MP5(μSv/h)	3.065	3.073	3.056	3.040	3.074	3.056	3.047	3.071	3.068	3.040	3.043	3.047	3.042	3.052	3.047	3.034	3.036	3.014	3.018	3.032	3.022	3.035	3.019	3.031
MP6(μSv/h)	3.045	3.062	3.047	3.049	3.036	3.034	3.029	3.064	3.061	3.042	3.044	3.047	3.049	3.066	3.056	3.062	3.050	3.044	3.051	3.056	3.037	3.022	3.035	3.030
MP7(μSv/h)	2.210	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	S	S	S	S	S	S	SSW	SSW	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSE
wind speed (m/s)	9.5	10.4	8.4	9.2	9.0	9.4	8.3	8.1	6.6	7.5	7.3	4.1	6.1	6.8	8.2	8.8	8.8	9.3	9.7	10.1	10.3	9.7	9.9	9.3

*1: NM: Not measured due to the malfunction

April 7, 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)	3.745	3.740	3.708	3.716	3.724	3.710	3.719	3.722	3.702	3.700	3.712	3.717	3.712	3.722	3.707	3.714	3.722	3.707	3.716	3.719	3.701	3.716	3.720	3.710
MP2(μSv/h)	2.754	2.749	2.754	2.732	2.723	2.747	2.736	2.721	2.730	2.730	2.718	2.701	2.710	2.725	2.717	2.715	2.719	2.713	2.725	2.713	2.716	2.730	2.707	2.729
MP3(μSv/h)	4.043	4.054	4.025	4.029	4.052	4.019	4.028	4.021	4.018	4.020	4.041	3.991	4.016	4.013	4.008	4.008	4.007	4.018	4.003	4.002	4.009	4.004	4.015	4.018
MP4(μSv/h)	3.098	3.089	3.083	3.078	3.057	3.065	3.030	3.040	3.047	3.037	3.042	3.060	3.048	3.039	3.045	3.040	3.047	3.043	3.047	3.041	3.039	3.052	3.044	3.037
MP5(μSv/h)	3.034	3.010	3.022	3.017	3.016	2.996	3.008	3.013	3.018	2.985	3.003	2.993	2.988	2.985	2.999	2.998	2.984	2.976	2.987	2.989	2.987	2.991	2.977	2.976
MP6(μSv/h)	3.047	3.039	3.042	3.024	3.018	3.011	3.018	3.007	2.993	2.991	3.007	2.963	2.985	2.986	2.950	2.968	2.965	2.969	2.980	2.973	2.962	2.960	2.961	2.970
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	S	S	S	S	SSE	SSE	SSE	S	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW
wind speed (m/s)	11.0	10.9	11.1	10.3	6.9	8.0	8.5	9.0	8.6	8.9	8.1	8.0	9.0	7.7	5.7	5.4	7.4	6.3	5.6	3.5	3.2	3.8	3.6	4.2

April 7, 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)	3.699	3.719	3.707	3.717	3.706	3.718	3.703	3.716	3.715	3.706	3.697	3.704	3.695	3.707	3.701	3.699	3.685	3.702	3.702	3.692	3.693	3.699	3.699	3.684
MP2(μSv/h)	2.713	2.714	2.713	2.711	2.702	2.712	2.719	2.716	2.711	2.729	2.706	2.702	2.703	2.710	2.706	2.708	2.700	2.698	2.701	2.692	2.693	2.697	2.688	2.705
MP3(μSv/h)	4.005	4.015	3.979	4.007	4.011	4.008	4.007	4.006	3.995	3.990	3.990	3.987	4.004	4.000	3.994	3.975	4.003	3.977	3.975	3.987	3.990	3.987	3.980	3.978
MP4(μSv/h)	3.043	3.037	3.043	3.044	3.044	3.037	3.043	3.026	3.047	3.037	3.033	3.041	3.036	3.037	3.041	3.018	3.021	3.016	3.022	3.034	3.040	3.013	3.021	3.028
MP5(μSv/h)	2.992	2.979	2.985	2.987	2.989	3.008	2.991	2.994	2.983	2.995	2.972	2.990	2.976	2.978	2.982	2.975	2.976	2.975	2.977	2.982	2.963	2.978	2.980	2.962
MP6(μSv/h)	2.964	2.954	2.964	2.966	2.972	2.967	2.972	2.973	2.969	2.966	2.949	2.974	2.955	2.959	2.971	2.951	2.958	2.955	2.962	2.954	2.959	2.965	2.959	2.962
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	WSW	W	W	W	WSW	WSW	SW	SSW	SSW	SW	SW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW
wind speed (m/s)	5.8	6.5	6.6	5.1	3.5	3.7	2.7	2.3	4.4	3.5	3.5	2.3	3.1	4.1	3.5	3.3	4.9	5.3	5.4	7.5	7.6	6.9	8.5	9.2

Fukushima Dai-ni (TEPCO's Monitaring Post)

April 7, 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)	3.852	3.862	3.863	3.850	3.863	3.845	3.851	3.389	3.855	3.849	3.837	3.850	3.840	3.834	3.842	3.836	3.846	3.835	3.841	3.827	3.824	3.843	3.836	3.847
MP2(μSv/h)	2.831	2.815	2.799	2.808	2.802	2.815	2.808	2.807	2.800	2.804	2.799	2.810	2.809	2.821	2.810	2.806	2.798	2.802	2.798	2.793	2.787	2.804	2.804	2.809
MP3(μSv/h)	4.172	4.157	4.160	4.175	4.152	4.155	4.144	4.158	4.146	4.158	4.144	4.168	4.157	4.146	4.149	4.151	4.135	4.137	4.146	4.120	4.125	4.144	4.134	4.128
MP4(μSv/h)	3.171	3.161	3.162	3.144	3.143	3.153	3.155	3.154	3.145	3.153	3.166	3.138	3.146	3.154	3.156	3.160	3.151	3.142	3.142	3.145	3.139	3.133	3.151	3.135
MP5(μSv/h)	3.108	3.110	3.099	3.107	3.096	3.103	3.097	3.104	3.107	3.093	3.093	3.082	3.099	3.092	3.090	3.074	3.083	3.081	3.076	3.089	3.082	3.079	3.095	3.070
MP6(μSv/h)	3.078	3.103	3.085	3.086	3.091	3.086	3.074	3.083	3.102	3.088	3.077	3.085	3.077	3.085	3.078	3.082	3.088	3.069	3.080	3.079	3.073	3.069	3.067	3.072
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SSW	SSW	SSW	SW	SW	SSW	SW	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW
wind speed (m/s)	6.0	5.5	6.3	6.8	6.9	6.0	7.1	6.5	6.0	5.2	4.1	4.8	4.8	3.4	2.5	0.4	1.9	4.0	4.4	5.0	3.3	3.3	1.8	2.0

*1: NM: Not measured due to the malfunction

April 7, 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)	3.843	3.843	3.845	3.828	3.842	3.827	3.834	3.831	3.821	3.824	3.825	3.822	3.819	3.812	3.818	3.811	3.813	3.801	3.824	3.824	3.814	3.805	3.821	3.819
MP2(μSv/h)	2.822	2.807	2.809	2.798	2.795	2.812	2.799	2.793	2.796	2.795	2.789	2.779	2.776	2.789	2.803	2.790	2.791	2.787	2.791	2.777	2.775	2.793	2.787	2.782
MP3(μSv/h)	4.134	4.146	4.137	4.122	4.131	4.136	4.120	4.125	4.115	4.135	4.122	4.112	4.119	4.110	4.117	4.120	4.122	4.106	4.104	4.112	4.107	4.114	4.103	4.112
MP4(μSv/h)	3.140	3.154	3.124	3.139	3.123	3.131	3.132	3.138	3.136	3.126	3.126	3.120	3.126	3.119	3.130	3.132	3.121	3.132	3.118	3.122	3.128	3.136	3.117	3.136
MP5(μSv/h)	3.091	3.076	3.086	3.079	3.076	3.065	3.083	3.070	3.067	3.065	3.065	3.068	3.073	3.071	3.054	3.064	3.066	3.077	3.066	3.060	3.075	3.071	3.074	3.061
MP6(μSv/h)	3.089	3.082	3.070	3.083	3.081	3.078	3.075	3.090	3.063	3.062	3.069	3.072	3.069	3.065	3.070	3.068	3.065	3.068	3.068	3.700	3.068	3.063	3.067	3.053
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	SSW	S	SSW	SSW	SSW	S	SSW	SSW	S	S	S	SSW	SSW	S	S	SSW	SSW	SSW	S	S	SSW	SSW	SSW	S
wind speed (m/s)	3.0	2.5	2.7	3.5	4.1	4.7	5.3	3.8	3.3	3.7	2.5	3.0	3.3	2.3	2.7	4.1	3.1	2.4	2.8	2.2	3.9	3.2	3.7	1.4

April 7, 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)	3.811	3.810	3.810	3.830	3.811	3.812	3.798	3.792	3.818	3.811	3.799	3.811	3.795	3.804	3.796	3.800	3.809	3.808	3.812	3.795	3.807	3.809	3.787	3.788
MP2(μSv/h)	2.792	2.781	2.784	2.810	2.795	2.807	2.793	2.775	2.797	2.784	2.787	2.789	2.792	2.792	2.780	2.780	2.794	2.779	2.788	2.774	2.791	2.797	2.795	2.791
MP3(μSv/h)	4.115	4.112	4.110	4.122	4.110	4.106	4.110	4.102	4.117	4.114	4.102	4.098	4.115	4.099	4.099	4.085	4.089	4.089	4.103	4.088	4.089	4.092	4.089	4.082
MP4(μSv/h)	3.113	3.127	3.139	3.125	3.118	3.122	3.125	3.112	3.120	3.128	3.127	3.134	3.120	3.125	3.140	3.109	3.117	3.114	3.097	3.120	3.119	3.118	3.126	3.114
MP5(μSv/h)	3.060	3.056	3.062	3.066	3.045	3.067	3.060	3.058	3.071	3.071	3.043	3.058	3.067	3.053	3.071	3.051	3.078	3.066	3.069	3.069	3.062	3.069	3.065	3.071
MP6(μSv/h)	3.070	3.062	3.055	3.057	3.064	3.052	3.075	3.057	3.066	3.048	3.052	3.069	3.067	3.054	3.055	3.071	3.067	3.048	3.050	3.051	3.052	3.068	3.053	3.065
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	S	SSE	S	SSW	SSW	SSW	S	SSW	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
wind speed (m/s)	1.6	1.1	3.9	4.7	4.5	4.2	4.4	5.0	3.3	4.3	6.5	6.3	5.7	6.2	6.6	6.7	8.3	7.1	8.5	9.0	8.9	8.9	9.3	10.1

Fukushima Dai-ni NPS

as of 10:00, April 8th, 2011

MP1 : 3.643μSv/h (as of 7:00 April 8th)
(Ref. Value:0.035～0.054μSv/h)

Location of Monitoring Post

MP2 : 2.679μSv/h (as of 7:00 April 8th)
(Ref. Value:0.042～0.062μSv/h)

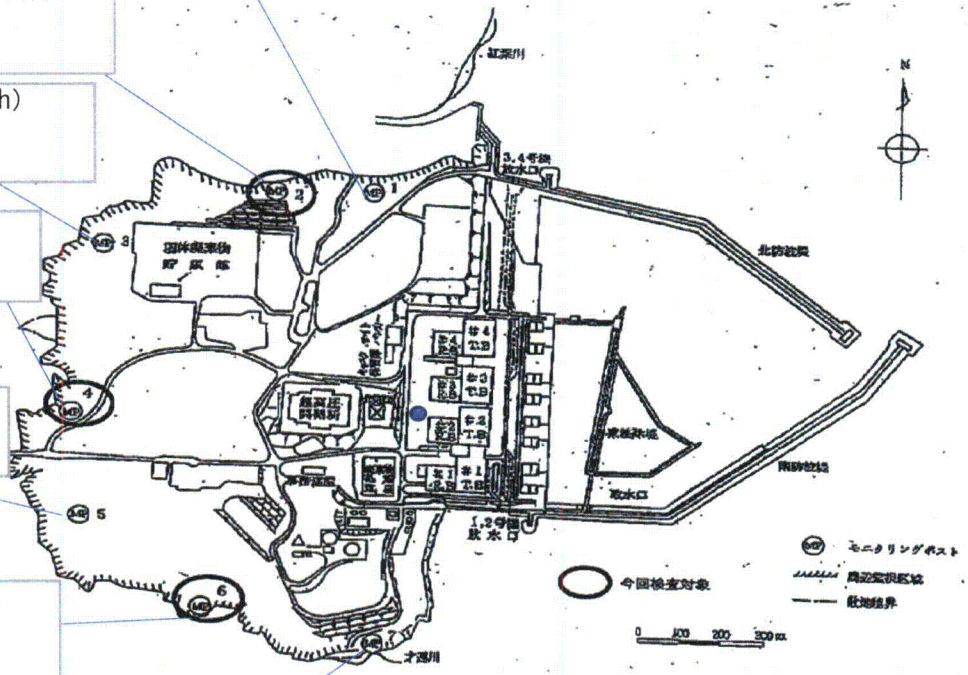
MP3 : 3.914μSv/h (as of 7:00 April 8th)
(Ref. Valur:0.036～0.052μSv/h)

MP4 : 2.999μSv/h (as of 7:00 April 8th)
(Ref. value: 0.036～0.052μSv/h)

MP5 : 2.948μSv/h (as of 7:00 April 8th)
(Ref. Value:0.041～0.058μSv/h)

MP6 : 2.928μSv/h (as of 7:00 April 8th)
(Ref. value:0.044～0.063μSv/h)

MP7 : 2.210μSv/h (as of 12:00 April 7th)
(Ref. Value: 0.043～0.062μSv/h)



添付資料（2）

Results of environmental monitoring at each NPSs etc. (as of 9pm April 7th, 2011)

unit: μ Sv/h

Range of normal average value	Company	NPS	April 7, 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	0.029	0.029	0.028	0.028	0.028	0.028	0.028	0.028	0.029	0.029	0.029	0.029
0.024～0.060	Tohoku Electric Power Co.	Onagawa NPS	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
0.012～0.060		Higashidori NPS	0.017	0.017	0.017	0.016	0.016	0.017	0.017	0.017	0.017	0.017	0.017	0.017
0.033～0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi※	59.4	61.3	59.3	59.0	59.4	60.6	58.5	58.5	58.5	58.4	58.2	58.0
0.036～0.052		Fukushima Dai-ni	4.172	4.144	4.157	4.146	4.134	4.120	4.119	4.104	4.115	4.110	4.115	4.103
0.011～0.159		Kashiwazaki kariwa NPS	0.066	0.067	0.065	0.066	0.066	0.066	0.067	0.066	0.066	0.066	0.066	0.066
0.036～0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	0.463	0.459	0.457	0.460	0.457	0.456	0.459	0.456	0.460	0.456	0.458	0.458
0.039～0.110		Tsuruga NPS	0.076	0.075	0.075	0.076	0.075	0.075	0.075	0.075	0.075	0.074	NM *1	NM *1
0.064～0.108	Chubu Electric Power Co.	Hamaoka NPS	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
0.0207～0.132	Hokuriku Electric Power Co.	Shika NPS	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.033	0.033
0.028～0.130	Chugoku Electric Power Co.	Shimane NPS	0.029	0.030	0.029	0.030	0.030	0.031	0.030	0.030	0.031	0.031	0.029	0.029
0.070～0.077	Kansai Electric Power Co.	Mihama NPS	0.074	0.074	0.074	0.074	0.072	0.074	0.075	0.074	0.075	0.074	0.073	0.073
0.045～0.047		Takahama NPS	0.042	0.043	0.043	0.043	0.042	0.042	0.042	0.042	0.043	0.043	0.042	0.042
0.036～0.040		Ooi NPS	0.036	0.036	0.036	0.035	0.035	0.036	0.036	0.036	0.034	0.035	0.034	0.033
0.011～0.080	Shikoku Electeic Power Co.	Ikata NPS	0.013	0.014	0.013	0.013	0.013	0.013	0.013	0.014	0.013	0.013	0.014	0.013
0.023～0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.026	0.026	0.026	0.024	0.026	0.027	0.028	0.027	0.027	0.027	0.025
0.034～0.120		Sendai NPS	0.041	0.038	0.038	0.039	0.039	0.038	0.038	0.041	0.037	0.037	0.035	0.038
0.009～0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.017	0.017	0.017	0.016
0.009～0.071		Japan Nuclear Fuel Plant Disposal	0.023	0.023	0.022	0.022	0.022	0.022	0.023	0.022	0.023	0.023	0.023	0.023

※ 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	April 7, 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	0.029	0.028	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	[illegible]	[illegible]
0.024～0.060	Tohoku Electric Power Co.	Onagawa NPS	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	[illegible]	[illegible]
0.012～0.060		Higashidori NPS	0.017	0.018	0.018	0.017	0.018	0.018	0.017	0.017	0.017	0.017	[illegible]	[illegible]
0.033～0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi※	58.0	57.7	57.6	57.4	57.1	56.8	56.8	56.6	56.7	56.5	[illegible]	[illegible]
0.036～0.052		Fukushima Dai-ni	4.079	4.060	4.079	4.089	4.043	4.028	4.016	4.003	4.005	4.007	[illegible]	[illegible]
0.011～0.159		Kashiwazaki kariwa NPS	0.066	0.066	0.066	0.065	0.066	0.066	0.066	0.065	0.067	0.067	[illegible]	[illegible]
0.036～0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	0.457	0.456	0.459	0.456	0.454	0.454	0.455	0.454	0.448	0.450	[illegible]	[illegible]
0.039～0.110		Tsuruga NPS	NM *1	NM *1	NM *1	NM *1	NM *1	0.075	0.075	0.076	0.075	0.076	[illegible]	[illegible]
0.064～0.108	Chubu Electric Power Co.	Hamaoka NPS	0.046	0.045	0.045	0.045	0.045	0.045	0.044	0.045	0.045	0.045	[illegible]	[illegible]
0.0207～0.132	Hokuriku Electric Power Co.	Shika NPS	0.033	0.033	0.033	0.033	0.033	0.033	0.034	0.034	0.034	0.034	[illegible]	[illegible]
0.028～0.130	Chugoku Electric Power Co.	Shimane NPS	0.029	0.029	0.030	0.031	0.031	0.030	0.030	0.029	0.030	0.030	[illegible]	[illegible]
0.070～0.077	Kansai Electric Power Co.	Mihama NPS	0.074	0.075	0.075	0.073	0.075	0.072	0.074	0.074	0.074	0.073	[illegible]	[illegible]
0.045～0.047		Takahama NPS	0.043	0.043	0.043	0.042	0.042	0.042	0.043	0.043	0.043	0.043	[illegible]	[illegible]
0.036～0.040		Ooi NPS	0.034	0.034	0.034	0.034	0.034	0.033	0.034	0.034	0.034	0.034	[illegible]	[illegible]
0.011～0.080	Shikoku Electeic Power Co.	Ikata NPS	0.013	0.014	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	[illegible]	[illegible]
0.023～0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.027	0.026	0.026	0.027	0.026	0.026	0.025	0.026	0.026	[illegible]	[illegible]
0.034～0.120		Sendai NPS	0.037	0.036	0.038	0.038	0.037	0.038	0.038	0.037	0.039	0.035	[illegible]	[illegible]
0.009～0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.016	0.016	0.017	0.017	0.016	0.016	0.016	0.016	[illegible]	[illegible]
0.009～0.071		Japan Nuclear Fuel Plant Disposal	0.023	0.023	0.022	0.023	0.022	0.023	0.023	0.023	0.022	0.023	[illegible]	[illegible]

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

*1: NM: Not measured because of inspection

Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (As of 13:00, April 6th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 6 m^3/h (As of 17:30, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water : 8 m^3/h (As of 12:12, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m^3/h (As of 17:32, April 3rd) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 12:00, April 6th)	Fuel range A : -1,500mm (As of 12:00, April 6th)	Fuel range A:-1,800mm Fuel range B:-2,200mm (As of 12:30, April 6th)	#2	Shutdown range measurement 1,965mm (As of 13:00, April 6th)	Shutdown range measurement 1,791mm (As of 13:00, April 6th)
Reactor pressure	0.313MPa g(A) 0.653MPa g(B) (As of 12:00, April 6th)	-0.016MPa g (A) -0.018MPa g (D) (As of 12:00,April 6th)	0.005MPa g (A) -0.086MPa g (C) (As of 12:30, April 6th)	#2	0.005MPa g (As of 13:00, April 6th)	0.005MPa g (As of 13:00, April 6th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	42.3℃ (As of 13:00, April 6th)	21.1℃ (As of 13:00, April 6th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 214.0℃ Temperature at the bottom head of RPV: 115.0℃ (As of 12:00, April 6th)	Feedwater nozzle temperature: 142.5℃ Temperature at the bottom head of RPV: #1 (As of 12:00, April 6th)	Feedwater nozzle temperature: 78.8℃ (under survey) Temperature at the bottom head of RPV: 115.0℃ (As of 12:30, April 6th)	Unit 4 No heating element (fuel) inside the reactor Unit 5,6 Monitoring by the reactor water temperature		
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.150MPa abs S/C: 0.150MPa abs (As of 12:00, April 6th)	D/W: 0.100MPa abs S/C:Down scale (under survey) (As of 12:00, April 6th)	D/W: 0.1069MPa abs S/C: 0.1731MPa abs (As of 12:30, April 6th)	#2		
CAMS*3	D/W: 3.10×10^{1}Sv/h S/C: 8.01×10^{0}Sv/h (As of 12:00, April 6th)	D/W: 3.11×10^{1}Sv/h S/C: 8.25×10^{-1}Sv/h (As of 12:00,April 6th)	D/W: 1.95×10^{1}Sv/h S/C: 7.99×10^{-1}Sv/h (As of 12:30, April 6th)	#2		
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	#2		
D/W*1 maximum operating pressure	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)			
Spent Fuel Pool water	#1	51.0℃ (As of 12:00, April 6th)	#1	#1	35.2℃ (As of 13:00, April 6th)	29.5℃ (As of 13:00, April 6th)
FPC skimmer level	4,500mm (As of 12:00, April 6th)	5,600mm (As of 12:00, April 6th)	#1	4,900mm (As of 12:30, April 6th)	#2	
Power supply	Receiving external power supply (P/C*4 2C)		Receiving external power supply (P/C4D)		Receiving external power supply	

Other information	Unit3: Collecting the data of RPV temperature and continuing survey for transitional situation Unit2: Confirmed the indicated value of S/C Pressure but continuing to survey the transition of condition	Common pool: about 27 ℃ (As of 8:00, April 6th)	Unit5: Supplemental Fuel Pool Cooling mode (From 9:52 April 6th)	Unit6: SHC*5 mode (From 20:06 April 5th)

Pressure conversion	Gauge pressure (MPa g) = Absolute pressure (MPa abs) – Atmospheric pressure (Normal atmospheric pressure 0.1013MPa) Absolute pressure (MPa abs) = Gauge pressure (MPa g) + Atmospheric pressure (Normal atmospheric pressure 0.1013MPa)

*1 D/W : Dry Well
*2 S/C : Suppression Chamber
*3 CAMS : Containment Atmospheric Monitoring System
*4 P/C : Power Center
*5 SHC : Shutdown Cooling

#1 : Measuring instrument malfunction
#2 : Except from data collection

News Release

経済産業省
Ministry of Economy, Trade and Industry

April 8, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 80th Release)
(As of 08:00 April 8th, 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
  - Water spray of around 38t of fresh water for Unit 4 using Concrete Pump Truck (50t/h) was carried out. (From 18:23 till 19:40 April 7th)

2. Other injuries
   - On the afternoon of 7 April, a worker who was making sandbags at the soil disposal yard (spoil bank) on the north side of Fukushima Dai-ichi NPS got sick and was transported to J-Village for the body survey of contamination of radioactive materials. Being confirmed to be free from contamination, he was taken to the Iwaki City Kyouritsu Hospital by ambulance.

3. Action taken by NISA
   - The Local Nuclear Emergency Response Headquarters issued the News Letter No.3 for the residents within the area from 20km to 30km radius. (April 7th)

(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 06:00 April 8th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.491(A) 0.889(B)	0.090(A) 0.085(D)	0.099(A) 0.020(C)	—	0.103	0.104
CV Pressure (D/W) [kPa]	180	100	106.1	—	—	—
Reactor Water Level*2 [mm]	-1,650(A) -1,650(B)	-1,500(A) Not available(B)	-2,000(A) -2,250(B)	—	1,669	1,691
Suppression Pool Water Temperature (S/C) [℃]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	150	down scale (under survey)	172.6	—	—	—
Spent Fuel Pool Water Temperature [℃]	Indicator Failure	63.0	Indicator Failure	Indicator Failure	34.8	28.0
Time of Measurement	0:00 April 8th	3:00 April 8th	01:30 April 8th	April 8th	06:00 April 8th	06:00 April 8th

*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 was 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 Reactor Core was increased by utilizing the Feedwater 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 Feedwater Line only (around $11m^3/h$). (09:00 March 23rd)
- Lighting in the Central Operation Room was recovered. (11:30 March 24th)
- Fresh water injection to RPV was started. (15:37 March 25)
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 Bq/cm^3$ of ^{131}I (Iodine) and $1.8 \times 10^6 Bq/cm^3$ of ^{137}Cs (Caesium) were detected as major radioactive nuclides.
- The pump for the fresh water injection to RPV of Unit 1 was switched from the Fire Pump Truck to the temporary motor-driven pump. (08:32 March 29th.)
- The Stagnant water on the basement floor of the turbine building was started to be transferred to the Condenser at around 17:00 March 24. As the Condenser was confirmed to be almost filled with water, pumping out of the water to the Condenser was stopped. (07:30 March 29th) In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the Condenser, the water in the Condensate Storage Tank started to be transferred to the Surge Tank of Suppression Pool Water (A) (12:00 March 31th), after switching the place where the water was to be transferred to the Surge Tank of Suppression Pool Water (B) (15:25 March 31th), the transfer was

restarted and finished. (15:26 April 2nd)

- Water spray of around 90t (fresh water) over the Spent Fuel Pool using Concrete Pump Truck was carried out. (From 13:03 till 16:04 March 31st) A test water spray using Concrete Pump Truck was carried out in order to confirm the appropriate position for water spray. (From 17:16 till 17:19 April 2nd)
- Lighting in the turbine building was partially turned on. (April 2nd)
- In order to switch the power supply to the motor-driven pump injecting fresh water to RPV from the temporary power supply to the external power supply, the injection to the reactor was temporarily carried out using the Fire Pump Truck. (10:42 to 11:52 April 3rd)
- The power supply for the fresh water injection to RPV was switched to the external power supply. (12:12 April 3rd)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building of Unit 1 to the Condenser, the transfer of the water in the Condenser to the Condensate Storage Tank was started. (13:55 April 3rd)
- Aiming at reducing the possibility of hydrogen combustion in the Primary Containment Vessel (PCV) of Unit 1, the operations for the injection of nitrogen to PCV were started. (22:30 April 6th)
- The start of nitrogen injection to PCV of Unit 1 was confirmed. (01:31 April 7th)
- White smoke was confirmed to generate continuously. (As of 06:30 April 8th)
- Fresh water injection to RPV is being carried out. (As of 08:00 April 8th)

<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 started. (16:34 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 Pool (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. (13:30 March 19th)
- Seawater injection of 40t to the Spent Fuel Pool was started. (From 15:05 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)
- Seawater injection of 18t to the Spent Fuel Pool was carried out. (From 16:07 till 17:01 March 22nd)
- Seawater injection to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line was carried out. (From 10:30 till 12:19 March 25th)
- Fresh water injection to RPV was started. (10:10 March 26th)
- Lighting of Central Operation Room was recovered (16:46 March26th)
- The pump for the fresh water injection to RPV of Unit 2 was switched from the Fire Pump Truck to the temporary motor-driven pump.(18:31 March 27th)
- Regarding the result of the concentration measurement in the stagnant water on the basement floor of the turbine building of Unit 2 of Fukushima Dai-ichi NPS announced by TEPCO on 27 March, TEPCO reported to NISA that as the result of analysis and evaluation through re-sampling, judging the measured value of ^{134}I (Iodine) was wrong, the concentrations of gamma nuclides including ^{134}I (Iodine) were less than the detection limit. (00:07 March 28).

- Seawater injection to the Spent Fuel Pool using the Fire Pump Truck was switched to the fresh water injection using the temporary motor-driven pump. (From 16:30 till 18:25 March 29th)
- As the malfunction of the temporary motor-driven pump, which had been injecting to the Spent Fuel Pool of Unit 2 since 09:25 March 30th, was confirmed at 09:45 March 30th, the injection pump was switched to the Fire Pump Truck. However, because cracks were confirmed in the hose (12:47 and 13:10 March 30th), the injection was suspended. Fresh water injection was resumed. (From 19:05 till 23:50 March 30th)
- Fresh water injection of around 70t to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line using the temporary motor-driven pump was carried out. (From 14:56 till 17:05 April 1st)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building of Unit 2 to the Condenser, the water in the Condensate Storage Tank was transferred to the Surge Tank of Suppression Pool Water. (From 16:45 March 29th till 11:50 April 1st)
- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) for laying electric cables, located near the Intake Channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed. (Around 09:30 April 2nd) In order to stop the outflow, concrete was poured into the pit. (16:25, 19:02 April 2nd)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building of Unit 2 to the Condenser, the transfer of the water in the Condenser to the Condensate Storage Tank was started. (17:10 April 2nd)
- The cameras for monitoring the water levels in the vertical part of the trench outside of the turbine building of Unit 2 and on the basement floor of the turbine building of Unit 2 were installed. (April 2nd)
- Lighting in the turbine building was partially turned on. (April 2nd)
- In order to switch the power supply to the motor-driven pump injecting fresh water to RPV from the temporary power supply to the external power supply, the injection to the reactor was temporarily carried out using the Fire Pump Truck. (From 10:22 till 12:06 April 3rd)

- The power supply for the fresh water injection to RPV was switched to the external power supply. (12:12 April 3rd)
- As the measure to prevent the outflow of the water accumulated in the Pits for Conduit in the area around the Inlet Bar Screen, the upper part of the Power Cable Trench for power source at Intake Channel was crushed and 20 bags of sawdust (3 kg/bag), 80 bags of high polymer absorbent (100 g/bag) and 3 bags of cutting-processed newspaper (Large garbage bag) were put inside. (From 13:47 till 14:30 April 3rd)
- Approximately 13kg of tracer (milk white bath agent) was put in from the Pit for the Duct for Seawater Pipe. (From 07:08 till 07:11 April 4th)
- Fresh water injection (Around 70t) to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line using the temporary motor-driven pump was carried out. (From 11:05 till 13:37 April 4th)
- The tracer solution was put in from the two holes dug around the Pit for the Conduit near the Inlet Bar Screen of Unit 2 and was confirmed to be flowed out from the crack to the sea. (14:15 April 5th) The coagulant (soluble glass) started to be injected from the holes around the Pit in order to prevent the outflowing of the water. (15:07 April 5th) The outflow of the water was confirmed to stop. (Around 05:38 April 6th) In addition, it was confirmed that the water level in the turbine building did not rise. Furthermore, the measurements to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (Finished at 13: 15 April 6th)
- One more pump for the transfer of the water in the Condenser of Unit 2 to the Condensate Storage Tank was installed. (Two pumps in total: 30 m^3/h) (Around 15:40 April 5th)
- Fresh water injection (Around 36t) to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line was carried out. (From 13:39 till 14:34 April 7th)
- White smoke was confirmed to generate continuously. (As of 06:30 April 8th)
- Fresh water injection to RPV is being carried out. (As of 08:00 April 8th)

<Unit 3>

- 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.

(05:10 March 13th)

- Operation of Vent (08:41 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)
- 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 carried out the water spray. (Finished at 03:40 March 20th)
- The pressure in PCV of Unit 3 rose (320 kPa at 11:00 March 20th). Preparation to lower the pressure was carried out. 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 21:30 March 20th till 03:58 March 21st).
- 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 Tokyo Fire Department and Osaka City Fire Bureau was carried out. (From 15:10 till 16:00 March 22nd)
- Lighting was recovered in the Central Operation Room. (22:43 March 22nd)
- Seawater injection of 35t to the Spent Fuel Pool via the Fuel Pool Cooling Line was carried out. (From 11:03 till 13:20 March 23rd) Around 120t of seawater was injected. (From around 5:35 till around 16:05 March 24th)
- 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.
- As the results of the survey of the stagnant water, into which workers who were laying electric cable on the ground floor and the basement floor of the turbine building of the Unit 3 walked, the dose rate on the water surface was around 400mSv/h, and as the result of gamma-ray analysis of the sampling water, the totaled concentration of each nuclide of the sampling water was around 3.9×10^{6} Bq/cm^{3}.
- Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department was carried out. (From 13:28 till 16:00 March 25th)
- Fresh water injection to RPV was started. (18:02 March 25th)

- Water spray of around 100t using Concrete Pump Truck (50t/h) was carried out. (From 12:34 till 14:36 March 27th)
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water. (From 17:40 March 28th till around 8:40 March 31st)
- The pump for the fresh water injection to RPV was switched from the Fire Pump Truck to the temporary motor-driven pump. (20:30 March 28th)
- Fresh water spray of around 100t using Concrete Pump Truck (50t/h) was carried out. (From 14:17 till 18:18 March 29th)
- Fresh water spray of around 105t using Concrete Pump Truck (50t/h) was carried out. (From 16:30 till 19:33 March 31st)
- Fresh water spray of around 75t using Concrete Pump Truck (50t/h) was carried out. (From 09:52 till 12:54 April 2nd)
- Lighting in the turbine building was partially turned on. (April 2nd)
- The camera for monitoring the water level in the vertical part of the trench outside of the turbine building was installed. (April 2nd)
- In order to switch the power supply to the motor-driven pump injecting fresh water to RPV from the temporary power supply to the external power supply, the injection to the reactor was temporarily carried out using the Fire Pump Truck. (From 10:03 till 12:16 April 3rd)
- The power supply for the fresh water injection to RPV was switched to the external power supply. (12:18 April 3rd)
- Fresh water spray of around 70t using Concrete Pump Truck (50t/h) was carried out. (From 17:03 till 19:19 April 4th)
- Fresh water spray (Around 70t) using Concrete Pump Truck (50t/h) was carried out. (From 06:53 till 08:53 April 7th)
- White smoke was confirmed to generate continuously (As of 06:30 April 8th)
- Fresh water injection to RPV is being carried out. (As of 08:00 April 8th)

<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 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. (05:45 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-Defense 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 electric cable to the Power Center was completed. (At around 15:00 March 21st)
- Power Center received electricity. (10:35 March 22nd)
- Water spray of around 150t using Concrete Pump Truck (50t/h) was carried out. (From 17:17 till 20:32 March 22nd)
- Water spray of around 130t using Concrete Pump Truck (50t/h) was carried out. (From 10:00 till 13:02 March 23rd)
- Water spray of around 150t using Concrete Pump Truck (50t/h) was carried out. (From 14:36 till 17:30 March 24th)
- Water spray of around 150t using Concrete Pump Truck (50t/h) was carried out. (From 19:05 till 22:07 March 25th)
- Seawater injection to the Spent Fuel Pool via the Spent Fuel Pool Cooling Line was carried out. (From 06:05 till 10:20 March 25th)
- Water spray of around 125t using Concrete Pump Truck (50t/h) was carried out. (From 16:55 till 19:25 March 27th)
- Lighting of Central Operation Room was recovered. (11:50 March 29th)
- Fresh water spray of around 140t using Concrete Pump Truck (50t/h) was carried out. (From 14:04 till 18:33 March 30th)
- Fresh water spray of around 180t using Concrete Pump Truck (50t/h) was carried out. (From 08:28 till 14:14 April 1st)
- Lighting in the turbine building was partially turned on. (April 2nd)

- From 2 April, the stagnant water in the Main Building of Radioactive Waste Treatment Facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from 3 April, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear. (09:22 April 4th)
- Fresh water spray of around 180t using Concrete Pump Truck (50t/h) was carried out. (From 17:14 till 22:16 April 3rd)
- Fresh water spray of around 20t using Concrete Pump Truck (50t/h) was carried out. (From 17:35 till 18:22 April 5th)
- Fresh water spray of around 38t using Concrete Pump Truck (50t/h) was carried out. (From 18:23 till 19:40 April 7th)
- White smoke was confirmed to generate continuously. (As of 06:30 April 8th)

<Units 5 and 6>

- The first unit of Emergency Diesel Generator (D/G) (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 (D/G) (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 temporary pump for RHR Seawater System (RHRS) of Unit 5 was

automatically stopped when the power supply was switched from the temporary to the permanent. (17:24 March 23rd)

- Repair of the temporary pump for RHRS of Unit 5 was completed (16:14 March 24th) and cooling was started again. (16:35 March 24th)
- Power supply for the temporary pump for RHRS of Unit 6 was switched from the temporary to the permanent. (15:38 and 15:42 March 25th)
- The groundwater with low-level radioactivity in the Sub Drain Pit of Units 5 and 6 (Around 1,500t) was started to be discharged through the Water Discharge Canal to the sea. (21:00 April 4th)

<Common Spent Fuel Pool>

- It was confirmed that the water level of Spent Fuel Pool was maintained almost full at after 06:00 March 18th.
- Water spray over the Common Spent Fuel Pool was started. (From 10:37 till 15:30 March 21st)
- The power was started to be supplied (15:37 March 24th) and cooling was also started.(18:05 March 24th)
- As of 07:45 April 7th, water temperature of the pool was around 28℃.

<Other>

- As the result of nuclide analysis at around the Southern Water Discharge Canal, 7.4×10^{1}Bq/cm^3 of ^{131}I (Iodine) (1,850.5 times higher than the concentration limit in water outside the Environmental Monitoring Area) was detected. (14:30 March 26th)

  (As the result of measurement on 29 March, it was detected as 3,355.0 times higher than the limit in water (13:55 March 29th). On the other hand, as the result of the analysis at the northern side of the Water Discharge Canal of the NPS, 4.6×10^{1}Bq/cm^3 of ^{131}I (Iodine) (1,262.5 times higher than the limit in water) was detected. (14:10 March 29th)
- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench. The rate of the Unit 3's trench could not measure because of the rubble. (Around 15:30 March 27th) The collected water in the vertical part of the trench outside of the turbine building of Unit 1

was transferred to the storage tank in the Main Building of Radioactive Waste Treatment Facilities by the temporary pump. Thereafter the water level from the top of the vertical part went down from approximately -0.14m to approximately -1.14m. (From 09:20 till 11:25 March 31st)

- In the samples of soil collected on 21 and 22 March on the site (at 5 points) of Fukushima Dai-ichi NPS, ^{238}P (Plutonium), ^{239}P (Plutonium) and ^{240}P (Plutonium) were detected (23:45 March 28th announced by TEPCO). The concentration of the detected plutonium was at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- When removing the flange of pipes of Residual Heat Removal Seawater System outside the building of Unit 3, three subcontractor's employees were wetted by the water remaining in the pipe. However, as the result of wiping the water off, no radioactive materials were attached to their bodies. (12:03 March 29th)
- On March 28th, the stagnant water was confirmed in the Main Building of Radioactive Waste Treatment Facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^{1} Bq/cm^{3} in the controlled area and that of 2.2×10^{1} Bq/cm^{3} in the non-controlled area were detected in March 29th.
- As the result of nuclide analysis at around the Southern Water Discharge Canal, 1.8×10^{2} Bq/cm^{3} of ^{131}I (Iodine) (4,385.0 times higher than the concentration limit in water outside the Environmental Monitoring Area) was detected (13:55 March 30th).
- The barge (the first ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Maritime Self-Defense Force. (15:42 March 31st) The transfer of fresh water from the barge (the first ship) to the Filtrate Tank was started. (15:58 April 1st) Thereafter it was suspended due to the malfunction of the hose (16:25 April 1st), but was resumed on April 2nd. (From 10:20 till 16:40 April 2nd)
- The permanent monitoring posts (No.1 to 8) installed near the Site Boundary were recovered. (March 31st) They are measuring once a day.

- The spraying for test scattering of antiscattering agent was carried out in the area of about 500 m^2 on the mountain-side of the Common Pool. (From 15:00 till 16:05 April 1st)
- The barge (the second ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Maritime Self-Defense Force. (9:10 April 2nd)
- The freshwater was transferred from the barge (the second ship) of the US armed force to the barge (the first ship). (From 09:52 till 11:15 April 3rd)
- The stagnant water with low-level radioactivity in the Main Building of Radioactive Waste Treatment Facilities (Around 10,000t) was started to be discharged from the southern side of the Water Discharge Canal to the sea, using the first pump. (19:03 April 4th) Further, the discharge using 10 pumps in total was carried out. (19:07 April 4th)
- In the samples of soil (7 samples in total) collected on 25 March (at 4 points) and 28 March (at 3 points) on the site of Fukushima Dai-ichi NPS, ^{238}P (Plutonium), ^{239}P (Plutonium) and ^{240}P (Plutonium) were detected (18:30 April 6th announced by TEPCO). The concentration of the detected plutonium was, in the same as the last one (Announced on 28 March), at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.
- In order to prevent the outflow of the contaminated water from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS. (From 15:00 till 16:30 April 5th)
- The test scattering of antiscattering agent to prevents the radioactive materials on the ground surface from being scattered was carried out in the area of about 600 m^2 on the mountain-side of the Common Pool. (April 5th, 6th)

● 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 06:00 April 8th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.15	0.14	0.10	0.17
Reactor water temperature	℃	25.1	25.0	34.7	30.3
Reactor water level*2	mm	9,346	10,346	7,810	8,785
Suppression pool water temperature	℃	23	24	26	31
Suppression pool pressure	kPa (abs)	105	106	111	110
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) Situation of Each Unit

<Unit 1>

- Around 17:56 March 30th, smoke was rising from the power distribution panel on the first floor of the turbine building of Unit 1. However, when the power supply was turned off, the smoke stopped to generate. It was judged by the fire station at 19:15 that this event was caused by the malfunction of the power distribution panel and was not a fire.
- The Residual Heat Removal System (B) to cool the reactor of Unit 1 became to be able to receive power from the emergency power supply as well as the external power supply. This resulted in securing the backup power supplies (emergency power supplies) of Residual Heat Removal System (B) for all Units. (14:30 March 30th)

(4) 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 functions) 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 functions) 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)
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● 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 Northern End of Site Boundary)
Approx. 0.37 μ SV/h (16:00 April 7th) (Approx. 0.38 μ SV/h (16:00 April 6th))

(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 the Government Nuclear Emergency Response Headquarters and the Local Nuclear 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 the 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 Nuclear Emergency Response Headquarters

(March12th)

0:49 Regarding Units 1 TEPCO Fukushima Dai-ichi NPS, TEPCO recognized the event (Unusual rise of the pressure in PCV) in accordance with the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (Reported to NISA at 01:20)

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

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

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

20:05 Considering the Directives from the 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 was 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 was 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.

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 International Atomic Energy Agency (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 U.S. Nuclear Regulatory Commission (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, the 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 Nuclear Emergency Response Headquarters was moved to the Fukushima Prefectural Office.

11:00 The 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, the Minister of Economy, Trade and Industry issued the following direction.
For Unit 4: To implement the water injection 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 Nuclear 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, Minamisoma 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 Nuclear 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 Director-General of Local Nuclear 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 Director-general of the 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.

(March 25th)

NISA directed orally to the TEPCO regarding the exposure of workers at the turbine building of Unit 3 of Fukushima Dai-ichi Nuclear Power Station occurred on March 24th, to review immediately and to improve its radiation control measures from the viewpoint of preventing a recurrence.

(March 28th)

Regarding the mistake in the evaluation of the concentration measurement in the stagnant water on the basement floor of the turbine building of Unit 2 of Fukushima Dai-ichi NPS announced by TEPCO on 27 March, NISA directed TEPCO orally to prevent the recurrence of such a mistake.

13:50 Receiving the suggestion by the special meeting of Nuclear Safety Commission (NSC) (Stagnant water on the underground floor of the turbine building at Fukushima Dai-ichi Plant Unit 2), NISA directed TEPCO orally to add the sea water monitoring points and carry out the groundwater monitoring.

Regarding the delay in the reporting of the water confirmed

outside of the turbine buildings, NISA directed TEPCO to accomplish the communication in the company on significant information in a timely manner and to report it in a timely and appropriate manner.

(March 29th)

11:16 The report was received, regarding the accident and trouble etc. in Onagawa NPS of Tohoku Electric Power Co. Inc. (the trouble of pump of component cooling water system etc. in Unit 2 and the fall of heavy oil tank for auxiliary boiler of Unit 1 by tsunami), pursuant to the Article 62-3 of the Nuclear Regulation Act and the Article 3 of the Ministerial Ordinance for the Reports related to Electricity.

In order to strengthen the system to assist the nuclear accident sufferers, the "Team to Assist the Lives of the Nuclear Accident Sufferers" headed by the Minister of Economy, Trade and Industry was established and the visits, etc. by the team to relevant cities, towns and villages were carried out.

The Local Nuclear Emergency Response Headquarters issued the News Letter No.1 for the residents within the area from 20 km to 30 km radius.

(March 30th)

Directions as to the implementation of the emergency safety measures for the other power stations considering the accident of Fukushima Dai-ichi and Dai-ni NPSs in 2011 was issued and handed to each electric power company and the relevant organization.

(March 31st)

Regarding the break-in of the propaganda vehicle to Fukushima Dai-ni NPS on 31 March, NISA directed TEPCO orally to take the carefully thought-out measures regarding physical protection, etc.

NISA alerted TEPCO to taking the carefully though-out measures regarding radiation control for workers.

The Local Nuclear Emergency Response Headquarters issued the News Letter No.2 for the residents within the area from 20 km to 30 km radius.

(April 1st)

NISA strictly alerted TEPCO to taking appropriate measures concerning the following three matters regarding the mistake in the result of nuclide analysis.

- Regarding the past evaluation results on nuclide analysis, all the nuclides erroneously evaluated should be identified and the re-evaluation on them should be promptly carried out.
- The causes for the erroneous evaluation should be investigated and the thorough measures for preventing the recurrence should be taken.
- Immediate notification should be done in the stage when any erroneous evaluation results, etc. are identified.

(April 2nd)

Regarding the outflow of the liquid including radioactive materials from the area around the Intake Channel of Unit 2 of Fukushima Dai-ichi NPS, NISA directed TEPCO orally to carry out nuclide analysis of the liquid sampled, to confirm whether there are other outflows from the same parts of the facilities as the one, from which the outflow was confirmed around the Unit 2, and to strengthen monitoring through sampling water at more points around the facilities concerned.

(April 4th)

On the imperative execution of the discharge to the sea as an emergency measure, NISA requested the technical advice of NSC and directed TEPCO to survey and confirm the impact of the spread of radioactive materials caused by the discharge, by ensuring continuity of the sea monitoring currently underway and enhancing it (Increase of the frequency of measuring as well as the number of monitoring points), disclose required information, as well as to enhance the strategy to minimize the discharge amount.

(April 5th)

Directions as to the implementation of advance notification and contact to the local governments with regard to taking measures related to discharge of radioactive materials from Fukushima Dai-ichi NPS, which have a possible impact on the environment, was issued.

(April 6th)

On the implementation of the nitrogen injection to PCV of Unit 1, NISA directed TEPCO on the following three points. (12:40 April 6th) ① Properly control the plant parameters, and take measures appropriately to ensure safety in response to changes in the parameters. ②Establish and implement an organizational structure and so on that will ensure the safety of the workers who will engage in the operation. ③As the possibility of leakage of the air in PCV to the outside due to the nitrogen injection cannot be ruled out, through the judicious and further enhanced monitoring, TEPCO shall survey and confirm the impact of the release and spreading of radioactive materials due to the nitrogen injection, and strive to disclose information.

(April 7th)

The Local Nuclear Emergency Response Headquarters issued the News Letter No.3 for the residents within the area from 20km to 30km radius. (April 7th)

< Possibility on radiation exposure (As of 08:00 April 8th) >

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
18,000 cpm	1
30,000-36,000 cpm	1
40,000 cpm	1
little less than 40,000 cpm*	1
very small counts	5

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

(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 6,000 cpm. 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.

(6) Fukushima Prefecture has started the screening from 13 March. It is carried out by rotating the evacuation sites and at the 13 places (set up

permanently) such as health offices. Up until April 6th, the screening was done to 133,972 people. Among them, 102 people were above the 100,000 cpm, but when measured these people again without clothes, etc., the counts decreased to 100,000 cpm and below, and there was no case which affects health.

2. Exposure of workers

As for the workers conducting operations in Fukushima Dai-ichi NPS, the total number of people who were at the level of exposure more than 100 mSv becomes 21.

For two out of the three workers who were confirmed to be at the level of exposure more than 170 mSv on March 24, the attachment of radioactive material on the skin of both legs was confirmed. As the two workers were judged to have a possibility of beta ray burn, they were transferred to the Fukushima Medical University Hospital, and after that, on March 25th, all of the three workers arrived at the National Institute of Radiological Sciences in the Chiba Prefecture. As the result of examination, the level of exposure of their legs was estimated to be from 2 to 3 Sv. The level of exposure of both legs and internal did not require medical treatment, but they decided to monitor the progress of all three workers in the hospital. All the three workers have been discharged from the hospital around the noon on 28 March.

At around 11:35 April 1st, a worker fell into the sea when he went on board the barge of the US Armed forces in order to adjust the hose. He was rescued immediately by other workers around without any injury and external contamination. In order to make double sure, the existence of internal radionuclide contaminant is being confirmed by a whole-body counter.

3. Others

(1) 4 members of Self-Defence Force who worked in Fukushima Dai-ichi NPS were injured by explosion. 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.

(2) As for policeman, the decontaminations of two policemen were confirmed by the National Police Agency. Nothing unusual was reported.
(3) On March 24th, examinations of thyroid gland for 66 children aged from 1 to 15 years old were carried out at the Kawamata Town public health Center. The result was at not at the level of having harmful influence.
(4) From March 26th to 27th, examinations of thyroid gland for 137 children aged from 0 to 15 years old were carried out at the Iwaki City Public Health Center. The result was not at the level of having harmful influence.
(5) From March 28th to 30th, examinations of thyroid gland for 946 children aged from 0 to 15 years old were carried out at the Kawamata Town Community Center and the Iidate Village Office. The result was not at the level of having harmful influence.

<Directive of screening levels for decontamination of radioactivity>
(1) On March 20th, the Local Nuclear 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 Nuclear 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 Nuclear 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 08:00 April 8th)>

1. Injury in Unit 1 of Fukushima Dai-ichi NPS due to earthquake on 11 March
   - Two employees (slightly, have already gone back working)
   - Two subcontract employees (one fracture in both legs, be in hospital)
   - Two died (After the earthquake, two TEPCO's employees missed and had been searched continuously. In the afternoon of March 30th, the two employees were found on the basement floor of the turbine building of Unit 4 and were confirmed dead by April 2nd.)

2. Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS on 12 March
   - Four employees (two TEPCO's employees and two subcontractor's employees) were injured at the explosion and smoke of Unit 1 around the turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic. Two TEPCO's employees return to work again and two subcontractors' employees are under home treatment.

3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS on 14 March.
   - Four TEPCO's employees (They have already return to work.)
   - Three subcontractor employees (They have already return to work.)
   - 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 17th.)

4. Other injuries

- On the earthquake on 11 March, one subcontractor's employees (a crane operator) died in Fukushima Dai-ni NPS. (It seems that the tower crane broke and the operator room was crushed and the person was hit on the head.)
- One emergency patient on 12 March. (Cerebral infarction, transported by the ambulance, be in hospital)
- Ambulance was requested for one employee complaining the pain at left chest outside of control area on March 12. (Conscious, under home treatment)
- 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 on 13 March. (One employee has already returned to work and the other is under home treatment.)
- Two subcontractor's employees were injured during working at temporary control panel of power source in the Common Spent Fuel Pool, transported to where were industrial medical doctors the Fukushima Dai-ni NPS on 22 and 23 March. (One employee has already returned to work and the other is under home treatment.)
- On the afternoon of 7 April, a worker who was making sandbags at the soil disposal yard (spoil bank) on the north side of Fukushima Dai-ichi NPS got sick and was transported to J-Village for the body survey of contamination of radioactive materials. Being confirmed to be free from contamination, he was taken to the Iwaki City Kyouritsu Hospital by ambulance.

<Situation of resident evacuation (As of 08:00 April 8th)>

At 11:00 March 15th, the 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.
- On March 28th, Chief Cabinet Secretary mentioned the continuation of the limited-access within the area of 20 km from Fukushima Dai-ichi NPS. On the same day, the Local Nuclear Emergency Response Headquarters notified the related municipalities of forbidding entry to the evacuation area within the 20 km zone.

<Directives regarding foods and drinks>

Directive from the Director-General of the Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi, Gunma, and Chiba was issued, which directed above-mentioned governors to suspend shipment and so on of the following products for the time being.

The Government Nuclear Emergency Response Headquarters organized the thoughts of imposing and lifting restrictions on shipment as follows, considering the NSC's advice.

- The area where restrictions on shipment to be imposed or lifted could be decided in units of the area where a prefecture is divided into, such as cities, towns, villages and so on, considering the spread of the contamination affected area and the actual situation of produce collection, etc.
- The restriction on shipment of the item, of which the result of the sample test exceeded the provisional regulation limits, shall be decided by judging in a comprehensive manner considering the regional spread of the contamination impact.
- Lifting the restrictions on shipment shall be implemented when a series of three results of nearly weekly tests for the item or the area falls below the provisional regulation limits, considering the situation of the Fukushima Dai-ichi NPS.
- However, the tests shall be carried out nearly weekly after the lifting, while the release of the radioactive materials from the NPS continues.

(1) Items under the suspension of shipment and restriction of intake (As of April 8th)

Prefectures	Suspension of shipment	Restriction of intake
Fukushima Prefecture	Non-head type leafy vegetables, head type leafy vegetables , flowerhead brassicas (Spinach, Cabbage, Broccoli, Cauliflower, *Komatsuna**, *Kukitachina**, *Shinobufuyuna**, Rape, *Chijirena, Santouna**, *Kousaitai**, *Kakina**, *etc.*), Turnip, Raw milk	Non-head type leafy vegetables, head type leafy vegetables, flowerhead brassicas (Spinach, Cabbage, Broccoli, Cauliflower, *Komatsuna**, *Kukitachina**, *Shinobufuyuna,* Rape, *Chijirena, Santouna**, *Kousaitai**, *Kakina**, *etc.*)
Ibaraki Pref.	Spinach, *Kakina**, Parsley, Raw milk	
Tochigi Pref.	Spinach, *Kakina**	
Gunma Pref.	Spinach, *Kakina**	
Chiba Pref.	- Spinach from Katori City and Tako Town - Spinach, Qing-geng-cai, Garland chrysanthemum, Sanchu Asian lettuce, Celery and Parsley from Asahi City	

*a green vegetable

(2) Request for restriction of drinking for tap-water (As of 08:00 April 8th)

Scope under restriction	Water service (Local governments requested for restriction)
All residents	None
Babies ・Water services that continue to respond to the directive	<Fukushima Prefecture> Iitate small water service (Iitate Village, Fukushima Prefecture)

・Tap-water supply service that continues to respond to the directive	Non

<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 Director-General of Local Nuclear 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)
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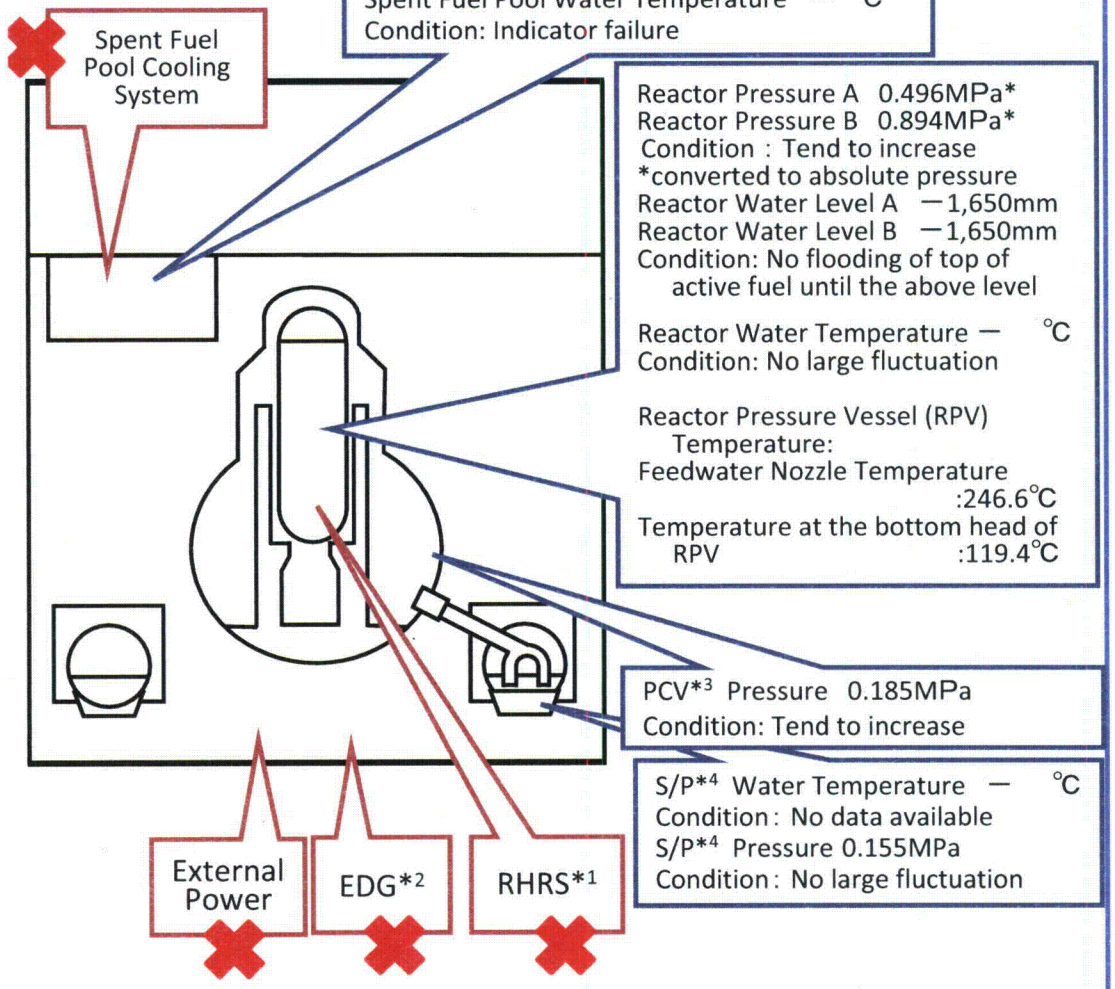
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1

(As of 14:00 April 8th, 2011)



Spent Fuel Pool Water Temperature — ℃
Condition: Indicator failure

Reactor Pressure A 0.496MPa*
Reactor Pressure B 0.894MPa*
Condition : Tend to increase
*converted to absolute pressure
Reactor Water Level A —1,650mm
Reactor Water Level B —1,650mm
Condition: No flooding of top of active fuel until the above level

Reactor Water Temperature — ℃
Condition: No large fluctuation

Reactor Pressure Vessel (RPV) Temperature:
Feedwater Nozzle Temperature :246.6℃
Temperature at the bottom head of RPV :119.4℃

PCV*3 Pressure 0.185MPa
Condition: Tend to increase

S/P*4 Water Temperature — ℃
Condition : No data available
S/P*4 Pressure 0.155MPa
Condition : No large fluctuation

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

Major Events after the earthquake

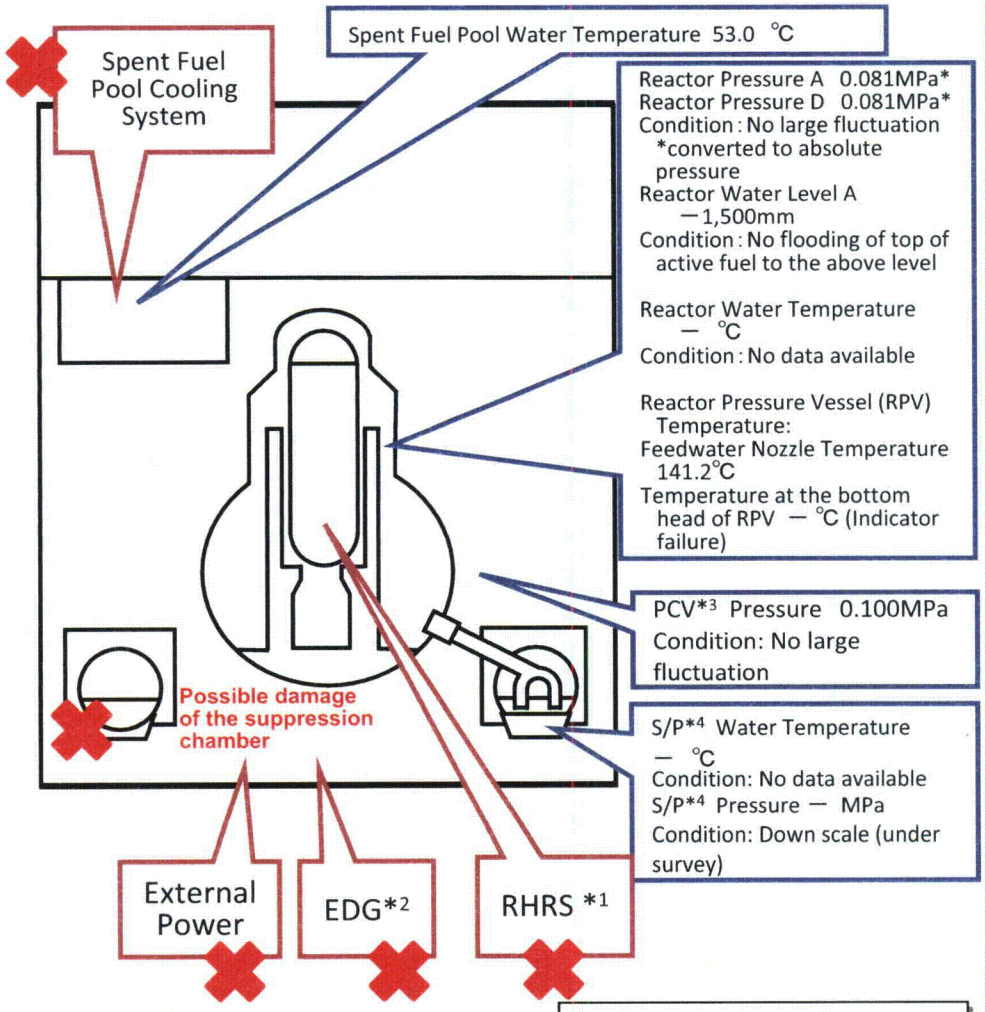
- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 12th 01:20 Occurrence of the Article 15 event (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 the Feedwater Line in addition to the Fire Extinguish Line. ($2m^3/h \rightarrow 18m^3/h$) 09:00 Switched to the Feedwater Line only.($18m^3/h \rightarrow 11m^3/h$)
- 24th 11:30 Lighting in the Central Control Room was recovered.
- 25th 15:37 Started fresh water injection.
- 29th 08:32 Switched to the water injection to the core using the temporary motor-driven pump.
- 31st 12:00 ～2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- 31st 13:03～16:04 Water spray by Concrete Pump Truck (Fresh water)
- 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- 3rd 13:55 Started to transfer the water from the condenser to CST.
- 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- 7th 01:31 Confirmed starting the injection of nitrogen to PCV.

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

（As of 14:00 April 8th, 2011）



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

Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

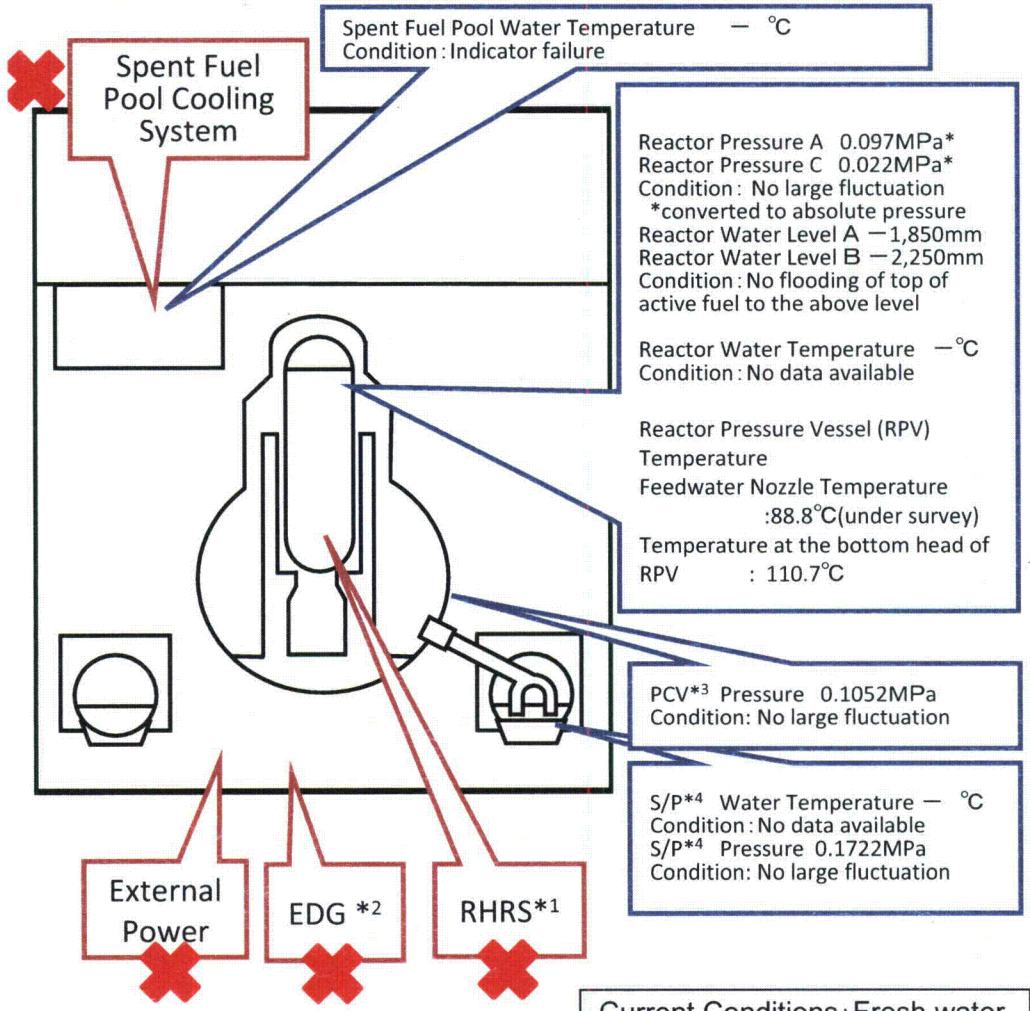
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

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 seawater to the Reactor Core.
14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
15th 00:02 Started to vent.
15th 06:10 Sound of explosion
15th around 06:20 Possible damage of the suppression chamber
20th 15:05～17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (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 SFP
25th 10:30～12:19 Sea water injection to SFP via FPC
26th 10:10 Started to inject fresh water to the Reactor Core.
26th 16:46 Lighting in the Central Control Room was recovered.
27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
29th 16:30～18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
29th 16:45～1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
30th 9:25～23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
1st 14:56～17:05 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
2nd around 9:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.
2nd 17:10 Started to transfer the water from the condenser to the Condensate Storage Tank (CST).
3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
3rd 13:47～14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.
4th 7:08～7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
4th 11:05～13:37 Injection of fresh water from FPC to SFP using the temporary motor-driven pump.
5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea.
15:07 Started to inject coagulant.
6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
7th 13:29～14:34 Freshwater injection to SFP via FPC (Around 36 ton)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

（As of 14:00 April 8th, 2011）



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

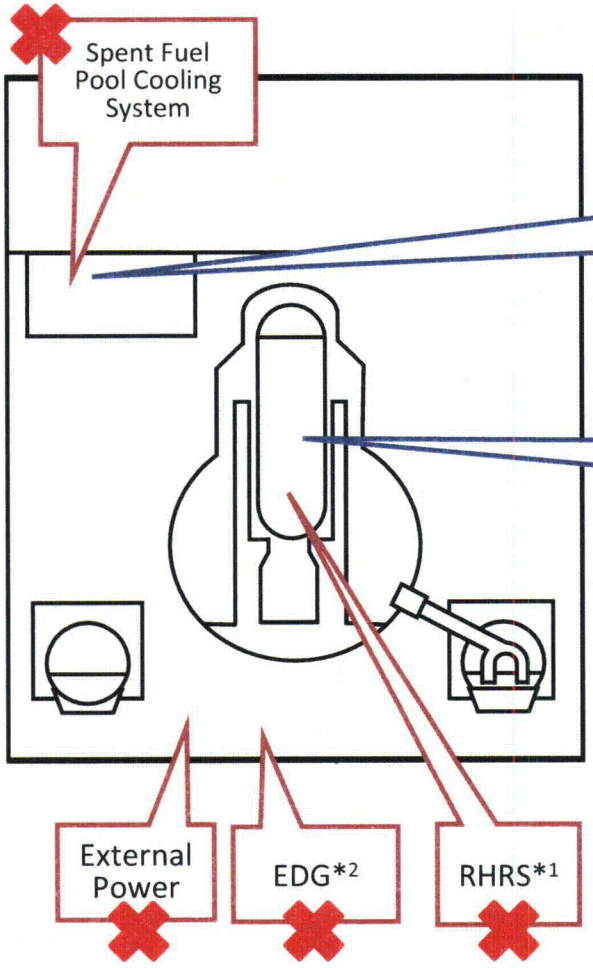
Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the core

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)
13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
13th 08:41 Started to vent.
13th 13:12 Started to inject seawater and borated water to core.
14th 05:20 Started to vent.
14th 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
14th 11:01 Sound of explosion
16th around 08:30 White smoke generated.
17th 09:48～10:01 Water discharge by the helicopters of Self-Defense Force
17th 19:05～19:15 Water spray from the ground by High pressure water-cannon trucks of Police
17th 19:35～20:09 Water spray from the ground by fire engines of Self-Defense Force
18th before 14:00～14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
18th ～14:45 Water spray from the ground by a fire engine of the US Military
19th 00:30 ～01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
19th 14:10 ～ 20th 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
20th 21:36 ～ 21st 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
21st around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
22nd 15:10 ～16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
22nd 22:46 Lighting 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 Fuel Pool Cooling Line (FPC)
23rd around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24th 04:50.
24th 05:35～16:05 Approximately 120 ton sea water injection to SFP via FPC
25th 13:28～16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
25th 18:02 Started fresh water injection to the core.
27th 12:34～14:36 Water spray by Concrete Pump Truck
28th 17:40～31st around 8:40 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
28th 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
<Water spray by Concrete Pump Truck (Fresh water)>
29th 14:17～18:18, 31st 16:30～19:33, 2nd 09:52～12:54, 4th 17:03～19:19, 7th 06:53 ～08:53
3rd 12:18 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4
（As of 14:00 April 8th, 2011）



In periodic inspection outage

Spent Fuel Pool Water Temperature — ℃
Condition: Indicator failure

No fuel is inside the reactor core

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

Major events after the earthquake

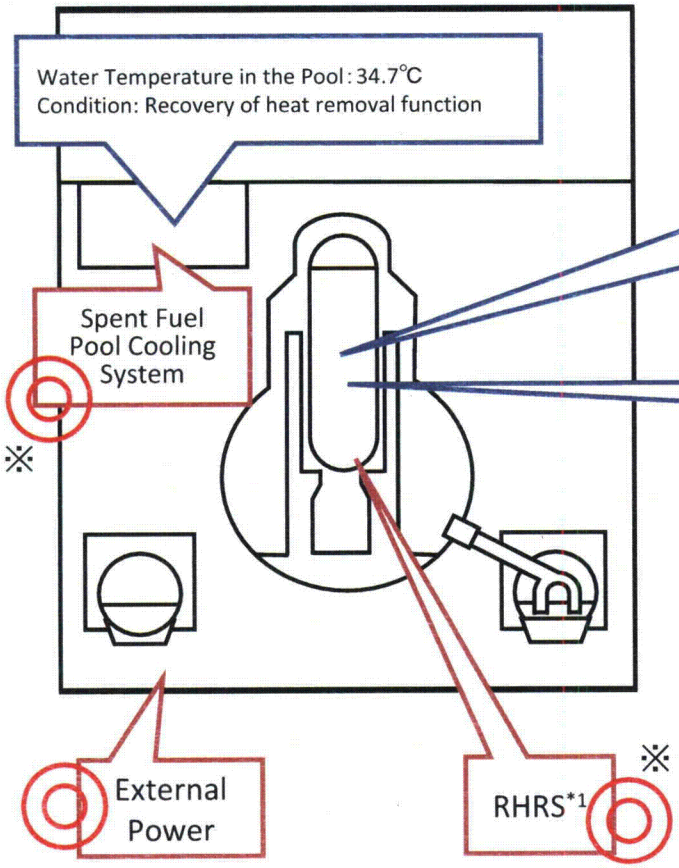
In periodic inspection outage when the earthquake occurred
14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84℃
15th 06:14 Confirmed the partial damage of wall in the 4th floor.
15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)
16th 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)
20th 08:21～09:40 Water spray over SFP by Self-Defense Force
20th around 18:30～19:46 Water spray over SFP by Self-Defense Force
21st 06:37～08:41 Water spray over SFP by Self-Defense Force
21st around 15:00 Work for laying cable to Power Center was completed.
22nd 10:35 Power Center received electricity.
<Water spray by Concrete Pump Truck>
22nd 17:17～20:32, 23rd 10:00～13:02, 24th 14:36～17:30, 25th 19:05～22:07, 27th 16:55～19:25
5th 06:05～10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)
29th 11:50 Lighting in the Central Control Room was recovered.
< Water spray by Concrete Pump Truck (Fresh water)>
30th 14:04～18:33, 1st 08:28～14:14, 3rd 17:14～22:16, 5th 17:35～18:22, 7th 18:23～19:40

Current Conditions: No fuel is in RPV*3.
Fresh water is being injected to the Spent Fuel Pool.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5
（As of 14:00 April 8th, 2011）

In periodic inspection outage



Reactor Pressure : 0.104MPa*
Reactor Water Level : 1,644mm
Reactor Water Temperature : 45.5℃
Condition : Pressure is under control.
*converted to absolute pressure

Reactor Pressure Vessel Temperature:
Monitoring by Reactor Water Temperature

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

Current Conditions :

20th 14:30 Cold shutdown

21st 11:36 Receiving electricity from external power supply

23rd 17:24 Pump for Residual Heat Removal Seawater System (RHRS) was automatically stopped when the power supply was switched from the temporary to the permanent.

24th 16:14 Repair of the RHRS pump was completed.

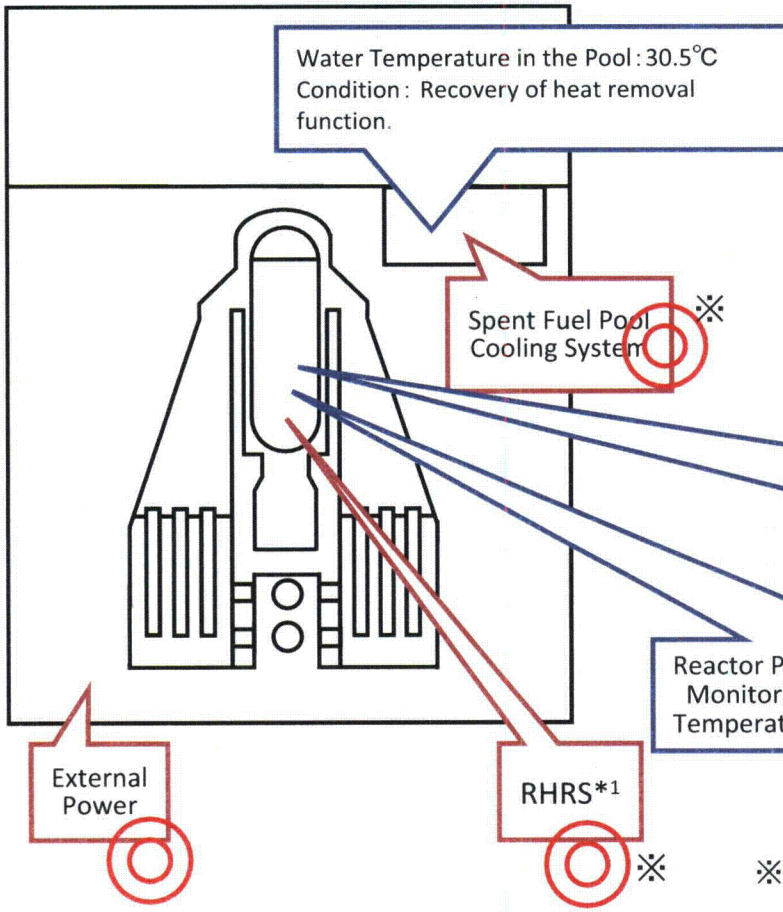
24th 16:35 Started to cooling.

4th 21:00 Started to discharge the groundwater with low-level radioactivity in the Sub Drain Pit to the sea.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6
（As of 14:00 April 8th, 2011）

In periodic inspection outage



Current Conditions :
20th 19:27 Cold shutdown
22nd 19:17 Receiving electricity from external power supply
4th 21:00 Started to discharge the groundwater with low-level radioactivity in the Sub Drain Pit to the sea

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

*1 Residual Heat Removal System

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

April 8th, 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 westsouthwest direction)
⑤ Front of Earthquake Isolation Building (approx. 0.5km from Unit2 in northwest dirction)
⑥ South side of main office building
⑦ Main Gate
MC: Monitoring Car TM: Transportable Monitoring post

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	56.0	56.0	56.1	56.1	56.2	56.0	56.0	55.7	55.7	55.6	55.5	55.6	55.5	55.6	55.6	55.6	55.5	55.4	55.4	55.4	55.3	55.3	55.3	55.2
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	681	-	-	683	-	-	685	-	-	684	-	-	675	-	-	682	-	-	679	-	-	679	-	-	
	⑦MG(μSv/h)*2	99	-	-	97	-	-	97	-	-	98	-	-	97	-	-	98	-	-	97	-	-	97	-	-	
	③WG(μSv/h)*3	43.3	-	-	43.5	-	-	43.4	-	-	43.1	-	-	43.1	-	-	43.4	-	-	43.2	-	-	43.2	-	-	
wind direction		WNW	SW	SSE	W	W	W	W	WNW	N	N	WNW	W	W	N	SE	SSE	SE	SSE	SSE	SE	SSE	S	W	SE
wind speed (m/s)		0.4	0.6	0.4	0.3	0.3	0.4	0.5	0.5	0.5	0.5	0.4	0.4	0.3	0.4	0.5	0.8	0.9	0.9	1.0	1.0	0.4	0.5	0.5	0.4

*1: SMOB : South Side of Main Office Building
*2: MG: Main Gate
*3: WG:West Gate
*4: NM: Not measured due to the malfunction

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	55.2	55.2	55.3	55.3	55.3	55.1	55.2	55.2	55.1	55.1	55.1	55.1	55.1	55.0	55.0	55.1	55.1	55.1	55.0					
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
TM	⑥SMOB(μSv/h)*1	675	-	-	676	-	-	676	-	-	677	-	-	677	-	-	676	-	-	676					
	⑦MG(μSv/h)*2	95	-	-	97	-	-	97	-	-	96	-	-	97	-	-	97	-	-	96					
	③WG(μSv/h)*3	43.1	-	-	43.1	-	-	42.8	-	-	43.0	-	-	42.9	-	-	43.0	-	-	43.0					
wind direction		E	W	W	W	WNW	W	S	SSE	SE	S	SSE	SE	W	SSW	SE	ESE	SE	ESE	ESE					
wind speed (m/s)		0.3	0.8	0.8	0.6	0.6	0.7	0.7	0.8	1.0	0.6	1.0	0.7	0.5	0.6	0.7	0.9	0.9	1.3	1.5					

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)																								
	neutron																								
TM	⑥SMOB(μSv/h)*1																								
	⑦MG(μSv/h)*2																								
	③WG(μSv/h)*3																								
wind direction																									
wind speed (m/s)																									

April 7th, 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 westsouthwest direction)
⑤ Front of Earthquake Isolation Building (approx. 0.5km from Unit2 in northwest dirction)
⑥ South side of main office building
⑦ Main Gate
MC: Monitoring Car TM: Transportable Monitoring post

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	58.0	57.9	57.8	57.9	57.8	57.7	57.7	57.6	57.7	57.6	57.6	57.7	57.6	57.7	57.6	57.5	57.4	57.6	57.4	57.5	57.3	57.3	57.3	57.3
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	679	-	-	672	-	-	677	-	-	679	-	-	677	-	-	673	-	-	671	-	-	667	-	-
	⑦MG(μSv/h)*2	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4
	③WG(μSv/h)*3	44.2	-	-	43.8	-	-	43.8	-	-	43.5	-	-	43.7	-	-	43.4	-	-	43.0	-	-	42.9	-	-
wind direction		E	SE	NE	SE	E	E	E	E	E	E	E	ESE	E	E	NE	SE	E	SE	E	SE	ESE	E	E	E
wind speed (m/s)		1.8	1.8	2.3	2.2	1.8	1.6	1.6	1.5	1.6	2.1	2.2	2.1	1.9	1.8	1.8	1.6	1.5	1.9	1.5	2.6	2.6	2.9	2.0	2.2

*1: SMOB : South Side of Main Office Building
*2: MG: Main Gate
*3: WG:West Gate
*4: NM: Not measured due to the malfunction

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	57.1	57.2	57.1	57.1	57.1	57.1	56.8	57.0	56.9	56.7	56.9	56.8	56.8	56.9	56.8	56.8	56.7	56.7	56.6	56.8	56.7	56.7	56.7	56.7
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	671	-	-	668	-	-	665	-	-	667	-	-	669	-	-	668	-	-	676	-	-	675	-	-
	⑦MG(μSv/h)*2	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	101	-	-	98	-	-	99	-	-	100	-	-	101	-	-	98	-	-
	③WG(μSv/h)*3	43.0	-	-	42.7	-	-	42.6	-	-	42.6	-	-	42.3	-	-	42.8	-	-	42.8	-	-	42.7	-	-
wind direction		E	ESE	E	E	E	SE	E	ESE	W	S	E	N	E	S	SW	S	SW	NW	SSE	S	N	WNW	SSW	SSW
wind speed (m/s)		1.9	2.1	1.8	1.7	1.5	1.3	1.3	1.1	0.8	0.9	0.8	0.5	0.4	0.5	0.5	0.5	0.4	0.3	0.5	0.4	0.7	0.4	0.2	0.5

Monitoring points		③																								
Reading time		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
MC	Reading(μSv/h)	56.7	56.7	56.5	56.6	56.5	56.6	56.5	56.5	56.5	56.4	56.5	56.5	56.5	56.4	56.2	56.3	56.3	56.2	56.3	56.1	56.2	56.1	56.1	56.1
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	674	-	-	678	-	-	679	-	-	680	-	-	684	-	-	683	-	-	685	-	-	681	-	-
	⑦MG(μSv/h)*2	98	-	-	100	-	-	100	-	-	99	-	-	98	-	-	99	-	-	99	-	-	98	-	-
	③WG(μSv/h)*3	42.6	-	-	43.3	-	-	43.2	-	-	43.0	-	-	43.0	-	-	43.2	-	-	43.3	-	-	43.2	-	-
wind direction		WNW	SW	WNW	WNW	NW	ESE	N	WNW	E	SSW	WSW	WNW	W	WSW	ESE	S	WSW	SSW	WNW	W	WSW	W	SW	SSW
wind speed (m/s)		0.6	0.6	0.8	0.7	0.3	0.5	0.3	0.4	0.4	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.3	0.4	0.5	0.4	0.4	0.5	0.6	0.5

Monitoring Post (as of 15:00)

※Check readings once a day

Monitoring Poists	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
Reading (μSv/h)	15	45	47	47	95	140	280	230

※As for MP-1 and 2, readings were observed by human eyes (Coulc not be transmitted because of system trouble)
※As for MP-3 to 8, readings were transmitted by system

April 7th, 2011

Fukushima Dai-ichi
Monitoring points

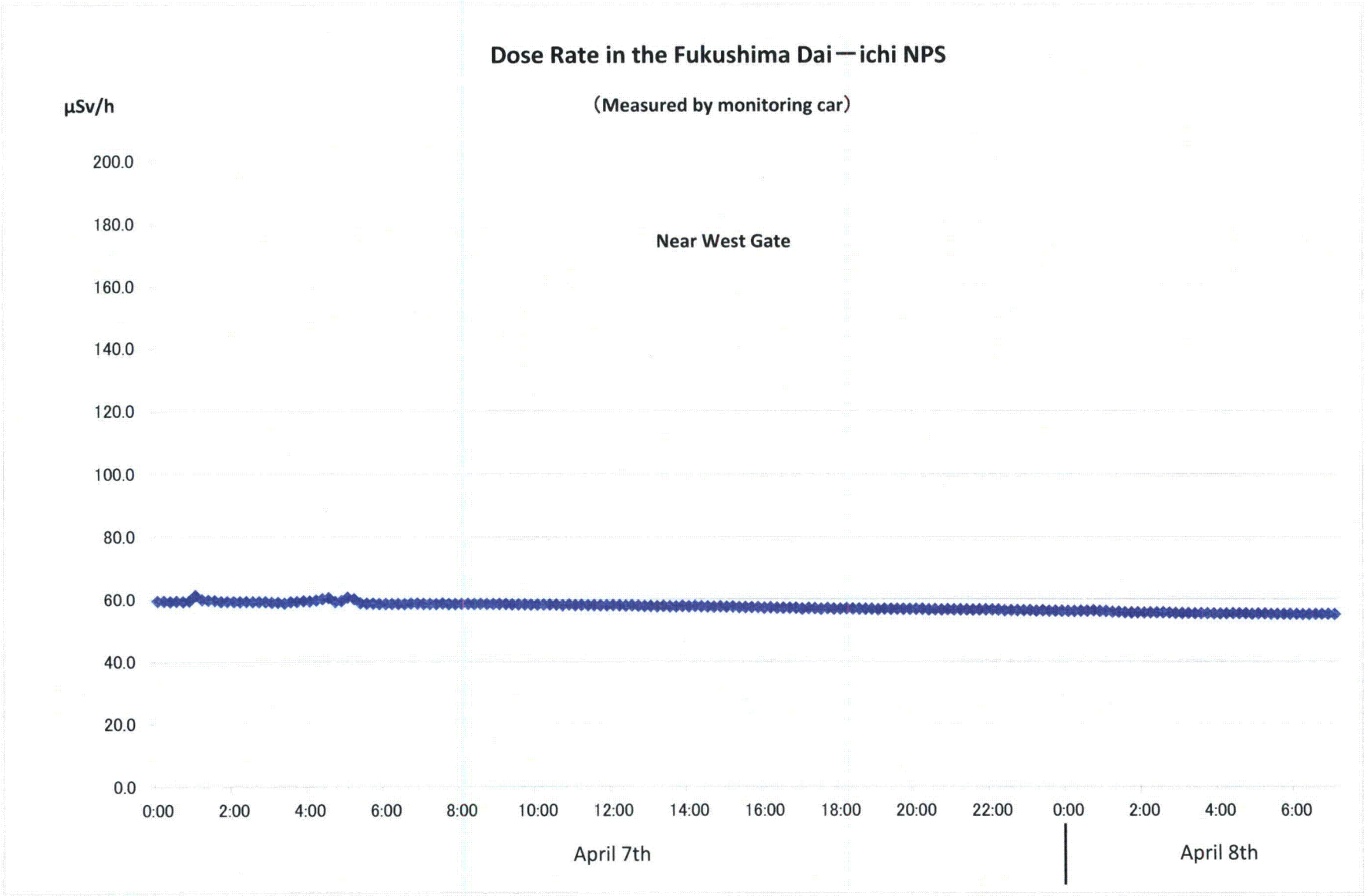
① North side of main office building(approx. 0.5km from Unit 2 in northwest direction)
② Near Gymnasium(East side of MP-5) (approx. 0.9km from Unit 2 in westnorthwest direction)
③ Near West Gate (near MP-5) (approx. 1.1km from Unit 2 in west direction)
④ Front of near Main Gate (near MP-6) (approx. 1.0km from Unit 2 in westsouthwest direction)
⑤ Front of Earthquake Isolation Building (approx. 0.5km from Unit2 in northwest dirction)
⑥ South side of main office building
⑦ Main Gate
MC: Monitoring Car TM: Transportable Monitoring post

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	59.4	59.4	59.3	59.4	59.3	59.5	61.3	59.9	59.7	59.6	59.3	59.3	59.3	59.2	59.3	59.2	59.2	59.2	59.0	59.0	58.7	59.2	59.2	59.5
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	713	-	-	716	-	-	709	-	-	712	-	-	710	-	-	709	-	-	712	-	-	708	-	-
	⑦MG(μSv/h)*2	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-
	③WG(μSv/h)*3	46.6	-	-	46.7	-	-	48.0	-	-	46.8	-	-	46.7	-	-	46.6	-	-	46.8	-	-	46.9	-	-
wind direction		NE	W	SE	WNW	E	W	W	W	SE	WNW	W	NW	WSW	WNW	WNW	N	NNW	NW	NE	SW	W	W	NNW	E
wind speed (m/s)		0.3	0.4	0.2	0.3	0.6	0.3	0.3	0.3	0.4	0.7	0.6	0.6	0.6	0.6	0.4	0.6	0.7	0.8	0.6	0.4	0.6	0.5	0.4	0.3

*1: SMOB : South Side of Main Office Building
*2: MG: Main Gate
*3: WG:West Gate
*4: NM: Not measured due to the malfunction

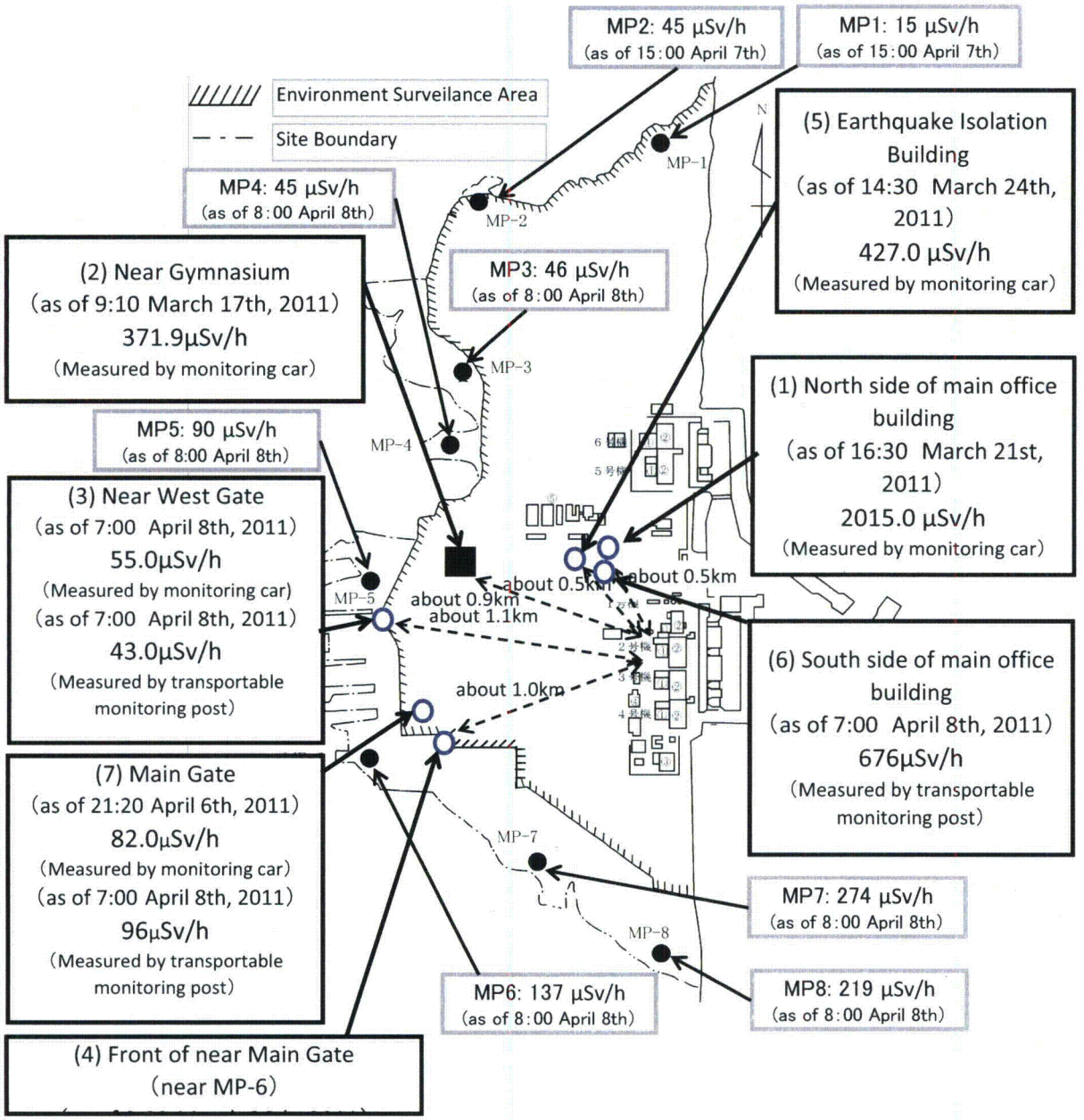
Monitoring points		③																							
Reading time		4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
MC	Reading(μSv/h)	59.4	59.7	60.1	60.5	59.2	59.5	60.6	60.1	58.8	58.6	58.6	58.5	58.5	58.5	58.5	58.4	58.6	58.6	58.5	58.5	58.4	58.6	58.4	58.4
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	708	-	-	712	-	-	711	-	-	708	-	-	709	-	-	708	-	-	706	-	-	709	-	-
	⑦MG(μSv/h)*2	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-	NM *4	-	-
	③WG(μSv/h)*3	47.0	-	-	47.9	-	-	48.0	-	-	46.4	-	-	46.5	-	-	46.7	-	-	46.4	-	-	46.2	-	-
wind direction		SSE	WNW	W	SE	NE	N	NNE	W	W	W	SW	W	W	SW	W	W	WSW	SW	W	WSW	SW	SW	SE	ESE
wind speed (m/s)		0.5	0.4	0.2	0.6	0.4	0.4	0.3	0.5	0.5	0.6	0.4	0.7	0.8	0.6	0.5	0.5	0.5	0.2	0.4	0.4	0.4	0.5	0.7	0.8

Monitoring points		③																							
Reading time		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
MC	Reading(μSv/h)	58.5	58.5	58.4	58.5	58.4	58.4	58.4	58.4	58.3	58.3	58.3	58.2	58.2	58.2	58.2	58.2	58.0	58.2	58.0	58.1	58.0	58.0	57.9	57.9
	neutron	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
TM	⑥SMOB(μSv/h)*1	710	-	-	706	-	-	700	-	-	698	-	-	692	-	-	689	-	-	685	-	-	684	-	-
	⑦MG(μSv/h)*2	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4	NM *4
	③WG(μSv/h)*3	46.4	-	-	45.8	-	-	45.8	-	-	45.3	-	-	45.3	-	-	44.8	-	-	44.7	-	-	44.3	-	-
wind direction		S	SE	SSE	ESE	E	E	SE	SE	SSE	E	SE	SE	ESE	SE	E	SE	E	E	E	SE	SE	E	E	E
wind speed (m/s)		1.0	1.0	0.7	1.2	1.4	1.1	0.9	1.0	1.1	1.1	1.1	1.6	2.1	1.5	1.3	1.3	1.7	1.7	1.4	1.3	1.4	1.9	1.9	2.0


Dose Rate in the Fukushima Dai－ichi NPS
(Measured by monitoring car)
μSv/h
Near West Gate
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00
2:00
4:00
6:00
April 7th
April 8th

Fukushima Dai－ichi NPS

as of 10:00, April 8th, 2011



Fukushima Dai-ni (TEPCO's Monitaring Post)

April 8, 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)	3.690	3.683	3.675	3.695	3.685	3.686	3.680	3.676	3.684	3.684	3.672	3.680	3.675	3.669	3.681	3.657	3.663	3.669	3.668	3.677	3.665	3.661	3.668	3.656
MP2(μSv/h)	2.701	2.689	2.692	2.689	2.694	2.684	2.681	2.688	2.677	2.687	2.682	2.679	2.678	2.670	2.693	2.685	2.687	2.688	2.687	2.688	2.688	2.674	2.682	2.680
MP3(μSv/h)	3.966	3.980	3.976	3.976	3.964	3.961	3.959	3.977	3.962	3.974	3.955	3.951	3.958	3.947	3.944	3.947	3.948	3.950	3.961	3.940	3.957	3.953	3.946	3.936
MP4(μSv/h)	3.017	3.030	3.020	3.021	3.016	3.020	3.013	3.010	3.017	3.018	3.013	2.999	3.013	3.022	3.020	3.026	3.006	3.008	3.016	3.009	3.010	3.007	3.011	3.010
MP5(μSv/h)	2.979	2.971	2.979	2.982	2.965	2.986	2.962	2.963	2.973	2.967	2.974	2.974	2.957	2.961	2.954	2.950	2.958	2.968	2.968	2.952	2.965	2.965	2.957	2.943
MP6(μSv/h)	2.959	2.956	2.961	2.948	2.966	2.948	2.956	2.951	2.959	2.948	2.949	2.945	2.940	2.947	2.944	2.948	2.939	2.943	2.943	2.957	2.942	2.947	2.947	2.940
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	SSW	SSW	SSW	SW	SSW	SW	SSW	SSW	SW	SW	SW	WSW	WSW	SW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW
wind speed (m/s)	8.0	6.6	5.1	4.4	6.9	8.6	7.1	6.5	6.7	6.0	5.1	5.2	5.3	5.2	6.3	7.6	8.9	6.5	8.3	8.0	8.4	7.9	5.0	6.1

*1: NM: Not measured due to the malfunction

April 8, 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)	3.670	3.659	3.667	3.653	3.648	3.653	3.658	3.657	3.661	3.661	3.657	3.658	3.654	3.665	3.656	3.653	3.655	3.658	3.643					
MP2(μSv/h)	2.685	2.691	2.689	2.676	2.681	2.678	2.670	2.660	2.675	2.688	2.672	2.669	2.680	2.677	2.678	2.673	2.669	2.683	2.679					
MP3(μSv/h)	3.946	3.947	3.929	3.942	3.951	3.931	3.950	3.934	3.927	3.954	3.935	3.919	3.934	3.935	3.939	3.916	3.924	3.927	3.914					
MP4(μSv/h)	2.994	3.013	2.999	3.002	3.001	2.992	3.000	3.002	2.996	2.991	2.993	3.005	2.979	3.000	2.988	2.999	2.987	3.001	2.999					
MP5(μSv/h)	2.952	2.958	2.936	2.969	2.951	2.949	2.935	2.935	2.945	2.950	2.951	2.947	2.947	2.944	2.952	2.944	2.934	2.941	2.948					
MP6(μSv/h)	2.946	2.936	2.920	2.941	2.934	2.943	2.935	2.931	2.924	2.931	2.935	2.931	2.920	2.942	2.930	2.928	2.929	2.923	2.928					
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1					
wind direction	SSW	SSW	SSW	SSW	SSW	S	SSW	SSW	SSW	SSW	SSW	S	S	S	S	S	S	S	S					
wind speed (m/s)	6.6	6.7	7.9	8.8	8.4	8.0	5.8	4.6	3.8	4.6	4.1	4.3	4.4	4.1	3.8	5.6	8.2	10.1	5.5					

April 8, 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)																								
MP2(μSv/h)																								
MP3(μSv/h)																								
MP4(μSv/h)																								
MP5(μSv/h)																								
MP6(μSv/h)																								
MP7(μSv/h)																								
wind direction																								
wind speed (m/s)																								

Fukushima Dai-ni (TEPCO's Monitaring Post)

April 7, 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)	3.821	3.795	3.789	3.775	3.785	3.780	3.793	3.780	3.775	3.788	3.810	3.781	3.794	3.797	3.785	3.776	3.785	3.771	3.785	3.770	3.765	3.763	3.742	3.741
MP2(μSv/h)	2.781	2.781	2.783	2.784	2.784	2.782	2.778	2.776	2.779	2.780	2.782	2.778	2.784	2.783	2.780	2.772	2.794	2.771	2.780	2.769	2.766	2.769	2.765	2.760
MP3(μSv/h)	4.079	4.085	4.080	4.072	4.091	4.079	4.060	4.057	4.079	4.071	4.063	4.076	4.079	4.079	4.077	4.069	4.068	4.074	4.089	4.063	4.072	4.080	4.050	4.051
MP4(μSv/h)	3.106	3.106	3.099	3.094	3.105	3.097	3.096	3.097	3.112	3.105	3.105	3.112	3.120	3.126	3.114	3.111	3.107	3.102	3.094	3.103	3.107	3.098	3.112	3.106
MP5(μSv/h)	3.065	3.073	3.056	3.040	3.074	3.056	3.047	3.071	3.068	3.040	3.043	3.047	3.042	3.052	3.047	3.034	3.036	3.014	3.018	3.032	3.022	3.035	3.019	3.031
MP6(μSv/h)	3.045	3.062	3.047	3.049	3.036	3.034	3.029	3.064	3.061	3.042	3.044	3.047	3.049	3.066	3.056	3.062	3.050	3.044	3.051	3.056	3.037	3.022	3.035	3.030
MP7(μSv/h)	2.210	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	S	S	S	S	S	S	SSW	SSW	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	SSE
wind speed (m/s)	9.5	10.4	8.4	9.2	9.0	9.4	8.3	8.1	6.6	7.5	7.3	4.1	6.1	6.8	8.2	8.8	8.8	9.3	9.7	10.1	10.3	9.7	9.9	9.3

*1: NM: Not measured due to the malfunction

April 7, 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)	3.745	3.740	3.708	3.716	3.724	3.710	3.719	3.722	3.702	3.700	3.712	3.717	3.712	3.722	3.707	3.714	3.722	3.707	3.716	3.719	3.701	3.716	3.720	3.710
MP2(μSv/h)	2.754	2.749	2.754	2.732	2.723	2.747	2.736	2.721	2.730	2.730	2.718	2.701	2.710	2.725	2.717	2.715	2.719	2.713	2.725	2.713	2.716	2.730	2.707	2.729
MP3(μSv/h)	4.043	4.054	4.025	4.029	4.052	4.019	4.028	4.021	4.018	4.020	4.041	3.991	4.016	4.013	4.008	4.008	4.007	4.018	4.003	4.002	4.009	4.004	4.015	4.018
MP4(μSv/h)	3.098	3.089	3.083	3.078	3.057	3.065	3.030	3.040	3.047	3.037	3.042	3.060	3.048	3.039	3.045	3.040	3.047	3.043	3.047	3.041	3.039	3.052	3.044	3.037
MP5(μSv/h)	3.034	3.010	3.022	3.017	3.016	2.996	3.008	3.013	3.018	2.985	3.003	2.993	2.988	2.985	2.999	2.998	2.984	2.976	2.987	2.989	2.987	2.991	2.977	2.976
MP6(μSv/h)	3.047	3.039	3.042	3.024	3.018	3.011	3.018	3.007	2.993	2.991	3.007	2.963	2.985	2.986	2.950	2.968	2.965	2.969	2.980	2.973	2.962	2.960	2.961	2.970
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	S	S	S	S	SSE	SSE	SSE	S	SSE	S	S	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SW	WSW
wind speed (m/s)	11.0	10.9	11.1	10.3	6.9	8.0	8.5	9.0	8.6	8.9	8.1	8.0	9.0	7.7	5.7	5.4	7.4	6.3	5.6	3.5	3.2	3.8	3.6	4.2

April 7, 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)	3.699	3.719	3.707	3.717	3.706	3.718	3.703	3.716	3.715	3.706	3.697	3.704	3.695	3.707	3.701	3.699	3.685	3.702	3.702	3.692	3.693	3.699	3.699	3.684
MP2(μSv/h)	2.713	2.714	2.713	2.711	2.702	2.712	2.719	2.716	2.711	2.729	2.706	2.702	2.703	2.710	2.706	2.708	2.700	2.698	2.701	2.692	2.693	2.697	2.688	2.705
MP3(μSv/h)	4.005	4.015	3.979	4.007	4.011	4.008	4.007	4.006	3.995	3.990	3.990	3.987	4.004	4.000	3.994	3.975	4.003	3.977	3.975	3.987	3.990	3.987	3.980	3.978
MP4(μSv/h)	3.043	3.037	3.043	3.044	3.044	3.037	3.043	3.026	3.047	3.037	3.033	3.041	3.036	3.037	3.041	3.018	3.021	3.016	3.022	3.034	3.040	3.013	3.021	3.028
MP5(μSv/h)	2.992	2.979	2.985	2.987	2.989	3.008	2.991	2.994	2.983	2.995	2.972	2.990	2.976	2.978	2.982	2.975	2.976	2.975	2.977	2.982	2.963	2.978	2.980	2.962
MP6(μSv/h)	2.964	2.954	2.964	2.966	2.972	2.967	2.972	2.973	2.969	2.966	2.949	2.974	2.955	2.959	2.971	2.951	2.958	2.955	2.962	2.954	2.959	2.965	2.959	2.962
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	WSW	W	W	W	WSW	WSW	SW	SSW	SSW	SW	SW	S	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW	SSW
wind speed (m/s)	5.8	6.5	6.6	5.1	3.5	3.7	2.7	2.3	4.4	3.5	3.5	2.3	3.1	4.1	3.5	3.3	4.9	5.3	5.4	7.5	7.6	6.9	8.5	9.2

Fukushima Dai-ni (TEPCO's Monitaring Post)

April 7, 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)	3.852	3.862	3.863	3.850	3.863	3.845	3.851	3.389	3.855	3.849	3.837	3.850	3.840	3.834	3.842	3.836	3.846	3.835	3.841	3.827	3.824	3.843	3.836	3.847
MP2(μSv/h)	2.831	2.815	2.799	2.808	2.802	2.815	2.808	2.807	2.800	2.804	2.799	2.810	2.809	2.821	2.810	2.806	2.798	2.802	2.798	2.793	2.787	2.804	2.804	2.809
MP3(μSv/h)	4.172	4.157	4.160	4.175	4.152	4.155	4.144	4.158	4.146	4.158	4.144	4.168	4.157	4.146	4.149	4.151	4.135	4.137	4.146	4.120	4.125	4.144	4.134	4.128
MP4(μSv/h)	3.171	3.161	3.162	3.144	3.143	3.153	3.155	3.154	3.145	3.153	3.166	3.138	3.146	3.154	3.156	3.160	3.151	3.142	3.142	3.145	3.139	3.133	3.151	3.135
MP5(μSv/h)	3.108	3.110	3.099	3.107	3.096	3.103	3.097	3.104	3.107	3.093	3.093	3.082	3.099	3.092	3.090	3.074	3.083	3.081	3.076	3.089	3.082	3.079	3.095	3.070
MP6(μSv/h)	3.078	3.103	3.085	3.086	3.091	3.086	3.074	3.083	3.102	3.088	3.077	3.085	3.077	3.085	3.078	3.082	3.088	3.069	3.080	3.079	3.073	3.069	3.067	3.072
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	SSW	SSW	SSW	SSW	SW	SW	SW	SW	SSW	SSW	SSW	SW	SW	SSW	SW	SSW	SW	SW	SW	SSW	SSW	SSW	SSW	SSW
wind speed (m/s)	6.0	5.5	6.3	6.8	6.9	6.0	7.1	6.5	6.0	5.2	4.1	4.8	4.8	3.4	2.5	0.4	1.9	4.0	4.4	5.0	3.3	3.3	1.8	2.0

*1: NM: Not measured due to the malfunction

April 7, 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)	3.843	3.843	3.845	3.828	3.842	3.827	3.834	3.831	3.821	3.824	3.825	3.822	3.819	3.812	3.818	3.811	3.813	3.801	3.824	3.824	3.814	3.805	3.821	3.819
MP2(μSv/h)	2.822	2.807	2.809	2.798	2.795	2.812	2.799	2.793	2.796	2.795	2.789	2.779	2.776	2.789	2.803	2.790	2.791	2.787	2.791	2.777	2.775	2.793	2.787	2.782
MP3(μSv/h)	4.134	4.146	4.137	4.122	4.131	4.136	4.120	4.125	4.115	4.135	4.122	4.112	4.119	4.110	4.117	4.120	4.122	4.106	4.104	4.112	4.107	4.114	4.103	4.112
MP4(μSv/h)	3.140	3.154	3.124	3.139	3.123	3.131	3.132	3.138	3.136	3.126	3.126	3.120	3.126	3.119	3.130	3.132	3.121	3.132	3.118	3.122	3.128	3.136	3.117	3.136
MP5(μSv/h)	3.091	3.076	3.086	3.079	3.076	3.065	3.083	3.070	3.067	3.065	3.065	3.068	3.073	3.071	3.054	3.064	3.066	3.077	3.066	3.060	3.075	3.071	3.074	3.061
MP6(μSv/h)	3.089	3.082	3.070	3.083	3.081	3.078	3.075	3.090	3.063	3.062	3.069	3.072	3.069	3.065	3.070	3.068	3.065	3.068	3.068	3.700	3.068	3.063	3.067	3.053
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	SSW	S	SSW	SSW	SSW	S	SSW	SSW	S	S	S	SSW	SSW	S	S	SSW	SSW	SSW	S	S	SSW	SSW	SSW	S
wind speed (m/s)	3.0	2.5	2.7	3.5	4.1	4.7	5.3	3.8	3.3	3.7	2.5	3.0	3.3	2.3	2.7	4.1	3.1	2.4	2.8	2.2	3.9	3.2	3.7	1.4

April 7, 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)	3.811	3.810	3.810	3.830	3.811	3.812	3.798	3.792	3.818	3.811	3.799	3.811	3.795	3.804	3.796	3.800	3.809	3.808	3.812	3.795	3.807	3.809	3.787	3.788
MP2(μSv/h)	2.792	2.781	2.784	2.810	2.795	2.807	2.793	2.775	2.797	2.784	2.787	2.789	2.792	2.792	2.780	2.780	2.794	2.779	2.788	2.774	2.791	2.797	2.795	2.791
MP3(μSv/h)	4.115	4.112	4.110	4.122	4.110	4.106	4.110	4.102	4.117	4.114	4.102	4.098	4.115	4.099	4.099	4.085	4.089	4.089	4.103	4.088	4.089	4.092	4.089	4.082
MP4(μSv/h)	3.113	3.127	3.139	3.125	3.118	3.122	3.125	3.112	3.120	3.128	3.127	3.134	3.120	3.125	3.140	3.109	3.117	3.114	3.097	3.120	3.119	3.118	3.126	3.114
MP5(μSv/h)	3.060	3.056	3.062	3.066	3.045	3.067	3.060	3.058	3.071	3.071	3.043	3.058	3.067	3.053	3.071	3.051	3.078	3.066	3.069	3.069	3.062	3.069	3.065	3.071
MP6(μSv/h)	3.070	3.062	3.055	3.057	3.064	3.052	3.075	3.057	3.066	3.048	3.052	3.069	3.067	3.054	3.055	3.071	3.067	3.048	3.050	3.051	3.052	3.068	3.053	3.065
MP7(μSv/h)	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1	NM *1
wind direction	S	SSE	S	SSW	SSW	SSW	S	SSW	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
wind speed (m/s)	1.6	1.1	3.9	4.7	4.5	4.2	4.4	5.0	3.3	4.3	6.5	6.3	5.7	6.2	6.6	6.7	8.3	7.1	8.5	9.0	8.9	8.9	9.3	10.1

Fukushima Dai-ni NPS

as of 10:00, April 8th, 2011

MP1 : 3.643μSv/h (as of 7:00 April 8th)
(Ref. Value:0.035～0.054μSv/h)

MP2 : 2.679μSv/h (as of 7:00 April 8th)
(Ref. Value:0.042～0.062μSv/h)

MP3 : 3.914μSv/h (as of 7:00 April 8th)
(Ref. Valur:0.036～0.052μSv/h)

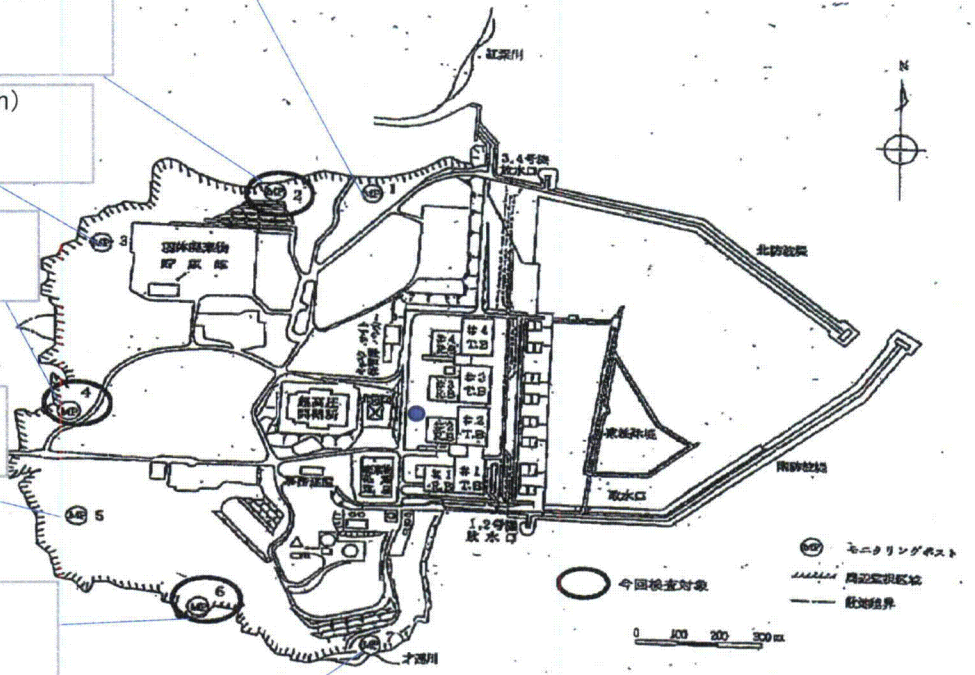
MP4 : 2.999μSv/h (as of 7:00 April 8th)
(Ref. value: 0.036～0.052μSv/h)

MP5 : 2.948μSv/h (as of 7:00 April 8th)
(Ref. Value:0.041～0.058μSv/h)

MP6 : 2.928μSv/h (as of 7:00 April 8th)
(Ref. value:0.044～0.063μSv/h)

MP7 : 2.210μSv/h (as of 12:00 April 7th)
(Ref. Value: 0.043～0.062μSv/h)

Location of Monitoring Post



添付資料（2）

Results of environmental monitoring at each NPSs etc. (as of 9pm April 7th, 2011)

unit: μ Sv/h

Range of normal average value	Company	NPS	April 7, 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	0.029	0.029	0.028	0.028	0.028	0.028	0.028	0.028	0.029	0.029	0.029	0.029
0.024～0.060	Tohoku Electric Power Co.	Onagawa NPS	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
0.012～0.060		Higashidori NPS	0.017	0.017	0.017	0.016	0.016	0.017	0.017	0.017	0.017	0.017	0.017	0.017
0.033～0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi※	59.4	61.3	59.3	59.0	59.4	60.6	58.5	58.5	58.5	58.4	58.2	58.0
0.036～0.052		Fukushima Dai-ni	4.172	4.144	4.157	4.146	4.134	4.120	4.119	4.104	4.115	4.110	4.115	4.103
0.011～0.159		Kashiwazaki kariwa NPS	0.066	0.067	0.065	0.066	0.066	0.066	0.067	0.066	0.066	0.066	0.066	0.066
0.036～0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	0.463	0.459	0.457	0.460	0.457	0.456	0.459	0.456	0.460	0.456	0.458	0.458
0.039～0.110		Tsuruga NPS	0.076	0.075	0.075	0.076	0.075	0.075	0.075	0.075	0.075	0.074	NM *1	NM *1
0.064～0.108	Chubu Electric Power Co.	Hamaoka NPS	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045
0.0207～0.132	Hokuriku Electric Power Co.	Shika NPS	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.033	0.033
0.028～0.130	Chugoku Electric Power Co.	Shimane NPS	0.029	0.030	0.029	0.030	0.030	0.031	0.030	0.030	0.031	0.031	0.029	0.029
0.070～0.077	Kansai Electric Power Co.	Mihama NPS	0.074	0.074	0.074	0.074	0.072	0.074	0.075	0.074	0.075	0.074	0.073	0.073
0.045～0.047		Takahama NPS	0.042	0.043	0.043	0.043	0.042	0.042	0.042	0.042	0.043	0.043	0.042	0.042
0.036～0.040		Ooi NPS	0.036	0.036	0.036	0.035	0.035	0.036	0.036	0.036	0.034	0.035	0.034	0.033
0.011～0.080	Shikoku Electeic Power Co.	Ikata NPS	0.013	0.014	0.013	0.013	0.013	0.013	0.013	0.014	0.013	0.013	0.014	0.013
0.023～0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.026	0.026	0.026	0.024	0.026	0.027	0.028	0.027	0.027	0.027	0.025
0.034～0.120		Sendai NPS	0.041	0.038	0.038	0.039	0.039	0.038	0.038	0.041	0.037	0.037	0.035	0.038
0.009～0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.017	0.017	0.017	0.016
0.009～0.071		Japan Nuclear Fuel Plant Disposal	0.023	0.023	0.022	0.022	0.022	0.022	0.023	0.022	0.023	0.023	0.023	0.023

※ 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	April 7, 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	0.029	0.028	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029		
0.024～0.060	Tohoku Electric Power Co.	Onagawa NPS	0.38	0.38	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37		
0.012～0.060		Higashidori NPS	0.017	0.018	0.018	0.017	0.018	0.018	0.017	0.017	0.017	0.017		
0.033～0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi※	58.0	57.7	57.6	57.4	57.1	56.8	56.8	56.6	56.7	56.5		
0.036～0.052		Fukushima Dai-ni	4.079	4.060	4.079	4.089	4.043	4.028	4.016	4.003	4.005	4.007		
0.011～0.159		Kashiwazaki kariwa NPS	0.066	0.066	0.066	0.065	0.066	0.066	0.066	0.065	0.067	0.067		
0.036～0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	0.457	0.456	0.459	0.456	0.454	0.454	0.455	0.454	0.448	0.450		
0.039～0.110		Tsuruga NPS	NM *1	NM *1	NM *1	NM *1	NM *1	0.075	0.075	0.076	0.075	0.076		
0.064～0.108	Chubu Electric Power Co.	Hamaoka NPS	0.046	0.045	0.045	0.045	0.045	0.045	0.044	0.045	0.045	0.045		
0.0207～0.132	Hokuriku Electric Power Co.	Shika NPS	0.033	0.033	0.033	0.033	0.033	0.033	0.034	0.034	0.034	0.034		
0.028～0.130	Chugoku Electric Power Co.	Shimane NPS	0.029	0.029	0.030	0.031	0.031	0.030	0.030	0.029	0.030	0.030		
0.070～0.077	Kansai Electric Power Co.	Mihama NPS	0.074	0.075	0.075	0.073	0.075	0.072	0.074	0.074	0.074	0.073		
0.045～0.047		Takahama NPS	0.043	0.043	0.043	0.042	0.042	0.042	0.043	0.043	0.043	0.043		
0.036～0.040		Ooi NPS	0.034	0.034	0.034	0.034	0.034	0.033	0.034	0.034	0.034	0.034		
0.011～0.080	Shikoku Electeic Power Co.	Ikata NPS	0.013	0.014	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013		
0.023～0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.027	0.026	0.026	0.027	0.026	0.026	0.025	0.026	0.026		
0.034～0.120		Sendai NPS	0.037	0.036	0.038	0.038	0.037	0.038	0.038	0.037	0.039	0.035		
0.009～0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.016	0.016	0.017	0.017	0.016	0.016	0.016	0.016		
0.009～0.071		Japan Nuclear Fuel Plant Disposal	0.023	0.023	0.023	0.022	0.023	0.023	0.023	0.023	0.022	0.023		

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

*1: NM: Not measured because of inspection

Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (As of 13:00, April 6th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 6 m^3/h (As of 17:30, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water : 8 m^3/h (As of 12:12, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m^3/h (As of 17:32, April 3rd) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 12:00, April 6th)	Fuel range A : -1,500mm (As of 12:00, April 6th)	Fuel range A:-1,800mm Fuel range B:-2,200mm (As of 12:30, April 6th)	#2	Shutdown range measurement 1,965mm (As of 13:00, April 6th)	Shutdown range measurement 1,791mm (As of 13:00, April 6th)
Reactor pressure	0.313MPa g(A) 0.653MPa g(B) (As of 12:00, April 6th)	-0.016MPa g (A) -0.018MPa g (D) (As of 12:00,April 6th)	0.005MPa g (A) -0.086MPa g (C) (As of 12:30, April 6th)	#2	0.005MPa g (As of 13:00, April 6th)	0.005MPa g (As of 13:00, April 6th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	42.3℃ (As of 13:00, April 6th)	21.1℃ (As of 13:00, April 6th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 214.0℃ Temperature at the bottom head of RPV: 115.0℃ (As of 12:00, April 6th)	Feedwater nozzle temperature: 142.5℃ Temperature at the bottom head of RPV: #1 (As of 12:00, April 6th)	Feedwater nozzle temperature: 78.8℃ (under survey) Temperature at the bottom head of RPV: 115.0℃ (As of 12:30, April 6th)	Unit 4 No heating element (fuel) inside the reactor Unit 5,6 Monitoring by the reactor water temperature		
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.150MPa abs S/C: 0.150MPa abs (As of 12:00, April 6th)	D/W: 0.100MPa abs S/C:Down scale (under survey) (As of 12:00, April 6th)	D/W: 0.1069MPa abs S/C: 0.1731MPa abs (As of 12:30, April 6th)	#2		
CAMS*3	D/W: 3.10×10^{1}Sv/h S/C: 8.01×10^{0}Sv/h (As of 12:00, April 6th)	D/W: 3.11×10^{1}Sv/h S/C: 8.25×10^{-1}Sv/h (As of 12:00,April 6th)	D/W: 1.95×10^{1}Sv/h S/C: 7.99×10^{-1}Sv/h (As of 12:30, April 6th)	#2		
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	#2		
D/W*1 maximum operating pressure	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)			
Spent Fuel Pool water	#1	51.0℃ (As of 12:00, April 6th)	#1	#1	35.2℃ (As of 13:00, April 6th)	29.5℃ (As of 13:00, April 6th)
FPC skimmer level	4,500mm (As of 12:00, April 6th)	5,600mm (As of 12:00, April 6th)	#1	4,900mm (As of 12:30, April 6th)	#2	
Power supply	Receiving external power supply (P/C*4 2C)		Receiving external power supply (P/C4D)		Receiving external power supply	

Other information	Unit3: Collecting the data of RPV temperature and continuing survey for transitional situation Unit2: Confirmed the indicated value of S/C Pressure but continuing to survey the transition of condition	Common pool: about 27 ℃ (As of 8:00, April 6th)	Unit5: Supplemental Fuel Pool Cooling mode (From 9:52 April 6th)	Unit6: SHC*5 mode (From 20:06 April 5th)

Pressure conversion	Gauge pressure (MPa g) = Absolute pressure (MPa abs) – Atmospheric pressure (Normal atmospheric pressure 0.1013MPa) Absolute pressure (MPa abs) = Gauge pressure (MPa g) + Atmospheric pressure (Normal atmospheric pressure 0.1013MPa)

*1 D/W : Dry Well
*2 S/C : Suppression Chamber
*3 CAMS : Containment Atmospheric Monitoring System
*4 P/C : Power Center
*5 SHC : Shutdown Cooling

#1 : Measuring instrument malfunction
#2 : Except from data collection

From: Hardesty, Duane
Sent: Friday, April 08, 2011 10:55 AM
To: PMT03 Hoc
Subject: FYI: REQUEST: PMTR Dose Assessment Training/Shadowing

FYI -

From: OST02 HOC
Sent: Friday, April 08, 2011 10:48 AM
To: Hardesty, Duane
Cc: Lewis, Doris; Brandon, Lou
Subject: RE: REQUEST: PMTR Dose Assessment Training/Shadowing

Complete per your request.

From: Hardesty, Duane
Sent: Thursday, April 07, 2011 2:41 PM
To: OST02 HOC
Cc: Lewis, Doris; Brandon, Lou
Subject: RE: REQUEST: PMTR Dose Assessment Training/Shadowing

EST will you plesae put Doris on the watchbill to shadow PMT Dose Assessment for the Tuesday (4/12) 11pm-7am shift and respond in kind.
Thank you,
PMT

From: Lewis, Doris
Sent: Thursday, April 07, 2011 1:18 PM
To: Brandon, Lou; Hardesty, Duane
Subject: REQUEST: PMTR Dose Assessment Training/Shadowing

Hi Lou and Duane,

I work in the Health Effects Branch, as an HP, in RES and some of my colleagues (Tony Huffert, Casper Sun) have been providing PMTR support for the events in Japan.

I wanted to know if I can come in for PMTR dose assessment training/shadowing on Monday (4/11) and Tuesday (4/12) on the 11pm-7am shift. I spoke to my other colleague, John Tomon, who will also work this shift.

I have previously taken a training course in RASCAL (I believe it was version 3.0) and am somewhat familiar with this code.

Let me know if this is ok.

Thanks,
Doris

qqq/279

From: Hardesty, Duane
Sent: Thursday, April 07, 2011 3:18 PM
To: PMT03 Hoc
Cc: Lewis, Doris; OST02 HOC
Subject: RE: REQUEST: PMTR Dose Assessment Training/Shadowing

Importance: High

Nema:
Would you please see that Doris is penciled in on the watchbill to shadow PMT Dose Assessment for both Monday (4/11) and Tuesday (4/12) on the 11pm-7am shift?
Thanks,
Duane

From: Lewis, Doris
Sent: Thursday, April 07, 2011 3:15 PM
To: Hardesty, Duane
Subject: RE: REQUEST: PMTR Dose Assessment Training/Shadowing

I can do both days.

From: Hardesty, Duane
Sent: Thursday, April 07, 2011 3:14 PM
To: Lewis, Doris
Cc: PMT03 Hoc
Subject: RE: REQUEST: PMTR Dose Assessment Training/Shadowing

No problem. I see now that you requested two days and I only put one (Tuesday (4/12)). We can correct that if you still want both (Monday (4/11) & Tuesday (4/12)) ?

From: Lewis, Doris
Sent: Thursday, April 07, 2011 2:44 PM
To: Hardesty, Duane
Subject: RE: REQUEST: PMTR Dose Assessment Training/Shadowing

Thanks Duane.

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Let me know if this is ok.

Thanks,
Doris

From: RMTPACTSU_ELNRC <RMTPACTSU_ELNRC@ofda.gov>
Sent: Friday, April 08, 2011 12:52 PM
To: LIA06 Hoc; LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; LIA12 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; ET07 Hoc
Subject: FYI -- FW: Impact of 7.4 Aftershock on Japanese Nuclear Facilities

---

From: Hughart, Joe
Sent: Thursday, April 07, 2011 9:18 PM
To: DART_PACTSU; RMT_PACTSU
Cc: Catlin, Steve(DCHA/OFDA) [USAID]; Cohen, Harold(GC/DCHA) [USAID]; john.holland@foh.hhs.gov; kiel.fisher@foh.hhs.gov
Subject: Imapct of 7.4 Aftershock on Japanese Nuclear Facilities

Spent fuel reprocessing plant at Rokkasho-mura: outside power lost, on emergency diesel power.

Higashi-Dori nuclear power plant: outside power lost, on emergency diesel power.

Onagawa nuclear power plant: two of 3 outside power lines cut, 1 line functional for cooling.

Fukushima Dai-Ichi nuclear power plant: no change.

Tokai Dai- ni nuclear power plant (closest to Tokyo): no problems.

Joe Hughart
CAPT USPHS
USAID OFDA MLU
CBRNE Officer
jhughart@ofda.gov

@004/280

From: Shaffer, Mark R <ShafferMr@state.gov>
Sent: Saturday, April 09, 2011 10:14 AM
To: LIA02 Hoc
Subject: Fw: EPA environmental monitoring data

Follow Up Flag: Follow up
Flag Status: Flagged

See below. IAEA IEC needs you guys to give the thumbs up so they can post the information. Let me know if there is a problem or delay so I can quickly resolve this. EPA approved them to have access, but it made its way there via an e-mail and not from an official ENAC contact (i.e. NRC). If NRC has a problem with this please let me know ASAP.

Mark

From: E.Buglova@iaea.org <E.Buglova@iaea.org>
To: Shaffer, Mark R
Sent: Sat Apr 09 14:58:13 2011
Subject: FW: EPA environmental monitoring data

Dear Marc

As discussed, please, see below the email sent to the NRC.
Many thanks for your help
Elena

From: IEC6 - INCIDENT & EMERGENCY CENTRE
Sent: Saturday, 09 April 2011 09:17
To: 'Hoo1@nrc.gov'; 'Hoo2@nrc.gov'; 'wch@nrc.gov'
Subject: EPA environmental monitoring data

Dear Sir / Madam,

The IEC is currently collating information provided by Member States on environmental monitoring data after the Fukushima NPP accident.

Two public EPA websites containing relevant information have been brought to our attention:
http://www.epa.gov/japan2011/rert/radnet-data-map.html
http://www.epa.gov/japan2011/rert/radnet-sampling-data.html

I'm writing to you, as an official ENAC Contact Point, to confirm whether we can post these two links in the ENAC website, and by extension include the USA on the list of Member States which have provided or made accessible monitoring data.

Could you please confirm whether this is acceptable?

Best regards
Lea Ruscio
Liaison Officer

IAEA IEC
Tel. +43-1-2698846
Tel. +43-1-2600-2203

Search

Press Releases

Press Release (Apr 09,2011)
Status of TEPCO's Facilities and its services after the Tohoku-Taiheiyou-Oki Earthquake (as of 9:00AM)

Due to the Tohoku-Taiheiyou-Oki Earthquake which occurred on March 11th 2011, TEPCO's facilities including our nuclear power stations have been severely damaged. We deeply apologize for the anxiety and inconvenience caused.

Below is the status of TEPCO's major facilities.
*new items are underlined

[Nuclear Power Station]
Fukushima Daiichi Nuclear Power Station:
Units 1 to 3: shutdown due to the earthquake
(Units 4 to 6: outage due to regular inspections)

*The national government has instructed the public to evacuate for those local residents within 20km radius of the site periphery and to evacuate voluntarily for those local residents between 20km and 30km radius of the site periphery.

*Off-site power has been connected to Units 1 to 6 by March 22nd, 2011.

* Unit 1
-The explosive sound and white smoke was confirmed near Unit 1 when the big quake occurred at 3:36 pm, March 12th.
-We started injection of sea water at 8:20 pm, March 12th, and then boric acid which absorbs neutron into the reactor afterwards.
-At approximately 2:30 am, March 23rd, we started the injection of sea water into the reactor from feed water system. After that, the injection of freshwater was started from 3:37 pm on March 25th (switched from the seawater injection). At 8:32 am, Mar 29th, transfer from the fire fighting pump to a temporary motor driven pump was made. From 10:42am to 11:52am on April 3rd we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-At approximately 10:50 am on March 24th, white smoke was confirmed arising from the top of the reactor building.
-At approximately 11:30 am, March 24th, lights in the main control room were restored.
-At approximately 5:00 pm, March 24th, draining water from underground floor of turbine buildings into a condenser was started and it was paused at approximately 7:30 am, March 29th because we confirmed that the water level reached almost full capacity of a condenser. In order to move the water in the condenser into a condensate storage tank, water transfer from the condensate storage tank to suppression pool's water surge-tanks was conducted from around 0:00 pm, March 31st to 3:26 pm, April 2nd.
-From 1:03 pm, March 31st, the water spray by the concrete pumping vehicle was started, and finished at 4:04 pm.
-In order to confirm the position of water spray to the spent fuel pool by the concrete pumping vehicle, the water spray was conducted from 5:16 pm to 5:19 pm.
-Some of turbine building lights were turned on April 2nd.
-The water transfer from the condenser to the condensate storage tank has been implemented since 1:55 pm, April 3rd.
-As it is suspected that hydrogen gas may be accumulated inside reactor containment vessel, at 10:30 pm, April 6th, we started the operation of the valve for the injection of nitrogen to the reactor in order to prevent the increase of oxygen density. Following this, the injection of nitrogen to the reactor was started at 1:31 am, April 7th.

* Unit 2
-At 1:25 pm, March 14th, since the Reactor Core Isolation Cooling System has failed, it was determined that a specific incident stipulated in

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Clause 1, Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (failure of reactor cooling function). At 5:17 pm, March 14th, while the water level in the reactor reached the top of the fuel rod, we have restarted the water injection with the valve operation.
-At approximately 6:14 am, March 15th, the abnormal sound was confirmed near the suppression chamber and the pressure inside the chamber decreased afterwards. It was determined that there was a possibility that something happened in the suppression chamber. While sea water injection to the reactor continued, TEPCO employees and workers from other companies not in charge of injection work started tentative evacuation to a safe location.
Sea water injection to the reactor continued.
-On March 18th, power was delivered up to substation for backup power through offsite transmission line. We completed laying cable further to unit receiving facility in the building, and at 3:46 pm, March 20th the load-side power panel of the receiving facility started to be energized.
-From approximately 3:05 pm to approximately 5:20 pm on March 20th, about 40 tons of seawater was injected into Unit 2 by TEPCO employees.
-At approximately 6:20 pm on March 21st, white smoke was confirmed arising from the top of the reactor building. As of 7:11 am on March 22nd, smoke decreased to the level where we could hardly confirm.
-From around 4:00 pm to 5:00 pm on March 22nd, approximately 18 tons of sea water was injected into the spent fuel pool by TEPCO employees.
-From 10:10 am on March 26th, freshwater (with boric acid) injection was initiated. (switched from the seawater injection) At 6:31pm, March 27th, transfer from the fire fighting pump to a temporary motor driven pump was made. From 10:22am to 0:06pm on April 3rd, we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-From 10:30 am on March 25th, seawater injection through Fuel Pool Cooling and Filtering System was initiated. The work was finished at 12:19 pm, March 25th. From 4:30 pm, March 29th, freshwater injection through Fuel Pool Cooling and Filtering System was initiated. (We switched from seawater to freshwater). The work was finished at 6:25 pm on March 29th. At 9:25 am, March 30th, we started fresh water injection by a temporary motor driven pump, but we switched the pump to the fire fighting pump due to the pump trouble. At 1:10 pm, March 30th, freshwater injection was suspended, because we found the crack on a part of the hose. At 7:05 pm, March 30th, freshwater injection was resumed and finished at 11:50 pm, March 31.
-At approximately 4:46 pm, March 26th, lights in the main control room were restored.
-At approximately 4:45 pm, March 29th, the water in a condensate storage tank was being transferred to suppression pool water surge-tanks to prepare for water transfer from a condenser to a condensate storage tank in order to drain water on the underground floor of the turbine building into a condenser. At 11:50 am, April 1st, transfer was completed.
-At 2:56 pm, April 1st, water injection into spent fuel pool in Unit 2 by temporary motor driven pump was initiated. At 5:05 pm on April 1st, the water injection was finished.
-The water transfer from the condenser to the condensate storage tank has been implemented since 5:10 pm, April 2nd.
-Some of turbine building lights were turned on April 2nd.
-At 11:05 am, April 4th, water injection into spent fuel pool in Unit 2 by a temporary motor driven pump was initiated. At 1:37 pm, April 4th, the water injection was finished.
-At 1:29 pm, April 7th, water injection into spent fuel pool in Unit 2 by a temporary motor driven pump was initiated. At 2:34 pm, April 7th, the water injection was finished.

* Unit 3
-At 6:50 am, March 14th, while water injection to the reactor was under operation (injection of boric acid was done on Mar 13th), the pressure in the reactor containment vessel increased to 530 kPa. As a result, at 7:44 am, it was determined that a specific incident stipulated in the Article 15, the Clause 1 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (abnormal increase of the pressure of reactor containment vessel). Afterwards, the pressure gradually decreased (as of 9:05 am, 490 kPa).
-At approximately 11:01 am, March 14th, an explosion followed by white smoke occurred near Unit 3. 4 TEPCO employees and 3 workers from other companies (all of them were conscious) sustained injuries and were taken to the hospital by ambulances.
-As the temperature of water in the spent fuel pool rose, spraying water by helicopters with the support of the Self Defense Force was considered. However the operation on March 16th was cancelled.
-At 6:15 am, March 17th, the pressure of the Suppression Chamber temporarily increased, but currently it is stable within a certain range. On March 20th, we were preparing to implement measures to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive material to outside) in order to fully secure safety. However, at present, it was not a situation to immediately implement measures and discharge air containing radioactive material to outside. We will continue to monitor the status of the pressure of the reactor containment vessel.

-In order to cool spent fuel pool, water was sprayed by helicopters on March 17th with the cooperation of Self-Defense Forces.
-At approximately past 7:00 pm, March 17th, Self-Defense Forces and the police started spraying water by water cannon trucks upon our request for the cooperation. At 8:09 pm, March 17th, they finished the operation.
-Before 2:00 pm, March 18th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At 2:45 pm, March 18th, the operation was finished.
-At approximately 12:30 am, March 19th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 1:10 am, March 19th, the operation was finished. They resumed spraying water at 2:10 pm and finished at approximately 3:40 am, March 20th.
-At approximately 9:30 pm, March 20th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 3:58 am, March 21st, the operation was finished.
-At approximately 3:55 pm, March 21st, light gray smoke was confirmed arising from the southeast side of the 5th floor roof of the Unit 3 building. The situation was reported to the fire department at approximately 4:21 pm. The parameters of reactor pressure vessel, reactor containment vessel, and monitored environmental data remained stable without significant change. However, employees working around Unit 3 evacuated to a safe location. On March 22nd, the color of smoke changed to somewhat white and it was slowly dissipating.
-At approximately 3:10 pm on March 22nd, spraying water to Unit 3 by Tokyo Fire Department's Hyper Rescue and Osaka City Fire Department was conducted, and completed at approximately 4:00 pm on the same day.
-At approximately 10:45 pm on March 22nd, lights in the main control room were restored.
-At approximately 11:00 am on March 23rd, the injection of sea water to spent fuel pool was conducted, and finished approximately at 1:20 pm on the same day.
-At 4:20 pm on March 23rd, light gray smoke was observed belching from Unit 3 building. The situation was reported to the fire department at 4:25 pm on March 23rd. The parameters of the reactor, the reactor containment vessel of Unit 3, and monitored figures around the site's immediate surroundings remained stable without significant change. To be safe, workers in the main control room of Unit 3 and around Unit 3 evacuated to a safe location. At approximately 11:30 pm on March 23rd and 4:50 am on March 24th, TEPCO employees confirmed the smoke has disappeared. Accordingly, workers evacuation was lifted.
-From approximately 5:35 am on March 24th, sea water injection through Fuel Pool Cooling and Filtering System was initiated, and finished at approximately 4:05 pm on the same day.
-From 1:28 pm on March 25th, Hyper Rescue team started water spray. The work finished at 4:00 pm on March 25th.
-From 6:02 pm on March 25th, the injection of freshwater to the reactor was started (switched from the seawater injection). At 8:30 pm on March 28th, the injection of fresh water was switched to temporary electricity pumps from the fire engine pumps. From 10:03am to 0:16pm on April 3rd, we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-At approximately 12:34pm March 27th, the injection of water by the concrete pump truck was started. At approximately 2:36 pm, March 27th, the operation was finished.
-At approximately 2:17pm March 29th, the injection of fresh water by the concrete pump truck was started. (Sea water had been injected so far and transfer from seawater to freshwater was made). The water injection was finished at 6:18 PM, March 29th.
-At approximately 5:40 pm, March 28th, the water in a condensate storage tank was being transferred to suppression pool water surge-tanks to prepare for water transfer from a condenser to a condensate storage tank in order to drain water on the underground floor of the turbine building into a condenser. We finished the transfer work at approximately 8:40 am, March 31st.
-From 4:30 pm, March 31st, the water spray by the concrete pumping vehicle was started, and finished at 7:33 pm.
-From 9:52 am, April 2nd, the water spray by the concrete pumping vehicle was started, and finished at 0:54 pm.
-Some of turbine building lights were turned on April 2nd.
-From 5:03 am, April 4th, the water spray by the concrete pumping vehicle was started, and finished at 07:19 pm.
-From 6:53 am, April 7th, water spray by the concrete pumping vehicle was started, and finished at 8:53 am.
-From 5:06 pm, April 8th, water spray by the concrete pumping vehicle was started, and finished at 8:00 pm.

* Unit 4
-At approximately 6:00 am, March 15th, an explosive sound was heard and the damage in the 5th floor roof of Unit 4 reactor building was confirmed. At 9:38 am, the fire near the north-west part of 4th floor of Unit 4 reactor building was confirmed. At approximately 11:00 am, TEPCO employees confirmed that the fire was out.
-At approximately 5:45 am on March 16th, a TEPCO employee discovered a fire at the northwest corner of the Nuclear Reactor Building. TEPCO

immediately reported this incident to the fire department and the local government and proceeded with the extinction of fire. At approximately 6:15 am, TEPCO staff confirmed at the site that there were no signs of fire.
-At approximately 8:21 am on March 20th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and they finished the operation at approximately 9:40 am. At approximately 6:45 pm spraying water was started by Self-Defenses' water cannon trucks and finished at approximately 7:45 pm.
-At approximately 6:30 am, March 21st, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At approximately 8:40 am, March 21, they had finished the operation.
-On March 21st, cabling has been completed from temporary substation to the main power center.
-From approximately 5:20 pm on March 22nd, spraying water from the concrete pumping vehicle was conducted and ended at approximately 8:30 pm on the same day.
-From approximately 10:00 am on March 23rd, spraying water from the concrete pumping vehicle was conducted and ended at approximately 1:00 pm on the same day.
-From approximately 2:35 pm on March 24th, spraying water by the concrete pumping vehicle was conducted and ended at approximately 5:30 pm on the same day.
-From 6:05 am on March 25th, seawater injection through Fuel Pool Cooling and Filtering System was initiated and finished at approximately 10:20 am on the same day.
-From 7:05 pm on March 25th, water spray by the concrete pumping vehicle was started and finished at 10:07 pm on March 25th.
-From 4:55 pm on March 27th, water spray by the concrete pumping vehicle was started and finished at 7:25 pm on March 27th.
-At approximately 11:50 am on March 29th, lights in the main control room were restored.
-From 2:04 pm on March 30th, water spray by the concrete pumping vehicle was started and finished at 6:33 pm on March 30th.
-Some of turbine building lights were turned on March 31st.
-From 8:28 am, April 1st, the water spray by the concrete pumping vehicle was started. At 2:14 pm, the water spray finished.
-From 5:14 pm, April 3rd, the water spray by the concrete pumping vehicle was started. At 10:16 pm, the water spray finished.
-From 5:35 pm, April 5th, the water spray by the concrete pumping vehicle was started. At 6:22 pm, the water spray finished.
-From 6:23 pm, April 7th, the water spray by the concrete pumping vehicle was started. At 7:40 pm, the water spray finished.

* Units 5 and 6
-At 5:00 am on March 19th, we started the Residual Heat Removal System Pump (C) of Unit 5 in order to cool the spent fuel pool. At 10:14 pm, we started the Residual Heat Removal System Pump (B) of Unit 6 in order to cool the spent fuel pool.
-Unit 5 has been in reactor cold shutdown since 2:30 pm on March 20th. Unit 6 has been in reactor cold shutdown since 7:27 pm on March 20th.
-At Units 5 and 6, in order to prevent hydrogen gas from accumulating within the buildings, we have made three holes on the roof of the reactor building for each unit.
-At approximately 5:24 pm on March 23rd, the temporary Residual Heat Removal System Seawater Pump automatically stopped when its power source was switched. We restarted the pump at around 4:14 pm, March 24th, and resumed cooling of reactor at around 4:35 pm.

*On March 18th, regarding the spent fuel in the common spent fuel pool, we have confirmed that the water level of the pool was secured. At around 10:37 am March 21st, water spraying to common spent fuel pool and finished at 3:30 pm. At around 6:05 pm, fuel pool cooling pump was started to cool the pool.
*common spent fuel pool: a spent fuel pool for common use set in a separate building in a plant site in order to preserve spent fuel which are transferred from the spent fuel pool in each Unit building.

*On March 17th, we patrolled buildings for dry casks and found no signs of abnormal situation for the casks by visual observation. A detailed inspection was under preparation.
*dry cask: a measure to store spent fuel in a dry storage casks in storages. Fukushima Daiichi Nuclear Power Station started to utilize the measure from August 1995.

*On March 21st, 23rd to April 7th we detected radioactive materials in the sea water. The data of the detected three nuclides (Iodine- 131, Cesium- 134 and Cesium- 137) will be reported as fixed data. Other nuclides figures are to be re-evaluated based on the improved measures for recurrence prevention which have been prepared in accordance to a strong warning by NISA on April 1.

*On March 20th, 21st, 23rd to April 7th, we detected radioactive materials in the air collected at the site of Fukushima Daiichi Nuclear Power Station. The data of the detected three nuclides (Iodine- 131, Cesium- 134 and Cesium- 137) will be reported as fixed data. Other nuclides figures

are to be re-evaluated based on the improved measures for recurrence prevention which have been prepared in accordance to a strong warning by NISA on April 1.

*Plutonium has been detected from the sample of soil at the site of Fukushima Daiichi Nuclear Power Station collected on 21st, 22nd, 25th and 28th of March, Concentration level of Plutonium detected was same as that of under usual environment and it was thought not to be harmful to human health. We will strengthen environmental monitoring of power station and surrounding environment.
Additionally Iodine, Cesium, Tellurium, Barium, Niobium, Ruthenium, Molybdenum, Technetium, Lanthanum, Beryllium, Silver have been detected from the sample of soil collected at Fukushima Daiichi Nuclear Power Station on 21st, 22nd, 25th and 28th of March.

*We detected radioactive materials contained in the puddles found in the turbine building of Unit 1 to 4. We are planning to conduct water analysis in preparation for treating the water. The analysis will be carried out in Fukushima Daini Nuclear Power Station with support from other nuclear companies (Japan Atomic Energy Agency, Japan Nuclear Fuel Limited).

*At approximately 3:30 pm, March 27th, we found water pooling in the vertical shaft of the trench outside of the turbine buildings for Units 1 to 3. The radiation dose at the surface of the water amounted 0.4 mSv/h in Unit 1 and over 1,000 mSv/h in Unit 2. We could not confirm the amount of the radiation dose in Unit 3. We will keep observing the condition of the water in the vertical shaft.
On March 29th, we detected niobium, tellurium, ruthenium, silver, tellurium, iodine, cesium, and ruthenium in the water collected at the trench of unit 1.
On March 30th, we took samples from the water in the trench of Unit 2 and 3, and conducted nuclide analysis on them. We are now confirming the results of the analysis.

*At approximately 9:30 am, April 2nd, we found that there was water in the shaft for storing power cable (concrete product) near the intake of water for Unit 2, the radioactive air dose was over 1,000mSv/h and the water spilled into the sea from the crack (approximately 20 cm) on the side of the shaft. We injected fresh concrete to the shaft twice, however, we could not observe a change in the amount of water flowing into the sea. Therefore, we considered that a new method of stopping the water and determined to use the polymer. Necessary equipment and experts of water shutoff will be dispatched to the site and after checking the condition, we began to stop water shutoff and were injecting polymer on April 3rd. On April 4th, we injected the tracer from the vertical shaft of the trench to start to examine the water current. We did not observe reduction of flow or change of color or water leaking. We checked the diagram and confirmed the route. At the same time, we checked the situation of the pit in detail and considered the possibility that the water was not from the pit, rather, from the joint between the piping upstream of the pit and the duct, then the water seeped through a layer of gravel below the piping. In order to stop that seepage from the layer of gravel, we decided to conduct the water sealing to the bedrock around the piping. We arranged for the specialist and gathered equipments. On April 5th, liquid glass was injected to the bedrock. Tracer was put through the two new holes drilled near the pit to investigate the water flow. At 2:15 pm, April 5th, it was observed the water with tracer came out from the crack on the concrete wall of the pit. At 3:7 pm, April 5th, injection of coagulant from the holes was initiated and we have confirmed the outflow from the crack on the concrete wall of the pit has stopped at 5:38 am, April 6th. We confirmed water level has not been rising in the turbine building of unit 2. On April 6th, a countermeasure by using rubber plate and fixer was implemented to prevent discharge of radioactive materials, and we are continuously monitoring for any existence of leakage. From 3:00pm April 5th, a construction of installing large sandbags around the pier to prevent the outflow of the contaminated water from station's port on the south side to the ocean was started. Also we are preparing spillage prevention fences as countermeasures for lowering the outflow to the ocean. Iodine and Cesium were detected from the water sampled in the pit and in the sea near the water discharge. Additional nuclide analysis will be implemented.
In addition, from April 2nd, we will implement sampling at 15km offshore Fukushima Daiichi and Fukushima Daini Nuclear Power Stations(3 points have been added since April 5th) and will evaluate these samples comprehensively.

*Since approximately 9:20 am, March 31st, the water transfer from the vertical shaft of Unit 1 to the reservoir of the centralized environmental facility was conducted. We finished the task around 11:25 am of the same day.

*We found a puddle of water at the main building of the centralized environmental facility process. We analyzed and detected approximately 1.2×10^{1}Bq/cm^3 of radioactivity in full dose in the Controlled Area and 2.2×10^{1}Bq/cm^3 in full dose in the Non-Controlled Area on March 29.
From April 3rd, the water level in the trench of Unit 3 increased by

15 cm. The route is not yet known, but there is a possibility that water in the turbine building of Unit 4 may be running to the trench of Unit 3. To be safe, at 09:22am, April 4th, we stopped transferring water to the turbine building of Unit 4. At this moment, the water level in the trench of Unit 3 became stable after stopping the water transfer.

*There is plenty of radioactive wastewater in the turbine buildings. Especially, Unit 2's wastewater is very highly radioactive. To store this stably, it was decided that this needed to be transferred to the Central Radioactive Waste Disposal Facility. However, within that facility, we are storing ten thousand tons of low level radioactive wastewater. In order to transfer more wastewater, we need to discharge the low level radioactive wastewater. In addition, as low radioactive subsurface water is piling up in sub-drain pits of Units 5 and 6 and a part of subsurface water is running into buildings. We are concerned that important equipment to secure the safety of reactors may be submerged.
Based on the Section 1 of the Article 64 of the Nuclear Reactor Regulation Law, we have decided to discharge to the sea approximately ten thousand tons of the accumulated low level radioactive water and a total of fifteen hundred tons of the low level radioactive subsurface water stored in the sub drain pits of Unit 5 and 6 as soon as we get ready.
From 7:03 pm, April 4th, we are discharging the low level radioactive wastewater stored in the Central Radioactive Waste Disposal Facility to the south of the water discharge canal. By 7:10 pm, we started ten pumps.
Also, from 9:00 pm, April 4th, we are discharging the low level radioactive wastewater stored in the sub drain pits of Unit 5 and 6 by using one pump via the water discharge canal of Units 5 and 6.
We evaluate the impact on the discharge of the low radioactive wastewater to the sea as approximately 0.6 mSv per year per an adult if an adult eats adjacent fish and seaweeds everyday. The amount (0.6 mSv of effective radioactive doses per year) is one-forth of annual radioactive dose (2.4 mSv) to which the general public is exposed from nature.

*The first barge of the U.S. Forces with fresh water to be used to cool down reactors etc. was towed by a ship of Maritime Self-Defense Force and docked at 3:42 pm on March 31st 2011. At approximately 3:58 pm, April 1st, we started to replenish filtrate tanks with the fresh water, and finished at 4:25 pm. At approximately 10:20 am, April 2nd, we resumed replenishing filtrate tanks with the fresh water, and finished at 4:40 pm.
The second barge of the U.S. Forces with the fresh water towed by the ship of Maritime Self-Defense Force came alongside the pier at approximately 9:10 am, April 2nd. It was in preparation for replenishing filtrate tanks with the fresh water. We began to transfer fresh water from the second barge to the first barge on April 3rd at 9:52 am and continued until 11:15 am on April 3rd.

*At 11:35 am, April 1st, a worker fell into the sea while stepping into the ship from the pier during the hose laying work of the barge. Other crew immediately rescued the worker. While no injury or contamination was confirmed, whole body counter has been implemented to check the contamination inside the body just in case.

*From 3:00 pm, April 1st, we started spraying inhibitor in order to prevent diffusion of radioactive materials. This attempt was conducted on a trial basis at the mountain side area of the common spent fuel pool in the range of 500m^2. The spraying finished at 4:05 pm. On April 5th and 6th , we also sprayed the inhibitor in order to prevent the spread of radioactive materials on a trial basis at the mountain side area of the common spent fuel pool in the range of 600m^2. On April 8th, we conducted trial spraying of the inhibitor at the mountain side area of the common spent fuel pool in the range of 500m^2.

*Monitoring posts (no.1 to no.8) which were installed around the site boundary have been restored. We will continue monitoring the measured value and make announcements on those values accordingly.

*We will continuously endeavor to securing safety, and monitoring of the surrounding environment.

Fukushima Daini Nuclear Power Station:
Units 1 to 4: shutdown due to the earthquake
*The national government has instructed evacuation for those local residents within 10km radius of the periphery.

*No damage has been done to the power station by the magnitude 7.4 earthquake occurred at approximately 11:32 pm, April 7th in the offshore of Miyagi Prefecture.

*In order to achieve cold shutdown, reactor cooling function was restored and cooling of reactors was conducted. As a result, all reactors achieved cold shutdown: Unit 1 at 5:00 pm, March 14th, Unit 2 at 6:00 pm, March 14th,Unit 3 at 0:15 pm, March 12th, Unit 4 at 7:15 am, March 16th.

*At 2:30 pm on March 30th, the power source of the residual heat removal system (B) to cool the reactor of Unit 1 was secured from an emergency power source in addition to an offsite power. This means that all the

units secure backup power sources (emergency power sources) for the residual heat removal system (B).

* Unit 1
As it was confirmed that the temperature of the Emergency Equipment Cooling Water System *1 has increased, at 3:20 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 4:25 pm, March 15th, after replacing the power facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

* Unit 4
As it was confirmed that the pressure at the outlet of the pumps of the Emergency Equipment Cooling Water System*1 has been decreased, at 8:05 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 9:25 pm, March 15th, after replacing the relevant facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

*1:emergency water system in which cooling water (pure water) circulates which exchanged the heat with sea water in order to cool down bearing pumps and/or heat exchangers etc.

Kashiwazaki Kariwa Nuclear Power Station:
Units 1, 5, 6, 7: normal operation
(Units 2 to 4: outage due to regular inspection)

*No damage has been done to the power station by the magnitude 7.4 earthquake occurred at approximately 11:32 pm, April 7th in the offshore of Miyagi Prefecture.

[Thermal Power Station]
-Hirono Thermal Power Station Units 2 and 4: shutdown due to the earthquake
-Hitachinaka Thermal Power Station Unit 1: shutdown due to the earthquake
-Kashima Thermal Power Station Units 6: shutdown due to the earthquake

[Hydro Power Station]
-Power supply has returned to normal, but facilities damaged by the earthquake are now being handled in a timely manner.

[Impacts on Transmission Facilities]
-Power supply has returned to normal, but facilities damaged by the earthquake are now being handled in a timely manner.

[Avoidance of further Implementation on Planned Rolling Blackouts and Request for Conserving Electricity Consumption]
Currently, we are giving our utmost efforts to restore power supply after our nuclear and thermal power facilities are severely damaged by Tohoku-Taiheiyou-Oki Earthquake. The widespread understanding and cooperation to the conservation of electricity among each customer have contributed to the improvement in the tight power supply-demand balance. Amidst this backdrop, in principle, we have decided not to implement further rolling blackouts.
However, we must sincerely ask for your continued cooperation in conserving electricity consumption due to the possible increase in demand caused by abrupt climate change or unexpected trouble in power stations that are currently being restored. In case the electricity supply-demand balance becomes tighter than expected, on the condition of prior announcement, we may reluctantly implement the rolling blackouts. We kindly ask for your cooperation.
Also, we will give our utmost efforts to maintain this policy of avoiding further implementation on rolling blackouts in summer.

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Press Releases

Press Release (Apr 08,2011)
Out flow of fluid containing radioactive materials to the ocean from areas near intake canal of Fukushima Daiichi Nuclear Power Station Unit 2 (continued report 4)

At around 9:30 am on April 2nd, we detected water containing radiation dose over 1,000 mSv/h in the pit* where supply cables are stored near the intake channel of Unit 2. Furthermore, there was a crack about 20 cm on the concrete lateral of the pit, from where the water in the pit was out flowing. At around 12:20 pm on April 2nd, we reaffirmed the event at the scene.
We have implemented sampling of the water in the pit, together with the seawater in front of the bar screen near the pit. These samples were sent to Fukushima Daini Nuclear Power Station for analysis. (Reported on April 2nd already)

Today at 5:38 am, we have observed stoppage of spilling of water from the crack on the concrete lateral of the pit. For the sake of completeness, we put further reinforcement for the stoppage of leakage and consider countermeasure including continuous injection of coagulant. We will also note the water level of turbine building of unit 2 remain unchanged. We will further investigate if there is any other leakage. (Reported on April 6th already)

We have been conducting sampling of seawater in front of the bar screen near the pit. In regard to the sample collected yesterday (April 7th), as a result of conducting nuclide analysis, radioactive materials were detected as described in the exhibit. Accordingly, we have reported the result of analysis to Nuclear and Industrial Safety Agency and Fukushima Prefecture.

Regarding the results on three nuclides (iodine 131, cesium 134, cesium 137), we would like to assume those as definite result, however, as for other nuclides, we will revaluate in accordance with the preventive measures formulated after being given warning from Nuclear and Industrial Safety Agency on April 1st.

* pit: a shaft made of concrete

Appendix:The result of nuclide analysis of the seawater at the front of shallow draft quay and the screens of Unit 2 and 4 of the Fukushima Daiichi Nuclear Power Statio(PDF 49.4KB)
Appendix:Radioactivity density of seawater near the quay of Fukushima Daiichi Nuclear Power Station (PDF 13.4KB)

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From: LIA01 Hoc
Sent: Saturday, April 09, 2011 12:00 PM
To: LIA02 Hoc
Cc: LIA08 Hoc; LIA06 Hoc
Subject: FW: EPA environmental monitoring data-IAEA

FYI

From: DeCair.Sara@epamail.epa.gov [mailto:DeCair.Sara@epamail.epa.gov]
Sent: Saturday, April 09, 2011 11:59 AM
To: LIA01 Hoc
Cc: LIA08 Hoc; LIA06 Hoc; EOC_Manager@epamail.epa.gov; EOC_Public_Information@epamail.epa.gov
Subject: Re: EPA environmental monitoring data-IAEA

Good morning,
That would be wonderful, thank you! You will convey that to IAEA? Thanks again,
Sara

Sent by EPA Wireless E-Mail Services

From: LIA01 Hoc [LIA01.Hoc@nrc.gov]
Sent: 04/09/2011 10:48 AM AST
To: Sara DeCair
Cc: LIA08 Hoc <LIA08.Hoc@nrc.gov>; LIA06 Hoc <LIA06.Hoc@nrc.gov>
Subject: FW: EPA environmental monitoring data-IAEA

Good Morning Ms. DeCair,

Please see the message below. IAEA is requesting permission to post the links to your RADNET website on their ENAC.

Please advise.

Thank you,
Russell Chazell
Federal Liaison
NRC Operations Center

From: LIA01 Hoc
Sent: Saturday, April 09, 2011 10:27 AM
To: 'eoc.epahq@epa.gov'
Cc: LIA08 Hoc; LIA06 Hoc
Subject: FW: EPA environmental monitoring data-IAEA
Importance: High

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Good Morning,

The NRC Operations Center has received the request below from the IAEA regarding EPA public website information. Specifically, IAEA is requesting permission to include the following EPA links on their website:

http://www.epa.gov/japan2011/rert/radnet-data-map.html
http://www.epa.gov/japan2011/rert/radnet-sampling-data.html

Please advise whether or not this is acceptable.

Thank you,

Russell Chazell
Federal Liaison
NRC Operations Center

From: IEC6@iaea.org [mailto:IEC6@iaea.org]
Sent: Saturday, April 09, 2011 5:17 AM
To: HOO Hoc; HOO2 Hoc; Huffman, William
Subject: EPA environmental monitoring data

Dear Sir / Madam,

The IEC is currently collating information provided by Member States on environmental monitoring data after the Fukushima NPP accident.

Two public EPA websites containing relevant information have been brought to our attention:
http://www.epa.gov/japan2011/rert/radnet-data-map.html
http://www.epa.gov/japan2011/rert/radnet-sampling-data.html

I'm writing to you, as an official ENAC Contact Point, to confirm whether we can post these two links in the ENAC website, and by extension include the USA on the list of Member States which have provided or made accessible monitoring data.

Could you please confirm whether this is acceptable?

Best regards
Lea Ruscio
Liaison Officer
IAEA IEC
Tel. +43-1-2698846
Tel. +43-1-2600-2203

From: LIA07 Hoc
Sent: Saturday, April 09, 2011 6:24 PM
To: Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: Updates for the Go Book: 1800 EDT, April 9
Attachments: Pages 1-5 ET Chronology 4.9.11_ 1800EDT.pdf; TEPCO Press Release 315.pdf; TEPCO Press Release 318.pdf; TEPCO Press Release 317.pdf; TEPCO Press Release 316.pdf; USNRC Earthquake-Tsunami Update.040911.1800EDT.pdf

Attached please find updated information for the "Go Books".

The update includes:

- The 1800 EDT, 04/09/11 Status Update
- The latest ET Chronology
- The latest TEPCO Press Releases (315-318)

Please let me know if you have any questions or concerns.

Yen

Yen Chen
Executive Briefing Team Coordinator
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

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From: PMT10 Hoc
Sent: Saturday, April 09, 2011 6:23 PM
To: LIA08 Hoc
Cc: pmt12.hoc@nrc.gov
Subject: Map showing houses and other buildings overlain with PAG plume

I would like to request an image to help assess implications of population relocation and relaxation of the 50 mile EPZ.

The base layer would be an aerial picture (e.g. Google earth) clearly showing residential and commercial structures, mountainous areas, and agricultural plots.

The top layers would include available pre-event population distribution information (similar to US census tract maps) and the current PAG plume overlay.

The scale should be such that the PAG plume covers most of the area.

Thanks,
Sam Keith
CDC Liaison

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From: PMT10 Hoc
Sent: Saturday, April 09, 2011 1:45 PM
To: pmt12.hoc@nrc.gov
Subject: Bioconcentration of cesium in marine and terrestrial environments

Response to PMT request regarding Cs in fish:

Bioconcentration information for Cs in fish and other biota is described in the extract below from pages 138, 139, and 156 of the ATSDR Toxicological Profile for Cesium, at http://www.atsdr.cdc.gov/ToxProfiles/tp157.pdf.

Also, FDA has determined Derived Investigation Levels (DILs) for cesium in food. The DIL for Cs-134+137 = 1200 Bq/kg. See http://www.fda.gov/ICECI/ComplianceManuals/CompliancePolicyGuidanceManual/ucm074576.htm.

Sam Keith
CDC Liaison

From: PMT10 Hoc
Sent: Friday, April 08, 2011 12:16 PM
To: 'Whitcomb, Robert C. (CDC/ONDIEH/NCEH)'
Cc: 'pac4@cdc.gov'; 'dlevans@cdc.gov'; 'eoctsu2@cdc.gov'
Subject: RE: Bioconcentration of iodine in marine and terrestrial environments

Bob, here is the cesium information on bioaccumulation from the Toxicological Profile for Cesium.

Sam

Since cesium does not volatilize from water, transport of cesium from water to the atmosphere is not considered likely, except by windblown sea sprays. Most of the cesium released to water will adsorb to suspended solids in the water column and ultimately be deposited in the sediment core. Cesium can also bioconcentrate and has been shown to bioaccumulate in both terrestrial and aquatic food chains. Mean bioconcentration factors (BCF) for ^{137}Cs of 146, 124, and 63 were reported for fish, brown macroalgae, and molluscs, respectively (Fisher et al. 1999). Mean BCF values of 92, 58, 39, and 150 were reported for ^{137}Cs in cod, haddock, plaice, and whiting, respectively (Steele 1990). In a study of aquatic organisms inhabiting the Ottawa River, a 4-fold increase of ^{137}Cs levels was observed with each trophic level (Rowan et al. 1998). The levels of ^{137}Cs in lake trout from Great Slave Lake, Canada were consistently higher than levels found in food sources and a biomagnification factor of 1.9 was calculated for lake trout, relative to their food sources. The biomagnification factor was 3.5 for large mature trout populating the lake (Rowan et al. 1998). It was shown that the bioconcentration and bioaccumulation of ^{137}Cs by aquatic organisms is significantly reduced in waters with a large humic content and high levels of potassium cations (Penttila et al. 1993). Because of the high potassium concentration in oceans, the transfer of ^{137}Cs and ^{134}Cs to fish is much greater in freshwater and the activity of freshwater fish may be 100 times that of ocean fish, given the same cesium concentration in the water (WHO 1983).

In soil surfaces, cesium has low mobility in comparison to other metals and usually does not migrate below a depth of 40 cm. The major portion of cesium is retained in the upper 20 cm of the soil surface (Korobova et al. 1998; Ruse and Peart 2000; Takenaka et al. 1998). Vertical migration patterns of ^{137}Cs in four agricultural soils from southern Chile indicated that approximately 90% of the applied cesium was retained in the top 40 cm of soil, and that in one soil, essentially 100% was bound in the upper 10 cm (Schuller et al. 1997). Migration rates of radiocesium were derived from the depth distribution profiles and were in the range of 0.11 to 0.29 cm/year (Schuller et al. 1997). The vertical migration patterns of

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^{90}Sr and ^{137}Cs produced from the atomic bomb exploded in Nagasaki, Japan were studied over a 40-year period (Mahara 1993). Over this period, 95% of the cesium remained in the top 10 cm of the soil surface and no cesium was detected below a depth of 40 cm. In contrast, only 70% of ^{90}Sr was located within a depth of 10 cm and a small percentage was detectable below a depth of 200 cm. The *in situ* vertical migration rate of ^{90}Sr was calculated as 0.42 cm/year and the migration rate of ^{137}Cs was 0.10 cm/year (Mahara 1993). The distribution of ^{137}Cs deposited in eastern France due to the Chernobyl accident was studied recently in four soil types with differing land use. The soils were all high in clay content, organic matter content never exceeded 10% in any of the soils, and none of the soils had been ploughed or tilled since the Chernobyl accident in 1986. In all cases, the majority of ^{137}Cs was detected in the upper 10 cm of soil, with only 1–2% migrating to depths of 40 cm or more (Renaud et al. 2003). Soil adsorption coefficients (K_d) of five radionuclides (^{54}Mn, ^{60}Co, ^{65}Zn, ^{85}Sr, and ^{137}Cs) were measured for 36 agricultural soils collected in Japan. It was determined that ^{137}Cs had the largest median K_d of all five radionuclides, and that a positive correlation was observed between the adsorption coefficient and exchangeable potassium content in the soil (Yasuda et al. 1995). No correlations were observed for other soil properties such as pH, water content, cation exchange capacity, and exchangeable calcium. Other studies have reported that clay and zeolite minerals strongly bind cesium cations and can therefore reduce the bioavailability of cesium and the uptake in plants by irreversibly binding cesium in interlayer positions of the clay particles (Paasikallio 1999). Experiments conducted by growing plants in a peat soil showed that the introduction of zeolites into the soil-plant system decreased the uptake of ^{134}Cs in plants by a factor of 8 (Shenber and Johanson 1992). The low hydration energy of cesium cations is primarily responsible for their selective sorption and fixation by clays and zeolites (Hakem et al. 1997). Soils rich in organic matter adsorb cesium, but the cesium adsorbed in the organic fraction is readily exchangeable and highly available for plant uptake (Sanchez et al. 1999). Regions in Venezuela, Brazil, and Russia have been identified where a great deal of rain is encountered, the soil is peaty or podzolic (a type of forest soil characterized by high leachability), and the mobility of cesium is considerably greater than in other soils (LaBrecque and Rosales 1996; WHO 1983).

The plant/soil concentration ratio (activity/kg of plant/activity/kg of soil) of ^{137}Cs for field crops in southern Finland ranged from 0.01 to 0.26. In northern Finland, this ratio ranged from 0.01 to 2.29, with the lowest values occurring in clay and silt soils and the highest values observed in fine sands (Paasikallio et al. 1994). The plant/soil concentration ratios for a series of vegetables and grains decreased in the following order: lettuce, cabbage>carrot, potato>cereals, onion; for fruits, the order was: blackcurrant> strawberry>apple (Paasikallio et al. 1994). The mean plant/soil concentration ratios of ^{137}Cs for trees at the Hanford Waste Site in the United States were 0.03 (roots), 0.06 (cores), and 0.02 (leaf/twig) (Landeen and Mitchell 1986).

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Korobova E, Ermakov A, Linnik V. 1998. ^{137}Cs and ^{90}Sr mobility in soils and transfer in soil-plant systems in the Novozybkov district affected by the Chernobyl accident. Appl Geochem 13(7):803-814.

LaBrecque JL, Rosales PA. 1996. The migration of ^{137}Cs in Venezuelan soils. J Trace Microprobe Tech 14(1):213-221.

Landeen DS, Mitchell RM. 1986. Radionuclide uptake by trees at a RAD waste pond in Washington State. Health Phys 50(6):769-774.

Mahara Y. 1993. Heavy metals in the environment: Storage and migration of fallout strontium-90 and cesium-137 for over 40 years in the surface soil of Nagasaki. J Environ Qual 22:722-730.

Paasikallio A, Rantavaara A, Sippola J. 1994. The transfer of cesium-137 and strontium-90 from soil to food crops after the Chernobyl accident. Sci Total Environ 155:109-124.

Paasikallio A. 1999. Effect of biotite, zeolite, heavy clay, bentonite and apatite on the uptake of radiocesium by grass from peat soil. Plant Soil 206:213-222.

Penttila S, Kairesalo T, Uusi-Rauva A. 1993. The occurrence and bioavailability of radioactive ^{137}Cs in small forest lakes in southern Finland. Environ Pollut 82:47-55.

Renaud P, Pourcelot L, Metivier J-M, et al. 2003. Mapping of ^{137}Cs deposition over eastern France 16 years after the Chernobyl accident. Sci Total Environ 309:257-264.

Rowan DJ, Chant LA, Rasmussen JB. 1998. The fate of radiocesium in freshwater communities- why is biomagnification variable both within and between species? J Environ Radioact 40(1):15-36.

Ruse ME, Peart MR. 2000. Intrasite sampling of Hong Kong soils contaminated by caesium-137. Chemosphere 41:45-51.

Sanchez AL, Wright SM, Smolders E, et al. 1999. High plant uptake of radiocesium from organic soils due to Cs mobility and low soil K content. Environ Sci Technol 33:2752-2757.

Schuller P, Ellies A, Kirchner G. 1997. Vertical migration of fallout ^{137}Cs in agricultural soils from Southern Chile. Sci Total Environ 193:197-205.

Shenber MA, Johanson KJ. 1992. Influence of zeolite on the availability of radiocesium in soil to plants. Sci Total Environ 113:287-295.

Steele AK. 1990. Derived concentration factors for caesium-137 in edible species of North Sea fish. Mar Pollut Bull 21(12):591-594.

Takenaka C, Onda Y, Hamajima Y. 1998. Distribution of cesium-137 in Japanese forest soils: Correlation with the contents of organic carbon. Sci Total Environ 222:193-199.

WHO. 1983. Selected radionuclides: Tritium, carbon-14, krypton-85, strontium-90, iodine, caesium-137, radon, plutonium. Environmental Health Criteria 25. Geneva: World Health Organization.

Yasuda H, Uchida S, Muramatsu Y, et al. 1995. Sorption of manganese, cobalt, zinc, strontium, and cesium onto agricultural soils: Statistical analysis on effects of soil properties. Water Air Soil Pollut 83:85-96.

From: Whitcomb, Robert C. (CDC/ONDIEH/NCEH) [mailto:byw3@cdc.gov]
Sent: Thursday, April 07, 2011 11:09 AM
To: PMT10 Hoc; Miller, Charles W. (CDC/ONDIEH/NCEH)
Cc: Charp, Paul (ATSDR/DHAC/SRAB); Evans, Lynn (CDC/ONDIEH/NCEH)
Subject: RE: Bioconcentration of iodine in marine and terrestrial environments

OK...please send same for Cs-137

Robert C. Whitcomb, Jr., Ph.D., CHP
Radiation Studies Branch, EHHE, NCEH, CDC
4770 Buford Highway, NE (MS-F58)
Atlanta, GA 30341-3717
Telephone: 770.488.3652 Fax: 770.488.1539

From: PMT10 Hoc [mailto:PMT10.Hoc@nrc.gov]
Sent: Thursday, April 07, 2011 10:37 AM
To: Whitcomb, Robert C. (CDC/ONDIEH/NCEH); Miller, Charles W. (CDC/ONDIEH/NCEH)
Cc: Charp, Paul (ATSDR/DHAC/SRAB); Evans, Lynn (CDC/ONDIEH/NCEH)
Subject: Bioconcentration of iodine in marine and terrestrial environments

Charles and Bob,

The following information on iodine bioconcentration comes from the Toxicological Profile for Iodine:

Iodine has been shown to bioaccumulate in many seawater and freshwater aquatic plants (Poston 1986). Freshwater plants (e.g., algae) contain 10^{-5}% by weight of iodine, whereas marine plants (algae) contain 10^{-3}% by weight (NCRP 1983). In freshwater fish, iodine concentrations in tissues range from 0.003 to 0.81 ppm, which gives concentration ratios (fish/water) of 0.9–810. In marine fish, the iodine concentrations range between 0.023 and 0.11 ppm, yielding concentration ratios of between 10 and 20 (Poston 1986). In terrestrial plants, iodine can be taken up through the roots, mainly as iodide and to a lesser extent, as iodate or iodine (Burte et al. 1991; Whitehead 1984). The average iodine concentration in terrestrial plants is 0.42 µg/g. The uptake is dependent on soil conditions and the use of fertilizers (Moiseyev et al. 1984). Distribution of iodine and iodide varies throughout the plant (Voigt et al. 1988). The uptake of iodine into terrestrial plants in combination with deposition of iodine onto the surfaces of plants plays an important role in the transfer of iodine through the soil-plant-cow-milk pathway. The efficiency through which iodine is transferred through this pathway is important in ascertaining the risk of radioiodine exposures in the general human population from continuous or accidental releases of ^{131}I and ^{129}I, especially in children (AEC 1974; Soldat 1976; Tubiana 1982; Voigt et al. 1989).

Poston TM. 1986. Literature review of the concentration ratios of selected radioisotopes in freshwater and marine fish. Battelle Pacific Northwest Labs Report No. DE86-015820 (NTIS/DE86015820), 1-21, 82-84, 243-272.

NCRP. 1983. Iodine-129: Evaluation of releases from nuclear power generation. Bethesda, MD: National Council on Radiation Protection and Management. NCRP Report No. 75.

Burte PP, Nair AGC, Manohar SB, et al. 1991. Iodide and iodine uptake in plants. J Radioanal Nucl Chem 155(6):391-402.

Whitehead DC. 1984. The distribution and transformations of iodine in the environment. Environ Int 10:321-339.

Moiseyev IT, Tikhomirov FA, Perevezentsev VM, Rerikh LA. 1984. Role of soil properties, interspecific plant differences, and other factors affecting the accumulation of radioactive iodine in crops. Soviet Soil Science 16:60-66.

Voigt G, Henrichs K, Prohl G, et al. 1988. Measurements of transfer coefficients fro ^{137}Cs, ^{60}Co, ^{54}Mn, ^{22}Na, ^{131}I and ^{95m}Tc from feed into milk and beef. Radiat Environ Biophys 27:143-152.

Voigt G, Muller H, Prohl G, et al. 1989. Experimental determination of transfer coefficients of ^{137}Cs and ^{131}I from fodder into milk of cows and sheep after the Chernobyl accident. Health Phys 57(6):967-973.

Sam

From: Virgilio, Martin
Sent: Saturday, April 09, 2011 10:35 AM
To: LIA07 Hoc; Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: REPLY: Go Book Update - 0600 EDT, April 9, 2011

All

Please note that our statement on the Deputies Meeting needs to be updated. (we say..."Guidance for Return (Short Term and Permanent Re-entry) of US Citizens to Areas around Fukushima Daiichi NPP", is also being finalized and will be used at the 04/11/2011 Deputies Meeting).

There is currently no Deputies Meeting scheduled for next week. Our next steps once we have our position paper finalized is not yet clear. However, it has been suggested that the next step might be to have this reviewed and discussed at the Japan IPC?

Marty

From: LIA07 Hoc
Sent: Saturday, April 09, 2011 6:10 AM
To: LIA07 Hoc; Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: Go Book Update - 0600 EDT, April 9, 2011

Attached, please find updated information for the "Go Books".

The update includes:

- The 0430 EDT, 04/09/11 Status Update
- The latest ET Chronology
- The latest TEPCO Press Releases (311-314)

Please let me know if you have any questions or concerns.

-Jim

Jim Anderson
Executive Briefing Team Coordinator
US Nuclear Regulatory Commission

0000287

LIA07.HOC@nrc.gov (Operations Center)
James.anderson@nrc.gov

From: LIA08 Hoc
Sent: Saturday, April 09, 2011 11:22 AM
To: PMT10 Hoc
Subject: RE: Cleaning of water being dumped

Thanks Sam. I would check with the PMT. All requests for analysis, equipment, procedures, etc. must come from the Japanese government, through the Embassy staff. The PMT can raise this with the NRC Japan team, to see if its worth raising up to the Japanese government, who are probably already thinking about things like this without our help. As a matter of fact I think I have seen requests already in our database for things like this. Jeff

From: PMT10 Hoc
Sent: Saturday, April 09, 2011 11:05 AM
To: LIA08 Hoc
Subject: Cleaning of water being dumped

Jeff, we just finished a CDC call during which the question was raised about the possibility of cleaning the contaminated water being released to the sea. I thought about the ability of subs to make reactor grade water from sea water and of skid mounted ion exchange systems. These can produce concentrated RAM and high rad levels.

I'd like to ask PMT the questions below, and will follow up with the NR rep if they are on site today.

Is any of the existing BWR water polishing equipment operational that could be used successfully to clean either the water being dumped into the sea now or the water later to be transferred from the spend fuel pool? What other technologies in truck-driven or skid-mounted form might be effective for this? Who might have or have access to them (GEH, INPO, NAVSEA08, other)? If used, what are the advantages and disadvantages? Perhaps the Japan team might have insights to share.

Thanks,
Sam Keith
CDC Liaison

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 6:01 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: 1800 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update
Attachments: USNRC Earthquake-Tsunami Update 041011 1800EDT.pdf

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From: LIA07 Hoc
Sent: Sunday, April 10, 2011 6:00 PM
To: LIA07 Hoc
Subject: 1800 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, April 10, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is only being shared within the Federal family.

Please call the NRC's Headquarters Operations Officer at 301-816-5100 with questions.

Thanks,
Jeremy

Jeremy Susco
Executive Briefing Team Coordinator
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)
jeremy.susco@nrc.gov

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4月10日　　福島第一(1F)

測定場所　①事務本館北(2号機より北西約0．5キロ)　②体育館付近(MP－5東側)(2号機より西北西約0．9キロ)
③西門付近 (MP-5付近)(2号機より西約1．1キロ)　④正門付近前(MP-6付近)(2号機より西南西約1．0キロ)
⑤免震棟前(2号機より北西約0．5キロ)　⑥事務本館南側　⑦正門
MC:モニタリングカー　可搬:可搬型MP

測定場所		③																							
時間		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
MC	測定値(μSv/h)	47.9	47.8	47.8	47.8	47.6	47.7	47.7	47.7	47.7	47.7	47.6	47.7	47.6	47.6	47.6	47.6	47.4	47.4	47.4	47.4	47.5	47.3	47.3	47.2
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	620	-	-	620	-	-	623	-	-	622	-	-	623	-	-	621	-	-	621	-	-	618	-	-
	⑦正門(μSv/h)	87	-	-	86	-	-	86	-	-	86	-	-	86	-	-	86	-	-	86	-	-	87	-	-
	③西門(μSv/h)	37	-	-	38	-	-	38	-	-	37	-	-	37	-	-	37	-	-	37	-	-	37	-	-
風向		南	北北西	西北西	西南西	西南西	南西	西南西	西南西	南南西	南西	南西	南	西北西	北西	西	北西	西北西	西北西	西	西	西南西	北西	西	西北西
風速(m/s)		0.4	0.3	0.4	0.4	0.6	0.6	0.4	0.4	0.2	0.3	0.4	0.3	0.5	0.4	2.0	0.3	0.4	0.4	0.5	0.4	0.5	0.6	0.6	0.5

測定場所		③																							
時間		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
MC	測定値(μSv/h)	47.3	47.4	47.3	47.2	47.3	47.2	47.2	47.2	47.2	47.2	47.2	47.1	47.1	47.1	47.1	47.0	47.1	47.0	47.1					
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND					
可搬	⑥本館南(μSv/h)	622	-	-	621	-	-	619	-	-	619	-	-	622	-	-	622	-	-	621					
	⑦正門(μSv/h)	85	-	-	86	-	-	86	-	-	85	-	-	87	-	-	86	-	-	86					
	③西門(μSv/h)	37	-	-	37	-	-	37	-	-	37	-	-	38	-	-	37	-	-	37					
風向		西北西	西	西	西	西南西	南西	西南西	西	西南西	西南西	西	西	西	西	西北西	南西	西南西	西	北西					
風速(m/s)		0.5	0.5	0.8	0.9	0.7	0.7	0.8	0.7	0.6	0.5	0.6	0.7	0.5	0.8	0.7	0.6	0.6	0.5	0.5					

測定場所		③																							
時間		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
MC	測定値(μSv/h)																								
	中性子																								
可搬	⑥本館南(μSv/h)																								
	⑦正門(μSv/h)																								
	③西門(μSv/h)																								
風向																									
風速(m/s)																									

4月9日　　福島第一(1F)

測定場所　①事務本館北(2号機より北西約0．5キロ)　②体育館付近(MP－5東側)(2号機より西北西約0．9キロ)
③西門付近 (MP-5付近)(2号機より西約1．1キロ)　④正門付近前(MP-6付近)(2号機より西南西約1．0キロ)
⑤免震棟前(2号機より北西約0．5キロ)　⑥事務本館南側　⑦正門
MC:モニタリングカー　可搬:可搬型MP

測定場所		③																						
時間		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
MC	測定値(μSv/h)	49.4	49.3	49.2	49.2	49.2	49.2	49.2	49.2	49.2	49.1	49.2	49.1	48.8	48.8	48.7	48.4	48.3	48.4	48.5	48.5	48.6	48.6	48.5	48.8
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	627	-	-	625	-	-	622	-	-	623	-	-	621	-	-	614	-	-	616	-	-	618	-	-
	⑦正門(μSv/h)	87	-	-	89	-	-	88	-	-	87	-	-	88	-	-	86	-	-	86	-	-	87	-	-
	⑨西門(μSv/h)	39	-	-	39	-	-	39	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-
風向		北北西	北東	北西	北東	北西	北東	北東	東	東	北東	北東	北北東	北北東	北西	北	北東	北東	東	北北東	北東	北東	北東	北東	北北東
風速(m/s)		0.6	0.7	0.9	1.1	0.6	0.6	0.6	1.9	0.7	0.9	0.8	1.0	0.8	0.7	0.8	4.0	6.3	3.9	2.0	1.1	1.7	7.1	5.7	3.1

測定場所		③																						
時間		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
MC	測定値(μSv/h)	48.5	48.5	48.5	48.4	48.4	48.3	48.4	48.6	48.5	48.4	48.3	48.3	48.2	48.2	48.2	48.2	48.2	48.3	48.2	48.1	48.3	48.2	48.1	48.1
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	618	-	-	621	-	-	622	-	-	622	-	-	618	-	-	625	-	-	623	-	-	620	-	-
	⑦正門(μSv/h)	87	-	-	87	-	-	87	-	-	87	-	-	87	-	-	87	-	-	87	-	-	87	-	-
	⑨西門(μSv/h)	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-
風向		北東	東北東	北北東	北北東	北東	北北東	北東	北東	北東	西	北東	北北東	北東	北東	北東	北東	北東	北東	北	北北西	北北東	北	北東	南西
風速(m/s)		3.1	1.5	0.7	0.6	0.5	0.5	0.6	0.6	0.7	0.9	0.4	0.4	1.6	6.0	6.6	6.5	6.5	0.4	0.3	0.4	0.5	0.6	0.6	0.5

測定場所		③																						
時間		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
MC	測定値(μSv/h)	48.2	48.0	48.1	48.1	48.0	47.9	48.0	48.0	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.9	47.8	47.8	47.8	47.7	47.8	47.8	47.8	47.6
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	625	-	-	625	-	-	623	-	-	623	-	-	622	-	-	621	-	-	620	-	-	621	-	-
	⑦正門(μSv/h)	87	-	-	86	-	-	87	-	-	86	-	-	86	-	-	86	-	-	86	-	-	86	-	-
	⑨西門(μSv/h)	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-	38	-	-
風向		北西	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北	南西
風速(m/s)		0.7	3.9	6.4	6.6	6.5	6.6	6.5	6.4	6.4	6.4	6.5	6.6	6.4	5.8	6.1	5.9	6.1	5.8	6.1	5.7	6.1	6.0	4.6	0.5

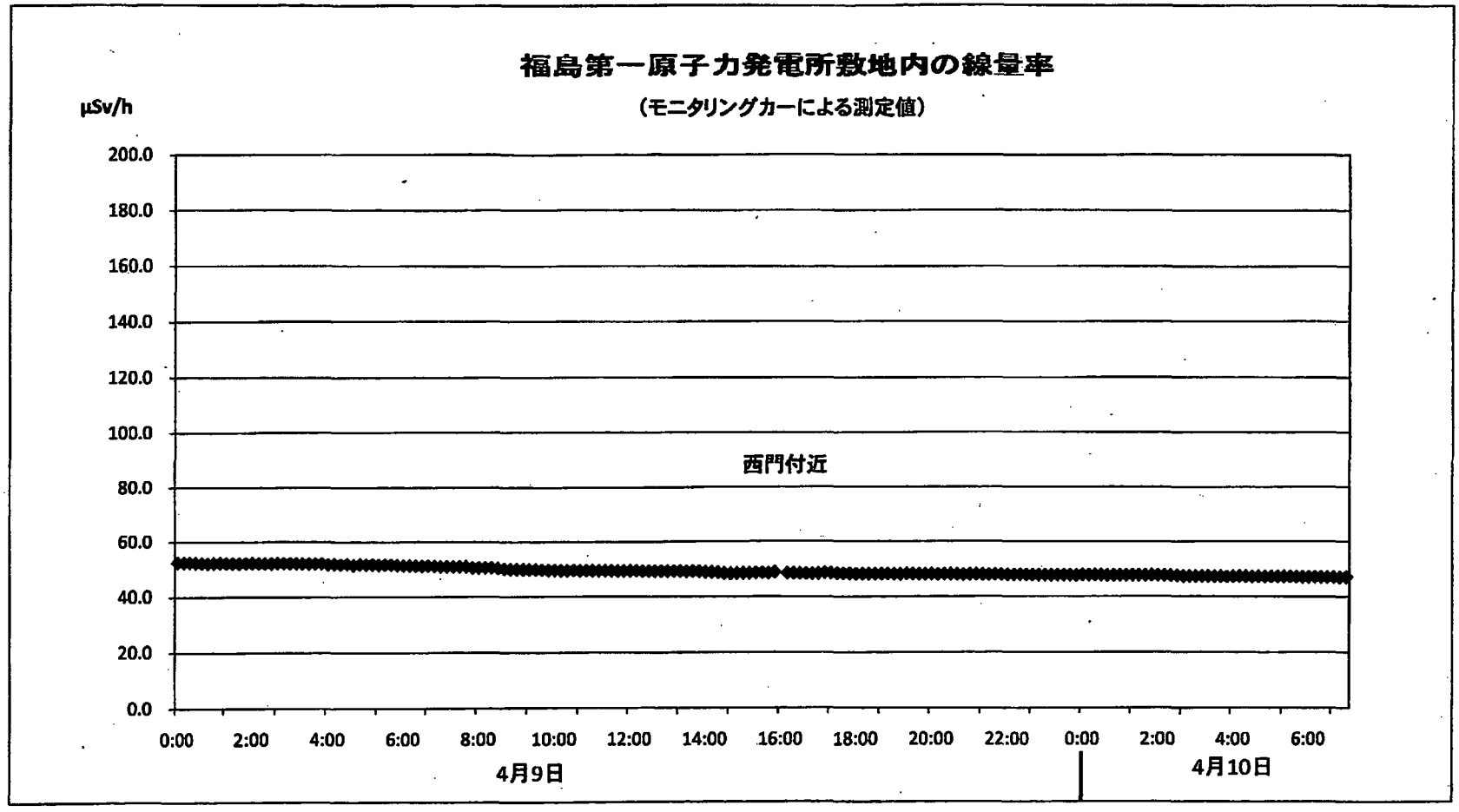
4月9日　福島第一(1F)

測定場所　①事務本館北(2号機より北西約0．5キロ)　②体育館付近(MP－5東側)(2号機より西北西約0．9キロ)
③西門付近 (MP-5付近)(2号機より西約1．1キロ)　④正門付近前(MP-6付近)(2号機より西南西約1．0キロ)
⑤免震棟前(2号機より北西約0．5キロ)　⑥事務本館南側　⑦正門
MC:モニタリングカー　可搬:可搬型MP

測定場所		③																							
時間		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
MC	測定値(μSv/h)	52.5	52.5	52.5	52.3	52.2	52.1	52.2	52.3	52.2	52.2	52.1	52.2	52.3	52.2	52.1	52.1	52.2	52.2	52.1	52.1	52.0	52.0	52.0	52.1
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	651	-	-	651	-	-	651	-	-	654	-	-	651	-	-	652	-	-	655	-	-	655	-	-
	⑦正門(μSv/h)	92	-	-	91	-	-	90	-	-	92	-	-	92	-	-	92	-	-	92	-	-	91	-	-
	③西門(μSv/h)	40	-	-	40	-	-	40	-	-	40	-	-	41	-	-	41	-	-	41	-	-	41	-	-
風向		北	北北西	北	北東	西北西	北	西北西	北北西	西	北北西	北北西	北西	北	西北西	北西	西北西	西北西	北西	北北東	北西	北西	北西	東	北北西
風速(m/s)		1.1	1.2	0.8	1.0	0.9	0.8	0.8	0.9	0.7	0.9	0.8	0.7	0.7	0.8	0.7	0.9	1.1	1.1	1.1	1.0	1.2	1.0	0.9	0.9

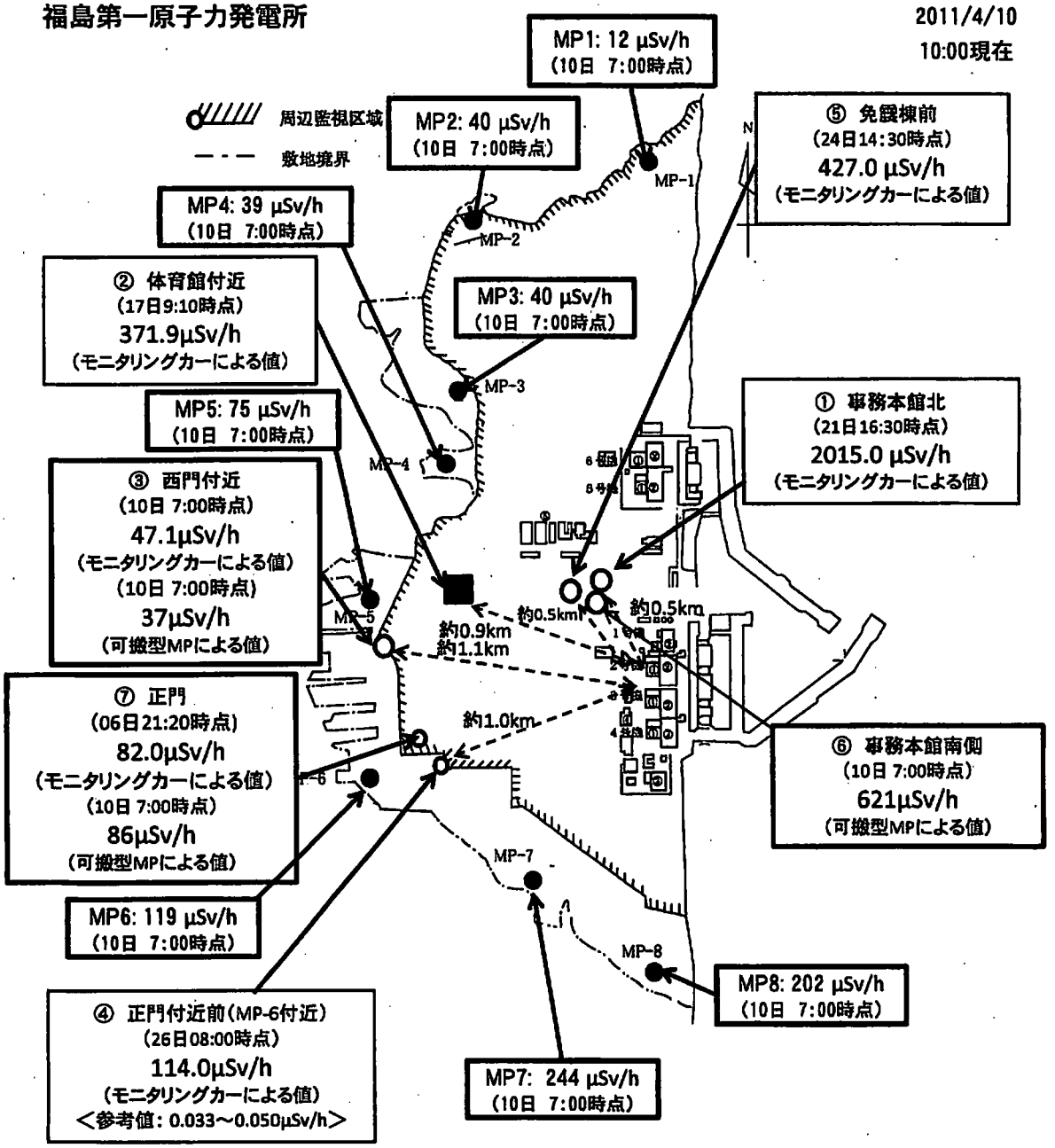
測定場所		③																							
時間		4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
MC	測定値(μSv/h)	51.7	51.9	51.8	51.9	51.4	51.8	51.7	51.8	51.6	51.7	51.7	51.5	51.3	51.3	51.2	51.1	51.2	51.1	50.9	50.9	50.9	50.9	50.9	50.6
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	653	-	-	654	-	-	655	-	-	651	-	-	650	-	-	649	-	-	643	-	-	643	-	-
	⑦正門(μSv/h)	91	-	-	91	-	-	91	-	-	91	-	-	91	-	-	91	-	-	91	-	-	89	-	-
	③西門(μSv/h)	41	-	-	41	-	-	41	-	-	40	-	-	40	-	-	40	-	-	40	-	-	40	-	-
風向		西	北西	北	北西	西	北	西	西	北西	北西	北西	北北西	北西	西北西	西	西北西	北西	西	北西	北西	北西	北北西	西	西北西
風速(m/s)		1.1	1.2	1.1	0.8	1.1	0.9	1.0	1.0	1.1	1.3	1.1	1.1	1.3	1.1	1.1	0.9	1.0	0.8	1.0	1.2	1.0	1.0	1.2	1.2

測定場所		③																							
時間		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
MC	測定値(μSv/h)	50.6	50.6	50.6	50.3	50.1	49.9	49.9	49.8	49.8	49.8	49.7	49.6	49.6	49.5	49.5	49.6	49.5	49.5	49.4	49.4	49.4	49.4	49.3	49.3
	中性子	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
可搬	⑥本館南(μSv/h)	644	-	-	637	-	-	630	-	-	627	-	-	627	-	-	626	-	-	626	-	-	625	-	-
	⑦正門(μSv/h)	90	-	-	89	-	-	88	-	-	89	-	-	87	-	-	88	-	-	86	-	-	87	-	-
	③西門(μSv/h)	40	-	-	39	-	-	39	-	-	39	-	-	39	-	-	39	-	-	39	-	-	38	-	-
風向		西	西	西北西	西	北西	西	北西	北西	北西	北西	北北西	北西	北北西	北北西	北西	北北西	北北西	北北西	北北西	北北西	北北西	北	北	北
風速(m/s)		1.0	1.0	1.1	1.3	1.2	1.1	1.1	0.8	1.2	1.1	1.0	1.2	2.9	1.3	1.1	1.5	0.9	0.9	1.0	0.9	0.7	0.7	0.8	0.7


福島第一原子力発電所敷地内の線量率
（モニタリングカーによる測定値）
μSv/h
200.0
180.0
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
西門付近
0:00
2:00
4:00
6:00
8:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
0:00
2:00
4:00
6:00
4月9日
4月10日

福島第一原子力発電所

2011/4/10
10:00現在



福島第一原子力発電所 モニタリングポスト空間線量率(μSv/h)

測定日時	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
2011/4/9 21:10	12	40	40	40	77	121	248	205
2011/4/9 21:20	12	40	40	40	77	121	247	205
2011/4/9 21:30	12	40	40	40	77	121	247	205
2011/4/9 21:40	12	40	40	39	77	121	247	205
2011/4/9 21:50	12	40	40	39	77	121	247	205
2011/4/9 22:00	12	40	40	39	77	121	247	205
2011/4/9 22:10	12	40	40	39	77	121	247	205
2011/4/9 22:20	12	40	40	39	77	121	247	205
2011/4/9 22:30	12	40	40	39	77	121	247	204
2011/4/9 22:40	12	40	40	39	77	121	247	204
2011/4/9 22:50	12	40	40	39	77	121	247	204
2011/4/9 23:00	12	40	40	39	77	121	247	204
2011/4/9 23:10	12	40	40	39	77	121	246	204
2011/4/9 23:20	12	40	40	39	77	121	246	204
2011/4/9 23:30	12	40	40	39	77	121	246	204
2011/4/9 23:40	12	40	40	39	77	121	246	204
2011/4/9 23:50	12	40	40	39	77	121	246	204
2011/4/10 0:00	12	40	40	39	77	121	246	204
2011/4/10 0:10	12	40	40	39	77	120	246	204
2011/4/10 0:20	12	40	40	39	77	120	246	204
2011/4/10 0:30	12	40	40	39	77	120	246	204
2011/4/10 0:40	12	40	40	39	77	120	246	204
2011/4/10 0:50	12	40	40	39	77	120	246	204
2011/4/10 1:00	12	40	40	39	77	120	246	204
2011/4/10 1:10	12	40	40	39	77	120	246	204
2011/4/10 1:20	12	40	40	39	77	120	246	204
2011/4/10 1:30	12	40	40	39	77	120	246	204
2011/4/10 1:40	12	40	40	39	77	120	246	204
2011/4/10 1:50	12	40	40	39	77	120	246	204
2011/4/10 2:00	12	40	40	39	76	120	246	204
2011/4/10 2:10	12	40	40	39	76	120	245	204
2011/4/10 2:20	12	40	40	39	76	120	245	204
2011/4/10 2:30	12	40	40	39	76	120	245	204
2011/4/10 2:40	12	40	40	39	76	120	245	204
2011/4/10 2:50	12	40	40	39	76	120	245	204
2011/4/10 3:00	12	40	40	39	76	120	245	204
2011/4/10 3:10	12	40	40	39	76	120	245	204
2011/4/10 3:20	12	40	40	39	76	120	245	204
2011/4/10 3:30	12	40	40	39	76	120	245	204
2011/4/10 3:40	12	40	40	39	76	119	245	203
2011/4/10 3:50	12	40	40	39	75	119	244	203
2011/4/10 4:00	12	40	40	39	76	119	244	203
2011/4/10 4:10	12	40	40	39	75	119	244	203
2011/4/10 4:20	12	40	40	39	76	119	244	203
2011/4/10 4:30	12	40	40	39	75	119	244	203
2011/4/10 4:40	12	40	40	39	75	119	244	203
2011/4/10 4:50	12	40	40	39	75	119	244	203
2011/4/10 5:00	12	40	40	39	75	119	244	203
2011/4/10 5:10	12	40	40	39	75	119	244	203
2011/4/10 5:20	12	40	40	39	75	119	244	203
2011/4/10 5:30	12	40	40	39	75	119	244	203
2011/4/10 5:40	12	40	40	39	75	119	244	203
2011/4/10 5:50	12	40	40	39	75	119	244	203
2011/4/10 6:00	12	40	40	39	75	119	244	202
2011/4/10 6:10	12	40	40	39	75	119	244	202
2011/4/10 6:20	12	40	40	39	75	119	244	202
2011/4/10 6:30	12	40	40	39	75	119	244	202
2011/4/10 6:40	12	40	40	39	75	119	244	202
2011/4/10 6:50	12	40	40	39	75	119	244	202
2011/4/10 7:00	12	40	40	39	75	119	244	202

福島第二(2F) (事業者のモニタリングポスト)

4月10日																							
モニタリングポスト	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)	3.441	3.447	3.461	3.439	3.423	3.439	3.438	3.456	3.456	3.459	3.436	3.437	3.450	3.446	3.437	3.445	3.433	3.449	3.434	3.445	3.427	3.438	3.442	3.462
MP2(μSv/h)	2.580	2.572	2.570	2.557	2.575	2.564	2.583	2.597	2.592	2.579	2.576	2.575	2.559	2.580	2.564	2.559	2.560	2.577	2.577	2.557	2.572	2.592	2.591	2.636
MP3(μSv/h)	3.722	3.709	3.723	3.715	3.713	3.724	3.724	3.727	3.710	3.703	3.705	3.711	3.698	3.724	3.705	3.711	3.700	3.713	3.711	3.688	3.697	3.709	3.716	3.742
MP4(μSv/h)	2.900	2.887	2.904	2.884	2.887	2.900	2.899	2.900	2.918	2.908	2.883	2.897	2.893	2.900	2.896	2.897	2.894	2.896	2.890	2.887	2.874	2.897	2.891	2.925
MP5(μSv/h)	2.917	2.915	2.898	2.897	2.910	2.888	2.930	2.911	2.924	2.923	2.918	2.889	2.905	2.913	2.906	2.899	2.908	2.900	2.893	2.878	2.890	2.900	2.901	2.955
MP6(μSv/h)	2.830	2.825	2.818	2.825	2.823	2.827	2.830	2.823	2.835	2.833	2.829	2.824	2.832	2.824	2.839	2.821	2.812	2.830	2.817	2.808	2.795	2.835	2.828	2.830
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北	北	北	北	北	北	北北東	北	北	北北東	北北東	北北東	北北東	北北東	北	北	北北東	北東	北北東	北北東	北北東	北	北	北
風速(m/s)	3.6	3.5	2.3	2.9	2.0	1.7	3.5	3.8	2.3	3.2	4.6	3.6	4.2	4.4	3.1	6.0	0.8	2.2	3.4	4.7	3.5	3.3	5.4	5.5

4月10日																								
モニタリングポスト	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)	3.440	3.430	3.427	3.427	3.409	3.431	3.423	3.414	3.409	3.417	3.407	3.398	3.416	3.409	3.415	3.400	3.402	3.409	3.389					
MP2(μSv/h)	2.581	2.560	2.558	2.548	2.551	2.555	2.554	2.560	2.554	2.548	2.543	2.555	2.549	2.540	2.542	2.531	2.547	2.536	2.540					
MP3(μSv/h)	3.705	3.692	3.672	3.693	3.678	3.671	3.689	3.686	3.674	3.693	3.693	3.683	3.667	3.676	3.667	3.673	3.666	3.661	3.664					
MP4(μSv/h)	2.894	2.890	2.873	2.883	2.874	2.868	2.867	2.881	2.861	2.874	2.865	2.873	2.885	2.871	2.871	2.875	2.854	2.870	2.866					
MP5(μSv/h)	2.926	2.886	2.888	2.893	2.892	2.883	2.888	2.870	2.864	2.887	2.872	2.891	2.865	2.875	2.868	2.873	2.879	2.877	2.859					
MP6(μSv/h)	2.843	2.823	2.819	2.809	2.804	2.798	2.820	2.804	2.809	2.795	2.778	2.807	2.807	2.802	2.792	2.794	2.794	2.800	2.806					
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測					
風向	北	北	北	北	北北西	北北西	北	北北西	北北西	北	北北西	北北西	北	北	北	北北西	北	北	北					
風速(m/s)	5.1	4.1	4.1	4.4	2.7	3.1	3.4	2.9	3.0	3.1	2.4	2.2	2.8	2.3	3.2	2.2	3.1	3.2	3.5					

4月10日																								
モニタリングポスト	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)																								
MP2(μSv/h)																								
MP3(μSv/h)																								
MP4(μSv/h)																								
MP5(μSv/h)																								
MP6(μSv/h)																								
MP7(μSv/h)																								
風向																								
風速(m/s)																								

福島第二(2F) (事業者のモニタリングポスト)

4月9日																								
モニタリングポスト	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)	3.396	3.390	3.394	3.408	3.409	3.431	3.421	3.409	3.408	3.421	3.418	3.429	3.413	3.418	3.477	3.465	3.458	3.454	3.456	3.438	3.442	3.429	3.428	3.451
MP2(μSv/h)	2.477	2.469	2.482	2.474	2.480	2.496	2.517	2.512	2.525	2.523	2.510	2.509	2.524	2.540	2.611	2.598	2.579	2.576	2.568	2.560	2.570	2.565	2.569	2.566
MP3(μSv/h)	3.652	3.638	3.662	3.631	3.627	3.640	3.670	3.658	3.671	3.680	3.702	3.702	3.676	3.712	3.748	3.740	3.712	3.709	3.717	3.688	3.719	3.705	3.694	3.712
MP4(μSv/h)	2.790	2.787	2.793	2.782	2.784	2.802	2.793	2.810	2.820	2.807	2.837	2.836	2.838	2.857	2.896	2.900	2.879	2.871	2.868	2.868	2.869	2.882	2.856	2.866
MP5(μSv/h)	2.741	2.740	2.736	2.733	2.729	2.718	2.745	2.771	2.781	2.772	2.784	2.801	2.802	2.823	2.862	2.898	2.878	2.860	2.865	2.874	2.868	2.874	2.866	2.852
MP6(μSv/h)	2.692	2.686	2.679	2.676	2.677	2.685	2.705	2.711	2.721	2.719	2.739	2.739	2.745	2.767	2.808	2.835	2.826	2.825	2.825	2.827	2.812	2.813	2.819	2.829
MP7(μSv/h)	1.960	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北北東	北北東	北	北	北	北	北	北北東	北	北	北	北	北	北	北	北	北	北	北北東	北北東	北北東	北東	北東	北東
風速(m/s)	6.0	5.3	4.8	4.4	4.4	3.9	3.8	3.7	3.5	3.9	4.6	5.2	6.2	5.8	6.5	6.1	5.4	3.5	4.0	4.0	3.6	3.8	4.2	3.7

4月9日																								
モニタリングポスト	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)	3.432	3.433	3.443	3.427	3.437	3.425	3.438	3.447	3.456	3.456	3.440	3.458	3.470	3.460	3.466	3.450	3.441	3.459	3.482	3.509	3.491	3.487	3.507	3.487
MP2(μSv/h)	2.575	2.562	2.565	2.561	2.562	2.573	2.574	2.622	2.634	2.646	2.666	2.645	2.607	2.611	2.600	2.607	2.623	2.607	2.625	2.676	2.669	2.663	2.649	2.613
MP3(μSv/h)	3.693	3.686	3.695	3.710	3.691	3.691	3.737	3.777	3.801	3.786	3.783	3.786	3.773	3.764	3.765	3.756	3.770	3.772	3.762	3.782	3.794	3.803	3.790	3.783
MP4(μSv/h)	2.881	2.882	2.871	2.857	2.876	2.884	2.873	2.945	2.983	2.946	2.973	2.955	2.935	2.931	2.916	2.924	2.927	2.948	2.948	2.935	2.933	2.972	2.967	2.949
MP5(μSv/h)	2.855	2.860	2.867	2.872	2.851	2.852	2.868	2.938	2.967	2.965	2.979	2.998	2.953	2.964	2.947	2.924	2.949	2.945	2.948	2.958	2.970	3.001	2.973	2.953
MP6(μSv/h)	2.820	2.810	2.821	2.821	2.800	2.818	2.823	2.856	2.889	2.882	2.905	2.890	2.878	2.857	2.869	2.863	2.872	2.858	2.873	2.879	2.907	2.902	2.911	2.900
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北北東	北北東	北北東	北北東	北	北	北	北北東	北	北北東	北北東	北北東	北北東	北	北北東	北	北北東	北	北	北	北	北	北	北
風速(m/s)	3.4	3.8	4.4	4.2	4.2	4.6	5.5	5.2	5.2	5.4	3.9	4.3	4.1	4.8	4.3	4.6	4.4	4.3	4.5	4.3	4.5	3.8	4.6	5.2

4月9日																								
モニタリングポスト	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)	3.477	3.459	3.458	3.477	3.457	3.449	3.453	3.477	3.445	3.444	3.454	3.454	3.470	3.485	3.472	3.453	3.447	3.434	3.450	3.445	3.449	3.449	3.440	3.434
MP2(μSv/h)	2.610	2.603	2.592	2.591	2.588	2.590	2.594	2.588	2.566	2.579	2.572	2.582	2.574	2.622	2.611	2.576	2.578	2.577	2.582	2.578	2.565	2.561	2.574	2.577
MP3(μSv/h)	3.768	3.759	3.753	3.754	3.753	3.743	3.743	3.728	3.729	3.741	3.721	3.736	3.719	3.734	3.727	3.716	3.723	3.722	3.726	3.720	3.717	3.708	3.722	3.707
MP4(μSv/h)	2.917	2.907	2.907	2.919	2.919	2.926	2.928	2.915	2.912	2.902	2.892	2.907	2.912	2.922	2.918	2.906	2.896	2.886	2.890	2.908	2.898	2.899	2.906	2.895
MP5(μSv/h)	2.931	2.931	2.931	2.923	2.920	2.931	2.920	2.910	2.920	2.913	2.907	2.904	2.909	2.907	2.921	2.905	2.903	2.895	2.901	2.901	2.895	2.905	2.905	2.898
MP6(μSv/h)	2.884	2.870	2.851	2.852	2.837	2.850	2.849	2.847	2.841	2.834	2.828	2.847	2.848	2.840	2.856	2.855	2.823	2.832	2.829	2.830	2.836	2.817	2.831	2.832
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北	北	北	北	北北東	北	北	北	北	北北西	北	北	北	北	北	北北西	北北西	北	北	北	西	北	北	北
風速(m/s)	4.7	3.7	4.1	3.2	3.2	4.4	3.6	4.2	4.0	3.9	5.0	3.4	3.2	3.3	3.3	4.1	4.6	5.7	4.6	2.7	2.8	2.3	2.5	3.4

福島第二(2F)(事業者のモニタリングポスト)

4月9日																								
モニタリングポスト	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)	3.544	3.536	3.520	3.523	3.536	3.526	3.526	3.527	3.521	3.526	3.519	3.533	3.528	3.530	3.520	3.519	3.516	3.524	3.511	3.522	3.524	3.522	3.526	3.525
MP2(μSv/h)	2.598	2.595	2.589	2.600	2.596	2.587	2.580	2.586	2.588	2.588	2.585	2.586	2.585	2.582	2.587	2.588	2.583	2.593	2.585	2.569	2.581	2.583	2.578	2.585
MP3(μSv/h)	3.795	3.791	3.795	3.814	3.797	3.785	3.786	3.785	3.799	3.787	3.788	3.784	3.781	3.782	3.767	3.785	3.780	3.765	3.779	3.780	3.783	3.755	3.765	3.766
MP4(μSv/h)	2.889	2.897	2.896	2.880	2.880	2.888	2.884	2.885	2.879	2.889	2.885	2.883	2.880	2.881	2.870	2.876	2.877	2.883	2.876	2.882	2.870	2.875	2.877	2.872
MP5(μSv/h)	2.851	2.849	2.836	2.846	2.853	2.837	2.838	2.850	2.835	2.832	2.848	2.837	2.833	2.841	2.841	2.845	2.840	2.848	2.847	2.832	2.827	2.833	2.840	2.835
MP6(μSv/h)	2.848	2.820	2.828	2.829	2.831	2.839	2.820	2.825	2.805	2.828	2.833	2.812	2.815	2.828	2.832	2.820	2.818	2.823	2.824	2.822	2.815	2.817	2.810	2.815
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北北西	北北西	北	北	北	北	北	北	北	北北西	北北西	北北西	北北西	北	北	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西
風速(m/s)	7.4	7.7	6.6	5.7	7.1	6.1	6.5	7.9	5.6	5.9	6.2	5.7	5.8	7.2	8.0	6.8	6.1	6.7	7.5	7.7	7.1	6.8	6.6	6.2

4月9日																								
モニタリングポスト	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)	3.525	3.505	3.500	3.499	3.510	3.510	3.485	3.500	3.503	3.496	3.489	3.502	3.484	3.486	3.495	3.472	3.487	3.467	3.478	3.480	3.483	3.467	3.469	3.474
MP2(μSv/h)	2.584	2.572	2.568	2.559	2.572	2.575	2.567	2.578	2.562	2.566	2.552	2.551	2.547	2.554	2.545	2.547	2.545	2.560	2.545	2.554	2.538	2.555	2.531	2.524
MP3(μSv/h)	3.773	3.781	3.778	3.749	3.770	3.775	3.758	3.767	3.763	3.761	3.749	3.735	3.741	3.757	3.748	3.737	3.734	3.743	3.731	3.733	3.730	3.720	3.733	3.717
MP4(μSv/h)	2.874	2.860	2.877	2.878	2.866	2.863	2.866	2.863	2.877	2.863	2.863	2.868	2.860	2.851	2.850	2.848	2.855	2.844	2.862	2.846	2.834	2.845	2.839	2.841
MP5(μSv/h)	2.829	2.836	2.819	2.823	2.840	2.821	2.841	2.823	2.811	2.829	2.827	2.812	2.808	2.813	2.814	2.794	2.791	2.799	2.801	2.801	2.792	2.786	2.797	2.791
MP6(μSv/h)	2.814	2.802	2.799	2.803	2.811	2.810	2.812	2.808	2.802	2.802	2.792	2.794	2.799	2.792	2.794	2.779	2.777	2.775	2.788	2.771	2.781	2.776	2.779	2.786
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北北西	北北西	北北西	北	北北西	北	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西
風速(m/s)	7.1	5.2	5.7	7.0	5.5	7.3	4.6	6.5	8.5	9.0	7.3	8.2	8.0	8.6	8.7	6.9	7.9	7.4	7.9	7.6	7.0	6.9	6.6	6.9

4月9日																								
モニタリングポスト	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)	3.460	3.466	3.465	3.442	3.448	3.439	3.431	3.413	3.422	3.423	3.406	3.395	3.406	3.403	3.407	3.407	3.415	3.408	3.402	3.406	3.406	3.388	3.401	3.405
MP2(μSv/h)	2.540	2.531	2.522	2.533	2.518	2.497	2.504	2.499	2.497	2.497	2.481	2.490	2.476	2.476	2.484	2.481	2.496	2.477	2.476	2.473	2.481	2.472	2.477	2.477
MP3(μSv/h)	3.720	3.717	3.712	3.703	3.716	3.699	3.690	3.691	3.674	3.670	3.675	3.665	3.663	3.682	3.657	3.654	3.653	3.656	3.645	3.650	3.648	3.652	3.647	3.649
MP4(μSv/h)	2.838	2.839	2.827	2.826	2.832	2.822	2.810	2.818	2.798	2.804	2.792	2.800	2.789	2.782	2.800	2.799	2.795	2.789	2.798	2.791	2.783	2.784	2.792	2.791
MP5(μSv/h)	2.780	2.785	2.783	2.779	2.776	2.775	2.750	2.761	2.742	2.728	2.764	2.737	2.729	2.741	2.735	2.740	2.742	2.747	2.726	2.736	2.726	2.733	2.734	2.726
MP6(μSv/h)	2.758	2.762	2.758	2.751	2.745	2.726	2.726	2.729	2.724	2.709	2.704	2.713	2.694	2.694	2.692	2.686	2.691	2.700	2.696	2.683	2.686	2.687	2.687	2.682
MP7(μSv/h)	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測	欠測
風向	北北西	北	北北西	北北西	北北西	北北西	北	北北西	北西	北北西	北北西	北	北	北	北	北	北	北北西	北	北	北	北	北	北北東
風速(m/s)	6.6	9.4	7.2	9.4	8.6	8.8	9.7	7.6	7.7	14.8	6.9	7.3	17.4	8.0	8.5	8.0	7.3	6.7	7.0	5.2	5.0	4.7	5.8	4.4

福島第二原子力発電所

2011/4/10
10:00現在

MP1:3.389μSv/h(10日　7:00時点)
(参考値:0.035～0.054μSv/h)

MP2:2.540μSv/h(10日　7:00時点)
(参考値:0.042～0.062μSv/h)

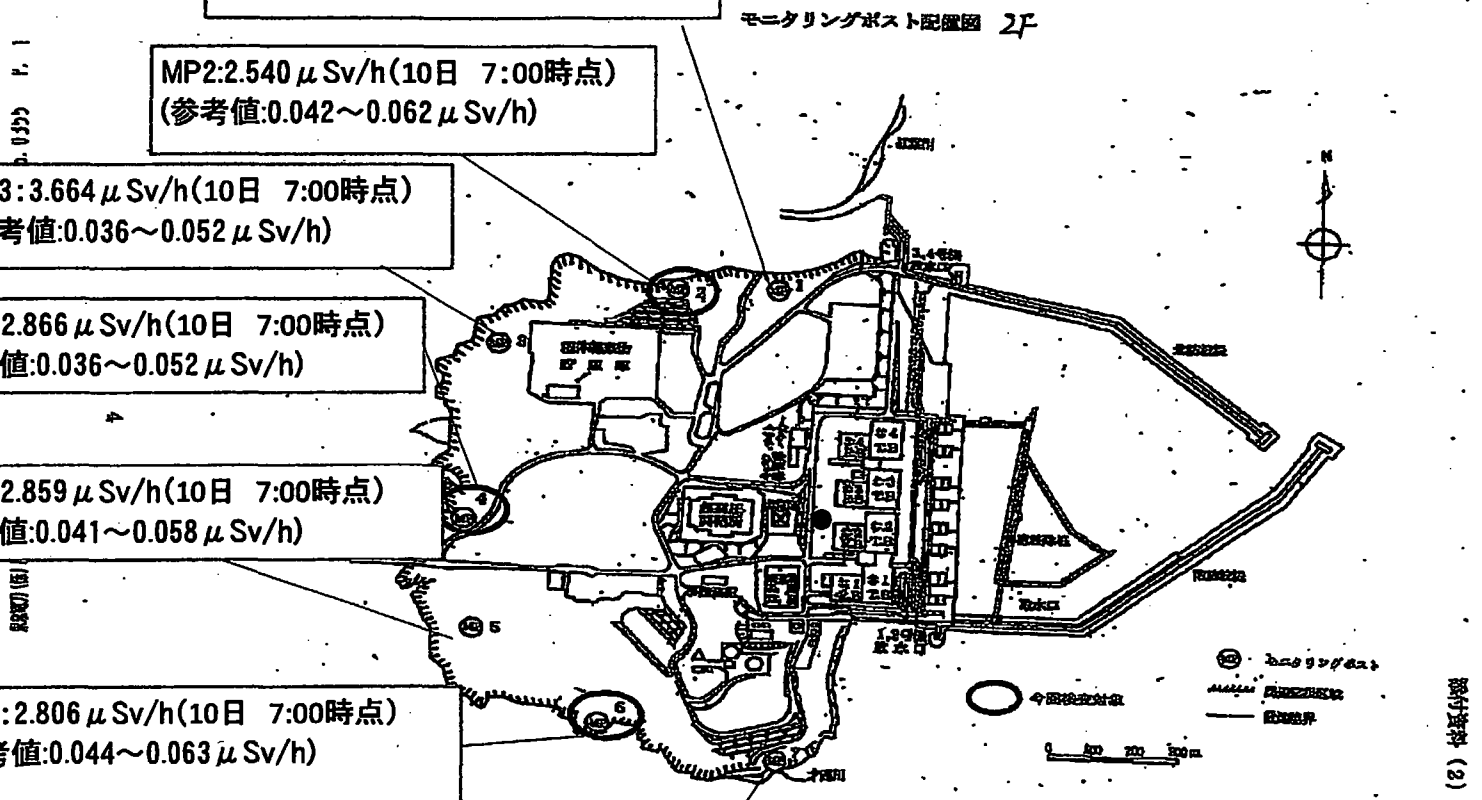
MP3:3.664μSv/h(10日　7:00時点)
(参考値:0.036～0.052μSv/h)

MP4:2.866μSv/h(10日　7:00時点)
(参考値:0.036～0.052μSv/h)

MP5:2.859μSv/h(10日　7:00時点)
(参考値:0.041～0.058μSv/h)

MP6:2.806μSv/h(10日　7:00時点)
(参考値:0.044～0.063μSv/h)

MP7：1.960μSv/h(9日　12:00時点)
(参考値:0.043～0.062μSv/h)



各発電所等の環境モニタリング結果

単位：μSv/h

通常の平常値の範囲	会社名	発電所名	4月9日											
			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	北海道電力㈱	泊発電所	0.030	0.031	0.031	0.031	0.031	0.030	0.031	0.031	0.030	0.031	0.031	0.030
0.024～0.060	東北電力㈱	女川原子力発電所	0.37	0.37	0.37	0.37	0.37	0.37	0.36	0.37	0.37	0.37	0.36	0.36
0.012～0.060		東通原子力発電所	0.017	0.017	0.017	0.016	0.017	0.017	0.017	0.017	0.017	0.018	0.017	0.018
0.033～0.050	東京電力㈱	福島第一原子力発電所※	52.5	52.2	52.3	52.1	51.7	51.7	51.3	50.9	50.6	49.9	49.6	49.4
0.036～0.052		福島第二原子力発電所	3.795	3.786	3.781	3.778	3.773	3.758	3.741	3.731	3.720	3.680	3.663	3.645
0.011～0.159		柏崎刈羽原子力発電所	0.087	0.087	0.088	0.070	0.071	0.071	0.069	0.072	0.071	0.071	0.069	0.077
0.036～0.053	日本原子力発電㈱	東海第二発電所	0.432	0.432	0.436	0.434	0.430	0.433	0.430	0.431	0.431	0.424	0.422	0.421
0.039～0.110		敦賀発電所	0.075	0.076	0.077	0.078	0.081	0.085	0.086	0.084	0.080	0.078	0.080	0.076
0.084～0.108	中部電力㈱	浜岡原子力発電所	0.045	0.046	0.049	0.050	0.047	0.046	0.049	0.052	0.048	0.050	0.053	0.055
0.0207～0.132	北陸電力㈱	志賀原子力発電所	0.038	0.040	0.040	0.043	0.046	0.046	0.046	0.053	0.044	0.039	0.034	0.032
0.028～0.130	中国電力㈱	島根原子力発電所	0.030	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.030	0.029	0.031	0.029
0.070～0.077	関西電力㈱	美浜発電所	0.073	0.073	0.075	0.076	0.079	0.084	0.085	0.080	0.078	0.077	0.078	0.073
0.045～0.047		高浜発電所	0.044	0.045	0.047	0.048	0.051	0.053	0.054	0.053	0.047	0.044	0.043	0.042
0.036～0.040		大飯発電所	0.035	0.036	0.037	0.040	0.045	0.049	0.051	0.047	0.041	0.038	0.036	0.035
0.011～0.080	四国電力㈱	伊方発電所	0.014	0.014	0.014	0.014	0.015	0.013	0.014	0.014	0.014	0.014	0.014	0.014
0.023～0.087	九州電力㈱	玄海原子力発電所	0.027	0.026	0.026	0.026	0.025	0.025	0.026	0.026	0.027	0.027	0.026	0.025
0.034～0.120		川内原子力発電所	0.037	0.039	0.039	0.036	0.036	0.037	0.037	0.036	0.039	0.037	0.035	0.037
0.009～0.089	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.017	0.016	0.017	0.016	0.016	0.017	0.017	0.017	0.017	0.016	0.017
0.009～0.071		六ヶ所 埋設事業所	0.022	0.022	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.022	0.023

※福島第一原子力発電所については、作業状況により若干測定時間のずれ及び測定位置の変更が生じることもございます。

通常の平常値の範囲	会社名	発電所名	4月9日											
			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	北海道電力㈱	泊発電所	0.031	0.031	0.031	0.031	0.030	0.031	0.031	0.031	0.031	0.031		
0.024～0.060	東北電力㈱	女川原子力発電所	0.36	0.36	0.36	0.36	0.36	0.36	0.35	0.35	0.35	0.35		
0.012～0.060		東通原子力発電所	0.024	0.025	0.025	0.025	0.019	0.017	0.017	0.016	0.017	0.017		
0.033～0.050	東京電力㈱	福島第一原子力発電所※	49.4	49.2	48.8	48.5	48.5	48.4	48.2	48.2	48.2	48.0		
0.036～0.052		福島第二原子力発電所	3.652	3.670	3.676	3.717	3.693	3.737	3.773	3.762	3.768	3.743		
0.011～0.159		柏崎刈羽原子力発電所	0.080	0.081	0.072	0.068	0.085	0.085	0.084	0.085	0.084	0.084		
0.036～0.053	日本原子力発電㈱	東海第二発電所	0.419	0.420	0.421	0.419	0.420	0.418	0.417	0.417	0.413	0.414		
0.039～0.110		敦賀発電所	0.075	0.073	0.074	0.073	0.075	0.074	0.074	0.074	0.075	0.074		
0.084～0.108	中部電力㈱	浜岡原子力発電所	0.054	0.053	0.054	0.049	0.045	0.044	0.043	0.043	0.044	0.043		
0.0207～0.132	北陸電力㈱	志賀原子力発電所	0.032	0.032	0.032	0.032	0.032	0.033	0.032	0.032	0.032	0.033		
0.028～0.130	中国電力㈱	島根原子力発電所	0.028	0.030	0.030	0.030	0.029	0.031	0.031	0.030	0.033	0.029		
0.070～0.077	関西電力㈱	美浜発電所	0.073	0.073	0.072	0.071	0.073	0.071	0.073	0.073	0.072	0.073		
0.045～0.047		高浜発電所	0.042	0.042	0.042	0.043	0.042	0.042	0.042	0.042	0.043	0.042		
0.036～0.040		大飯発電所	0.035	0.035	0.034	0.034	0.034	0.034	0.035	0.034	0.035	0.035		
0.011～0.080	四国電力㈱	伊方発電所	0.014	0.014	0.015	0.014	0.014	0.013	0.014	0.014	0.014	0.014		
0.023～0.087	九州電力㈱	玄海原子力発電所	0.025	0.025	0.026	0.025	0.026	0.027	0.027	0.026	0.025	0.025		
0.034～0.120		川内原子力発電所	0.037	0.037	0.036	0.037	0.038	0.036	0.039	0.036	0.036	0.038		
0.009～0.089	日本原燃(株)	六ヶ所 再処理事業所	0.019	0.024	0.025	0.025	0.018	0.017	0.016	0.016	0.016	0.016		
0.009～0.071		六ヶ所 埋設事業所	0.029	0.031	0.030	0.031	0.025	0.023	0.023	0.022	0.022	0.022		

※1 福島第一原子力発電所については、作業状況により若干測定時間のずれ及び測定位置の変更が生じることもございます。
※2 中部電力(株)からの4月1日12時データより、宇宙線寄与分を加算しない値で報告を受けています。

4月9日 21時現在

東京電力福島第一原子力発電所敷地内の核種分析結果

採取場所：1F南放水口付近（1～4u放水口から南側約330m地点）
採取方法：海水を汲みあげ採取
測定方法：試料500mlを福島第二に運搬し、Ge半導体検出器で測定
測定時間：1，000秒

核種	3月31日 8:40 1F南放水口付近（1～4u放水口から南側約330m地点）		3月31日 14:00 1F南放水口付近（1～4u放水口から南側約330m地点）		4月1日 8:20 1F南放水口付近（1～4u放水口から南側約330m地点）		4月1日 14:00 1F南放水口付近（1～4u放水口から南側約330m地点）		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	7.4E+01	1900	8.7E+01	2200	7.1E+01	1800	3.8E+01	950	4.0E-02
Cs-134	2.1E+01	350	2.5E+01	420	2.2E+01	370	1.1E+01	180	6.0E-02
Cs-137	2.1E+01	230	2.5E+01	280	2.2E+01	240	1.1E+01	120	9.0E-02

核種	4月2日 8:30 1F南放水口付近（1～4u放水口から南側約330m地点）		4月2日13:20 1F南放水口付近（1～4u放水口から南側約330m地点）		4月3日 8:40 1F南放水口付近（1～4u放水口から南側約330m地点）		4月3日 13:50 1F南放水口付近（1～4u放水口から南側約330m地点）		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	6.0E-01	15	4.4E-01	11	2.9E+01	720	2.5E+01	630	4.0E-02
Cs-134	1.1E+00	18	5.1E-01	8.4	1.1E+01	190	1.0E+01	170	6.0E-02
Cs-137	1.1E+00	12	5.1E-01	5.6	1.1E+01	130	1.0E+01	110	9.0E-02

採取場所：1F南放水口付近（1～4u放水口から南側約330m地点）
採取方法：海水を汲みあげ採取
測定方法：試料500mlを福島第二に運搬し、Ge半導体検出器で測定
測定時間：1，000秒

核種	4月4日 9:00 1F南放水口付近（1～4u放水口から南側約330m地点）		4月4日 14:20 1F南放水口付近（1～4u放水口から南側約330m地点）		4月5日 8:55 1F南放水口付近（1～4u放水口から南側約330m地点）		4月5日 14:10 1F南放水口付近（1～4u放水口から南側約330m地点）		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	1.1E+01	280	4.1E+01	1000	1.6E+01	400	1.1E+01	280	4.0E-02
Cs-134	5.1E+00	85	1.9E+01	320	7.7E+00	130	5.3E+00	88	6.0E-02
Cs-137	5.1E+00	57	1.9E+01	210	7.8E+00	87	5.4E+00	60	9.0E-02

核種	4月6日 8:30 1F南放水口付近（1～4u放水口から南側約330m地点）		4月6日 14:05 1F南放水口付近（1～4u放水口から南側約330m地点）		4月7日 8:30 1F南放水口付近（1～4u放水口から南側約330m地点）		4月7日 14:00 1F南放水口付近（1～4u放水口から南側約330m地点）		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	3.2E+00	80	3.7E+00	93	2.2E+00	55	1.7E+00	43	4.0E-02
Cs-134	2.1E+00	35	2.4E+00	40	1.7E+00	28	1.8E+00	30	6.0E-02
Cs-137	2.0E+00	22	2.5E+00	28	1.7E+00	19	1.8E+00	20	9.0E-02

採取場所：1F南放水口付近（1～4u放水口から南側約330m地点）
採取方法：海水を汲みあげ採取
測定方法：試料500mlを福島第二に運搬し、Ge半導体検出器で測定
測定時間：1，000秒

核種	4月8日 8:55 1F南放水口付近（1～4u放水口から南側約330m地点）		4月8日 13:55 1F南放水口付近（1～4u放水口から南側約330m地点）						③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）					
I-131	1.9E+01	480	1.9E+00	48					4.0E-02
Cs-134	1.2E+01	200	1.9E+00	32					6.0E-02
Cs-137	1.2E+01	130	1.9E+00	21					9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

採取場所：1F 5～6放水口北側（5～6u放水口から北側約30m地点）
採取方法：海水を汲みあげ採取
測定方法：試料500mlを福島第二に運搬し、Ge半導体検出器で測定
測定時間：1，000秒

核種	3月31日 8:20 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		3月31日 13:40 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		4月1日 8:40 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		4月1日 14:15 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	
I-131	4.5E+01	1100	8.3E+01	2100	1.2E+02	3000	7.5E+01	1900	4.0E-02
Cs-134	1.2E+01	200	2.6E+01	430	3.7E+01	620	2.4E+01	400	6.0E-02
Cs-137	1.2E+01	130	2.6E+01	290	3.7E+01	410	2.5E+01	280	9.0E-02

核種	4月2日 8:50 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		4月2日 13:40 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		4月3日 9:00 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		4月3日 14:05 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	
I-131	5.3E+01	1300	3.3E+01	820	1.2E+01	300	9.6E+00	240	4.0E-02
Cs-134	2.1E+01	350	1.3E+01	220	5.0E+00	83	3.7E+00	62	6.0E-02
Cs-137	2.1E+01	230	1.3E+01	150	5.0E+00	56	3.7E+00	41	9.0E-02

採取場所：1F 5～6放水口北側（5～6u放水口から北側約30m地点）
採取方法：海水を汲みあげ採取
測定方法：試料500mlを福島第二に運搬し、Ge半導体検出器で測定
測定時間：1，000秒

核種	4月4日 9:25		4月4日 14:40		4月5日 9:15		4月5日 14:30		③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	1F 5～6放水口北側（5～6u放水口から北側約30m地点）		1F 5～6放水口北側（5～6u放水口から北側約30m地点）		1F 5～6放水口北側（5～6u放水口から北側約30m地点）		1F 5～6放水口北側（5～6u放水口から北側約30m地点）		
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	
I-131	5.3E+00	130	5.3E+00	130	2.4E+01	600	1.6E+01	400	4.0E-02
Cs-134	2.3E+00	38	2.5E+00	42	1.3E+01	220	7.5E+00	130	6.0E-02
Cs-137	2.3E+00	26	2.6E+00	29	1.3E+01	140	7.7E+00	86	9.0E-02

核種	4月6日 8:55		4月6日 14:25		4月7日 8:50		4月7日 14:20		③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	1F 5～6放水口北側（5～6u放水口から北側約30m地点）		1F 5～6放水口北側（5～6u放水口から北側約30m地点）		1F 5～6放水口北側（5～6u放水口から北側約30m地点）		1F 5～6放水口北側（5～6u放水口から北側約30m地点）		
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	
I-131	2.4E+01	600	4.1E+01	1000	1.1E+02	2800	3.2E+01	800	4.0E-02
Cs-134	1.4E+01	230	2.3E+01	380	6.7E+01	1100	2.0E+01	330	6.0E-02
Cs-137	1.4E+01	160	2.4E+01	270	6.8E+01	760	2.0E+01	220	9.0E-02

採取場所：1F 5～6放水口北側（5～6u放水口から北側約30m地点）
採取方法：海水を汲みあげ採取
測定方法：試料500mlを福島第二に運搬し、Ge半導体検出器で測定
測定時間：1，000秒

核種	4月8日 9:15 1F 5～6放水口北側（5～6u放水口から北側約30m地点）		4月8日 14:25 1F 5～6放水口北側（5～6u放水口から北側約30m地点）						③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）					
I-131	5.0E+01	1300	4.6E+01	1200					4.0E-02
Cs-134	3.4E+01	570	2.9E+01	480					6.0E-02
Cs-137	3.4E+01	380	2.9E+01	320					9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

東京電力福島第二原子力発電所敷地内の核種分析結果

採取場所：2F北放水口付近（3、4号放水口付近）（1Fから約10km）
採取方法：海水をくみ上げ採取
測定方法：試料500mlをGe半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	3月31日 10:00		4月1日 9:50		4月2日 9:55		4月3日 9:35		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	1.5E+00	38	1.1E+00	28	5.4E-01	14.0	2.8E-01	6.9	4.0E-02
Cs-134	3.6E-01	6.0	3.0E-01	5.0	1.7E-01	2.9	9.9E-02	1.7	6.0E-02
Cs-137	3.6E-01	4.0	2.9E-01	3.2	1.8E-01	2.0	9.2E-02	1.0	9.0E-02

検出核種（半減期）	4月4日 9:50		4月5日 9:45		4月6日 9:05		4月7日 9:55		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		2F 北放水口付近（3,4号放水口付近）（1Fから約10km）		
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合	
I-131	5.5E-01	13.8	3.1E+00	78	2.2E+00	55	1.8E+00	45.0	4.0E-02
Cs-134	2.2E-01	3.7	1.4E+00	23.3	1.1E+00	18	9.8E-01	16.0	6.0E-02
Cs-137	2.4E-01	2.7	1.4E+00	15.6	1.1E+00	12	1.0E+00	11.0	9.0E-02

※　0.0E−0とは、0.0×10−0と同じ意味である。

採取場所：2F北放水口付近（3、4号放水口付近）（1Fから約10km）
採取方法：海水をくみ上げ採取
測定方法：試料500mlをGe半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月8日 9:05								③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	2F 北放水口付近（3,4号放水口付近）（1Fから約10km）								
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）							
I-131	1.4E+00	35							4.0E-02
Cs-134	9.0E-01	15							6.0E-02
Cs-137	8.8E-01	9.8							9.0E-02

検出核種（半減期）									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

※　O.OE－Oとは，O.O×１０－Oと同じ意味である。

採取場所：2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）
採取方法：海水をくみ上げ採取
測定方法：試料500mlをGe半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	3月31日 9:15		4月1日 9:00		4月2日 9:00		4月3日 8:50		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	8.0E-01	20	8.3E-01	21	1.4E-01	3.5	7.9E-02	2.0	4.0E-02
Cs-134	1.6E-01	2.7	2.0E-01	3.3	5.1E-02	0.86	1.8E-02	0.3	6.0E-02
Cs-137	1.8E-01	2.0	1.9E-01	2.1	4.4E-02	0.49	2.8E-02	0.3	9.0E-02

核種	4月4日 8:40		4月5日 8:50		4月6日 8:35		4月7日 9:10		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）		
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	7.1E-02	1.8	3.7E+00	92.5	2.6E+00	65	2.0E+00	50.0	4.0E-02
Cs-134	2.0E-02	0.33	1.4E+00	23.33	1.1E+00	18	1.0E+00	17.0	6.0E-02
Cs-137	2.5E-02	0.28	1.4E+00	15.56	1.1E+00	12	9.9E-01	11.0	9.0E-02

※　0.0E－0とは、0.0×10－0と同じ意味である。

採取場所：2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）
採取方法：海水をくみ上げ採取
測定方法：試料500mlをGe半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月8日 8:10 2F岩沢海岸付近（1,2号放水口から南側に約7，000m地点）								③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）							
I-131	1.2E+00	30							4.0E-02
Cs-134	6.6E-01	11							6.0E-02
Cs-137	6.7E-01	7.4							9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

※　○.○E－○とは、○.○×１０－○と同じ意味である。

海水核種分析結果＜沿岸＞

採取場所	1F 5～6放水口北側 (5, 6u放水口から北側に約30m地点)				1F 南放水口付近 (1～4u放水口から南側に約330m地点)				2F 北放水口付近 (3, 4u放水口付近) (1Fから約10km地点)		2F 岩沢海岸付近 (1, 2u放水口から 南側に約7km地点) (1Fから約16km地点)		②炉規則告示濃度限度 Bq/cm^3 (別表第2第六欄 周辺監視区域外 の 水中の濃度限度)
試料採取日時刻	平成23年4月8日 9時15分		平成23年4月8日 14時25分		平成23年4月8日 8時55分		平成23年4月8日 13時55分		平成23年4月8日 9時05分		平成23年4月8日 8時10分		
検出核種 (半減期)	①試料濃度 (Bq/cm^3)	倍率 (①/②)	①試料濃度 (Bq/cm^3)	倍率 (①/②)	①試料濃度 (Bq/cm^3)	倍率 (①/②)	①試料濃度 (Bq/cm^3)	倍率 (①/②)	①試料濃度 (Bq/cm^3)	倍率 (①/②)	①試料濃度 (Bq/cm^3)	倍率 (①/②)	
I-131 (約8日)	5. 0E+01	1, 300	4. 6E+01	1, 200	1. 9E+01	480	1. 9E+00	48	1. 4E+00	35	1. 2E+00	30	4E-02
Cs-134 (約2年)	3. 4E+01	570	2. 9E+01	480	1. 2E+01	200	1. 9E+00	32	9. 0E-01	15	6. 6E-01	11	6E-02
Cs-137 (約30年)	3. 4E+01	380	2. 9E+01	320	1. 2E+01	130	1. 9E+00	21	8. 8E-01	9. 8	6. 7E-01	7. 4	9E-02

※ O. OE－Oとは、O. O×１０$^{-O}$と同じ意味である。

東京電力福島第二原子力発電所敷地内の核種分析結果

採取場所：1F敷地沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

核種	4月2日 14:03 1F敷地沖合約15km付近		4月3日 12:39 1F敷地沖合約15km付近		4月4日 12:29 1F敷地沖合約15km付近		4月5日 13:33 1F敷地沖合約15km付近		③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	
I-131	1.1E-01	2.7	1.5E-01	3.7	1.9E-01	4.8	1.9E-01	4.8	4.0E-02
Cs-134	2.3E-02	0.39	3.4E-02	0.57	5.2E-02	0.87	7.6E-02	1.3	6.0E-02
Cs-137	2.6E-02	0.29	3.9E-02	0.43	6.4E-02	0.71	7.7E-02	0.86	9.0E-02

核種	4月5日 15:45 1F敷地沖合約15km付近		4月6日 11:38 1F敷地沖合約15km付近		4月6日 12:29 1F敷地沖合約15km付近		4月7日 9:36 1F敷地沖合約15km付近		③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)	
I-131	1.0E-01	2.5	2.3E-01	5.8	2.1E-01	5.3	9.9E-02	2.5	4.0E-02
Cs-134	4.9E-02	0.8	1.2E-01	2.00	8.9E-02	1.5	4.2E-02	0.7	6.0E-02
Cs-137	4.5E-02	0.50	1.3E-01	1.4	1.0E-01	1.1	4.2E-02	0.47	9.0E-02

※　O.OE－Oとは、O.O×１０－Oと同じ意味である。

採取場所：2F敷地沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月2日 13:35 2F敷地沖合約15km付近		4月3日 12:20 2F敷地沖合約15km付近		4月4日 12:10 2F敷地沖合約15km付近		4月5日 13:15 2F敷地沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	1.1E-01	2.8	7.7E-02	1.9	8.5E-02	2.1	7.2E-02	1.8	4.0E-02
Cs-134	1.9E-02	0.32			2.7E-02	0.45	2.3E-02	0.38	6.0E-02
Cs-137	2.5E-02	0.28	1.8E-02	0.20	1.9E-02	0.21			9.0E-02

核種	4月5日 16:14 2F敷地沖合約15km付近		4月6日 12:12 2F敷地沖合約15km付近		4月6日 12:52 2F敷地沖合約15km付近		4月7日 9:08 2F敷地沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	9.6E-02	2.4	9.2E-02	2.3	2.5E-02	0.63	4.0E-02	1.0	4.0E-02
Cs-134	2.5E-02	0.42	3.7E-02	0.62			1.1E-02	0.2	6.0E-02
Cs-137	2.2E-02	0.24	3.7E-02	0.41			1.3E-02	0.1	9.0E-02

※　０．０Ｅ－０とは、０．０×１０－０と同じ意味である。

採取場所：2F敷地沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種 (半減期)	4月7日 10:24 2F敷地沖合約15km付近								③周辺監視区域外の水中の濃度限度 (Bq/cm^3)
	①放射能濃度 (Bq/cm^3)	水中濃度限度に対する割合 (①/③)							
I-131	4.6E-02	1.20							4.0E-02
Cs-134	1.9E-02	0.3							6.0E-02
Cs-137	1.9E-02	0.2							9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

※　O.OE－Oとは、O.O×１０－Oと同じ意味である。

採取場所：岩沢海岸沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月2日 13:12 岩沢海岸沖合約15km付近		4月3日 12:02 岩沢海岸沖合約15km付近		4月4日 11:55 岩沢海岸沖合約15km付近		4月5日 13:00 岩沢海岸沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	7.6E-02	1.9	4.6E-02	1.1	4.7E-02	1.2	6.0E-02	1.5	4.0E-02
Cs-134							1.8E-02	0.3	6.0E-02
Cs-137									9.0E-02

核種	4月5日 16:53 岩沢海岸沖合約15km付近		4月6日 12:44 岩沢海岸沖合約15km付近		4月6日 13:15 岩沢海岸沖合約15km付近		4月7日 8:43 岩沢海岸沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	1.8E-01	4.5			2.4E-02	0.6	5.3E-02	1.3	4.0E-02
Cs-134	3.1E-01	5.2							6.0E-02
Cs-137	3.2E-01	3.6							9.0E-02

※　0.0E−0とは、0.0×10−0と同じ意味である。

採取場所：岩沢海岸沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月7日 9:52 岩沢海岸沖合約15km付近								③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）							
I-131	5.6E-02	1.40							4.0E-02
Cs-134	2.2E-02	0.4							6.0E-02
Cs-137									9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

※　0.0E－0とは、0.0×１０－0と同じ意味である。

採取場所：請戸川沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月5日 13:48 請戸川沖合約15km付近		4月6日 11:10 請戸川沖合約15km付近		4月6日 11:54 請戸川沖合約15km付近		4月7日 10:02 請戸川沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	2.0E-01	5.0	4.2E-01	11	3.8E-01	9.5	1.6E-01	4.0	4.0E-02
Cs-134	6.5E-02	1.1	1.9E-01	3.2	1.8E-01	3.0	9.3E-02	1.6	6.0E-02
Cs-137	7.1E-02	0.79	2.0E-01	2.2	1.9E-01	2.1	8.100E-02	0.9	9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

※　O.OE－Oとは、O.O×１０－Oと同じ意味である。

採取場所：広野町沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月5日 12:44 広野町沖合約15km付近		4月6日 13:18 広野町沖合約15km付近		4月6日 13:37 広野町沖合約15km付近		4月7日 8:14 広野町沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	9.8E-02	2.5	3.1E-02	0.78			3.0E-02	0.8	4.0E-02
Cs-134	5.7E-02	1.0	1.2E-02	0.20			8.5E-03	0.1	6.0E-02
Cs-137	5.9E-02	0.66	1.4E-02	0.16			7.3E-03	0.1	9.0E-02

核種	4月7日 9:15 広野町沖合約15km付近								③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）							
I-131	4.8E-02	1.20							4.0E-02
Cs-134	2.8E-02	0.47							6.0E-02
Cs-137	2.4E-02	0.27							9.0E-02

※　O.OE－Oとは、O.O×１０－Oと同じ意味である。

採取場所：南相馬市沖合約15km付近
測定方法：試料500mlを福島第二へ運搬し，Ge半導体検出器で測定
測定時間：1，000秒

検出核種（半減期）	4月5日 14:03 南相馬市沖合約15km付近		4月6日 10:41 南相馬市沖合約15km付近		4月6日 11:30 南相馬市沖合約15km付近		4月7日 10:30 南相馬市沖合約15km付近		③周辺監視区域外の水中の濃度限度（Bq/cm^3）
	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	①放射能濃度（Bq/cm^3）	水中濃度限度に対する割合（①/③）	
I-131	5.7E-02	1.4	6.6E-02	1.7	2.4E-02	0.60	3.7E-01	9.3	4.0E-02
Cs-134			4.5E-02	0.75			2.0E-01	3.3	6.0E-02
Cs-137	1.8E-02	0.2	4.6E-02	0.51			2.1E-01	2.3	9.0E-02

核種									③周辺監視区域外の水中の
I-131									4.0E-02
Cs-134									6.0E-02
Cs-137									9.0E-02

※　O.OE－Oとは、O.O×１０－Oと同じ意味である。

福島第一　物揚場前および2号機、4号機スクリーン海水核種分析結果

採取場所	1F 物揚場前海水		1F 2号機スクリーン海水		1F 4号機スクリーン海水		②炉規則告示濃度限度Bq/cm^3（別表第2第六欄周辺監視区域外の水中の濃度限度）
試料採取日時刻	平成23年4月8日　7時15分		平成23年4月8日　9時00分		平成23年4月8日　8時50分		
検出核種（半減期）	①試料濃度（Bq/cm^3）	倍率（①/②）	①試料濃度（Bq/cm^3）	倍率（①/②）	①試料濃度（Bq/cm^3）	倍率（①/②）	
I-131（約8日）	4.7E+02	12,000	9.3E+02	23,000	3.8E+02	10,000	4E-02
Cs-134（約2年）	3.4E+02	5,700	6.3E+02	11,000	2.6E+02	4,300	6E-02
Cs-137（約30年）	3.5E+02	3,900	6.3E+02	7,000	2.6E+02	2,900	9E-02

※　○.○E+○とは、○.○×１０$^{+○}$と同じ意味である。
※　その他の核種については評価中

1. 採取・測定条件

試料採取	場所	福島第一　西門			
	日時	3/31 2:00～2:20	4/1 2:00～2:20	4/2 2:00～2:20	4/3 2:03～2:23
	採取方法	モニタリングカーにてダスト採取			
	風向・風速	WSW　0.8m/s（2:00現在）	WNW　0.9m/s（2:00現在）	NW　0.4m/s（2:00現在）	WNW　0.6m/s（2:10現在）
試料測定	日時	3/31　12:26～	4/1 10:39～	4/2　10:28～	4/3　16:36～
	測定方法	試料を2Fに持ち込みGe半導体型核種分析装置にて分析			
	測定時間	1,000s			

2. 結果

	核種	3/31採取分		4/1採取分		4/2採取分		4/3採取分		③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	
揮発性	I-131	6.4E-04	0.64	2.5E-04	0.25	4.3E-04	0.43	2.3E-04	0.23	1.0E-03
	Cs-134	4.2E-05	0.02	3.6E-05	0.02	3.9E-05	0.02	2.8E-05	0.01	2.0E-03
	Cs-137	4.5E-05	0.02	3.4E-05	0.01	3.7E-05	0.01	3.1E-05	0.01	3.0E-03
粒子状	I-131	1.9E-04	0.19	1.1E-04	0.11	2.1E-04	0.21	1.1E-04	0.11	1.0E-03
	Cs-134	3.3E-05	0.02	2.0E-05	0.01	1.9E-05	0.01	1.6E-05	0.01	2.0E-03
	Cs-137	3.6E-05	0.01	2.0E-05	0.01	2.0E-05	0.01	1.6E-05	0.01	3.0E-03

※　人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

※　O.OE－Oとは、$O.O \times 10^{-O}$と同じ意味である。

福島第一原子力発電所敷地内における空気中放射性物質の核種分析結果について

1. 採取・測定条件

試料採取	場所	福島第一　西門			
	日時	4/4 2:22～2:42	4/5 2:02～2:22	4/6 2:00～2:20	4/7 2:00～2:20
	採取方法	モニタリングカーにてダスト採取			
	風向・風速	WNW　0.7m/s（2:30現在）	W　0.6m/s（2:10現在）	W　0.6m/s（2:00現在）	WSW　0.6m/s（2:00現在）
試料測定	日時	4/4　13:11～	4/5　13:13～	4/6　11:22～	4/7　12:28～
	測定方法	試料を2Fに持ち込みGe半導体型核種分析装置にて分析			
	測定時間	2,000s	1,000s	1,000s	揮発性1,000s　粒子状2,000s

2. 結果

	核種	4/4採取分		4/5採取分		4/6採取分		4/7採取分		③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	
揮発性	I-131	2.0E-04	0.20	4.2E-04	0.42	2.0E-04	0.20	7.8E-04	0.78	1.0E-03
	Cs-134	2.5E-05	0.01	2.1E-05	0.01	ND	-	7.5E-06	0.00	2.0E-03
	Cs-137	2.8E-05	0.01	2.1E-05	0.01	ND	-	ND	-	3.0E-03
粒子状	I-131	1.0E-04	0.10	2.2E-04	0.22	6.7E-05	0.07	1.7E-04	0.17	1.0E-03
	Cs-134	1.5E-05	0.01	3.1E-05	0.02	9.3E-06	0.00	1.5E-04	0.08	2.0E-03
	Cs-137	1.6E-05	0.01	3.1E-05	0.01	7.7E-06	0.00	1.5E-04	0.05	3.0E-03

※　人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

※　O.OE－Oとは、$O.O \times 10^{-O}$と同じ意味である。

福島第一原子力発電所敷地内における空気中放射性物質の核種分析結果について

1. 採取・測定条件

試料採取	場所	福島第一　西門
	日時	4/8 2:01～2:21
	採取方法	モニタリングカーにてダスト採取

2. 結果

	核種	4/8採取分		③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	
揮発性	I-131	2.1E-04	0.21	1.0E-03
	Cs-134	1.3E-05	0.01	2.0E-03
	Cs-137	1.4E-05	0.00	3.0E-03
粒子状	I-131	8.7E-05	0.09	1.0E-03
	Cs-134	9.6E-06	0.00	2.0E-03
	Cs-137	9.0E-06	0.00	3.0E-03

※　人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

※　O.OE－Oとは、$O.O \times 10^{-O}$と同じ意味である。

福島第二原子力発電所敷地内における空気中放射性物質の核種分析結果について

1. 採取・測定条件

試料採取	場所	福島第二 MP−1					
	日時	3/31 10:07～10:15	3/31 14:45～14:53	4/1 10:41～10:49	4/1 15:54～16:02	4/2 9:36～9:44	4/2 15:38～15:46
	採取方法	モニタリングカーにてダスト採取					
試料測定	日時	3/31 13:02～	3/31 18:21～	4/1 12:59～	4/1 18:18～	4/2 11:09～	4/2 17:48～
	測定方法	Ge半導体型核種分析装置にて分析					
	測定時間	1000s	1000s	1000s	1000s	1000s	1000s

2. 結果

	核種	3/31採取分①		3/31採取分②		4/1採取分①		4/1採取分②		4/2採取分①		4/2採取分②		③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	
揮発性	I−131	1.6E−04	0.16	1.5E−04	0.15	1.1E−04	0.11	1.1E−04	0.11	9.2E−05	0.09	6.9E−05	0.07	1.0E−03
	Cs−134	6.9E−05	0.03	6.8E−05	0.03	5.2E−05	0.03	4.6E−05	0.02	4.9E−05	0.02	ND	−	2.0E−03
	Cs−137	7.3E−05	0.02	6.9E−05	0.02	5.3E−05	0.02	5.1E−05	0.02	5.6E−05	0.02	2.0E−05	0.01	3.0E−03
粒子状	I−131	1.3E−04	0.13	7.8E−05	0.08	4.8E−05	0.05	5.3E−05	0.05	5.3E−05	0.05	3.7E−05	0.04	1.0E−03
	Cs−134	7.3E−05	0.04	4.2E−05	0.02	2.8E−05	0.01	3.3E−05	0.02	2.8E−05	0.01	3.2E−05	0.02	2.0E−03
	Cs−137	7.1E−05	0.02	4.3E−05	0.01	2.9E−05	0.01	3.0E−05	0.01	2.9E−05	0.01	3.3E−05	0.01	3.0E−03

※ 人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

※ O.OE−Oとは、$O.O \times 10^{-O}$と同じ意味である。

福島第二原子力発電所敷地内における空気中放射性物質の核種分析結果について

1. 採取・測定条件

試料採取	場所	福島第二 MP−1					
	日時	4/3 10:26～10:34	4/3 16:19～16:27	4/4 9:29～9:37	4/4 16:06～16:14	4/5 9:13～9:21	4/5 16:04～16:12
	採取方法	モニタリングカーにてダスト採取					
試料測定	日時	4/3 19:37～	4/3 17:40～	4/4 10:39～	4/4 18:08～	4/5 10:26～	4/5 19:08～
	測定方法	Ge半導体型核種分析装置にて分析					
	測定時間	揮発性1000s 粒子状2000s	1000s	1000s	2000s	1000s	2000s

2. 結果

	核種	4/3採取分①		4/3採取分②		4/4採取分①		4/4採取分②		4/5採取分①		4/5採取分②		③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	
揮発性	I−131	3.9E−05	0.04	8.2E−05	0.08	4.2E−05	0.04	5.4E−05	0.05	3.8E−05	0.04	6.8E−05	0.07	1.0E−03
	Cs−134	ND	−	4.1E−05	0.02	ND	−	3.7E−05	0.02	ND	−	3.2E−05	0.02	2.0E−03
	Cs−137	ND	−	4.5E−05	0.02	ND	−	3.8E−05	0.01	ND	−	3.7E−05	0.01	3.0E−03
粒子状	I−131	2.9E−05	0.03	3.7E−05	0.04	2.3E−05	0.02	3.9E−05	0.04	5.1E−05	0.05	3.4E−05	0.03	1.0E−03
	Cs−134	2.2E−05	0.01	2.8E−05	0.01	ND	−	2.5E−05	0.01	2.4E−05	0.01	2.2E−05	0.01	2.0E−03
	Cs−137	2.1E−05	0.01	2.2E−05	0.01	ND	−	2.5E−05	0.01	2.1E−05	0.01	2.0E−05	0.01	3.0E−03

※ 人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

※ O.OE−Oとは、O.O×10^{-O}と同じ意味である。

福島第二原子力発電所敷地内における空気中放射性物質の核種分析結果について

1. 採取・測定条件

試料採取	場所	福島第二 MP－1			
	日時	4/6 9:29～9:41	4/6 15:50～15:58	4/7 9:43～9:50	4/7 16:09～16:17
	採取方法	モニタリングカーにてダスト採取			
	風向・風速	－	－	－	－
試料測定	日時	4/6 12:28～	4/6 20:34～	4/7 11:08～	4/7 19:40～
	測定方法	Ge半導体型核種分析装置にて分析			
	測定時間	1000s	揮発性1000s 粒子状2000s	1000s	1000s

2. 結果

	核種	4/6採取分①		4/6採取分①		4/7採取分②		4/7採取分②		③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	
揮発性	I-131	5.7E-05	0.06	ND	－	3.1E-05	0.03	1.6E-05	0.02	1.0E-03
	Cs-134	3.4E-05	0.02	ND	－	1.0E-05	0.01	ND	－	2.0E-03
	Cs-137	3.8E-05	0.01	ND	－	1.4E-05	0.00	ND	－	3.0E-03
粒子状	I-131	4.5E-05	0.05	3.0E-05	0.03	1.0E-05	0.01	5.8E-05	0.06	1.0E-03
	Cs-134	2.4E-05	0.01	1.8E-05	0.01	ND	－	2.5E-05	0.01	2.0E-03
	Cs-137	2.9E-05	0.01	1.9E-05	0.01	ND	－	2.6E-05	0.01	3.0E-03

※ 人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

福島第二原子力発電所敷地内における空気中放射性物質の核種分析結果について

1. 採取・測定条件

試料採取	場所	福島第二　MP－1			
	日時	4/8 9:33～9:41	4/8 15:28～15:36		
	採取方法	モニタリングカーにてダスト採取			

2. 結果

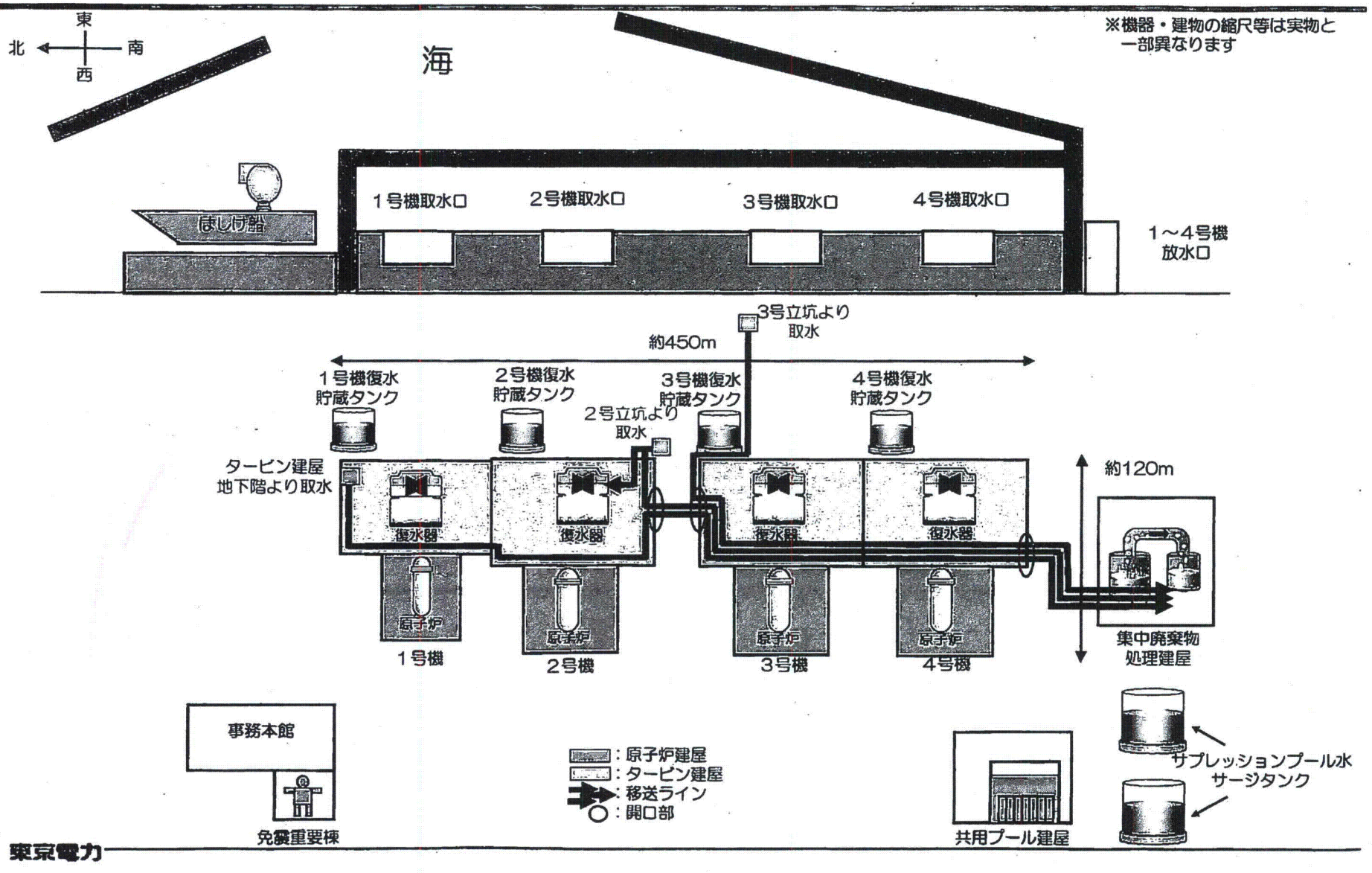
	核種	4/8採取分①		4/8採取分②						③放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)	①放射能濃度(Bq/cm3)	空気中濃度限度に対する割合(①／③)					
揮発性	I-131	2.6E-05	0.03	1.6E-05	0.02					1.0E-03
	Cs-134	ND	-	ND	-					2.0E-03
	Cs-137	ND	-	ND	-					3.0E-03
粒子状	I-131	1.5E-05	0.02	1.0E-05	0.01					1.0E-03
	Cs-134	ND	-	ND	-					2.0E-03
	Cs-137	ND	-	ND	-					3.0E-03

※　人が呼吸する空気中の放射性核種の3ヶ月間についての平均濃度に対して、法令にて定められている濃度限度。

発電所敷地内における空気中放射性物質の核種分析結果

採取場所		1F 西門		2F MP－1 （参考）				②放射線業務従事者の呼吸する空気中の濃度限度（Bq/cm^3）※
試料採取日時刻		平成23年4月8日 2時01分～2時21分		平成23年4月8日 9時33分～9時41分		平成23年4月8日 15時28分～15時36分		
検出核種（半減期）		①試料濃度（Bq/cm^3）	倍率（①/②）	①試料濃度（Bq/cm^3）	倍率（①/②）	①試料濃度（Bq/cm^3）	倍率（①/②）	
揮発性	I-131（約8日）	2.1E-04	0.21	2.6E-05	0.03	1.6E-05	0.02	1E-03
	Cs-134（約2年）	1.3E-05	0.01	ND	－	ND	－	2E-03
	Cs-137（約30年）	1.4E-05	0.00	ND	－	ND	－	3E-03
粒子状	I-131（約8日）	8.7E-05	0.09	1.5E-05	0.02	1.0E-05	0.01	1E-03
	Cs-134（約2年）	9.6E-06	0.00	ND	－	ND	－	2E-03
	Cs-137（約30年）	9.0E-06	0.00	ND	－	ND	－	3E-03

【参考】タービン建屋たまり水の排水イメージ



From: LIA02 Hoc
Sent: Sunday, April 10, 2011 10:39 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Tokyo area water contamination analysis results, April 8-10

From: OST02 HOC
Sent: Sunday, April 10, 2011 10:39 PM
To: PMT02 Hoc; PMT11 Hoc; Hoc, PMT12; LIA08 Hoc; LIA02 Hoc; LIA03 Hoc; FOIA Response.hoc Resource; OST01 HOC
Subject: FW: Tokyo area water contamination analysis results, April 8-10

fyi.

From: Weber, Michael
Sent: Sunday, April 10, 2011 9:44 PM
To: PMT01 Hoc
Cc: Zimmerman, Roy; ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: FYI - Tokyo area water contamination analysis results, April 8-10

Info on trace levels of detection in Japanese drinking water.

From: Howard, E. Bruce <HowardEB@state.gov>
To: Walcott, Naomi <WalcottN@state.gov>; ccoleman@mail.nih.gov <ccoleman@mail.nih.gov>; Petrie, Ronald C <PetrieRC@state.gov>; Weber, Michael
Cc: Davis, Dylan S (TDY/PAS) <TDYDavisDS@state.gov>; Whitney, Thomas C <WhitneyTC@state.gov>; Hefner, Timothy B <HefnerTB@state.gov>; Stahl, Eric
Sent: Sun Apr 10 21:04:12 2011
Subject: Tokyo area water contamination analysis results, April 8-10

Analysis of Water from Kanamachi Purification Plant, Katsushika, Tokyo at 0600 on 4/9/11 - 4/10/11

4/9/11
I-131: Not Detected

4/10/11
I-131: Not Detected
*Not Detected ≤ 20 Bq/kg

Analysis of Tap Water from Shinjuku, Tokyo on 4/8/11 - 4/9/11:

4/8/11
I-131: 0.89 Bq/kg
Cs-134: 0.23 Bq/kg
Cs-137: 0.22 Bq/kg

QQQ/291

4/9/11
I-131: 1.0 Bq/kg
Cs-134: Not Detected
Cs-137: 0.25 Bq/kg

Note: GOJ Warning limits for consumption:
Iodine: 300 Bq/kg (100 Bq/kg for infants 12 mos and under)
Cesium: 200 Bq/kg

This email is UNCLASSIFIED.

From: Virgilio, Martin
Sent: Sunday, April 10, 2011 10:25 AM
To: Zimmerman, Roy; Uhle, Jennifer; Blount, Tom; Cool, Donald; Hiland, Patrick; LIA06 Hoc; Hoc, PMT12; RST01 Hoc
Cc: Boyce, Thomas (OIS); Weber, Michael; Moore, Scott; Piccone, Josephine; Mroz (Sahm), Sara
Subject: REPLY: OUU documents

Roy

I am good with that statement. There was some question earlier about the States. It is my understanding that the document has been shared with the RSLOs and they were given instruction that it was for their use in talking with stakeholders and not to he handed out to anyone outside of the distribution list. We will follow up to confirm.

Marty

From: Zimmerman, Roy
Sent: Saturday, April 09, 2011 10:33 PM
To: Uhle, Jennifer; Blount, Tom; Cool, Donald; Hiland, Patrick; LIA06 Hoc; Hoc, PMT12; RST01 Hoc
Cc: Boyce, Thomas (OIS); Virgilio, Martin; Weber, Michael
Subject: OUU documents

Suggest that as a result of the OUO document released to the NY times, we add the following on all OUO documents sent to non-federal agencies.

"This document is for Official Use Only and is not intended to be shared with other stakeholders without NRC approval."

QQQ/292

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 7:15 AM
To: Shaffer, Mark R
Cc: LIA03 Hoc
Subject: RE: OUO: Transition Report April 9 1530-2400

Hello, Mark,
I looked through all the "sent" items on both computers and no RST Stability Report appears to have been sent to you. Further, the liaison coordinator has indicated that the RST stability report will be part of a larger report—but as of yet has not been completed nor released to anyone. I will keep asking about this. I was wondering if you were referring to something that the RST Stability Report will ultimately be part of (the Global Assessment, I believe). I will forward the draft of that to you, and leave instructions for the final version containing the RST Stability Report to be sent to you.
Best,
Elizabeth

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, April 10, 2011 6:51 AM
To: LIA02 Hoc
Subject: Re: OUO: Transition Report April 9 1530-2400

Folks - the following is noted in the transition report:

Action: Continue to follow. UPDATE: A copy of the RST Stability Document was released to Mark and he was instructed not to release it to any other organization and that it was for his use only.

If a copy of the document was sent to me, I'm having trouble locating it. Can you please check to see that it was sent to my State Department e-mail address, and/or re-send the document. Thank you.

Mark

From: LIA02 Hoc <LIA02.Hoc@nrc.gov>
To: Abrams, Charlotte <Charlotte.Abrams@nrc.gov>; Wittick, Brian <Brian.Wittick@nrc.gov>; Afshar-Tous, Mugeh <Mugeh.Afshar-Tous@nrc.gov>; Shaffer, Mark R; Bloom, Steven <Steven.Bloom@nrc.gov>; Schwartzman, Jennifer <Jennifer.Schwartzman@nrc.gov>; Tobin, Jennifer <Jennifer.Tobin@nrc.gov>; Mayros, Lauren <Lauren.Mayros@nrc.gov>; Jones, Andrea <Andrea.Jones@nrc.gov>; English, Lance <Lance.English@nrc.gov>; Smiroldo, Elizabeth <Elizabeth.Smiroldo@nrc.gov>; Young, Francis <Francis.Young@nrc.gov>; Henderson, Karen <Karen.Henderson@nrc.gov>; Ramsey, Jack <Jack.Ramsey@nrc.gov>; Shepherd, Jill <Jill.Shepherd@nrc.gov>; Baker, Stephen <Stephen.Baker@nrc.gov>; Emche, Danielle <Danielle.Emche@nrc.gov>; Fragoyannis, Nancy <Nancy.Fragoyannis@nrc.gov>; LIA03 Hoc <LIA03.Hoc@nrc.gov>; Stahl, Eric <Eric.Stahl@nrc.gov>; Owens, Janice <Janice.Owens@nrc.gov>; Fehst, Geraldine <Geraldine.Fehst@nrc.gov>; Foggie, Kirk <Kirk.Foggie@nrc.gov>; Breskovic, Clarence <Clarence.Breskovic@nrc.gov>; LIA08 Hoc <LIA08.Hoc@nrc.gov>; LIA06 Hoc <LIA06.Hoc@nrc.gov>
Cc: Mamish, Nader <Nader.Mamish@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>; LIA02 Hoc <LIA02.Hoc@nrc.gov>
Sent: Sun Apr 10 05:35:13 2011
Subject: OUO: Transition Report April 9 1530-2400

~~OFFICIAL USE ONLY~~

QQQ | 393

TRANSITION REPORT FOR APRIL 9, 1530 - 2400
Gerri to Elizabeth

Updates during Shift

- A draft paper prepared by the Site Team's Michel Hay, subject line "NRC Response to Fukushima Event," was forwarded to LIA02 by the LT Coordinator for OIP and LIA02 review and comment. LIA02 provided edits, then forwarded the draft to International Liaisons for their review and comment. Action: track comments and status of report.

    - **Fourth Team to Japan.** Members for team#4 will leave this week. Brian Wittick left on 4/9; Steve Garchow (RIV), Heather Gepford (RII), Tony Huffert (RES), Jeff Mitman (NRR), Carl Moore (RIII), and Steve Reynolds (RIII) will leave on 4/12. Additional travelers may be identified to leave on 4/14. USAID is the funding source. **Action:** Added Team #4 list of travelers and emergency contact information to both the Japan Traveler List, and Japan Traveler Contact/Emergency contact information file. Both files are located on LIA02 desktop. Pending action: Update Team#4 grid as requested traveler information comes in.

- **Coordination of IAEA and U.S. Efforts.** While the IAEA's Incident and Emergency Centre (IEC) has not agreed to be a formal "clearinghouse" (i.e., actively reaching out to all IAEA member states requesting that all assistance efforts be coordinated through the IEC), they are tracking all offers for assistance via a database that was posted on ENAC last week. For the effort to be effective, they need input from countries, and they do not have anything from the United States. The State Department is the lead in the "Consortium." INPO is the lead on equipment issues. Although US Embassy Tokyo had established a tracking system to compile assistance requests from the Japanese and offers from USG entities, INPO had been separately tracking equipment requests (see INPO item below). The Embassy and INPO tracking have been merged. On April 5th, LT received the latest equipment request matrices from USAID, originated by the Tokyo embassy. During April 5th conference call, OMB indicated to LT that they intend to start approving all finances for equipment purchases for Japan.

- **Mailbox size limits**. Team requested verification that mailboxes had size limits increased due to difficulties sending emails. On 4/7 received response from Joe Turner/OIS that email box sizes for those in Japan are being monitored daily for max capacity. **Action:** Notified Joe Turner about Team#4 travelers. Notify Joe Turner as new travelers are identified to leave for Japan.

- **Plant Status Updates.** James Whitney, NSIR has requested that all of the "Plant Status" news releases on ENAC be sent to him to assist other government agencies in their analysis of the situation. **Action:** Send james.whitney@nrc.gov "plant status updates" on ENAC as they come in (sent during day shift on 4/9).

- **TEPCO Earthquake Info.** Vince Holahan, the NRC staff member embedded with PACCOM, has requested to be on the distribution list for the Japanese earthquake info sent from TEPCO. **Action:** Please forward these emails to Vince.Holahan@nrc.gov as they are received.

- **Request to Share RST Document with Foreign Governments:** The Governments of Canada, the UK and Finland have requested that the RST share their "Stability Document," which they have discussed during their daily call with these governments. The request was forwarded to the ET, who is assessing what information is contained in the document before deciding on whether or not to share the document. The document is still in draft (awaiting interagency comments). PMT was given permission to read the draft document to conference call members. Release of this document will be addressed as part of the process being developed to address the release of a document to NY Times. **Action:** Continue to follow. **UPDATE**: A copy of the RST Stability Document was released to Mark and he was instructed not to release it to any other organization and that it was for his use only.

- **1 Pager for Margie's Morning Meeting** – Danielle/Eric requested that the draft be sent to them to add to it overnight. They will send back updates via email. **Action:** Work off of the draft sent back from them. If they don't send back any updates overnight, then work off of the draft completed.

Future Actions/OPEN ITEMS

- **News Reports on IAEA "Recommendation" to Extend Evacuation Zone:** News media is reporting that the IAEA has called on Japan to extend the evacuation zone around Fukushima, based on abnormal levels of radiation detected in a village outside the current evacuation zone. This was neither a special announcement nor a formal recommendation from the IAEA. Instead, the reports result from information provided at the March 30 IAEA technical briefing, at which DDG Denis Flory reported on the location of the abnormal radiation levels and noted that they were located outside the evacuation zone. When asked a direct question about whether the IAEA was recommending that Japan extend the zone, DDG Flory stated only that the IAEA was encouraging the "counterpart" to "carefully assess

the situation." Full summary of technical briefing here: http://iaea.org/newscenter/news/tsunamiupdate01.html, relevant paragraph is the fourth paragraph under item #2, "Radiation Monitoring." Jen Schwartzman verified with Mark Shaffer that no formal announcement has come from IAEA in this regard.

- **Deputies Committee Decisions and Action Items:** SECY has been sending summaries of the Deputies Committee meetings as they are received and the LT Director/Coordinator have been tracking any actions pertinent to the LT. There are currently no international liaison tasks resulting from these meetings but the LT Director will inform us if this changes. **Action:** Mark Shaffer would like to see the summaries.

- **Translators.** 24/7 translation coverage in the HOC has been suspended. Mike Call who is in Japan until 4/16 speaks Japanese. At HQ there is a Japanese foreign assignee and other options available. Also, Tony Nakanishi may be available to provide translation assistance. USAID is paying for an NRC-dedicated translator in Tokyo. If we need items translated and cannot get assistance from within NRC, we can rely on them. **Action:** If in need of USAID translation support, fax the document to +81-3-3224-5538 and send a scanned (PDF) copy to the Japan site team as a backup.

- **INPO:** All equipment requests are now going through INPO. They are consolidating all available information. Contact information for INPO is 770-644-8118 or email at inpoercassistance@inpo.org.

- **NRC Health Unit request:** The NRC team members were given KI before they left. At this time the guidance is to not take the KI while on duty in Tokyo. However, due to the still-fluid nature of the environmental hazards posed by radioactive isotopes, there is still the possibility that KI could be required at some point. Should it become necessary to have the NRC team take the KI, the LIA02/LIA03 international liaisons would be responsible for receiving the advice from ADM/Dr. Cadoux and to get the information to the team immediately.

- **Daily calls with UK/France/Canada.** Calls will take place at 0930 with RST and PMT to discuss reactor-related and radiation-related information, respectively, with regulatory representatives from these three countries. Everyone should call into the HOO to be connected. Finland and the IAEA may also participate on an intermittent basis. **The new number to call into is 800-772-3842 and the pin is 6108. NOTE: There is no call on the weekends.**

- **Daily NRC Japan Team – RST/PMT Call.** The time of the call varies. As of 4/5 it was **2100** with RST and PMT have been notified of the call and international liaison should plan on participating (OIP staff in Japan don't necessarily participate). All parties should call into **301-816-5120** and use pass-code **6105.**

- **Laptop shuffling in Japan.** Some laptops (the blue-top ones) still have difficulty printing so the ground team has requested the assistance of CSC in "re-assigning" the laptops that work well to the members of the 3rd team (since the 2nd team members leave Japan by 4/13). **ACTION:** No action for OIP but we may be requested to assist if there are any difficulties. We should also note that if future teams go to Japan, they should take non-blue-top or personal laptops to make it easier to connect to the Embassy printer.

- **Update Japan Traveler Information Document on LIA02 with Return Team info –** from LT Director please update the traveler table as NRC Japan Travel Team members return to U.S. **ACTION:** Await reply emails from returned travelers and update the Document on LIA02.

- **Announcement of French nuclear safety meeting in May:** Reuters is reporting that Sarkozy has announced plans for a high-level meeting of "G20 nuclear industry officials" in Paris in May 2011 "to define international nuclear safety standards." The article states that Sarkozy "declared this [meeting] would lay the groundwork for the IAEA high-level meeting on June 20-24. We are seeking additional information on this announcement from official channels. Message sent to Eric at 0400 inquiring whether he has heard anything via his French contacts (noting that ASN will be meeting with the NRC Team in the next day or two). Report any new information learned to OIP management and ET. The policy to delay meeting will be articulated by DOS high level representatives at a G-20 meeting in Abu Dhabi the week of April 4. The French announced their intent to convene this meeting, and stated that the Japanese Prime Minister is supportive. **ACTION:** OIP will continue to interact with interagency as appropriate and update ET.

DAILY ACTIONS/REMINDERS

- International updates must be sent to LIA07 (to be put in the HOO Status Update) before the end of every shift as well as posted on the LT status board (different than the LT Log).
- The 3-12 PM shift should try and work on the one pager and the 7 AM – 3 PM should finalize and send to Margie. Please include information from email from Danielle and Eric. Margie reminds us that the write-up should not

contain technical details, which are already captured in other reports, and should be marked "Official Use Only – Foreign Government Information."

- Both shifts are responsible for sending all emails to the FOIA email address. Open new email, copy previous day's emails as an attachment and send to FOIA Response.hoc@nrc.gov. Also it would be helpful to mark the red flag on the right to show which emails were sent.
- The international team should sit in on calls with the ET and team leader (Chuck or Dan) to take notes and provide a short summary of what was discussed via email to OIP reps on Japan Team. The Chairman's briefing has been moved to 0800 while he is in Vienna, April 4-6, and will involve a three way call with Casto, ET, and Chairman. [Japan 13 hours ahead, Vienna 6 hours ahead]
- Prior to any international call you set up, please make sure you contact the HOOs to let them know that you are going to have an international call.
- Reminder to Keep Mark Shaffer in-the-loop at shaffermr@state.gov, regardless of time of day, regardless of whether he is in the office or asleep. Especially cc Mark on all communication to IAEA.
- Reminder to keep ISN/NESS on the distribution list for the NRC Japan situation reports ISN-NESS-DL@state.gov.
- Keep RST and PMT updated on who is currently in Japan on NRC team.
- Please make sure to keep the NRC Japan travelers list updated (check the last updated date) and post a new copy on LIA02 cabinet as changes occur.
- OIP has been tasked with providing IAEA ENAC daily summary to Commissioner's TAs and EDO POC. OIP is also being asked to place a cover page on this report indicating the sensitivity of the information. The document will be provided by email.

From: ET07 Hoc
Sent: Sunday, April 10, 2011 2:45 PM
To: Marshall, Jane
Attachments: transition plan - updated.docx

rec'd 294

Operations Center Transition Plan to Reduced Staffing for Fukushima Dai-ichi Event

Based on the Chairman's April 8, 2011 memorandum to the EDO with approval of Operations Center staffing for the Japan event, staff is beginning to transition current staffing levels to a six-person team as described in the memorandum:

"I have been briefed by the staff and understand their proposal recommending a reduction in the Operations Center staffing in response to the event. Provided that adequate support to the site team can be maintained, I approve the staff's recommendation to reduce the Operations Center response team to one team directed by a member of the Executive Team (ET), and consisting of two members from the Reactor Safety Team (RST), one member of the Protective Measures Team (PMT), and one member of the Liaison Team (L T) to provide immediate support to the site team, and one assistant to the ET director. The team should be supplemented as necessary based on workload, and line organizations should be tasked as a high priority for support as needed. The team should be staffed around-the-clock as long as the site team is staffed."

The intent of this document is to detail the actions taken and planned for an orderly transition to the six-person agency watch staff, the associated actions to transfer incoming requests to NRC line organizations, and the subsequent reduction of products delivered by the agency watch team and/or participation in conferences or calls regarding the event. It is expected that each NRC Office will have a central point of contact and a distribution network to properly process and distribute to key available staff members the requests sent by the agency watch team as it continues to support the needs of the Site Team in Japan. The principal roles of the team in the Operations Center are to provide a point of contact for the site team and to ensure that site team needs are met with a similar response time as a fully-staffed Operations Center. The change is that the Operations Center team is not expected to provide support directly, but rather to manage that support from the line organizations. The Operations Center team will provide direct support consistent with the limited resources and available skill sets of the new team size.

Messaging on Transition

NRC is realigning the functions for the Japan Earthquake and Tsunami response to better serve the changing information needs for stakeholders. The following realignment will occur, beginning Monday April 11, 2011:

1. The NRC Site Team in Japan will continue to be staffed at the current level. Additional NRC staff are preparing to depart the U.S. for Japan for turnover to allow some of the current staff to return to the U.S.
2. NRC's line organizations will be leveraged to perform detailed technical analyses previously performed by the full Reactor Support and Protective Measures Teams in the NRC HQ Operations Center.
3. The Headquarters Operations Center will continue to have enhanced staffing around the clock dedicated to this response, but will have fewer individuals per shift in the Operations Center. Their focus will be coordination and communications while shifting

most of the technical work associated with this response to NRC's regular line organizations.

Actions by Team:

Executive Team

1. Continue to update and distribute the ET one-pager.
2. Define roles and skills needed for each position.
3. Determine when and if temporary augmentation of the Ops Center staff is needed (when tasks cannot be efficiently or effectively worked through the line organization), which skill sets are needed, and the duration of the augmentation.
4. Change to 2 Commissioners' Assistants (CA) briefings per week starting April 11. Briefings will be Tuesdays and Thursdays at 10 am (CAs notified on 4/10/11 call).
5. Modify Ops Center Status Update as of April 11 to once per day and shorten.
6. Brief TAs on new schedule for status updates. (completed 4/10/11)
7. Determine criteria or date to move team of 6 to the _____ Room?
8. Determine staff for the start of the 6 person team on Monday April 11 – April 16 (completed 4/9/11)
9. Develop implementing plan for new staffing starting April 17.
10. Ensure ODs provide a point of contact for Japan-event related tasks coordinated through the Ops Center. (M. Evans sent an email request to ODs on 4/9/11 to provide a POC.)
11. Ensures consistency in document nomenclature for various documents and responses to information requests. Identify reports/documents to be sunsetted, as more global documents are created and kept up-to-date.

Executive Briefing Team

1. Based on feedback from external stakeholders, the SitRep will continue to be provided in its current format. The update frequency will be reduced to once per day (1600 hrs). Obtain input from PMT/RST and issue SitRep daily at 1600.

ET Support Team

1. Determine computer work station usage and how to transition to the 6 person team functions.
2. Update list of calls for ops center.
3. Support staff should have appropriate coordination skills to work with the entire team to facilitate the completion of actions and provide support as needed.
4. Teams should provide information so that support staff can be aware of the existence and location and nomenclature of important documents.
5. Coordinate with the HOOs to schedule and announce non-routine Commissioner Assistance briefings for emergent issues as directed by ET Director (HOOs need 2 hrs to make notifications and setup the voice conferencing system for CA calls).

NSIR Incident Response Staff

1. Implement a process for capturing relevant items from various workstations and emails (an auto-forward or bounce-back message may help for emails).
2. Provide SharePoint and WebEOC access and instruction to support staff so that SharePoint can be utilized once the briefing products are consolidated/discontinued.
3. Determine an effective method to track actions, information, and decisions if Chronology is to be discontinued.
4. Address Ops Center operational issues (facility and Ops Center computer system issues)

Protective Measures Team

1. Notify participants on 0930 call – change to weekly. Consider moving to line organizations for conducting weekly calls.
2. Agree with recommendation to go to weekly calls for information exchange on monitoring data (1100).
3. Modify calls with the Japan team to once per day, but team should select the best time.
4. Maintain 1545 radiological community of interest call with PACOM – done in SCIF, supported by Whitney, Ulses, and V. Holahan.
5. Modify PACOM J2 calls to on an as-needed basis from 1700 daily.
6. Maintain daily calls w/ V. Holahan, and PACOM.
7. Determine computer work station usage and how to transition to person/shift.

Reactor Safety Team

1. Staff the BWR Expert position with a person with the following skills: Strong BWR experience and continuity in the Japan event in RST area.
2. Staff a Severe Accident/BWR Analyst position with the following skills in priority order: (1) severe accident/PRA, (2) BWR experience, and (3) Ops center function and equipment experience.
3. Assign to the BWR expert the primary responsibility to:
    a. Lead the overall RST activities for the Japan Event
    b. Lead periodic calls with the consortium and Japan site team
    c. Develop assessments on RST activities for Japan site team and appropriate stakeholders.
    d. Provide recommendation on release of RST assessments to the ET director.
    e. Develop taskings for line organization to assist site team.
4. Assign to the Severe Accident/BWR analyst the primary responsibility to:
    a. Provide support to the BWR expert on RST assessments
    b. Provide updates to Fukushima status update chart
    c. Coordinate and track external requests going to line organizations
    d. Maintain RST task tracker

5. Move responsibility of the UK/Canada/France call to the line organization or discontinue. Notify participants on Monday, 4/11/11.
6. Consolidate two calls with the industry consortium/Japan team (one at 0300, and one at 1700). Include PMT in both calls. Suspend 1100 consortium call on Tuesday.

Liaison Team

In addition to site team support, the LT member is responsible for providing liaison support to the Operations Center team consistent with normal Liaison Team responsibilities. The LT member will work with the POCs identified in each supporting office (principally OIP, FSME, and OCA) to ensure that tasks, deliverables, and schedules are understood by the appropriate line organization.

The LT member will participate on the following calls:

1. Calls with the site team.
2. 1100 Emergency Support Function (ESF)-8 call – this occurs on Tuesdays only now (state or OIP and LT Coordinator)
3. 1400 USAID Congressional call – this call occurs on Tuesdays only now (OCA and LT Coordinator)
4. 1700 HHS call with 50 states and federal partners – State Liaison and LT Coordinator participate – now down to Tuesdays and Thursdays only

These calls can be handled by the LT member and, at their judgment, by including appropriate program office staff. These calls may stop altogether in the near future due to diminishing interest by other stakeholders.

Actions to Implement Prior to Transition

There are no LT calls that need to be cancelled and no actions required to interact with other stakeholders prior to implementing the new ops center staffing plan.

1. Issue new roster for the revised staffing (Completed 4/9/11 for interim staffing; longer-term staffing will be worked week of April 11).
2. Brief new team on roles/responsibilities
3. Identify POC's for Offices to provide as "reach-back" access, Brief Offices on transition and implications including need for close communications (M. Evans requested Office POCs by email dated 4/9/11)
    a. FSME –
    b. NMSS – Doug Weaver
    c. NRR – Office TA
    d. NSIR –OPA - ?
    e. OCA - ?
    f. OIP -?
    g.

h.

4. Notify stakeholders that the SitRep will be issued once daily.

From: LIA07 Hoc
Sent: Sunday, April 10, 2011 6:19 AM
To: LIA07 Hoc; Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: Go Book Update - 0600 EDT, April 10, 2011
Attachments: TEPCO Press Release 322.pdf; TEPCO Press Release 323.pdf; TEPCO Press Release 324.pdf; TEPCO Press Release 325.pdf; TEPCO Press Release 319.pdf; TEPCO Press Release 320.pdf; TEPCO Press Release 321.pdf; NRC Status Update 04.10.11--0430.pdf; pages 1-5 ET Chronology 4.10.11_0600EDT.pdf; April 10 0600 EDT one pager.pdf

Attached, please find updated information for the "Go Books".

The update includes:

- The 0430 EDT, 04/10/11 Status Update
- The 0600 EDT, 04/10/11 One-pager/briefing sheet
- The latest ET Chronology
- The latest TEPCO Press Releases (319-325)

Please let me know if you have any questions or concerns.

-Jim

Jim Anderson
Executive Briefing Team Coordinator
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)
James.anderson@nrc.gov

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Search

Press Releases

Press Release (Apr 10,2011)
Status of TEPCO's Facilities and its services after the Tohoku-Taiheiyou-Oki Earthquake (as of 9:00AM)

Due to the Tohoku-Taiheiyou-Oki Earthquake which occurred on March 11th 2011, TEPCO's facilities including our nuclear power stations have been severely damaged. We deeply apologize for the anxiety and inconvenience caused.

Below is the status of TEPCO's major facilities.
*new items are underlined

[Nuclear Power Station]
Fukushima Daiichi Nuclear Power Station:
Units 1 to 3: shutdown due to the earthquake
(Units 4 to 6: outage due to regular inspections)

*The national government has instructed the public to evacuate for those local residents within 20km radius of the site periphery and to evacuate voluntarily for those local residents between 20km and 30km radius of the site periphery.

*Off-site power has been connected to Unit 1 to 6 by March 22, 2011.

*Unit 1
-The explosive sound and white smoke was confirmed near Unit 1 when the big quake occurred at 3:36 pm, March 12th.
-We started injection of sea water at 8:20 pm, March 12th, and then boric acid which absorbs neutron into the reactor afterwards.
-At approximately 2:30 am, March 23rd, we started the injection of sea water into the reactor from feed water system. After that, the injection of freshwater was started from 3:37 pm on March 25th (switched from the seawater injection). At 8:32 am, Mar 29th, transfer from the fire fighting pump to a temporary motor driven pump was made. From 10:42am to 11:52am on April 3rd we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-At approximately 10:50 am on March 24th, white smoke was confirmed arising from the top of the reactor building.
-At approximately 11:30 am, March 24th, lights in the main control room were restored.
-At approximately 5:00 pm, March 24th, draining water from underground floor of turbine buildings into a condenser was started and it was paused at approximately 7:30 am, March 29th because we confirmed that the water level reached almost full capacity of a condenser. In order to move the water in the condenser into a condensate storage tank, water transfer from the condensate storage tank to suppression pool's water surge-tanks was conducted from around 0:00 pm, March 31st to 3:26 pm, April 2nd.
-From 1:03 pm, March 31st, the water spray by the concrete pumping vehicle was started, and finished at 4:04 pm.
-In order to confirm the position of water spray to the spent fuel pool by the concrete pumping vehicle, the water spray was conducted from 5:16 pm to 5:19 pm.
-Some of turbine building lights were turned on April 2nd.
-The water transfer from the condenser to the condensate storage tank has been implemented since 1:55 pm, April 3rd.
-As it is suspected that hydrogen gas may be accumulated inside reactor containment vessel, at 10:30 pm, April 6th, we started the operation of the valve for the injection of nitrogen to the reactor in order to prevent the increase of oxygen density. Following this, the injection of nitrogen to the reactor was started at 1:31AM, April 7th.

*Unit 2
-At 1:25 pm, March 14th, since the Reactor Core Isolation Cooling System has failed, it was determined that a specific incident stipulated in Clause 1, Article 15 of Act on Special Measures Concerning Nuclear

Emergency Preparedness occurred (failure of reactor cooling function). At 5:17 pm, March 14th, while the water level in the reactor reached the top of the fuel rod, we have restarted the water injection with the valve operation.
-At approximately 6:14 am, March 15th, the abnormal sound was confirmed near the suppression chamber and the pressure inside the chamber decreased afterwards. It was determined that there was a possibility that something happened in the suppression chamber. While sea water injection to the reactor continued, TEPCO employees and workers from other companies not in charge of injection work started tentative evacuation to a safe location.
Sea water injection to the reactor continued.
-On March 18th, power was delivered up to substation for backup power through offsite transmission line. We completed laying cable further to unit receiving facility in the building, and at 3:46 pm, March 20th the load-side power panel of the receiving facility started to be energized.
-From approximately 3:05 pm to approximately 5:20 pm on March 20th, about 40 tons of seawater was injected into Unit 2 by TEPCO employees.
-At approximately 6:20 pm on March 21st, white smoke was confirmed arising from the top of the reactor building. As of 7:11 am on March 22nd, smoke decreased to the level where we could hardly confirm.
-From around 4:00 pm to 5:00 pm on March 22nd, approximately 18 tons of sea water was injected into the spent fuel pool by TEPCO employees.
-From 10:10 am on March 26th, freshwater (with boric acid) injection was initiated. (switched from the seawater injection) At 6:31pm, March 27th, transfer from the fire fighting pump to a temporary motor driven pump was made. From 10:22am to 0:06pm on April 3rd, we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-From 10:30 am on March 25th, seawater injection through Fuel Pool Cooling and Filtering System was initiated. The work was finished at 12:19 pm, March 25th. From 4:30 pm, March 29th, freshwater injection through Fuel Pool Cooling and Filtering System was initiated. (We switched from seawater to freshwater). The work was finished at 6:25 pm on March 29th. At 9:25 am, March 30th, we started fresh water injection by a temporary motor driven pump, but we switched the pump to the fire fighting pump due to the pump trouble. At 1:10 pm, March 30th, freshwater injection was suspended, because we found the crack on a part of the hose. At 7:05 pm, March 30th, freshwater injection was resumed and finished at 11:50 pm, March 31.
-At approximately 4:46 pm, March 26th, lights in the main control room were restored.
-At approximately 4:45 pm, March 29th, the water in a condensate storage tank was being transferred to suppression pool water surge-tanks to prepare for water transfer from a condenser to a condensate storage tank in order to drain water on the underground floor of the turbine building into a condenser. At 11:50 am, April 1st, transfer was completed.
-At 2:56 pm, April 1st, water injection into spent fuel pool in Unit 2 by temporary motor driven pump was initiated. At 5:05 pm on April 1st, the water injection was finished.
-The water transfer from the condenser to the condensate storage tank has been implemented since 5:10 pm, April 2nd.It was finished at 1:10 pm, April 9th.
-Some of turbine building lights were turned on April 2nd.
-At 11:05 am, April 4th, water injection into spent fuel pool in Unit 2 by a temporary motor driven pump was initiated. At 1:37 pm, April 4th, the water injection was finished.
-At 1:29 pm, April 7th, water injection into spent fuel pool in Unit 2 by a temporary motor driven pump was initiated. At 2:34 pm, April 7th, the water injection was finished.

*Unit 3
-At 6:50 am, March 14th, while water injection to the reactor was under operation (injection of boric acid was done on Mar 13th), the pressure in the reactor containment vessel increased to 530 kPa. As a result, at 7:44 am, it was determined that a specific incident stipulated in the Article 15, the Clause 1 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (abnormal increase of the pressure of reactor containment vessel). Afterwards, the pressure gradually decreased (as of 9:05 am, 490 kPa).
-At approximately 11:01 am, March 14th, an explosion followed by white smoke occurred near Unit 3. 4 TEPCO employees and 3 workers from other companies (all of them were conscious) sustained injuries and were taken to the hospital by ambulances.
-As the temperature of water in the spent fuel pool rose, spraying water by helicopters with the support of the Self Defense Force was considered. However the operation on March 16th was cancelled.
-At 6:15 am, March 17th, the pressure of the Suppression Chamber temporarily increased, but currently it is stable within a certain range. On March 20th, we were preparing to implement measures to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive material to outside) in order to fully secure safety. However, at present, it was not a situation to immediately implement measures and discharge air containing radioactive material to outside. We will continue to monitor the status of the pressure of the reactor containment vessel.

-In order to cool spent fuel pool, water was sprayed by helicopters on March 17th with the cooperation of Self-Defense Forces.
-At approximately past 7:00 pm, March 17th, Self-Defense Forces and the police started spraying water by water cannon trucks upon our request for the cooperation. At 8:09 pm, March 17th, they finished the operation.
-Before 2:00 pm, March 18th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At 2:45 pm, March 18th, the operation was finished.
-At approximately 12:30 am, March 19th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 1:10 am, March 19th, the operation was finished. They resumed spraying water at 2:10 pm and finished at approximately 3:40 am, March 20th.
-At approximately 9:30 pm, March 20th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 3:58 am, March 21st, the operation was finished.
-At approximately 3:55 pm, March 21st, light gray smoke was confirmed arising from the southeast side of the 5th floor roof of the Unit 3 building. The situation was reported to the fire department at approximately 4:21 pm. The parameters of reactor pressure vessel, reactor containment vessel, and monitored environmental data remained stable without significant change. However, employees working around Unit 3 evacuated to a safe location. On March 22nd, the color of smoke changed to somewhat white and it was slowly dissipating.
-At approximately 3:10 pm on March 22nd, spraying water to Unit 3 by Tokyo Fire Department's Hyper Rescue and Osaka City Fire Department was conducted, and completed at approximately 4:00 pm on the same day.
-At approximately 10:45 pm on March 22nd, lights in the main control room were restored.
-At approximately 11:00 am on March 23rd, the injection of sea water to spent fuel pool was conducted, and finished approximately at 1:20 pm on the same day.
-At 4:20 pm on March 23rd, light gray smoke was observed belching from Unit 3 building. The situation was reported to the fire department at 4:25 pm on March 23rd. The parameters of the reactor, the reactor containment vessel of Unit 3, and monitored figures around the site's immediate surroundings remained stable without significant change. To be safe, workers in the main control room of Unit 3 and around Unit 3 evacuated to a safe location. At approximately 11:30 pm on March 23rd and 4:50 am on March 24th, TEPCO employees confirmed the smoke has disappeared. Accordingly, workers evacuation was lifted.
-From approximately 5:35 am on March 24th, sea water injection through Fuel Pool Cooling and Filtering System was initiated, and finished at approximately 4:05 pm on the same day.
-From 1:28 pm on March 25th, Hyper Rescue team started water spray. The work finished at 4:00 pm on March 25th.
-From 6:02 pm on March 25th, the injection of freshwater to the reactor was started (switched from the seawater injection). At 8:30 pm on March 28th, the injection of fresh water was switched to temporary electricity pumps from the fire engine pumps. From 10:03am to 0:16pm on April 3rd, we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-At approximately 12:34pm March 27th, the injection of water by the concrete pump truck was started. At approximately 2:36 pm, March 27th, the operation was finished.
-At approximately 2:17pm March 29th, the injection of fresh water by the concrete pump truck was started. (Sea water had been injected so far and transfer from seawater to freshwater was made). The water injection was finished at 6:18 PM, March 29th.
-At approximately 5:40 pm, March 28th, the water in a condensate storage tank was being transferred to suppression pool water surge-tanks to prepare for water transfer from a condenser to a condensate storage tank in order to drain water on the underground floor of the turbine building into a condenser. We finished the transfer work at approximately 8:40 am, March 31st.
-From 4:30 pm, March 31st, the water spray by the concrete pumping vehicle was started, and finished at 7:33 pm.
-From 9:52 am, April 2nd, the water spray by the concrete pumping vehicle was started, and finished at 0:54 pm.
-Some of turbine building lights were turned on April 2nd.
-From 5:03 am, April 4th, the water spray by the concrete pumping vehicle was started, and finished at 07:19 pm.
-From 6:53 am, April 7th, water spray by the concrete pumping vehicle was started, and finished at 8:53 am.

* Unit 4
-At approximately 6:00 am, March 15th, an explosive sound was heard and the damage in the 5th floor roof of Unit 4 reactor building was confirmed. At 9:38 am, the fire near the north-west part of 4th floor of Unit 4 reactor building was confirmed. At approximately 11:00 am, TEPCO employees confirmed that the fire was out.
-At approximately 5:45 am on March 16th, a TEPCO employee discovered a fire at the northwest corner of the Nuclear Reactor Building. TEPCO immediately reported this incident to the fire department and the local

government and proceeded with the extinction of fire. At approximately 6:15 am, TEPCO staff confirmed at the site that there were no signs of fire.
-At approximately 8:21 am on March 20th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and they finished the operation at approximately 9:40 am. At approximately 6:45 pm spraying water was started by Self-Defenses' water cannon trucks and finished at approximately 7:45 pm.
-At approximately 6:30 am, March 21st, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At approximately 8:40 am, March 21, they had finished the operation.
-On March 21st, cabling has been completed from temporary substation to the main power center.
-From approximately 5:20 pm on March 22nd, spraying water from the concrete pumping vehicle was conducted and ended at approximately 8:30 pm on the same day.
-From approximately 10:00 am on March 23rd, spraying water from the concrete pumping vehicle was conducted and ended at approximately 1:00 pm on the same day.
-From approximately 2:35 pm on March 24th, spraying water by the concrete pumping vehicle was conducted and ended at approximately 5:30 pm on the same day.
-From 6:05 am on March 25th, seawater injection through Fuel Pool Cooling and Filtering System was initiated and finished at approximately 10:20 am on the same day.
-From 7:05 pm on March 25th, water spray by the concrete pumping vehicle was started and finished at 10:07 pm on March 25th.
-From 4:55 pm on March 27th, water spray by the concrete pumping vehicle was started and finished at 7:25 pm on March 27th.
-At approximately 11:50 am on March 29th, lights in the main control room were restored.
-From 2:04 pm on March 30th, water spray by the concrete pumping vehicle was started and finished at 6:33 pm on March 30th.
-Some of turbine building lights were turned on March 31st.
-From 8:28 am, April 1st, the water spray by the concrete pumping vehicle was started. At 2:14 pm, the water spray finished.
-From 5:14 pm, April 3rd, the water spray by the concrete pumping vehicle was started. At 10:16 pm, the water spray finished.
-From 5:35 pm, April 5th, the water spray by the concrete pumping vehicle was started. At 6:22 pm, the water spray finished.
-From 6:23 pm, April 7th, the water spray by the concrete pumping vehicle was started. At 7:40 pm, the water spray finished.
-From 5:07 pm, April 9th, the water spray by the concrete pumping vehicle was started. At 7:24 pm, the water spray finished.

*Unit 5 and 6
-At 5:00 am on March 19th, we started the Residual Heat Removal System Pump (C) of Unit 5 in order to cool the spent fuel pool. At 10:14 pm, we started the Residual Heat Removal System Pump (B) of Unit 6 in order to cool the spent fuel pool.
-Unit 5 has been in reactor cold shutdown since 2:30 pm on March 20th. Unit 6 has been in reactor cold shutdown since 7:27 pm on March 20th.
-At Units 5 and 6, in order to prevent hydrogen gas from accumulating within the buildings, we have made three holes on the roof of the reactor building for each unit.
-At approximately 5:24 pm on March 23rd, the temporary Residual Heat Removal System Seawater Pump automatically stopped when its power source was switched. We restarted the pump at around 4:14 pm, March 24th, and resumed cooling of reactor at around 4:35 pm.

*On March 18th, regarding the spent fuel in the common spent fuel pool, we have confirmed that the water level of the pool was secured. At around 10:37 am March 21st, water spraying to common spent fuel pool and finished at 3:30 pm. At around 6:05 pm, fuel pool cooling pump was started to cool the pool.
*common spent fuel pool: a spent fuel pool for common use set in a separate building in a plant site in order to preserve spent fuel which are transferred from the spent fuel pool in each Unit building.

*On March 17th, we patrolled buildings for dry casks and found no signs of abnormal situation for the casks by visual observation. A detailed inspection was under preparation.
*dry cask: a measure to store spent fuel in a dry storage casks in storages. Fukushima Daiichi Nuclear Power Station started to utilize the measure from August 1995.

*On March 21st, 23rd to April 8th we detected technetium, cobalt, iodine, cesium, tellurium, barium, lanthanum and molybdenum from the seawater around the discharge canal of the station. (We are reevaluating)

* On March 20th, 21st, 23rd to April 8th, we detected iodine, cesium, tellurium and ruthenium in the air collected at the site of Fukushima Daiichi Nuclear Power Station. (We are reevaluating)

*Plutonium has been detected from the sample of soil at the site of

Fukushima Daiichi Nuclear Power Station collected on 21st, 22nd, 25th and 28th of March, Concentration level of Plutonium detected was same as that of under usual environment and it was thought not to be harmful to human health. We will strengthen environmental monitoring of power station and surrounding environment.
Additionally Iodine, Cesium, Tellurium, Barium, Niobium, Ruthenium, Molybdenum, Technetium, Lanthanum, Beryllium, Silver have been detected from the sample of soil collected at Fukushima Daiichi Nuclear Power Station on 21st, 22nd, 25th and 28th of March.

*We detected radioactive materials contained in the puddles found in the turbine building of Unit 1 to 4. We are planning to conduct water analysis in preparation for treating the water. The analysis will be carried out in Fukushima Daini Nuclear Power Station with support from other nuclear companies (Japan Atomic Energy Agency, Japan Nuclear Fuel Limited).

*At approximately 3:30 pm, March 27th, we found water pooling in the vertical shaft of the trench outside of the turbine buildings for Units 1 to 3. The radiation dose at the surface of the water amounted 0.4 mSv/h in Unit 1 and over 1,000 mSv/h in Unit 2. We could not confirm the amount of the radiation dose in Unit 3. We will keep observing the condition of the water in the vertical shaft.
On March 29th, we detected niobium, tellurium, ruthenium, silver, tellurium, iodine, cesium, and ruthenium in the water collected at the trench of unit 1.
On March 30th, we took samples from the water in the trench of Unit 2 and 3, and conducted nuclide analysis on them. We are now confirming the results of the analysis.

*At approximately 9:30 am, April 2nd, we found that there was water in the shaft for storing power cable (concrete product) near the intake of water for Unit 2, the radioactive air dose was over 1,000mSv/h and the water spilled into the sea from the crack (approximately 20 cm) on the side of the shaft. We injected fresh concrete to the shaft twice, however, we could not observe a change in the amount of water flowing into the sea. Therefore, we considered that a new method of stopping the water and determined to use the polymer. Necessary equipment and experts of water shutoff will be dispatched to the site and after checking the condition, we began to stop water shutoff and were injecting polymer on April 3rd.
On April 4th, we injected the tracer from the vertical shaft of the trench to start to examine the water current. We did not observe reduction of flow or change of color or water leaking. We checked the diagram and confirmed the route. At the same time, we checked the situation of the pit in detail and considered the possibility that the water was not from the pit, rather, from the joint between the piping upstream of the pit and the duct, then the water seeped through a layer of gravel below the piping. In order to stop that seepage from the layer of gravel, we decided to conduct the water sealing to the bedrock around the piping. We arranged for the specialist and gathered equipments. On April 5th, liquid glass was injected to the bedrock. Tracer was put through the two new holes drilled near the pit to investigate the water flow. At 2:15 pm, April 5th, it was observed the water with tracer came out from the crack on the concrete wall of the pit. At 3:7 pm, April 5th, injection of coagulant from the holes was initiated and we have confirmed the outflow from the crack on the concrete wall of the pit has stopped at 5:38 am, April 6th. We confirmed water level has not been rising in the turbine building of unit 2. On April 6th, a countermeasure by using rubber plate and fixer was implemented to prevent discharge of radioactive materials, and we are continuously monitoring for any existence of leakage. From 3:00pm April 5th, a construction of installing large sandbags around the pier to prevent the outflow of the contaminated water from station's port on the south side to the ocean was started. Also we are preparing spillage prevention fences as countermeasures for lowering the outflow to the ocean.
Iodine and Cesium were detected from the water sampled in the pit and in the sea near the water discharge. Additional nuclide analysis will be implemented.
In addition, from April 2nd, we will implement sampling at 15km offshore Fukushima Daiichi and Fukushima Daini Nuclear Power Stations(3 points have been added since April 5th) and will evaluate these samples comprehensively.

*Since approximately 9:20 am, March 31st, the water transfer from the vertical shaft of Unit 1 to the reservoir of the centralized environmental facility was conducted. We finished the task around 11:25 am of the same day.

*We found a puddle of water at the main building of the centralized environmental facility process. We analyzed and detected approximately 1.2×10^{1}Bq/cm^3 of radioactivity in full dose in the Controlled Area and 2.2×10^{1}Bq/cm^3 in full dose in the Non-Controlled Area on March 29.
From April 3rd, the water level in the trench of Unit 3 increased by 15 cm. The route is not yet known, but there is a possibility that water in the turbine building of Unit 4 may be running to the trench of Unit 3. To be safe, at 09:22am, April 4th, we stopped transferring water to the

turbine building of Unit 4. At this moment, the water level in the trench of Unit 3 became stable after stopping the water transfer.

*There is plenty of radioactive wastewater in the turbine buildings. Especially, Unit 2's wastewater is very highly radioactive. To store this stably, it was decided that this needed to be transferred to the Central Radioactive Waste Disposal Facility. However, within that facility, we are storing ten thousand tons of low level radioactive wastewater. In order to transfer more wastewater, we need to discharge the low level radioactive wastewater. In addition, as low radioactive subsurface water is piling up in sub-drain pits of Units 5 and 6 and a part of subsurface water is running into buildings. We are concerned that important equipment to secure the safety of reactors may be submerged.
Based on the Section 1 of the Article 64 of the Nuclear Reactor Regulation Law, we have decided to discharge to the sea approximately ten thousand tons of the accumulated low level radioactive water and a total of fifteen hundred tons of the low level radioactive subsurface water stored in the sub drain pits of Unit 5 and 6 as soon as we get ready.
From 7:03 pm, April 4th, we are discharging the low level radioactive wastewater stored in the Central Radioactive Waste Disposal Facility to the south of the water discharge canal. By 7:10 pm, we started ten pumps.
Also, from 9:00 pm, April 4th, we are discharging the low level radioactive wastewater stored in the sub drain pits of Unit 5 and 6 by using one pump via the water discharge canal of Units 5 and 6. After that, at 6:52 pm, April 9th we finished discharging water. The amount of water was approximately 1,320 tons.
We evaluate the impact on the discharge of the low radioactive wastewater to the sea as approximately 0.6 mSv per year per an adult if an adult eats adjacent fish and seaweeds everyday. The amount (0.6 mSv of effective radioactive doses per year) is one-forth of annual radioactive dose (2.4 mSv) to which the general public is exposed from nature.

*On April 7th, we knocked holes in the external walls of turbine buildings at Units 2 to 4 for the preparation of draining the puddles to the centralized waste treatment facility. We are checking the heath in the building of centralized waste treatment facility.

*The first barge of the U.S. Forces with fresh water to be used to cool down reactors etc. was towed by a ship of Maritime Self-Defense Force and docked at 3:42 pm on March 31st 2011. At approximately 3:58 pm, April 1st, we started to replenish filtrate tanks with the fresh water, and finished at 4:25 pm. At approximately 10:20 am, April 2nd, we resumed replenishing filtrate tanks with the fresh water, and finished at 4:40 pm.
The second barge of the U.S. Forces with the fresh water towed by the ship of Maritime Self-Defense Force came alongside the pier at approximately 9:10 am, April 2nd. It was in preparation for replenishing filtrate tanks with the fresh water. We began to transfer fresh water from the second barge to the first barge on April 3rd at 9:52 am and continued until 11:15 am on April 3rd.

*At 11:35 am, April 1st, a worker fell into the sea while stepping into the ship from the pier during the hose laying work of the barge. Other crew immediately rescued the worker. While no injury or contamination was confirmed, whole body counter has been implemented to check the contamination inside the body just in case.

*At 9:19 am, April 9th, one contractor with a full-face mask who was working on cables in the water treatment building felt sick and got injured by stepping into the manhole whose cover was dislocated. This person was transported to the hospital. The result of medical examination was "contusion of right knee and doubt of medical collateral ligament injury on right knee." It is confirmed that there is no possibility of body contamination.

*From 3:00 pm, April 1st, we started spraying inhibitor in order to prevent diffusion of radioactive materials. This attempt was conducted on a trial basis at the mountain side area of the common spent fuel pool in the range of 500m2. The spraying finished at 4:05 pm. On April 5th and 6th , we also sprayed the inhibitor in order to prevent the spread of radioactive materials on a trial basis at the mountain side area of the common spent fuel pool in the range of 600m2. On April 8th, we conducted trial spraying of the inhibitor at the mountain side area of the common spent fuel pool in the range of 680m2.

*Monitoring posts (no.1 to no.8) which were installed around the site boundary have been restored. We will continue monitoring the measured value and make announcements on those values accordingly.

*We will continuously endeavor to securing safety, and monitoring of the surrounding environment.

Fukushima Daini Nuclear Power Station:
Units 1 to 4: shutdown due to the earthquake
*The national government has instructed evacuation for those local residents within 10km radius of the periphery.

*In order to achieve cold shutdown, reactor cooling function was restored

and cooling of reactors was conducted. As a result, all reactors achieved cold shutdown: Unit 1 at 5:00 pm, March 14th, Unit 2 at 6:00 pm, March 14th, Unit 3 at 0:15 pm, March 12th, Unit 4 at 7:15 am, March 16th.

*At 2:30 pm on March 30th, the power source of the residual heat removal system (B) to cool the reactor of Unit 1 was secured from an emergency power source in addition to an offsite power. This means that all the units secure backup power sources (emergency power sources) for the residual heat removal system (B).

*Unit 1
As it was confirmed that the temperature of the Emergency Equipment Cooling Water System *1 has increased, at 3:20 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 4:25 pm, March 15th, after replacing the power facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

*Unit 4
As it was confirmed that the pressure at the outlet of the pumps of the Emergency Equipment Cooling Water System*1 has been decreased, at 8:05 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 9:25 pm, March 15th, after replacing the relevant facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

*1:emergency water system in which cooling water (pure water) circulates which exchanged the heat with sea water in order to cool down bearing pumps and/or heat exchangers etc.

Kashiwazaki Kariwa Nuclear Power Station:
Units 1, 5, 6, 7: normal operation
(Units 2 to 4: outage due to regular inspection)

[Thermal Power Station]
-Hirono Thermal Power Station Units 2 and 4: shutdown due to the earthquake
-Hitachinaka Thermal Power Station Unit 1: shutdown due to the earthquake
-Kashima Thermal Power Station Unit 6: shutdown due to the earthquake

[Hydro Power Station]
-Power supply has returned to normal, but facilities damaged by the earthquake are now being handled in a timely manner.

[Impacts on Transmission Facilities]
-Power supply has returned to normal, but facilities damaged by the earthquake are now being handled in a timely manner.

[Avoidance of further Implementation on Planned Rolling Blackouts and Request for Conserving Electricity Consumption]
Currently, we are giving our utmost efforts to restore power supply after our nuclear and thermal power facilities are severely damaged by Tohoku-Taiheiyou-Oki Earthquake. The widespread understanding and cooperation to the conservation of electricity among each customer have contributed to the improvement in the tight power supply-demand balance. Amidst this backdrop, in principle, we have decided not to implement further rolling blackouts.
However, we must sincerely ask for your continued cooperation in conserving electricity consumption due to the possible increase in demand caused by abrupt climate change or unexpected trouble in power stations that are currently being restored. In case the electricity supply-demand balance becomes tighter than expected, on the condition of prior announcement, we may reluctantly implement the rolling blackouts. We kindly ask for your cooperation.
Also, we will give our utmost efforts to maintain this policy of avoiding further implementation on rolling blackouts in summer.

back to page 1

From: ET07 Hoc
Sent: Sunday, April 10, 2011 5:32 AM
To: Marshall, Michael
Cc: Marshall, Jane
Subject: RE:

Michael Marshall – Please disregard. I was trying to send this to Jane Marshall. As you can see it is 5:30 am on Sunday, and I am blaming that.

From: ET07 Hoc
Sent: Sunday, April 10, 2011 5:30 AM
To: ET07 Hoc; Marshall, Michael
Subject:

Jane, et al.,

Attached are the tweaked shift schedules. Descriptions of each follow.

1. The first is a 5 section shift rotation that is loosely based on a 4 on 2 off schedule with an addition of office hours to round out 10 shifts (which adds up to 80 hrs minus any OT for turnover). In my opinion this is a little unwieldy and people bounce around a little more than they should.
2. This is a balanced (as balanced as it can get) rotation based on the above 4 on 2 off rotation with no office hours. The amount of shifts is not divisible by 5 so there are a couple of odd numbers.
3. The third is an option we had provided to begin with, it is a straight shift rotation that flips on a weekly basis (this flipping can be modified any way you want it to) with the weekends be split 12 hour shifts to minimize weekend impacts.
4. The 4th is a rotation that the plants use. It fits the shift requirements nicely and provides 4 days of office time every 5 weeks. This keeps people on the same shift for longer to minimize the swapping of schedules. This is the cleanest from a scheduling aspect and provides for some long (3.5 day) breaks. **I recommend this one.**

One thing to keep in mind. It is valuable to set up teams of people and assign them to a rotor spot. That way the same folks are always working together and you are not pulling your hair out. For instance , after the personnel for the teams are identified you assign them to a team and then connect that team to a rotor position. For instance you have 6 individuals for Team A. Team A works rotor A and sticks to that schedule. This accomplishes a couple things. First, the responders know weeks in advance what their schedule is and can identify conflicts and plan their life in advance. Second, it allows for consistency in the shifts, **as long as we require the teams to work the same schedule.** This is important for continuity of turnover , information sharing, ect. I strongly encourage that we make whatever the ET wants to do the standard for the other teams.

Let me know if this meets our scheduling needs. If not I will be here bright-eyed and bushy-tailed Monday morning to do what I can.

V/R,

Jason

aaa | 296

	0	1	2	3	4	5	6	7
	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT
1	D	D	D	D	D			M
2	M	M				D	D	D
3	S	S	S	S	S			
4						S	S	S
5			M	M	M	M	M	
	4/16	4/17	4/18	4/19	4/20	4/21	4/22	4/23

	8	9	10	11	12	13	14	15	16	17	18	19	20	21			
	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
1	M	M	M	M				S	S	S	S	S			9	76.5	-4
2	D	D			M	M	M	M	M				S	S	9	76.5	-4
3			D	D	D	D	D			M	M	M	M	M	10	85	5
4	S	S						D	D	D	D	D			7	59.5	-21
5			S	S	S	S	S						D	D	7	59.5	-21
	4/24	4/25	4/26	4/27	4/28	4/29	4/30	5/1	5/2	5/3	5/4	5/5	5/6	5/7			

	22	23	24	25	26	27	28	29	30	31	32	33	34	35			
	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
1		D	D	D	D	D					M	M	M	M	9	76.5	-4
2	S	S	S				D	D	D	D	D				8	68	-12
3				S	S	S	S	S				D	D	D	8	68	-12
4	M	M	M	M	M				S	S	S	S	S		10	85	5
5	D					M	M	M	M	M				S	7	59.5	-21
	5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21			

5 Section Shift Rotation with Office Hours Balanced for 10 shifts (80 hour work week)

	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
A	D	D	D	D	O		S	S	S	S				M	10	85	5
B				O	D	D	D	D	O		S	S	S	S	10	85	5
C		M	M	M	M	M			D	D	D	D	O		10	85	5
D	S	S	S		O		M	M	M	M			D	D	10	85	5
E	M		O	S	S	S			O	O	M	M	M		10	85	5
	4/24	4/25	4/26	4/27	4/28	4/29	4/30	5/1	5/2	5/3	5/4	5/5	5/6	5/7			

SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
M	M	M			D	D	D	D	O	O			S	10	85	5
S			M	M	M	M		O	D	D	D	D		10	85	5
	S	S	S	S	S		M	M	M			O	D	10	85	5
D	D	O	O			S	S			M	M	M	M	10	85	5
	O	D	D	D	O			S	S	S	S	S		10	85	5
5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21			

Legend
D = 7 - 3
S = 3-11
M = 11- 7
O = Office Hours

5 Section Shift Rotation Balanced with out office hours

	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
A	D	D	D	D			S	S	S	S				M	9	77	-3.5
B					D	D	D	D			S	S	S	S	8	68	-12
C		M	M	M	M	M			D	D	D	D			9	77	-3.5
D	S	S	S				M	M	M				D	D	8	68	-12
E	M			S	S	S				M	M	M	M		8	68	-12
	4/24	4/25	4/26	4/27	4/28	4/29	4/30	5/1	5/2	5/3	5/4	5/5	5/6	5/7			

SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
M	M	M			D	D	D	D					S	8	68	-12
S			M	M	M	M			D	D	D	D		9	76.5	-3.5
	S	S	S	S	S		M	M	M				D	8	68	-12
D	D				S	S	S			M	M	M	M	9	76.5	-3.5
		D	D	D				S	S	S	S	S		8	68	-12
5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21			

Straight Shifts with 12 hour Weekend Split Shift

	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
A		D	D	D	D	D			M	M	M	M	M		10	85	5
B		M	M	M	M	M			S	S	S	S	S		10	85	5
C		S	S	S	S	S			D	D	D	D	D		10	85	5
D	M12						M12	M12						D12	4	48	-32
E	D12						D12	D12						M12	4	48	-32
	4/24	4/25	4/26	4/27	4/28	4/29	4/30	5/1	5/2	5/3	5/4	5/5	5/6	5/7			

SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
	S	S	S	S	S			D	D	D	D	D		10	85	5
	D	D	D	D	D			M	M	M	M	M		10	85	5
	M	M	M	M	M			S	S	S	S	S		10	85	5
D12						M12	M12						D12	4	48	-32
M12						D12	D12						M12	4	48	-32
5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21			

Legend
D = 7 - 3
S = 3-11
M = 11- 7
D12 = 12 HOUR DAY 11AM - 11PM
N12 = 12 DAY 11PM -11AM

5 WEEK SEVEN DAY ROTATION WITH A WEEK OF OFFICE TIME (CLEANIST)

	SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
A	D	D	D	D	D				O	O	O	O	D		10	85	5
B	M	M	M	M			D	D	D	D	D	D			10	85	5
C			S	S	S	S	S	S	S			M	M	M	10	85	5
D	S	S			M	M	M	M	M	M	M			D	10	85	5
E		O	O	O	O	D				S	S	S	S	S	10	85	5
	4/24	4/25	4/26	4/27	4/28	4/29	4/30	5/1	5/2	5/3	5/4	5/5	5/6	5/7			

SUN	MON	TUES	WED	THURS	FRI	SAT	SUN	MON	TUES	WED	THURS	FRI	SAT	SHIFTS	HOURS	
		S	S	S	S	S	S	S			M	M	M	10	85	5
	O	O	O	O	D				S	S	S	S	S	10	85	5
M	M	M	M			D	D	D	D	D	D			10	85	5
D	D	D	D	D					O	O	O	O	D	10	85	5
S	S			M	M	M	M	M	M	M			D	10	85	5
5/8	5/9	5/10	5/11	5/12	5/13	5/14	5/15	5/16	5/17	5/18	5/19	5/20	5/21			

From: Hay, Michael
Sent: Sunday, April 10, 2011 10:54 PM
To: RST01 Hoc; Hoc, PMT12
Subject: RE: Global Assessment Draft 0630_4-10.docx

Follow Up Flag: Follow up
Flag Status: Flagged

Thanks for the inputs. We had a meeting today and have clearer direction on the report structure. Chuck Norton currently understands what we need from the RST. I do need an electronic copy of the "NARAC Plume Model Dose Projections," dated March 20. No more actions are needed form others until requested.

Thanks.

Mike

From: RST01 Hoc
Sent: Sunday, April 10, 2011 5:55 AM
To: Hay, Michael
Subject: FW: Global Assessment Draft 0630_4-10.docx

Mike,

Forwarding this document. Please let us know what else you might need.

Rick Hasselberg
RST Coordinator

From: RST07 Hoc
Sent: Sunday, April 10, 2011 6:49 AM
To: RST01 Hoc
Subject: Global Assessment Draft 0630_4-10.docx

Please send to Japan Team to see if this addresses their request.

000297

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 3:16 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

-----Original Message-----
From: Turner, Joseph
Sent: Sunday, April 10, 2011 3:16 PM
To: LIA02 Hoc; Gepford, Heather
Cc: ET02 Hoc
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Ok.
This message was sent via Blackberry.

----- Original Message -----
From: LIA02 Hoc
To: Gepford, Heather
Cc: Turner, Joseph; ET02 Hoc
Sent: Sun Apr 10 15:00:21 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Hello, Heather--
Mr. Turner, please include Heather from Region II on you blackberry list. Karen, I understand that you will be in the Ops Ctr tomorrow--please follow up with Heather if there are any special instructions.
Best regards,
Elizabeth

-----Original Message-----
From: Gepford, Heather
Sent: Sunday, April 10, 2011 2:54 PM
To: Reynolds, Steven; ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I've got the same problem as Steve with respect to getting a blackberry, since I'm in Region II. How are we going to handle the regional folks?

Thanks,
Heather Gepford

From: Reynolds, Steven
Sent: Sunday, April 10, 2011 1:18 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert

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Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

I would like an international blackberry also. As I am in Region III, would it be possible to ask Jeff Mitman or Tony Huffert to bring it with them to Japan. If that is not possible, is it possible to overnight it tonight so that it will be in Region III tomorrow (Monday)?

thanks,
Steve Reynolds

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Anthony (Tony) Huffert, RES, one of the NRC staff who is traveling to Japan on Tuesday, would like to have an international Blackberry and international laptop. Even though he may not travel on Tuesday (see earlier e-mail from ET02 on this) we need to go on the assumption that he will travel on that day; therefore we need to have the BB and laptop ready and delivered to the Ops Center by 2PM tomorrow, Monday 4/11/11. Tony also would like to have some training on using the BB when he picks it up BB at 2PM.

My earlier e-mail indicated that Jeff Mitman, NRR wanted a international BB as well so let's work on getting him one for the same time. I'm sending him a cc of this e-mail so he can provide additional information and/or changes to pick up time based on his needs. Also, Jeff could you please indicate whether you want a laptop or not?

I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 7:54 PM
To: LIA08 Hoc
Subject: FW: Request for Slide Package from Shaw Group

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 7:54 PM
To: Casto, Chuck
Cc: Liaison Japan; Emche, Danielle; Stahl, Eric; LIA06 Hoc
Subject: Request for Slide Package from Shaw Group

Chuck,

Marty Virgilio and the ET have asked that you forward to us the package of slides presented to the Site Team recently by the Shaw Group. Can you please send?

Thanks,

LIA02

QQQ 1299

From: LIA02 Hoc
Sent: Monday, April 11, 2011 3:42 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: HOO to Return to Normal Dosimetry Process

From: O'Donnell, John
Sent: Monday, April 11, 2011 3:42 PM
To: LIA02 Hoc; Young, Francis; Administrative ServicesCenter
Cc: Pedersen, Roger; Garry, Steven; Bartlett, Matthew; Thompson, Richard; Hinson, Charles; Struckmeyer, Richard; Foster, Jack
Subject: HOO to Return to Normal Dosimetry Process

Steve and Francis,

The normal dosimetry issuance process you requested is below. This is the overview and the RSOs can provide the individuals with the details for their offices.

Obtaining an NRC Dosimeter @ HQ

1. Obtain a Dosimeter Authorization Form.
   a. The following offices have internal procedures that include this form.
      i. NRR ADM-403
      ii. NRO NRO-ADM-110
      iii. FSME ML101040309
      iv. NMSS NMSS Dosimeter Authorization
   b. The Administrative Services Center (ASC) also has dosimeter request forms available at the ASC Services Desk in the 2nd Floor Lobby of OWFN.

2. Complete the individual information requested and duties requiring a dosimeter.

3. Acknowledge that appropriate training is current.
   a. At a minimum, discuss with the RSO the radiological hazards of the duty.
   b. Should not need KI, but if need perceived, review the guidance in Exhibit 3 and cautions in Exhibit 4 of MD 10.131.
   c. Should not need respiratory protection, respirators require medical qualification. This does not include dust masks.

4. Review the guidelines for use of dosimeters (should be a separate page).
   a. Do not place in checked luggage
   b. Keep on person, if possible.
   c. Wear on upper portion of trunk of body

5. Sign the form
   a. Obtain your Office RSO or ARSO signature for dosimeter authorization
   b. The RSO retains a copy for office records.

6. The individual must present the completed form to the ASC staff (OWFN 2nd Floor Lobby)
   a. The ASC will issue the temporary dosimeter to the individual from the ASC Services Desk.

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b. This service is not always immediately available, so please plan accordingly. (1 to 24 hours is best.)
c. ASC hours are M-F, 7:15 am to 5:00 pm. Phone 301-415-2251.

The dosimeter wear period is quarterly beginning on the 1st day of January, April, July and October. The dosimeters must be returned to the ASC at the end of each quarter.

The Headquarters RSOs and ARSOs are listed below by office.

Office	RSO	ARSO
NRR	Roger Pedersen	Steven Garry
NMSS	Matt Bartlett	Richard Thompson
FSME	John O'Donnell	Richard Struckmeyer
NRO	Charles Hinson	

Note: HQ personnel in Offices other than those listed above should contact the NRR RSO for dosimetry guidance.

Regards,

John O'Donnell
301-415-7908

News Release

経済産業省
Ministry of Economy, Trade and Industry

April 11, 2011
Nuclear and Industrial Safety Agency

Information of the Situation Caused by the Earthquake of Hamadori in Fukushima Prefecture
(As of 17:33 April 11th, 2011)

Around 17:16 (UTC 08:16) April 11th, 2011, Earthquake occurred Hamadori Fukushima Prefecture.

All units of Onagawa NPS (Tohoku Electric Power Company Inc.), Fukushima Dai-ichi NPS and Fukushima Dai-ni NPS (Tokyo Electric Power Company Inc.) have been shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake occurred on March 11th 2011.

The current situation of each nuclear facility is as follows;

- Onagawa NPS (According to Tohoku Electric Power Company Inc.)
  All five external power lines have been confirmed and there are no unusual data measured at monitoring posts.

- Fukushima Dai-ichi NPS (According to Tokyo Electric Company Inc.)
  - There are no unusual data measured at monitoring posts.
  - The direction of evacuation was issued to workers at the site, accompanied with the occurrence of this earthquake.
  - Both recovery work of external power supply and replacement work of fire extinguishing pump are being carried out in parallel because the motor driven pump for injection to reactor core of Units 1 to 3 stopped due to the halt of external power supply from Tohoku Electric Company Inc. to each unit.

- Fukushima Dai-ni NPS (According to Tokyo Electric Company Inc.)
  - The external power has been confirmed.
  - There are no unusual data in plant parameters.
  - There are no unusual data measured at monitoring posts.

- Tokai Dai-ni NPP (According to The Japan Atomic Power Company)
  - The external power has been confirmed.

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-No unusual event has been confirmed.

1. The status of operation at Nuclear Power Station

- Onagawa NPS (Tohoku Electric Power Company Inc.)
  - Unit 1: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 2: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 3: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
- Fukushima Dai-ichi NPS (Tokyo Electric Company Inc.)
  - Unit 1: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 2: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 3: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 4: in outage
  - Unit 5: in outage
  - Unit 6: in outage
- Fukushima Dai-ni NPS (Tokyo Electric Company Inc.)
  - Unit 1: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 2: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 3: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
  - Unit 4: Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake
- Tokai Dai-ni NPP (The Japan Atomic Power Company)
  - Shutdown since the 2011 Tohoku district - off the Pacific Ocean Earthquake

(Reference)

Seismic Intensity in Japanese Scale of each area;

Max. 6-: Hamadori in Fukushima Prefecture, Nakadori in Fukushima Prefecture, Southern part of Ibaraki Prefecture

Max. 5+: Northern part of Ibaraki Prefecture, etc.

Max. 5-: Northern part of Miyagi Prefecture, Southern part of Miyagi Prefecture, Aizu of Fukushima Prefecture

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

JOINT STATEMENT
by: RSMC Tokyo(JP), RSMC Obninsk(RU) and RSMC Beijing(CN)

Emergency notified by the IAEA (Emergency)

Issued: 08:00 UTC, Apr. 11, 2011

RADIOLOGICAL EVENT DETAILS
Source:
Fukushima Daiichi, Japan
Location:
37.4206 degrees North latitude, 141.0329 degrees East longitude
Release date-time:
From: 03:10 UTC 11 Apr 2011
To: 03:10 UTC 12 Apr 2011
Comments:
Emergency Accident

Weather Situation

It is cloudy with weak wind around Fukushima because a cold trough is approaching to the eastern part of Japan. For the next 24 hours, the cold trough will pass over the eastern part of Japan. It will bring moderate precipitation with partly severe weather on the mainly eastern part of Japan including around Fukushima.

Trajectories

The simulation results from RSMC Beijing and Tokyo are very similar. Results of RSMC Beijing show that the tracers released at from 500m and 3000m are moving toward northeast in the first 36 hours, and then make a clockwise to northeast in the rest of forecast period. The tracer from 1500m will go to northeast slowly in whole predicted period. RSMC Tokyo predicts that the tracers from 500m~3000m move toward northeast for the first 24 hours, and then turn anticlockwise to the north for the following 48 hours.
RSMC Obninsk predicts that the tracer from 500m moves to the southeast during the first 36 hours, and then turns to southwest in the rest of forecast period. The tracer 1500m is going to southeast in next 72 hours. And the tracer released at 3000m moves toward northeast for the whole forecast period.

Exposure

The simulation results of three RSMCs show that the exposure areas will spread toward south for the first 24 hours and then will spread toward southeast during the rest of predicted period and cover the northwestern part of Pacific Ocean.

Depositions

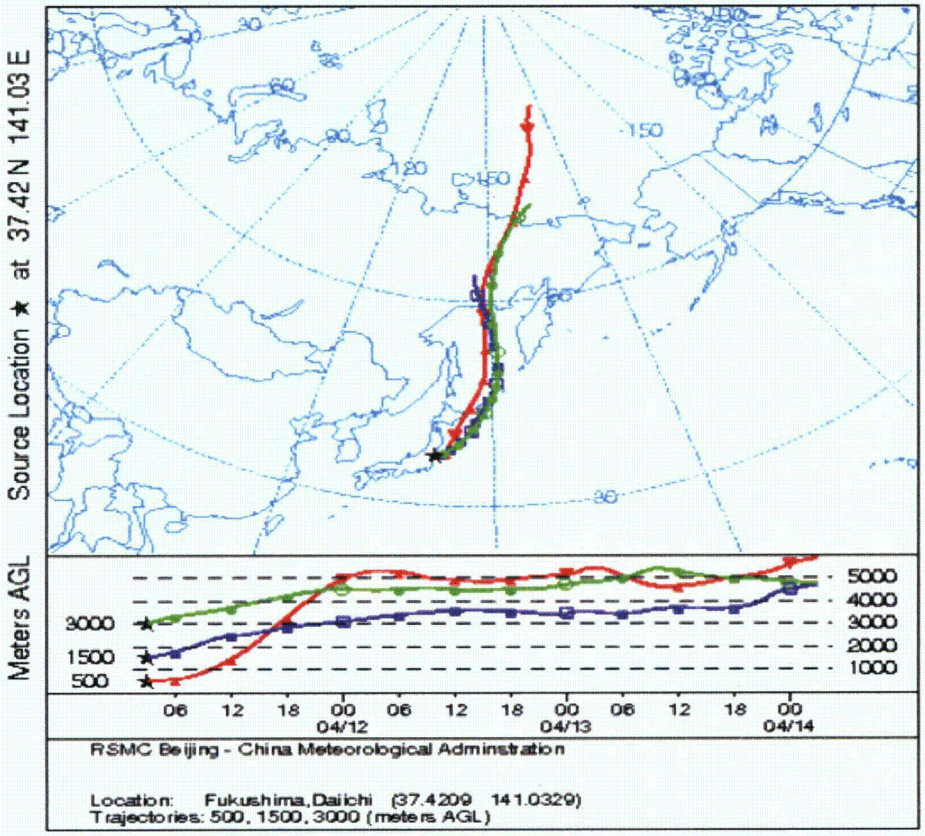
From three RSMCs' deposition charts, we could get that the deposition area for the whole period covers the eastern part of Japan Islands and the northwestern part of Pacific Ocean.

Summary

There would be a hazard around the eastern part of Japan Islands, northwestern part of Pacific Ocean.

END

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION
Forward trajectories starting at 03 UTC 11 Apr 11
12 UTC 10 Apr CMAG Forecast Initialization

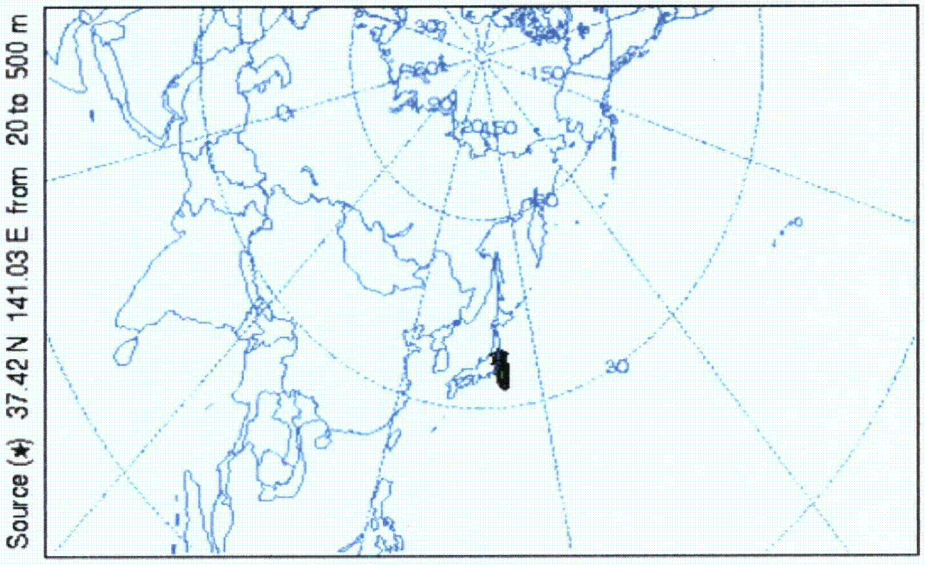


RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (Bq/m2)

Integrated from 00z 11 Apr to 00z 12 Apr (UTC)

I131 Release Started at 03Z 11 Apr (UTC)

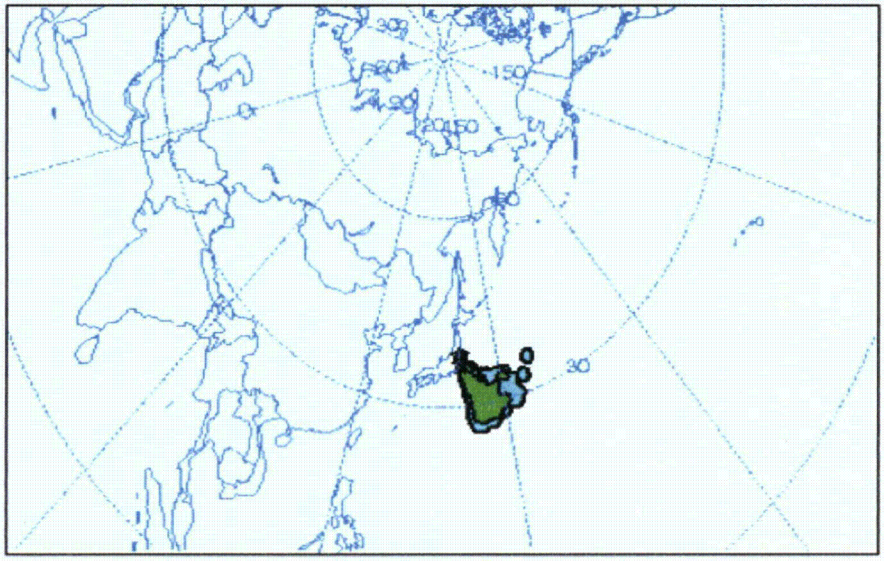


Location: Fukushima,Daiichi (37.4209 141.0329)
Meteorology: GT213
Emission: 1 Bq of I131 over 24 hr
Distribution: Uniform between 20 m - 500 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (Bq/m2)
Integrated from 00z 11 Apr to 00z 13 Apr (UTC)
I131 Release Started at 03Z 11 Apr (UTC)

Source (★) 37.42 N 141.03 E from 20 to 500 m



12Z 10 Apr 11 CMAG FORECAST INITIALIZATION

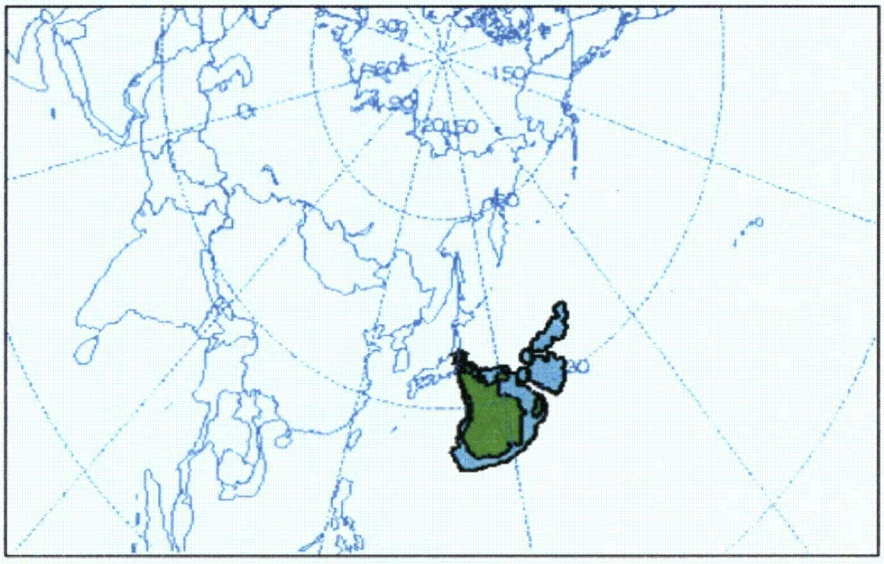
1.0E-10 1.0E-12 1.0E-14 1.0E-16

3.4E-10 Maximum at square

Location: Fukushima,Daiichi (37.4209 141.0329)
Meteorology: GT213
Emission: 1 Bq of I131 over 24 hr
Distribution: Uniform between 20 m - 500 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Deposition at Ground-Level (Bq/m2)
Integrated from 00z 11 Apr to 00z 14 Apr (UTC)
I131 Release Started at 03Z 11 Apr (UTC)

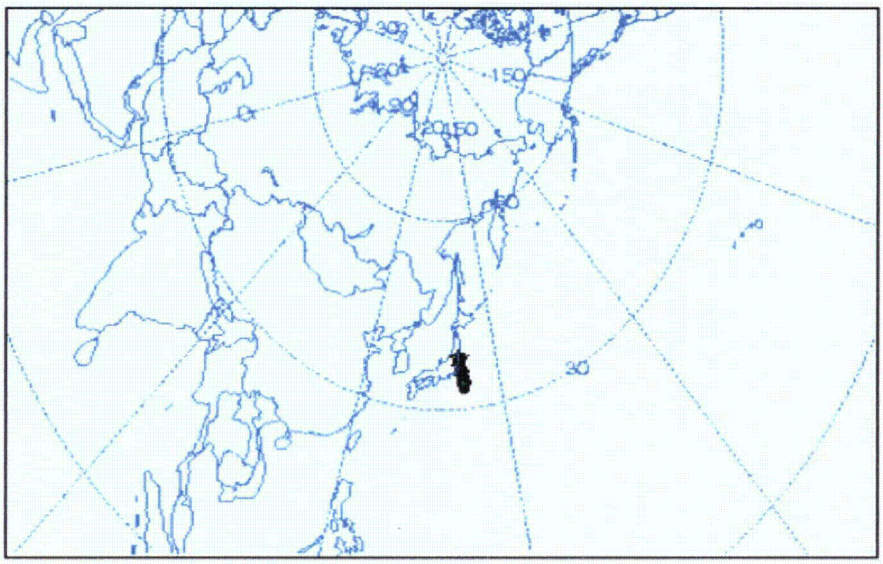


Location: Fukushima,Daiichi (37.4209 141.0329)
Meteorology: GT213
Emission: 1 Bq of I131 over 24 hr
Distribution: Uniform between 20 m - 500 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m3)
Integrated from 00z 11 Apr to 00z 12 Apr (UTC)
I131 Release Started at 03Z 11 Apr (UTC)

Source (*) 37.42 N 141.03 E from 20 to 500 m



12Z 10 Apr 11 CMAG FORECAST INITIALIZATION

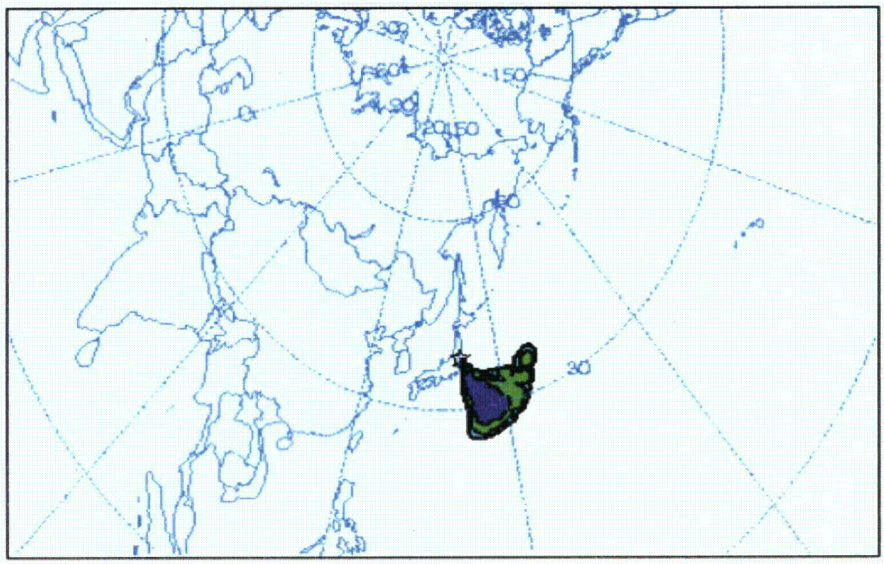
1.0E-10 1.0E-12 1.0E-14 1.0E-16

6.2E-10 Maximum at square

Location: Fukushima,Daiichi (37.4209 141.0329)
Meteorology: GT213
Emission: 1 Bq of I131 over 24 hr
Distribution: Uniform between 20 m - 500 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m3)
Integrated from 00z 12 Apr to 00z 13 Apr (UTC)
I131 Release Started at 03Z 11 Apr (UTC)



Source (★) 37.42 N 141.03 E from 20 to 500 m

12Z 10 Apr 11 CMAG FORECAST INITIALIZATION

1.0E-10 1.0E-12 1.0E-14 1.0E-16

4.9E-10 Maximum at square

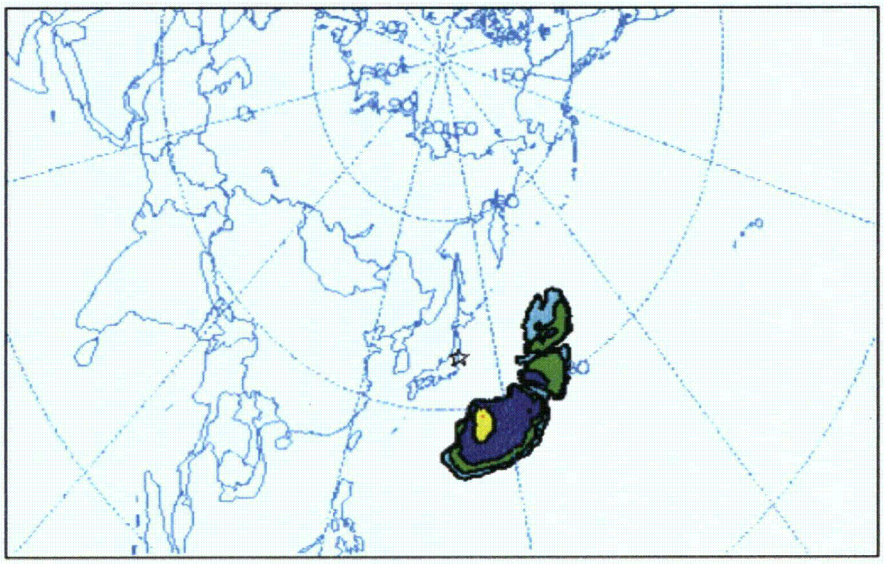
Location: Fukushima,Daiichi (37.4209 141.0329)
Meteorology: GT213
Emission: 1 Bq of I131 over 24 hr
Distribution: Uniform between 20 m - 500 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

RSMC BEIJING - CHINA METEOROLOGICAL ADMINISTRATION

Exposure averaged between 0 m and 500 m (Bq-s/m3)

Integrated from 00z 13 Apr to 00z 14 Apr (UTC)

I131 Release Started at 03Z 11 Apr (UTC)

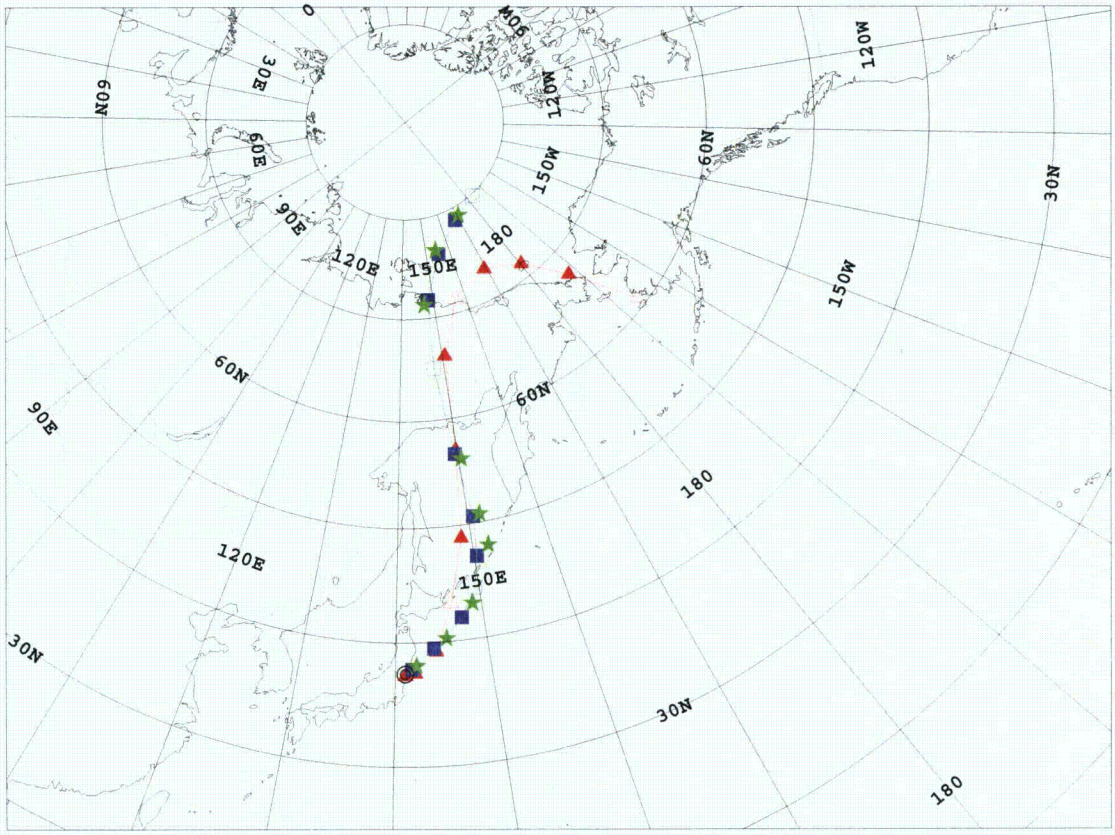


Location: Fukushima,Daiichi (37.4209 141.0329)
Meteorology: GT213
Emission: 1 Bq of I131 over 24 hr
Distribution: Uniform between 20 m - 500 m agl
Deposition: Wet and Dry (0.1 cm/s)
Notes: Contours may change from map to map
Results based on default values

☐ DELEGATED AUTHORITY REQUESTED
☐ IAEA NOTIFIED EMERGENCY

3-D TRAJECTORY

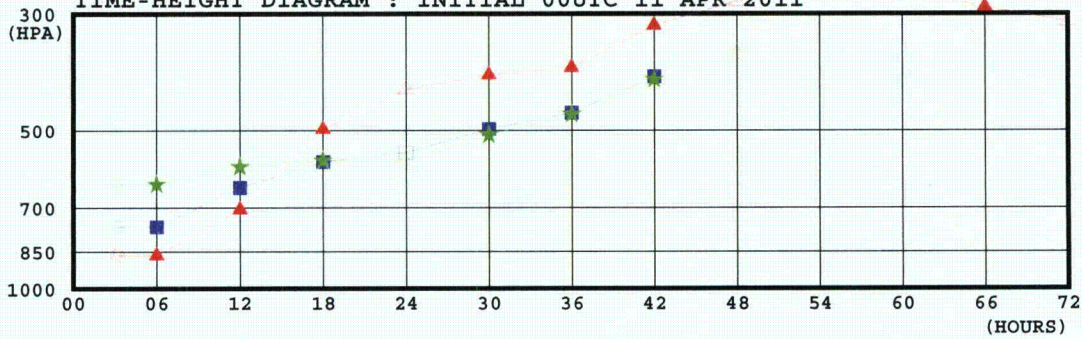
FROM 03UTC 11 APR 2011 TO 00UTC 14 APR 2011



(ISSUED 0423UTC 11 APR 2011)

INITIAL HEIGHT = 500M ABOVE THE SURFACE
INITIAL HEIGHT = 1500M ABOVE THE SURFACE
INITIAL HEIGHT = 3000M ABOVE THE SURFACE
MARKED WITH TIME INTERVAL OF 6 HOURS
◎ SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN

TIME-HEIGHT DIAGRAM : INITIAL 00UTC 11 APR 2011



JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL
CHART 1 / 5

☐ DELEGATED AUTHORITY REQUESTED
☐ IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 03UTC 11 APR 2011
TO 00UTC 12 APR 2011

(ISSUED 0423UTC 11 APR 2011)

ASSUMED POLLUTANT RELEASED : I -131
START OF THE EMISSION : 0310UTC 11 APR 2011
END OF THE EMISSION : 0310UTC 12 APR 2011
◎ SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 2.44E-9 (BQ.S/M3)
CONTOURS: 1E-10 , 1E-12 , 1E-14

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL

☐ DELEGATED AUTHORITY REQUESTED
☐ IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 12 APR 2011
TO 00UTC 13 APR 2011

(ISSUED 0423UTC 11 APR 2011)

ASSUMED POLLUTANT RELEASED : I -131
START OF THE EMISSION : 0310UTC 11 APR 2011
END OF THE EMISSION : 0310UTC 12 APR 2011
◎ SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 7.67E-11 (BQ.S/M3)
CONTOURS: 1E-12 , 1E-14 , 1E-16

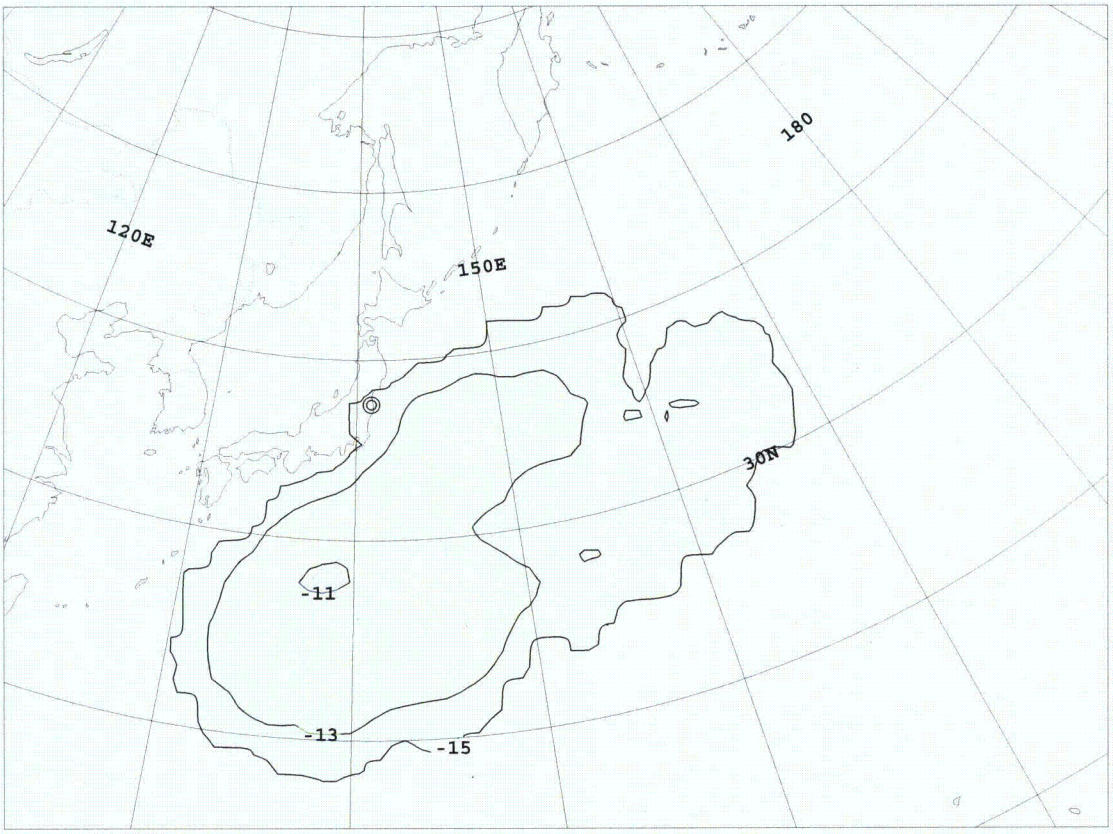
CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL

☐ DELEGATED AUTHORITY REQUESTED
☐ IAEA NOTIFIED EMERGENCY

TIME INTEGRATED SURFACE - 500M LAYER CONCENTRATION

INTEGRATED FROM 00UTC 13 APR 2011
TO 00UTC 14 APR 2011



(ISSUED 0423UTC 11 APR 2011)

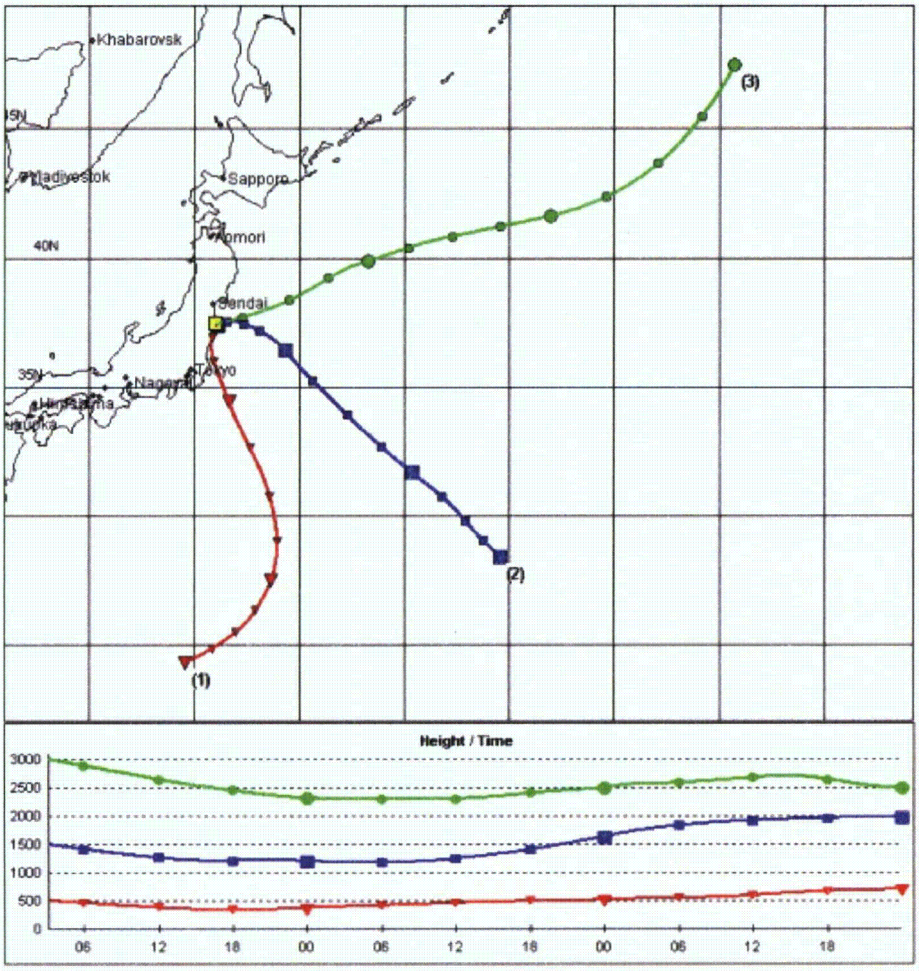
ASSUMED POLLUTANT RELEASED : I -131
START OF THE EMISSION : 0310UTC 11 APR 2011
END OF THE EMISSION : 0310UTC 12 APR 2011
◎ SOURCE LOCATION : LATITUDE 37.42N
LONGITUDE 141.03E
NAME FUKUSHIMA DAIICHI, JAPAN
ASSUMED TOTAL EMISSION : 1 BECQUEREL
UNIFORM RELEASE FROM 20- 500M ABOVE THE GROUND
UNIT : (BQ.S/M3)
MAXIMUM : 1.27E-11 (BQ.S/M3)
CONTOURS: 1E-11 , 1E-13 , 1E-15

CONTOUR VALUES MAY CHANGE FROM CHART TO CHART

JAPAN METEOROLOGICAL AGENCY
GLOBAL TRACER TRANSPORT MODEL

RSMC Obninsk, Russia

Forward trajectories



Levels: (1) 500 m (2) 1500 m (3) 3000 m

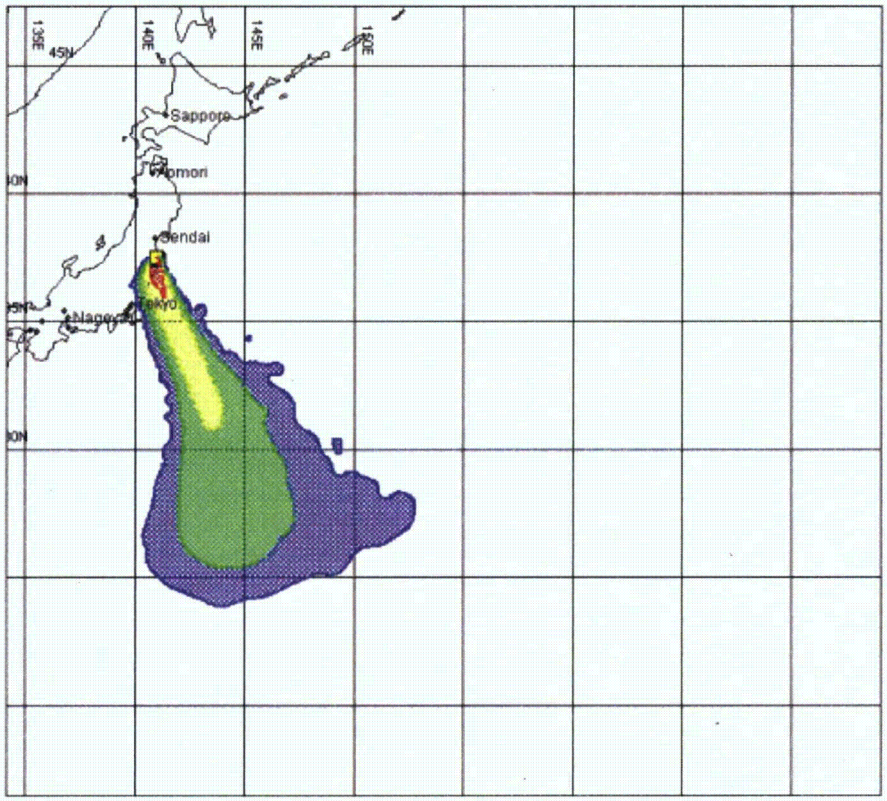
Date of release: 11 Apr 2011, 3:10 UTC

Source location: 141.03° E, 37.42° N

RSMC Obninsk, Russia

Total deposition

from 11 Apr 2011, 00:00 to 14 Apr 2011, 00:00 UTC



Contours: 1e-11 1e-12 1e-13 1e-14

Maximum value: 2.5e-10 Bq/m2

Date of release: 11 Apr 2011, 3:10 UTC

Source location: 141.03° E, 37.42° N

Total release: 1 Bq of I-131

Duration: 24:00

Vert. distribution: uniform 20-500 m

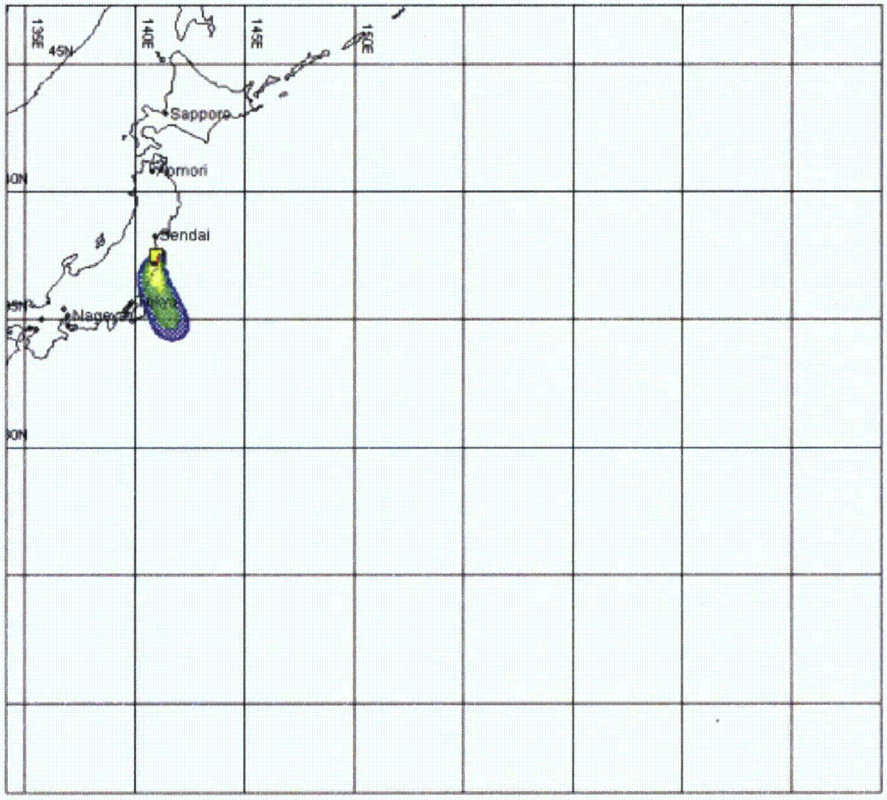
Contour values may change from chart to chart

Results based on default initial values

RSMC Obninsk, Russia

Time integrated surface to 500m layer concentrations

from 11 Apr 2011, 00:00 to 12 Apr 2011, 00:00 UTC



Contours: 1e-08 1e-09 1e-10 1e-11

Maximum value: 3.8e-08 Bq*s/m3

Date of release: 11 Apr 2011, 3:10 UTC

Source location: 141.03° E, 37.42° N

Total release: 1 Bq of I-131

Duration: 24:00

Vert. distribution: uniform 20-500 m

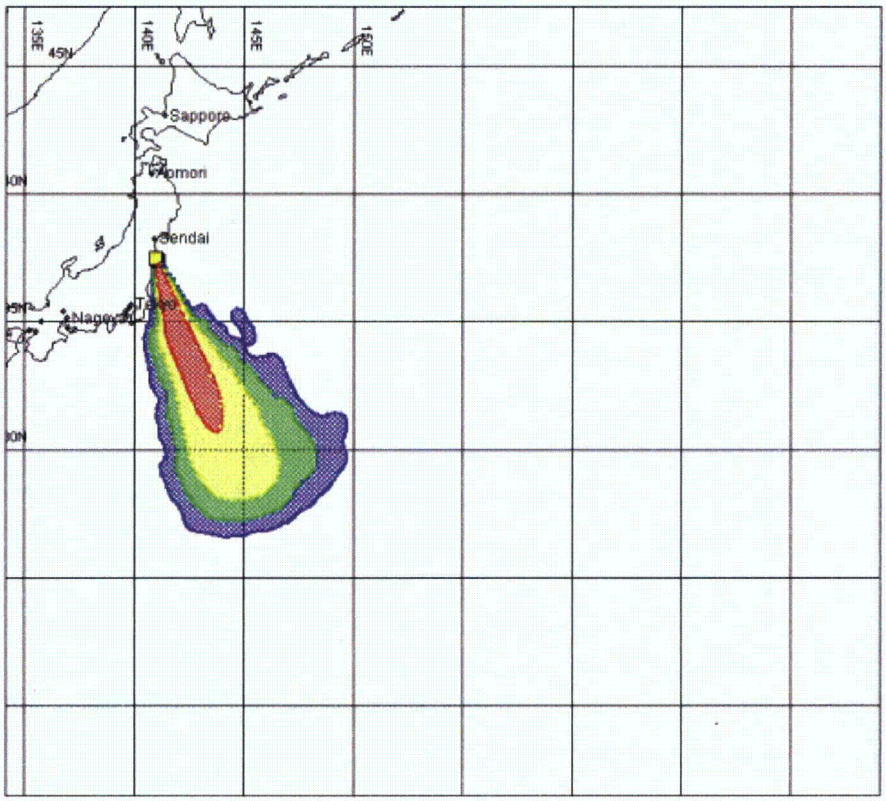
Contour values may change from chart to chart

Results based on default initial values

RSMC Obninsk, Russia

Time integrated surface to 500m layer concentrations

from 12 Apr 2011, 00:00 to 13 Apr 2011, 00:00 UTC



Contours: 1e-10 1e-11 1e-12 1e-13

Maximum value: 1.9e-09 Bq*s/m3

Date of release: 11 Apr 2011, 3:10 UTC

Source location: 141.03° E, 37.42° N

Total release: 1 Bq of I-131

Duration: 24:00

Vert. distribution: uniform 20-500 m

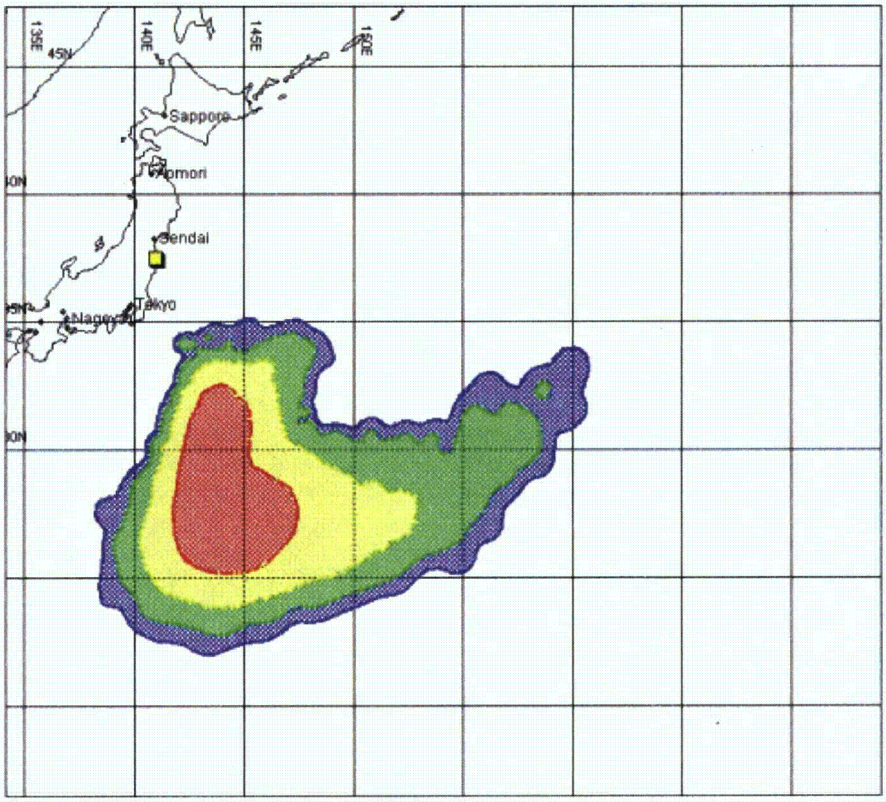
Contour values may change from chart to chart

Results based on default initial values

RSMC Obninsk, Russia

Time integrated surface to 500m layer concentrations

from 13 Apr 2011, 00:00 to 14 Apr 2011, 00:00 UTC



Contours: 1e-11 1e-12 1e-13 1e-14

Maximum value: 4.7e-11 Bq*s/m3

Date of release: 11 Apr 2011, 3:10 UTC

Source location: 141.03° E, 37.42° N

Total release: 1 Bq of I-131

Duration: 24:00

Vert. distribution: uniform 20-500 m

Contour values may change from chart to chart

Results based on default initial values

※1：計器不良
※2：データ採取対象外
※3：状況推移を総括調査中

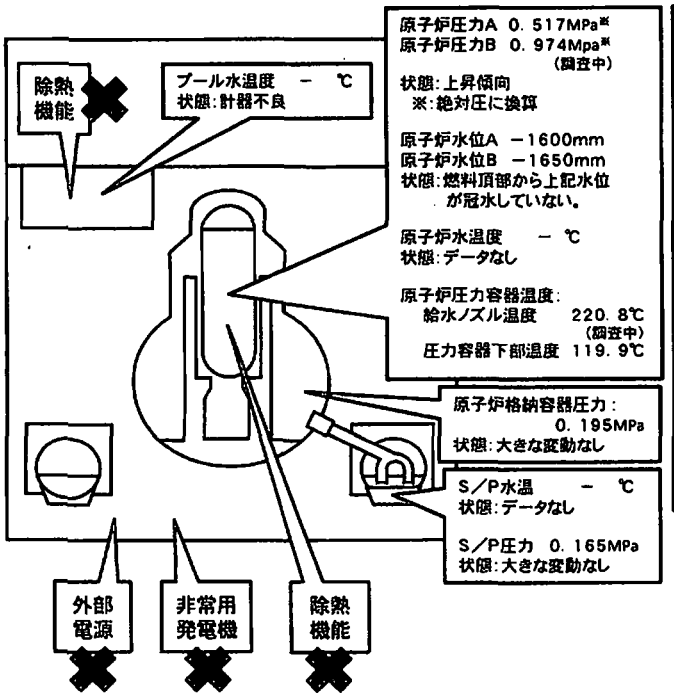
福島第一原子力発電所　プラント関連パラメータ

4月11日　13:00現在

号機	1u	2u	3u	4u	5u	6u
注水状況	給水ラインを用いた淡水注入中。 流量 6m³/h （4/3 17:30）仮設計器	消火系ラインを用いた淡水注入中。 流量　7m³/h （4/7 19:00）　仮設計器	消火系ラインを用いた淡水注入中。 流量 7m³/h （4/3 17:32）仮設計器	停止中	停止中	停止中
原子炉水位	燃料域A：−1600mm 燃料域B：−1650mm （4/11　12:00現在）	燃料域A：−1500mm （4/11　12:00現在）	燃料域A：−1900mm 燃料域B：−2250mm （4/11　12:00現在）	※2	停止域 1909mm （4/11　13:00現在）	停止域 2489mm （4/11　13:00現在）
原子炉圧力	0.416MPa g（A） 0.873MPa g（B）　※3 （4/11　12:00現在）	−0.020MPa g（A） −0.023MPa g（D） （4/11　12:00現在）	−0.017MPa g（A） −0.083MPa g（C） （4/11　12:00現在）	※2	0.006MPa g （4/11　13:00現在）	0.018MPa g （4/11　13:00現在）
原子炉水温度	（系統流量がないため採取不可）			※2	42.6℃ （4/11　13:00現在）	33.4℃ （4/11　13:00現在）
原子炉圧力容器温度	給水ノズル温度：220.8℃　※3 圧力容器下部温度：119.9℃ （4/11　12:00現在）	給水ノズル温度：154.8℃ 圧力容器下部温度　※1 （4/11　12:00現在）	給水ノズル温度：97.0℃　※3 圧力容器下部温度：111.0℃ （4/11　12:00現在）	4u:原子炉内に発熱体（燃料）なし 5,6u:原子炉水温度にて監視中		
D/W・S/C圧力	D/W　0.195MPa abs S/C　0.165MPa abs （4/11　12:00現在）	D/W　0.095MPa abs S/C　※1 （4/11　12:00現在）	D/W　0.1043MPa abs S/C　0.1699MPa abs （4/11　12:00現在）	※2		
CAMS	D/W　※1 S/C　1.11×10¹Sv/h （4/11　12:00現在）	D/W　2.84×10¹Sv/h S/C　7.17×10⁻¹Sv/h （4/11　12:00現在）	D/W　1.77×10¹Sv/h S/C　6.81×10⁻¹Sv/h （4/11　12:00現在）	※2		
D/W設計使用圧力	0.384MPa g（0.485MPa abs）	0.384MPa g（0.485MPa abs）	0.384MPa g（0.485MPa abs）	※2		
D/W最高使用圧力	0.427MPa g（0.528MPa abs）	0.427MPa g（0.528MPa abs）	0.427MPa g（0.528MPa abs）			
使用済燃料プール	※1	71.0℃ （4/11　12:00現在）	※1	※1	36.3℃ （4/11　13:00現在）	23.0℃ （4/11　13:00現在）
FPCスキマーサージタンクレベル	4500mm （4/11　12:00現在）	5800mm （4/11　12:00現在）	※1	4750mm （4/11　12:00現在）	※2	
電源	外部電源受電中（P/C2C）		外部電源受電中（P/C4D）		外部電源受電中	
その他情報				共用プール： 32℃程度 （4/11 6:30）	5u：非常モード （4/11 9:57～）	6u：SHCモード （4/11 10:13～）

圧力換算　ゲージ圧(MPa g)　＝　絶対圧(MPa abs)　−　大気圧(標準大気圧 0.1013 MPa)
絶対圧(MPa abs)　＝　ゲージ圧(MPa g)　＋　大気圧(標準大気圧 0.1013 MPa)

福島第一原子力発電所1号機の状況
（4月11日　13:00現在）

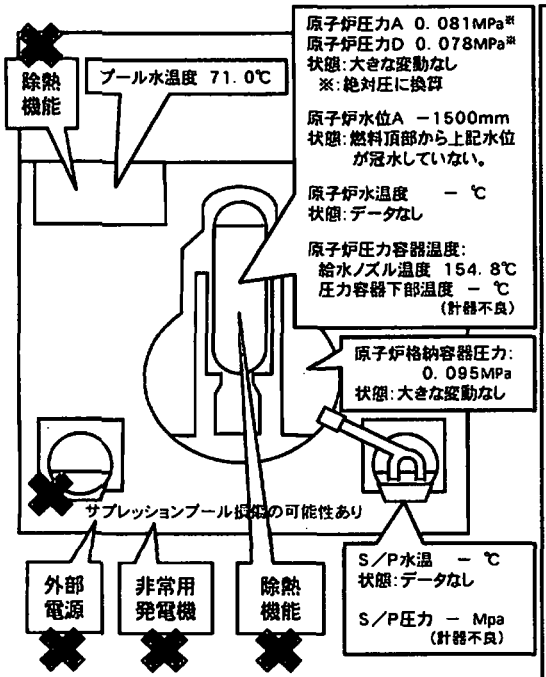


発生後の主要なできごと

11日14:46　運転中、地震により自動停止
11日15:42　10条通報（全交流電源喪失）
11日16:36　15条事象の発生（非常用炉心冷却装置注水不能）
12日01:20　15条事象の発生（格納容器圧力異常上昇）
12日10:17　ベント開始
12日15:36　爆発音
12日20:20　海水及びホウ酸の炉心注水開始
23日02:33　消火系に加え、給水系を使うことにより炉心への注水量増量（2m³/h → 18m³/h）。9:00に給水系のみに切替（18m³/h → 11m³/h）
24日11:30　中央制御室の照明復帰
25日15:37　淡水の炉心注水開始
29日08:32　仮設電動ポンプでの炉心注水に切替
31日12:00～2日15:26　復水貯蔵タンク（CST）からサプレッションプール水サージタンク（SPT）へ移送開始
31日13:03～16:04 コンクリートポンプ車による放水（淡水）
3日12:02　仮設電動ポンプの電源を仮設電源から外部電源に切替
3日13:55　復水器からCSTへ移送開始
6日22:30　原子炉格納容器への窒素封入操作開始
7日01:31　原子炉格納容器への窒素封入開始を確認
9日04:10　原子炉格納容器への窒素封入を高純度窒素発生装置に切替
10日9:30　復水器からCSTへの移送完了

現状：プール及び炉心への淡水注入を継続

福島第一原子力発電所2号機の状況
（4月11日　13:00現在）

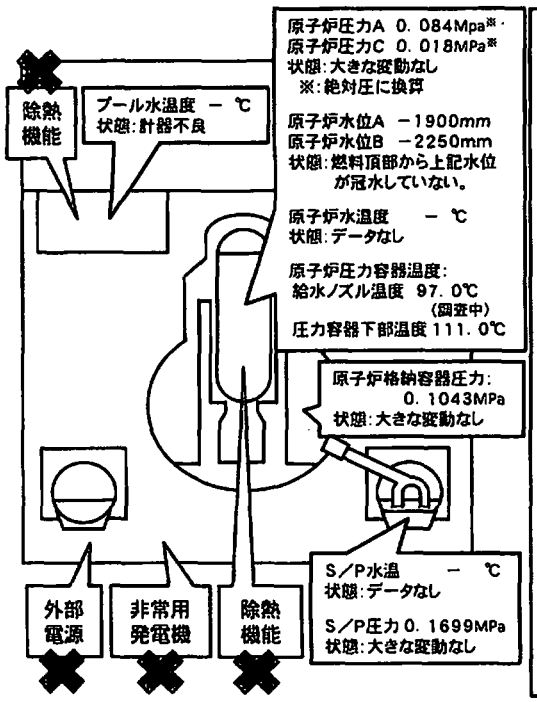


発生後の主要なできごと

11日14:46　運転中、地震により自動停止
11日15:42　10条通報（全交流電源喪失）
11日16:36　15条事象の発生（非常用炉心冷却装置注水不能）
13日11:00　ベント開始
14日13:25　15条事象の発生（原子炉冷却機能喪失）
14日16:34　海水の炉心注水開始
14日22:50　15条事象の発生（格納容器圧力異常上昇）
15日0:02　ベント開始
15日06:10　爆発音発生
15日06:20頃 サプレッションプール（圧力抑制室）損傷の可能性あり
20日15:05～17:20　使用済燃料プール冷却系（FPC）から使用済燃料プール（SFP）に海水約40t注水
20日15:46　パワーセンター受電
21日18:22 白煙が発生。22日7:11にほとんど見えない程度に減少
22日16:07　SFPに約18tの海水を注水
25日10:30～12:19　FPCからSFPに海水を注水
26日10:10　淡水の炉心注水開始
26日16:46　中央制御室の照明復帰
27日18:31　仮設電動ポンプでの炉心注水に切替
29日16:30～18:25　仮設電動ポンプでの淡水のSFP注水に切替
29日16:45～1日11:50　復水貯蔵タンク（CST）からサプレッションプール水サージタンク（SPT）へ移送
30日9:25～23:50　SFPへ注水していたところ、仮設電動ポンプの不調を確認（9:45）。消防ポンプに切替えて注水するが、ホース破損が確認（12:47,13:10）されたため、注水中断。19:05に淡水注水を再開
1日14:56～17:05 FPCからSFPへ仮設電動ポンプにより淡水注水
2日 9:30頃　取水口付近のピットに1000mSv/hを超える水が溜まっていること及びピット側面から、水が流出していることを確認
2日17:10　復水器からCSTへ移送開始
3日12:12　仮設電動ポンプの電源を仮設電源から外部電源に切替
3日13:47～14:30　ピット内に、おがくず20袋、高分子吸収材80袋、裁断処理した新聞紙3袋を投入
4日7:08～7:11　トレーサー（入浴剤）約13kgを海水配管トレンチ立坑から投入
4日11:05～13:37　FPCからSFPへ仮設電動ポンプにより淡水注水
5日14:15　トレーサーが立坑周辺の隙間から海へ流出していることを確認。15:07から凝固剤の注入開始
6日5:38頃　ピット側面からの水の流出が止まったことを確認
7日13:29～14:34　FPCからSFPに淡水注水（約36トン）
9日13:10　復水器からCSTへの移送完了。
10日10:37～12:38　FPCからSFPへ仮設電動ポンプにより淡水注水（約60トン）

現状：プール及び炉心への淡水注入を継続

福島第一原子力発電所3号機の状況
（4月11日　13:00現在）



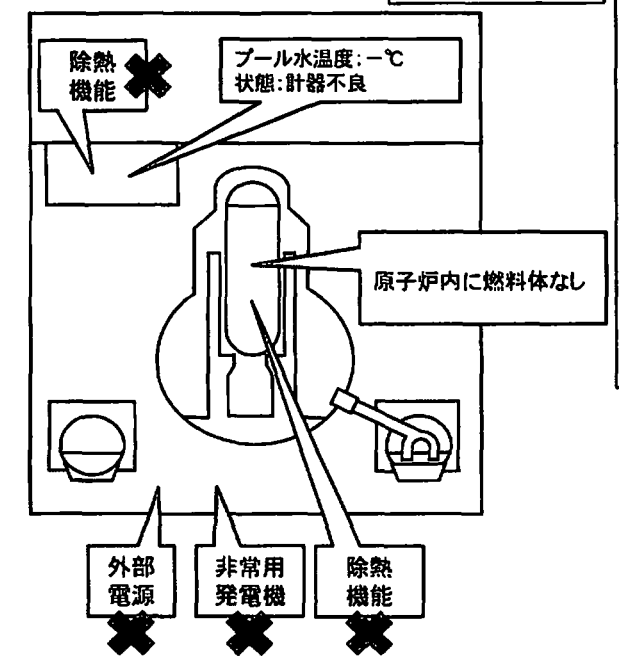
発生後の主要なできごと

11日14:46　運転中、地震により自動停止
11日15:42　10条通報（全交流電源喪失）
13日05:10　15条事象の発生（非常用炉心冷却装置注水不能）
13日08:41　ベント開始
13日13:12　海水及びホウ酸の炉心注水開始
14日05:20　ベント開始
14日07:44　15条事象の発生（格納容器圧力異常上昇）
14日11:01　爆発音
16日08:30頃　白煙が発生
17日09:48～10:01　自衛隊ヘリによる放水
17日19:05～19:15　警察の高圧放水車による散水
17日19:35～20:09　自衛隊の消防車により放水
18日14時前～14:38　自衛隊消防車6台による地上放水～14:45　米軍消防車1台による地上放水
19日0:30～01:10　東京消防庁ハイパーレスキュー隊放水
19日14:10～20日3:40　東京消防庁ハイパーレスキュー隊放水
20日 11:00　格納容器内圧力が上昇（320kPa）。その後、低下。
20日21:36～21日3:58　東京消防庁ハイパーレスキュー隊放水
21日15:55頃　灰色がかった煙が発生。17:55に煙が収まっていることを確認
22日15:10～16:00　東京消防庁ハイパーレスキュー隊及び大阪市消防局放水
22日22:46　中央制御室の照明復帰
23日11:03-13:20 使用済燃料プール冷却系(FPC)から使用済燃料プール(SFP)に約35tの海水を注水
23日16:20頃　黒煙が発生。23:30頃及び24日4:50に煙の発生が止んでいることを確認。
24日05:35～16:05　FPCからSFPに約120トンの海水を注水
25日13:28～16:00　東京消防庁の支援を受けた川崎市消防局による放水
25日18:02　淡水の炉心注水開始
27日12:34～14:36 コンクリートポンプ車による放水
28日17:40～31日8:40頃 復水貯蔵タンク（CST）からサプレッションプール水サージタンク（SPT）へ移送
28日20:30　仮設電動ポンプでの炉心注水に切替
＜コンクリートポンプ車による放水（淡水）＞
29日14:17～18:18 、31日16:30～19:33、2日09:52 ～12:54、4日17:03 ～19:19 、7日06:53～8:53
8日17:06～20:00、10日17:15～19:15
3日12:18　仮設電動ポンプの電源を仮設電源から外部電源に切替

現状：プール及び炉心への淡水注入を継続

福島第一原子力発電所4号機の状況
（4月11日　13:00現在）

定検停止中



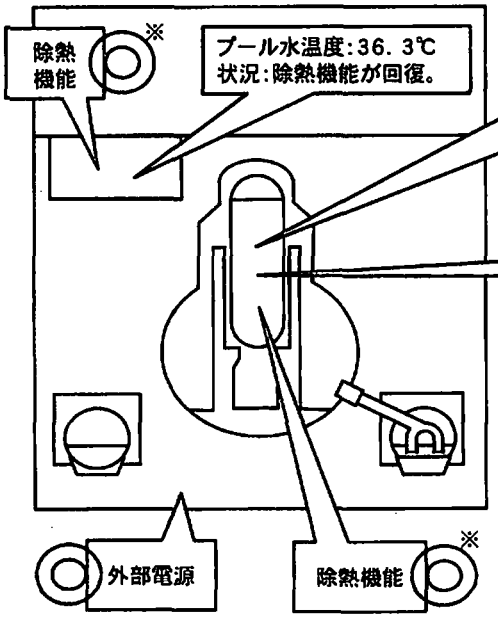
発生後の主要なできごと

地震発生時、定期検査により停止中
14日04:08　使用済燃料プール温度84℃
15日06:14　4Fの壁が一部破損の確認
15日09:38　3階部分で火災(12:25鎮火)
16日05:45　4号機で火災。事業者によると現場での火は確認できず(06:15)
20日08:21～9:40　自衛隊による使用済燃料プール（SFP）への放水
20日18:30頃 ～ 19:46　自衛隊によるSFPへの放水
21日06:37～08:41　自衛隊によるSFPへの放水
21日15:00頃　パワーセンターまでのケーブル敷設完了
22日10:35　パワーセンター受電
＜コンクリートポンプ車による放水＞
22日17:17～20:32、23日10:00～13:02、24日14:36～17:30、25日19:05～22:07
27日16:55～19:25
25日06:05～10:20　使用済燃料プール冷却系（FPC）からSFPに海水を注入
29日11:50　中央制御室の照明復帰
＜コンクリートポンプ車による放水（淡水）＞
30日14:04～18:33、1日8:28～14:14、3日17:14～22:16、5日17:35～18:22、
7日18:23～19:40、9日17:07～19:24

現状：原子炉圧力容器に燃料体が存在しない
プールへの淡水注入を継続

福島第一原子力発電所5号機の状況
（4月11日　13:00現在）

定検停止中



原子炉圧力:0.107MPa※
原子炉水位:1909mm
原子炉水温度:42.6℃
状況:操作により圧力等を制御中。
※:絶対圧に換算

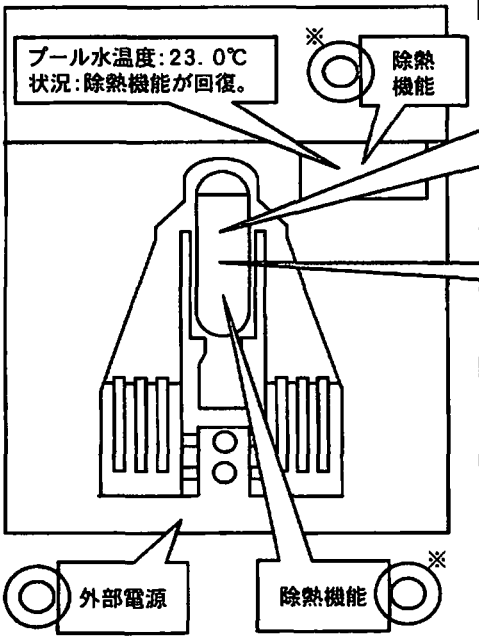
原子炉圧力容器温度:
原子炉水温度にて監視中。

現状:20日14:30　冷温停止。
21日11:36　外部電源から受電開始。
23日17:24　残留熱除去海水系(RHRS)ポンプが、仮設から本設の電源への切り替えの際に自動停止。
24日16:14　RHRSポンプの修理完了。
24日16:35　冷却開始。
4日21:00～
8日12:14　サブドレンピットの低レベルの地下水を海洋に放出(約950t)。

※　炉水とプール水を切替えて除熱

福島第一原子力発電所6号機の状況
（4月11日　13:00現在）

定検停止中



原子炉圧力:0.119MPa※
原子炉水位:2489mm
原子炉水温度:33.4℃
状況:操作により圧力等を制御中。
※:絶対圧に換算

原子炉圧力容器温度:
原子炉水温度にて監視中

現状:20日19:27　冷温停止。
22日19:17　外部電源から受電開始。
4日21:00～
9日18:52　サブトレンピットの低レベルの地下水を海洋に放出(約373t)。

※　炉水とプール水を切替えて除熱

News Release

経済産業省
Ministry of Economy, Trade and Industry

平成２３年４月１１日
経　済　産　業　省
原子力安全・保安院

福島県浜通りの地震発生による状況について（第二報）
（４月１１日　１９時３０分現在）

本日（４月１１日）１７時１６分頃、福島県内陸部で地震が発生しました。

東北電力(株)女川原子力発電所並びに東京電力(株)福島第一原子力発電所、福島第二原子力発電所及び日本原電(株)東海第二発電所の各施設は、東北地方太平洋沖地震後運転を停止しています。

女川原子力発電所については、東北電力(株)によれば、現在のところ、外部電源は５系統とも確保され、モニタリングポストの値に異常は認められていません。

福島第一原子力発電所については、東京電力(株)からの連絡によれば、モニタリングポストの値には異常は認められていません。なお、地震の発生に伴い、現場作業員には退避命令が出ましたが、解除されております。また、１～３号機への東北電力からの外部電源が停止し、各号機への炉心への注入ポンプ（電動）が停止したため、外部電源の復旧作業と消防ポンプへの切替作業を並行して実施中とのことです。その後、１～３号機への外部電源は全て復旧しました。また、原子炉格納容器への窒素の注入は停止したとのことです。

福島第二原子力発電所については、東京電力(株)によれば、外部電源は確保され、パラメータの値に異常は認められていません。モニタリングポストの値に異常は認められていません。

東海第二発電所については、日本原子力発電(株)によれば、外部電源は確保され、異常は認められていません。

○原子力発電所

東北電力(株)女川原子力発電所

１号機　停止中
２号機　停止中
３号機　停止中

東京電力(株)福島第一原子力発電所
１号機　停止中
２号機　停止中
３号機　停止中
４号機　停止中
５号機　停止中
６号機　停止中
東京電力（株）福島第二原子力発電所
１号機　停止中
２号機　停止中
３号機　停止中
４号機　停止中
日本原電(株)東海第二発電所
停止中

○電気（4月11日19:30現在）
・東北電力（4月11日18:00現在）
停電戸数：約36万戸
停電地域：岩手県　一部地域で停電（約２万９千戸）
宮城県　一部地域で停電（約９万３千戸）
福島県　一部地域で停電※（約２４万戸）
※４月１１日１７時１６分に発生した地震により新たに発生した停電戸数は、福島県内の約２０万４千戸。

［参考情報］現在停止中の発電所（原子力発電所を除く）
・東北電力（4月11日18:00現在）
仙台火力発電所　４号機
新仙台火力発電所　１，２号機
原町火力発電所　１，２号機
} 東北地方太平洋沖地震による停止

○コンビナート（4月11日19:10現在）
福島県いわき市の第一三共プロファーマ(株)小名浜工場でガス漏れ、火災が発生（既に鎮火。けが人なし）。

○都市ガス（4月11日18:35現在）
被害情報なし。引き続き情報収集中。

○ＬＰガス（4月11日19:10現在）

いわき市鹿島の一般住宅でＬＰガス漏れが発生、元栓を閉めて漏えい防止を図っているところ。

（参考）

各地の震度

宮城県北部：最大震度５弱
宮城県南部：最大震度５弱
福島県中通り：最大震度６弱
福島県浜通り：最大震度６弱
福島県会津：最大震度５弱
茨城県北部：最大震度５強
茨城県南部：最大震度６弱

（本発表資料のお問い合わせ）
原子力安全・保安院
原子力安全広報課：吉澤、小山田
電話：０３－３５０１－５８９０（原子力安全広報課）

From: LIA02 Hoc
Sent: Monday, April 11, 2011 12:24 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: [METI Japan](Apr_11)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 8_0800_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf; Apr_11 Radioactivity Level Map [Chart].pdf

-----Original Message-----
From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Monday, April 11, 2011 12:13 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_11)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Monday, the following information has been updated.

---- Today's news ----
We have regular updates as follow.

---- Updates from METI ----
1. [METI] Apr 8_0800_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs [Please refer to the attached file]

2. [METI] Apr 11_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----
3. [NISA] Apr 11 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
http://www.meti.go.jp/press/2011/04/20110411007/20110411007-1.pdf

[NISA] Apr 8 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English version) http://www.nisa.meti.go.jp/english/files/en20110411-1-1.pdf

4. [NISA] Apr 11 0200_Fukushima Dai-ichi Major Parameters of the Plant (only Japanese version is available. English version will be uploaded.) http://www.meti.go.jp/press/2011/04/20110411003/20110411003-3.pdf

[NISA] Apr 8 0600_Fukushima Dai-ichi Major Parameters of the Plant (English version)
http://www.nisa.meti.go.jp/english/files/en20110411-1-3.pdf

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---- Major Updates from other agencies of Japanese Government --- 5. [MLIT] Apr 11 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawaski City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

6. [MLIT] Apr 11 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

7. [NSC] Apr 10 1645_Assessment of the result of environment monitoring (only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110410_1.pdf

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

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(See attached file: [METI] Apr 8_0800_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf)

(See attached file: Apr_11 Radioactivity Level Map [Chart].pdf)

Tohoku Pacific Earthquake and the seismic damage to the NPSs

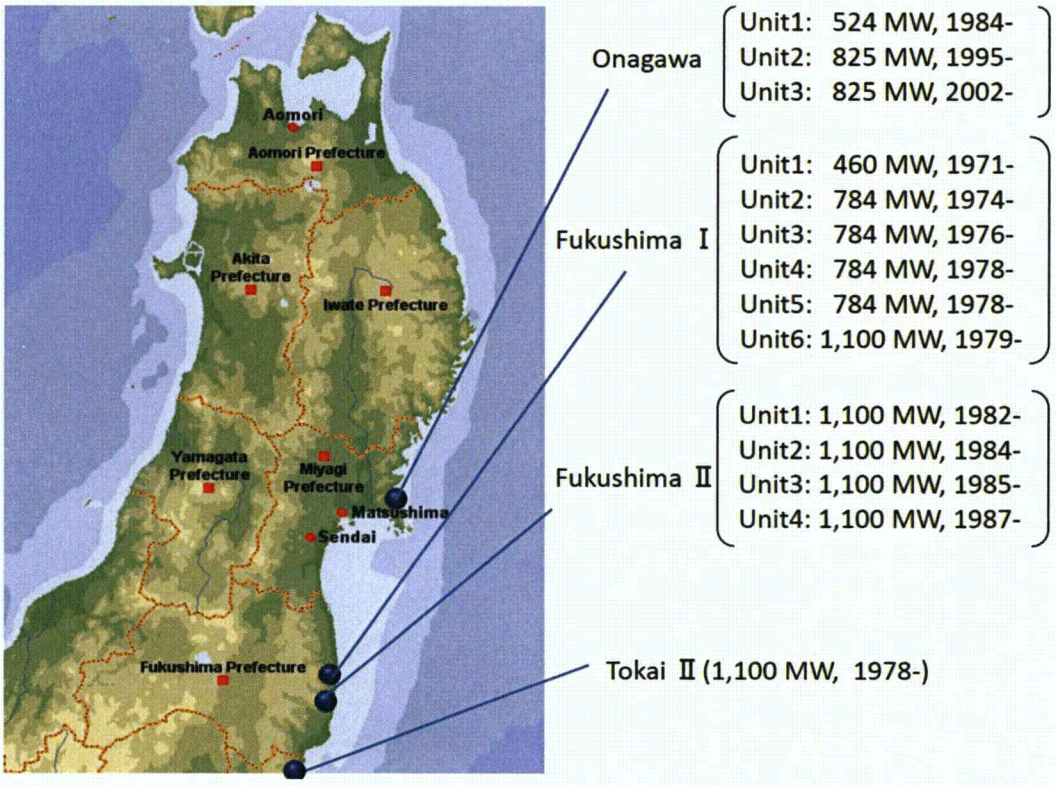
As of 8:00am April 8th, 2011 (JST)
Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Tohoku Pacific Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS) of Tokyo Electric Power Co. Inc.(TEPCO)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS of Tohoku Electric Power Co. Ltd.; Units 1, 2 and 3 at Fukushima I NPS of TEPCO; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS of TEPCO; and an unit of Tokai Dai-ni (II) NPS of Japan Atomic Power Co. Ltd.) were automatically shut-down.

After the automatic shut-down, Units 1, 2 and 3 at Onagawa, Unit 3 at Fukushima II, and the Unit at Tokai II have been cold shut down safely. As for the Units 1, 2 and 4 at Fukushima II, TEPCO operator of the station reported the nuclear emergency situation to Nuclear and Industrial Safety Agency (NISA), but afterward the three units have been cold shut down.



Tsunami damaged the cooling systems at the Fukushima Dai-ichi (I)

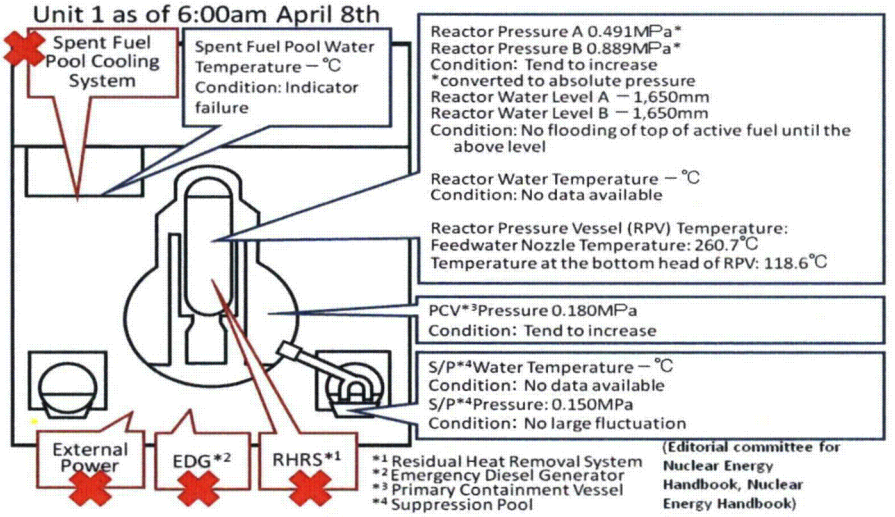
Since the external power supply was cut off upon the earthquake occurrence at 14:46 on March 11th, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation. Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast.

The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 10 meters high from the seawater level. Fukushima I lost the AC power sources for Unit 1, 2, 3 and 4 and lost function necessary for cooling down the reactor cores (Unit1,2 and 3) and spent fuel kept in the pools (Unit1,2,3 and 4) inside reactor buildings. Consequently, the pressure and temperature of reactor cores and the water temperature of spent fuel pools went up.

For counter measures, water is being injected into the reactor pressure vessels of Units 1, 2 and 3. At the same time, police, fire brigade and the Self Defense Forces are attempting to pour water into the spent fuel pool of Units 3 and 4 by spraying seawater from helicopters, water cannon trucks and fire engine. Further, TEPCO engineers are working to restore external power supply to Units 1, 2, 3 and 4 (power supply to Units 5 and 6 was completed) by installing the electricity cable connecting to the transmission line of Tohoku Electric Power Co. Ltd. and other transmission route.

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the reactor was automatically shut-down and the Tsunami disabled the equipments, the temperature of the reactor core went up and the water level inside the pressure vessel dropped and the reaction of cladding metal of fuel and water generated hydrogen. Vent of the primary containment vessel was operated at 10:17am on March 12th. The hydrogen leaked outside of the containment vessel and caused the explosion at the upper-part of a concrete building housing at 15:36 on March 12th.
- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 8:00am April 8th, instead of seawater. On March 29th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.
- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out. On April 2nd, a test water spray over the spent fuel pool was carried out in order to confirm the appropriate position for water spray.
- Lighting in the main control room was recovered on March 24th. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.
- White smoke was confirmed to generate continuously as of 6:30am April 8th.
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, 2.1×10^{5}Bq/cm^{3} of ^{131}I (Iodine) and 1.8×10^{6}Bq/cm^{3} of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since around 17:00 March 24th, the stagnant water has been transferred to the condenser. As the condenser was confirmed to be almost filled with water, pumping out the water to the condenser was stopped at 7:30am on March 29th.
- In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water (A) (12:00 March 31th). After switching the place where the water was to be transferred to the surge tank of suppression pool water (B) (15:25 March 31th), the transfer was restarted and finished. (15:26 April 2nd) Thereafter, the water in the condenser was transferred to the condensate storage tank at 13:55 on April 3rd.
- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th.
- The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the automatic shut-down of the reactor, the water injection function was sustained, but the reactor water level tended to decrease. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th.

- At 6:10am on March 15th, TEPCO reported that there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 8:00am April 8th, instead of seawater. On March 27th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

- The seawater injection to the spent fuel pool of Unit 2 using the fire pump truck was switched to the fresh water injection using the temporary motor-driven pump on March 29th. On March 30th, April 1st, 4th and 7th, the injection of fresh water to the spent fuel pool via the spent fuel cooling line were carried out. At 3:00am on April 8th, the temperature in the spent fuel pool was 63.0 degree centigrade.

- The power center of Unit 2 received electricity on Match 20th. On March 26th, lighting of the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

- White smoke was confirmed to generate continuously as of 6:30am April 8th.

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water from 16:45 March 29th till 11:50am April 1st. Thereafter, the water in the condenser was transferred to the condensate storage tank at 17:10 on April 2nd, and 13:55 on April 3rd.

- One more pump for the transfer of the water in the condenser of Unit 2 to the condensate storage tank was installed at 15:40 April on 5th.

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) for laying electric cables, located near the intake channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed. (as of around 9:30 April 2nd) In order to stop the outflow, concrete was started to be poured into the pit. (16:25 and 19:02 April 2nd)

- As the measure to prevent the outflow of the water accumulated in the pits for conduit in the area around the inlet bar screen of Unit 2, the upper part of the power cable trench for power source at the intake channel was crushed and sawdust, high polymer absorbent and cutting-processed newspaper were put inside. (From 13:47 till 14:30 April 3rd)

- The tracer solution was put in from the two holes dug around the pit for the conduit near the inlet bar screen of Unit 2 and was confirmed to be flowed out from the crack to the sea at 14:15 April 5th. The coagulant (soluble glass) started to be injected from the holes around the pit in order to prevent the outflowing of the water at 15:07 April 5th. The outflow of the water was confirmed to stop at around 5:38am April 6th. In addition, it was confirmed that the water level in the turbine building did not rise. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (Finished at 13: 15 April 6th)

Unit 3 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel through the fire extinguishing system line. And vent of the primary containment vessel was operated at 20:41 on March 12th, at 8:41am on March 13th and at 5:20am on March 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

- On March 16th, 21st and 23rd, the smoke (sometimes whitish, grayish or slightly blackish one) was generated from Unit 3 and died down. As of 6:30am April 8th, white smoke was confirmed to generate continuously.

- For counter measures, seawater was being injected into the reactor pressure vessel, thereafter; fresh water was being injected from March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump. Fresh water is being injected as of 8:00 April 8th.

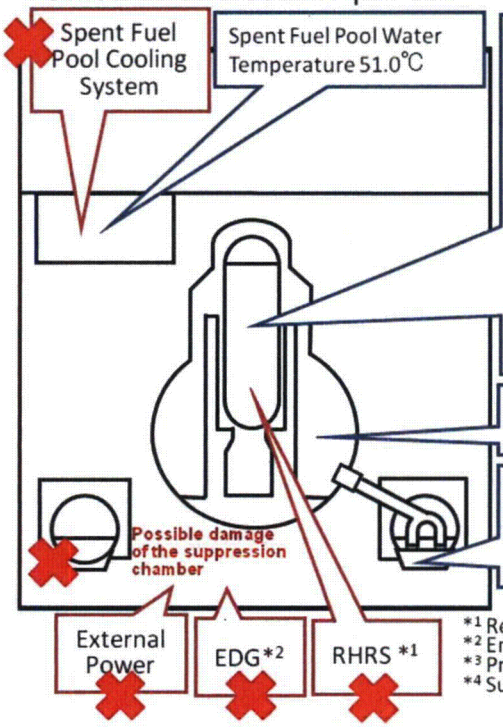
- At the same time, to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Injection of seawater to the spent fuel pool via the cooling and purification line was carried out on March 23rd and March 24th. From March 29th till April 7th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out five times.

- The pressure in the primary containment vessel of Unit 3 rose. (320 kPa as of 11:00 March 20th) Judging from the situation, immediate pressure relief was not required, and monitoring of the pressure continues. (106.1 kPa as of 1:30am April 8th)

- Works for the recovery of external power supply is being carried out. At 22:43 on March 22nd, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply at 12:18 on April 3rd.

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from 17:40 March 28th till around 8:40am March 31st.

Unit 2 as of 6:00am April 8th



Reactor Pressure A 0.090MPa*
Reactor Pressure B 0.085MPa*
Condition: No large fluctuation
*converted to absolute pressure
Reactor Water Level A －1,500mm
Condition: No flooding of top of active fuel to the above level

Reactor Water Temperature －℃
Condition: No data available

Reactor Pressure Vessel (RPV) Temperature:
Feedwater Nozzle Temperature 143.0℃
Temperature at the bottom head of RPV －℃
(Indicator failure)

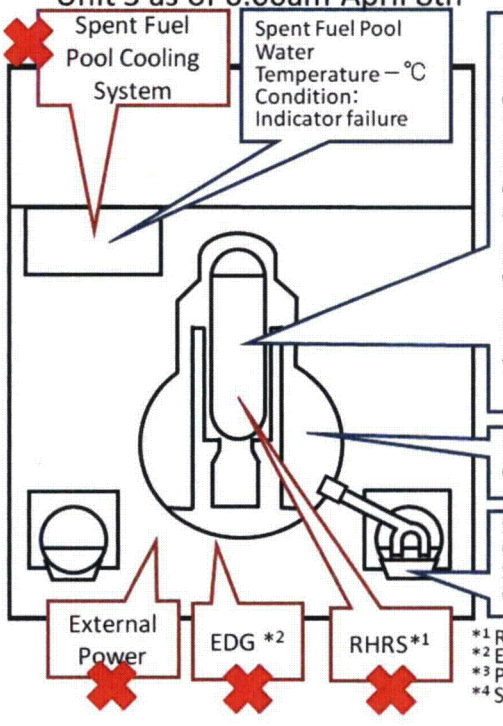
PCV*3Pressure 0.100MPa
Condition: No large fluctuation

S/P*4Water Temperature －℃
Condition: No data available
S/P*4Pressure － MPa
Condition: Down scale (under survey)

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

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

Unit 3 as of 6:00am April 8th



Reactor Pressure A 0.099MPa*
Reactor Pressure C 0.020MPa*
Condition: No large fluctuation
*converted to absolute pressure
Reactor Water Level A －2,000mm
Reactor Water Level B －2,250mm
Condition: No flooding of top of active fuel to the above level

Reactor Water Temperature －℃
Condition: No data available

Reactor Pressure Vessel (RPV) Temperature
Feedwater Nozzle Temperature: 88.2℃(under survey)
Temperature at the bottom head of RPV :110.8℃

PCV*3Pressure0.1061MPa
Condition: No large fluctuation

S/P*4Water Temperature －℃
Condition: No data available
S/P*4Pressure 0.1762MPa
Condition: No large fluctuation

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

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

Unit 4 No fuel is in the reactor pressure vessel. Fresh water is being injected to the spent fuel pool.

- There is no fuel in the reactor pressure vessel due to replacement work of the shroud.

- The temperature of water in the spent fuel pool went up. At 4:08am on March 14th, the temperature in the spent fuel pool of Unit 4 was 84 degree centigrade.

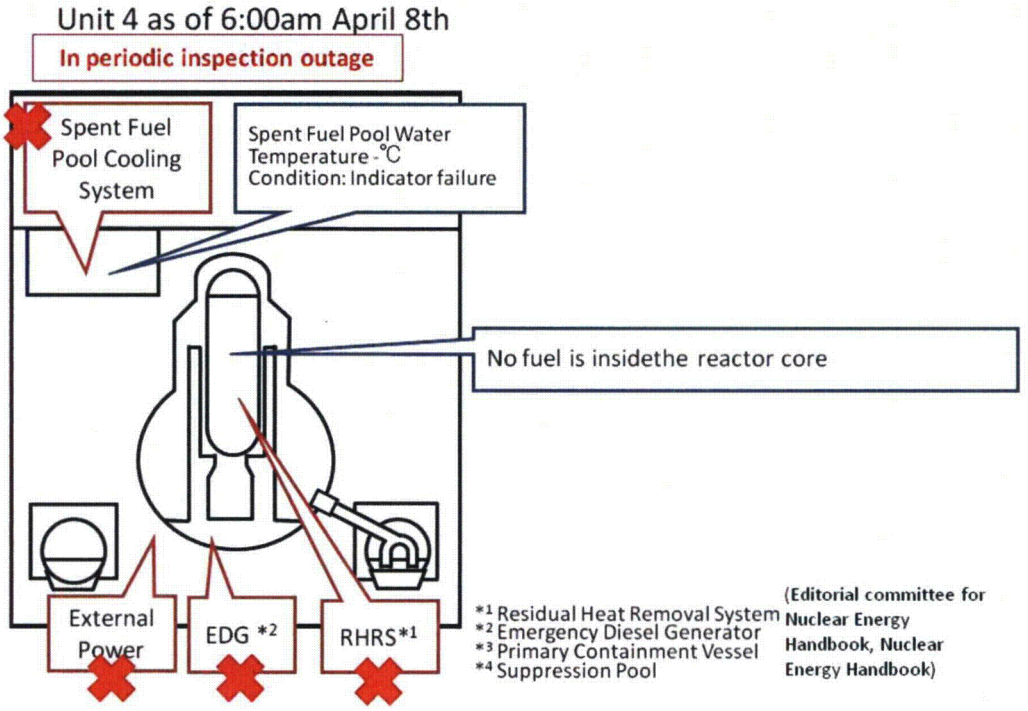
- It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am, but the fire was extinguished spontaneously as of 11:00am. And at 5:45am on March 16th, it was reported that a fire occurred at Unit 4; however, no fire was confirmed by TEPCO staff on the ground at 6:15am.

- White smoke was confirmed to generate continuously as of 6:30am April 8th.

- Water spray over the spent fuel pool of Unit 4 by Self-Defense Force was carried out three times from March 20th till March 21st. And water spray using a concrete pump truck had been carried out five times with seawater from March 22nd till March 27th and five times with fresh water from March 30th till April 7th. Injection of seawater to the spent fuel pool via the fuel pool cooling line was carried out on March 25th.

- The power center received electricity on March 22nd. On March 29th, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on.

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from 3 April, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

- The emergency generator (B) for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

- The pump for residual heat removal system (RHR) (C) for Unit 5 and RHR (B) for Unit 6 started up on March 19th and recovered heat removal function. (power supply: emergency diesel generators for Unit 6)

- Unit 5 was under cold shut down at 14:30 and Unit 6 was under cold shut down at 19:27 on March 20th.

- Unit 5 and Unit 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and Unit 6 was switched from the emergency diesel generator to the external power supply on March 21st and March 22nd.

- The temporary pump of RHR seawater system (RHRS) for Unit 5 was automatically stopped at 17:24 on March 23rd when the power supply was switched from the temporary to the permanent. Thereafter, repair of the temporary pump of RHRS was completed at 16:14 and cooling was started again at 16:35 on March 24th.

- Power supply for the temporary pumps for RHRS of Unit 6 was switched from the temporary to the permanent at 15:38 and 15:42 on March 25th.

- The temperature of water in the spent fuel pool of Unit 5 and Unit 6 were 34.8 degree centigrade and 28.0 degree centigrade, respectively as of 6:00am April 8th.

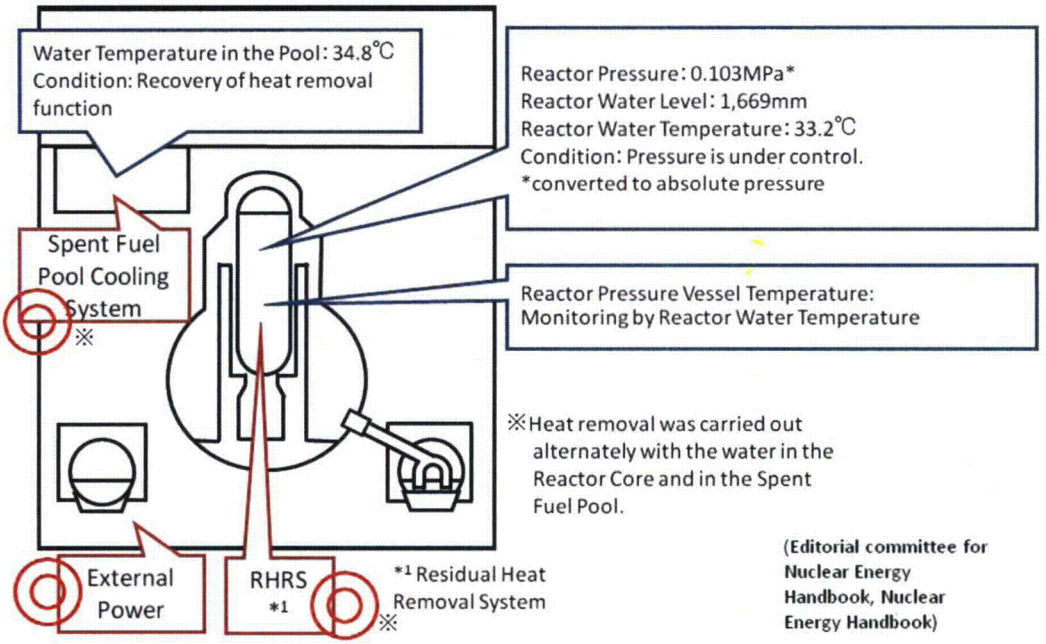
- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,500t) was started to be discharged through the water discharge canal to the sea at 21:00 April 4th.

Common Spent Fuel Pool

- The power supply was started at 15:37 and cooling was also started at 18:05 on March 24th. As of 7:45am April 7th, the water temperature of the pool was around 28 degree centigrade.

Unit 5 as of 6:00am April 8th

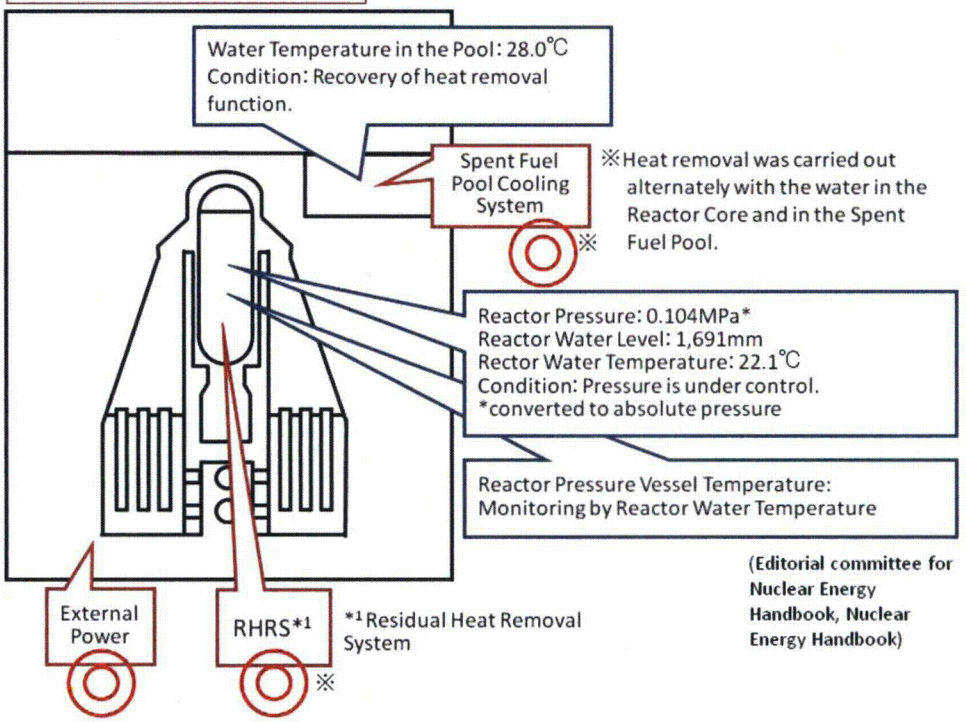
In periodic inspection outage



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

Unit 6 as of 6:00am April 8th

In periodic inspection outage



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

Other

- As the result of nuclide analysis at around the southern water discharge canal, 7.4×10^{1}Bq/cm^3 of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Aria) was detected as of 14:30 March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)

- As the result of the analysis at the northern water discharge canal, 4.6×10^{1}Bq/ cm^3 of ^{131}I (1262.5 times higher than the limit) was detected as of 14:10 March 29th.

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench. The rate of the Unit 3's trench could not measure because of the rubble. (Around 15:30 March 27th) The water of the Unit 1's was transferred to the storage tank in the main building of radioactive waste treatment facilities by the temporary pump. Thereafter the water level from the top of the vertical part went down from approximately -0.14m to approximately -1.14m. (From 9:20am till 11:25 March 31st)

- In the samples of soil collected on March 21st and 22nd on the site (at 5 points) of Fukushima I, plutonium 238, 239 and 240 were detected (23:45 March 28th announced by TEPCO). The concentration of the detected plutonium was at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

- In the samples of soil (7 samples in total) collected on 25 March (at 4 points) and 28 March (at 3 points) on the site of Fukushima Dai-ichi NPS, ^{238}Pu (Plutonium), ^{239}Pu (Plutonium) and ^{240}Pu (Plutonium) were detected (18:30 April 6th announced by TEPCO). The concentration of the detected plutonium was, in the same as the last one (Announced on 28 March), at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^{1} Bq/cm^3 in the controlled area and that of 2.2×10^{1} Bq/cm^3 in the non-controlled area were detected in March 29th.

- The barge (the first ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (15:42 March 31st) The transfer of fresh water from the barge to the filtrate tank was started. (15:58 April 1st) Thereafter it was suspended due to the malfunction of the hose (16:25 April 1st), but was carried out from 10:20am till 16:40 April 2nd.

- The barge (the second ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (9:10am April 2nd)

- The spraying for test scattering of anti-scattering agent was carried out in the area of about 500 m^2 on the mountain-side of the Common Pool. (From 15:00 till 16:05 April 1st)

- The freshwater was transferred from the barge (the second ship) of the US armed force to the other barge (the first ship). (From 09:52 till 11:15 April 3rd)

- The stagnant water with low-level radioactivity in the main building of radioactive waste treatment facilities (Around 10,000t) was started to be discharged from the southern side of the water discharge canal to the sea, using the first pump at 19:03 April 4th. Further, at 19:07 on the same day, the discharge using 10 pumps in total was carried out.

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS. (From 15:00 till 16:30 April 5th)

- The test scattering of antiscattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out in the area of about 600 m^2 on the mountain-side of the Common Pool. (April 5th, 6th)

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram "Fukushima prefecture"). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.

- On March 16th, the Local Emergency Response Headquarter issued "the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:
http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:
http://www.bousai.ne.jp/eng/

Outline of the Fukushima I Nuclear Power Station

(Fukushima Dai-ichi nuclear power station)

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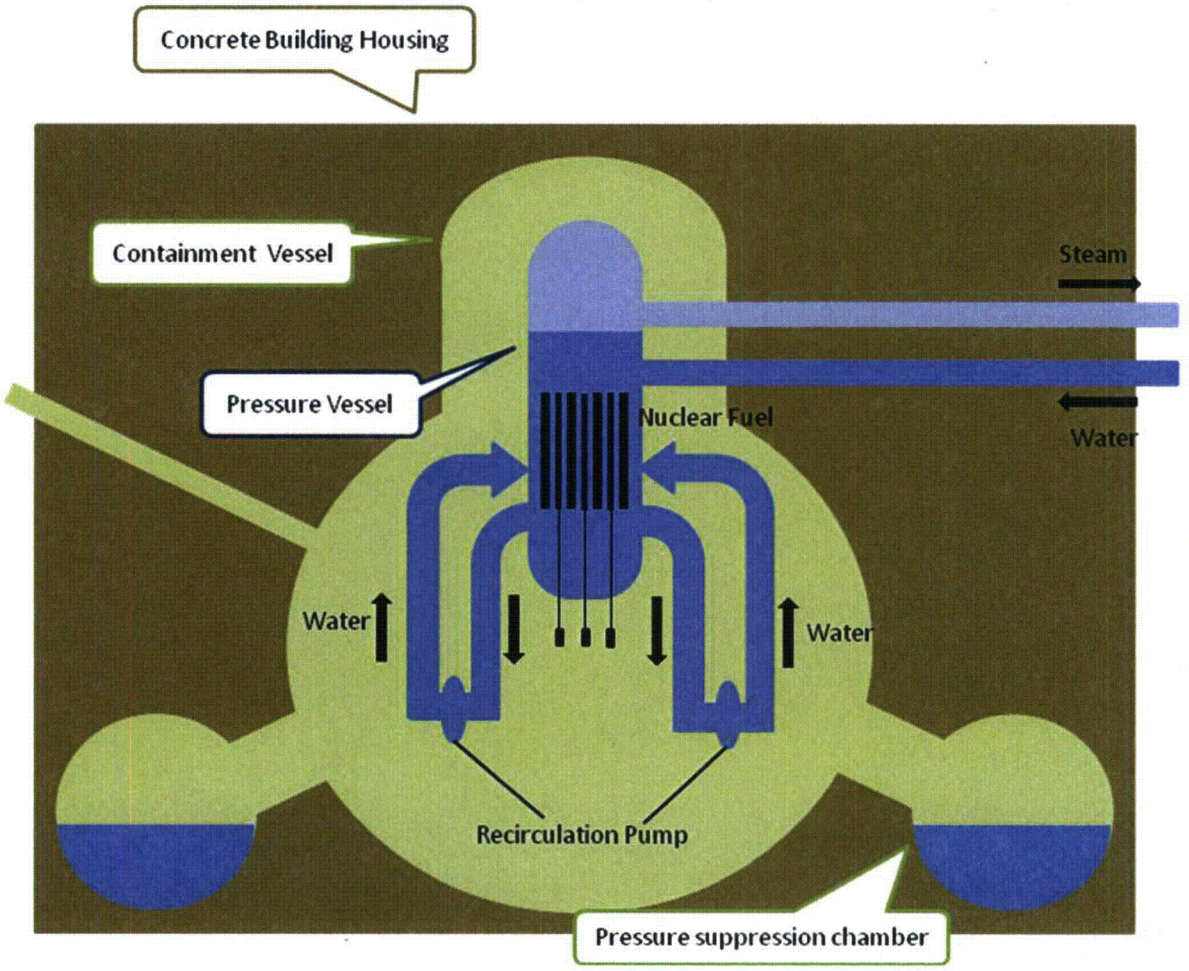
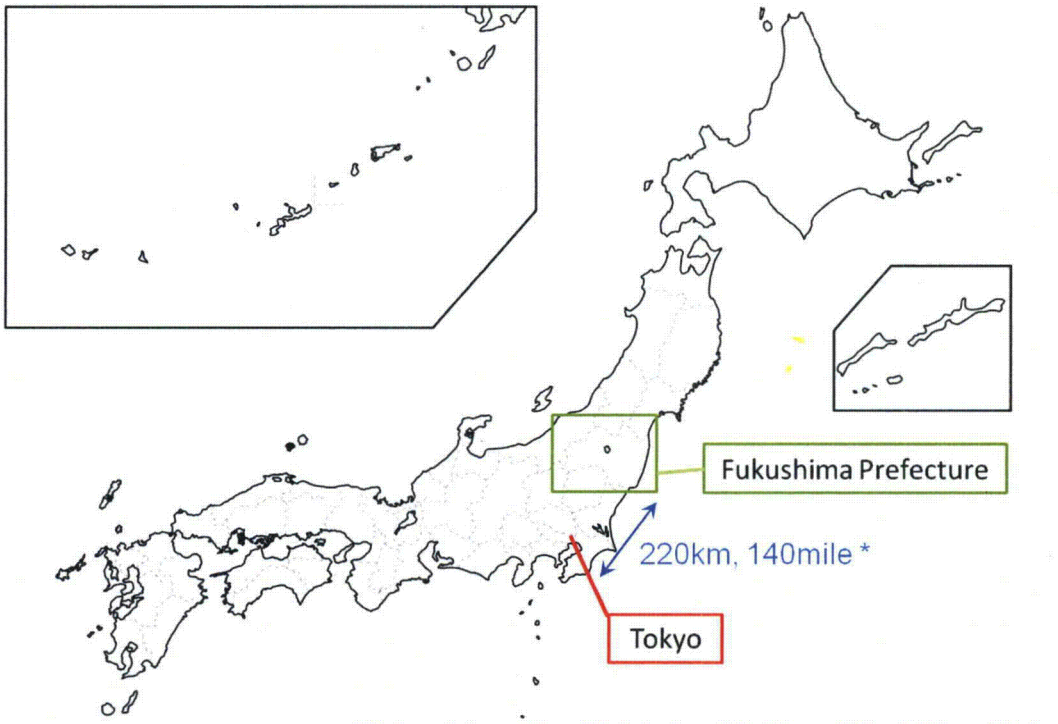
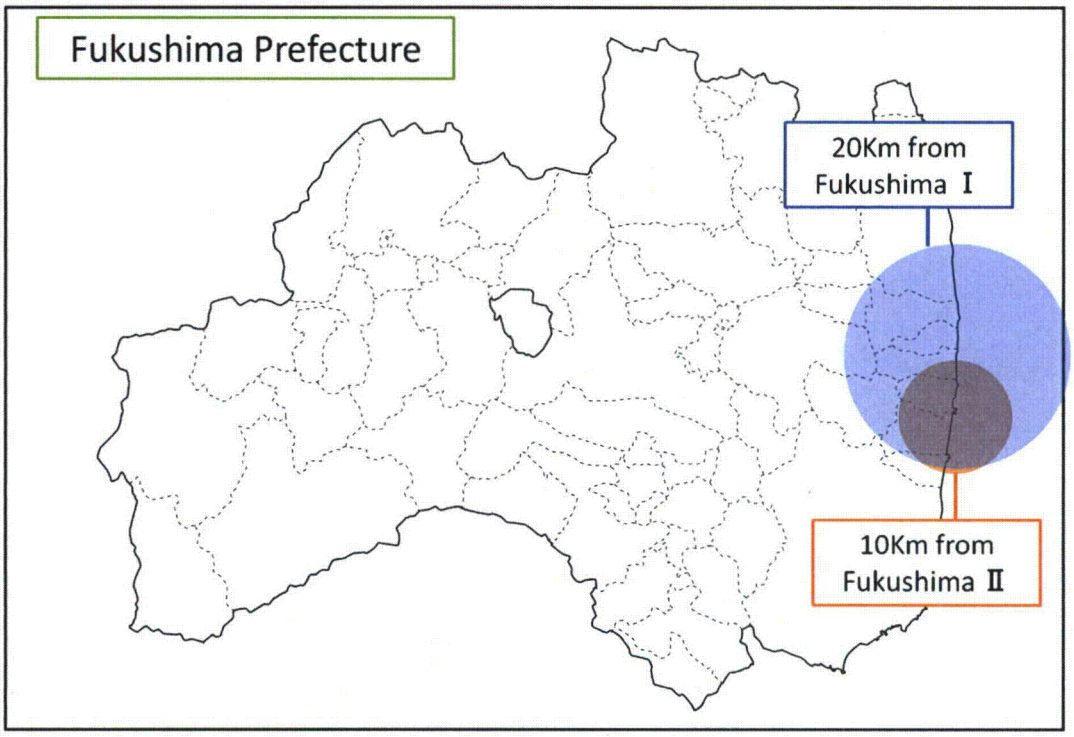


(Structure of BWR)

Location of Fukushima I and II in Japan



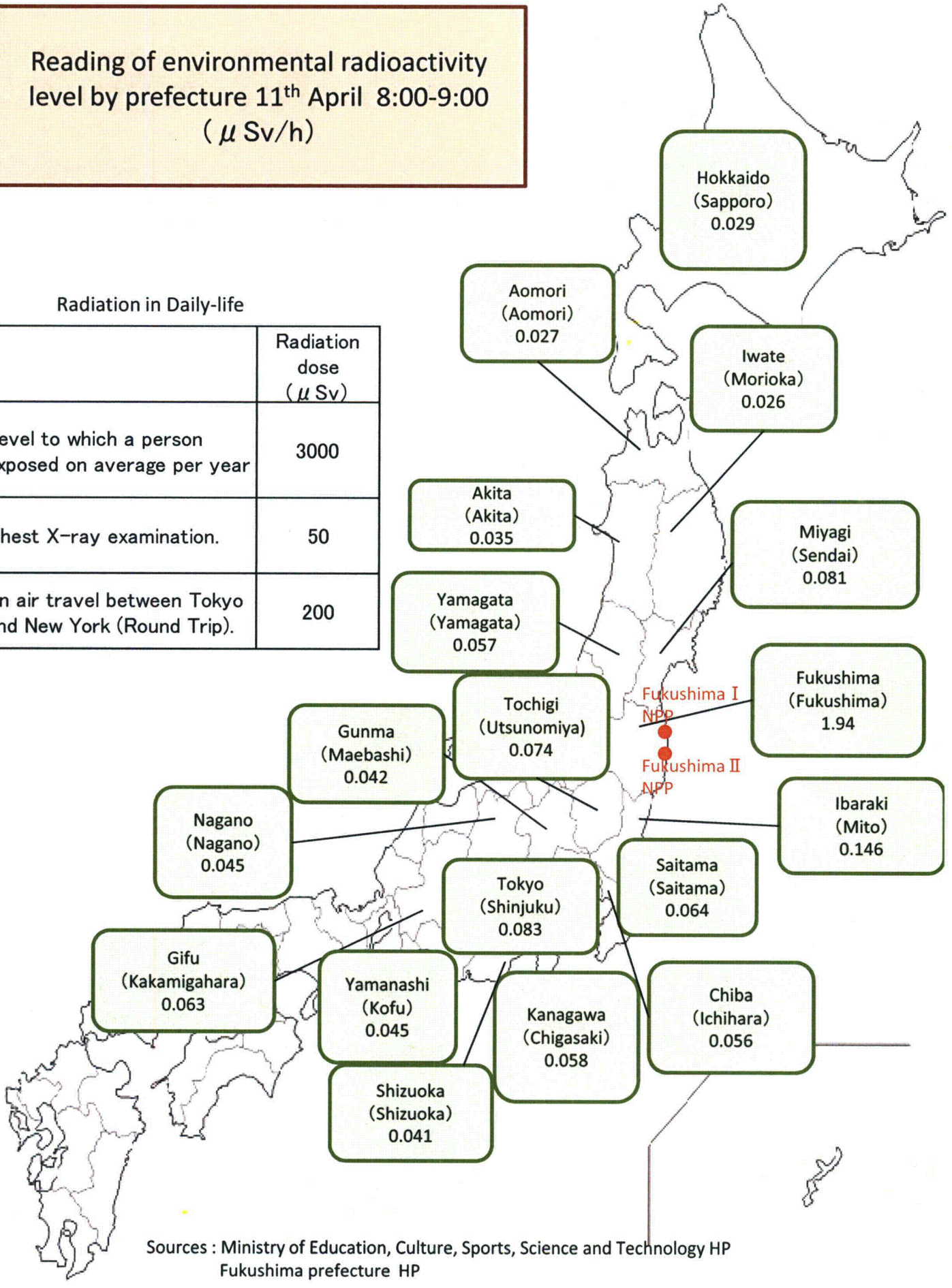
*Distance between Three Mile Island and Washington D.C. 140 k m、88mile



Reading of environmental radioactivity level by prefecture 11th April 8:00-9:00 (μSv/h)

Radiation in Daily-life

	Radiation dose (μSv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

From: Zimmerman, Roy
Sent: Monday, April 11, 2011 8:12 AM
To: Evans, Michele; Uhle, Jennifer; ET07 Hoc
Subject: RE: what is the status of finding a replacement for Vince?

i handled letting PACOM know that Vince can stay until April 28. We still need to look whether a replacement is desired, (maybe too early for PACOM to know), but at least have a person in the wings, ready to go.

From: Evans, Michele
Sent: Monday, April 11, 2011 5:55 AM
To: Uhle, Jennifer; ET07 Hoc; Zimmerman, Roy
Subject: Re: what is the status of finding a replacement for Vince?

My understanding is that Roy handled that on Sat.

Sent from an NRC Blackberry
Michele Evans

From: Uhle, Jennifer
To: ET07 Hoc; Evans, Michele
Sent: Sun Apr 10 23:53:56 2011
Subject: what is the status of finding a replacement for Vince?

There is an action item here for ET to find a replacement for Vince. Are you handling that or should that be a priority for ET?

Jennifer

aaa/303

From: LIA02 Hoc
Sent: Monday, April 11, 2011 11:45 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Blackberry

From: Lupold, Timothy
Sent: Monday, April 11, 2011 11:44 AM
To: LIA02 Hoc
Subject: RE: Blackberry

I can do that anytime. I can come over this afternoon. Let me know what is convenient for you.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:29 AM
To: Lupold, Timothy
Cc: ET02 Hoc
Subject: Blackberry

Tim,

Need to know when you can come over on Wednesday and get your international blackberry

Steve

aaa1304

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:49 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Here is the schedule

From: Young, Francis
Sent: Monday, April 11, 2011 10:47 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: FW: Here is the schedule

From: Kreuter, Jane
Sent: Tuesday, April 05, 2011 8:19 AM
To: OIP Distribution
Subject: Here is the schedule

Jane A. Kreuter
U.S. Nuclear Regulatory Commission
Office of International Programs
Phone: 301-415-1780
Fax: 301-415-2395
E-Mail: Jane.Kreuter@nrc.gov

QQQ/305

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:52 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Per your request
Attachments: April 5- April 15 - International Liaison Schedule.doc

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From: LIA03 Hoc
Sent: Monday, April 11, 2011 10:52 AM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: Per your request

From: Kreuter, Jane
Sent: Monday, April 11, 2011 10:52 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: Per your request

Jane A. Kreuter
U.S. Nuclear Regulatory Commission
Office of International Programs
Phone: 301-415-1780
Fax: 301-415-2395
E-Mail: Jane.Kreuter@nrc.gov

aaa/3020

International Liaison Coverage for the NRC's Japan Disaster Response

March 24-April 15, 2011

Below you will find the schedule for OIP coverage of the Ops Center. If you cannot work a shift you are scheduled for, it is your responsibility to find a replacement. Once again, thank you for your time, effort and flexibility.

SHIFT 1
SHIFT 6

TUESDAY, APRIL 5

	Staff #1	Staff #2
6:30-3:30	Skip	
3:00-12:00 a	Brian	

WEDNESDAY, APRIL 6

	Staff #1	Staff #2
6:30-3:30	Skip	
3:00p-12:00 a	Lauren	Brian

THURSDAY, APRIL 7

	Staff #1	Staff #2
6:30-3:30	Skip	
3:00p-12:00 a	Steve B.	Brian

SHIFT 7

FRIDAY, APRIL 8

	Staff #1	Staff #2
6:30-3:30	Mugeh	
3:00p-12:00 a	Gerri	Brian

SATURDAY, APRIL 9

	Staff #1	Staff #2
6:30-3:30	Mugeh	Skip
3:00p-12:00 a	Gerri	Brian

SUNDAY, APRIL 10

	Staff #1	Staff #2
6:30-3:30	Elizabeth	Mugeh
3:00p-12:00 a	Gerri	Brian

SHIFT 8

MONDAY, APRIL 11

	Staff #1	Staff #2
6:30-3:30	Steve Bloom	Lance
3:00p-12:00 a	Jenny	Janice

TUESDAY, APRIL 12

	Staff #1	Staff #2
6:30-3:30	Lance	Steve Bloom
3:00p-12:00 a	Jenny	Janice

WEDNESDAY, APRIL 13

	Staff #1	Staff #2
6:30-3:30	Lance	Steve Bloom
3:00p-12:00 a	Janice	Jenny

THURSDAY, APRIL 14

	Staff #1	Staff #2
6:30-3:30	Steve Baker	
3:00p-12:00 a	Jill	Karen

FRIDAY, APRIL 15

	Staff #1	Staff #2
6:30-3:30	Steve Baker	
3:00p-12:00 a	Jill	Karen

From: LIA07 Hoc
Sent: Monday, April 11, 2011 4:46 AM
To: Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: Update for Go Book: 0430 EDT, April 11, 2011
Attachments: USNRC Earthquake-Tsunami Update 041111 0430EDT.pdf; TEPCO Press Release 331.pdf; Pages 1-5 ET Chronology 4.9.11_ 1800EDT.pdf

Attached please find updated information for the "Go Book."

The update includes:

- The 0430 EDT, 04/11/11 Status Update
- The latest ET Chronology
- The latest TEPCO Press Release (331)

Please let me know if you have any questions or concerns.

Yen

Yen Chen
Executive Briefing Team Coordinator
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

aaa/307

Search

Press Releases

Press Release (Apr 11,2011)
Status of TEPCO's Facilities and its services after the Tohoku-Taiheiyou-Oki Earthquake (as of 9:00AM)

Due to the Tohoku-Taiheiyou-Oki Earthquake which occurred on March 11th 2011, TEPCO's facilities including our nuclear power stations have been severely damaged. We deeply apologize for the anxiety and inconvenience caused.

Below is the status of TEPCO's major facilities.
*new items are underlined

[Nuclear Power Station]
Fukushima Daiichi Nuclear Power Station:
Units 1 to 3: shutdown due to the earthquake
(Units 4 to 6: outage due to regular inspections)

*The national government has instructed the public to evacuate for those local residents within 20km radius of the site periphery and to evacuate voluntarily for those local residents between 20km and 30km radius of the site periphery.

*Off-site power has been connected to Unit 1 to 6 by March 22, 2011.

*Unit 1
-The explosive sound and white smoke was confirmed near Unit 1 when the big quake occurred at 3:36 pm, March 12th.
-We started injection of sea water at 8:20 pm, March 12th, and then boric acid which absorbs neutron into the reactor afterwards.
-At approximately 2:30 am, March 23rd, we started the injection of sea water into the reactor from feed water system. After that, the injection of freshwater was started from 3:37 pm on March 25th (switched from the seawater injection). At 8:32 am, Mar 29th, transfer from the fire fighting pump to a temporary motor driven pump was made. From 10:42am to 11:52am on April 3rd we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-At approximately 10:50 am on March 24th, white smoke was confirmed arising from the top of the reactor building.
-At approximately 11:30 am, March 24th, lights in the main control room were restored.
-At approximately 5:00 pm, March 24th, draining water from underground floor of turbine buildings into a condenser was started and it was paused at approximately 7:30 am, March 29th because we confirmed that the water level reached almost full capacity of a condenser. In order to move the water in the condenser into a condensate storage tank, water transfer from the condensate storage tank to suppression pool's water surge-tanks was conducted from around 0:00 pm, March 31st to 3:26 pm, April 2nd.
-From 1:03 pm, March 31st, the water spray by the concrete pumping vehicle was started, and finished at 4:04 pm.
-In order to confirm the position of water spray to the spent fuel pool by the concrete pumping vehicle, the water spray was conducted from 5:16 pm to 5:19 pm.
-Some of turbine building lights were turned on April 2nd.
-The water transfer from the condenser to the condensate storage tank has been implemented since 1:55 pm, April 3rd. The transfer was completed at 9:30 am on April 10th.
-As it is suspected that hydrogen gas may be accumulated inside reactor containment vessel, at 10:30 pm, April 6th, we started the operation of the valve for the injection of nitrogen to the reactor in order to prevent the increase of oxygen density. Following this, the injection of nitrogen to the reactor was started at 1:31AM, April 7th.

*Unit 2
-At 1:25 pm, March 14th, since the Reactor Core Isolation Cooling System has failed, it was determined that a specific incident stipulated in

Clause 1, Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (failure of reactor cooling function). At 5:17 pm, March 14th, while the water level in the reactor reached the top of the fuel rod, we have restarted the water injection with the valve operation.
-At approximately 6:14 am, March 15th, the abnormal sound was confirmed near the suppression chamber and the pressure inside the chamber decreased afterwards. It was determined that there was a possibility that something happened in the suppression chamber. While sea water injection to the reactor continued, TEPCO employees and workers from other companies not in charge of injection work started tentative evacuation to a safe location.
Sea water injection to the reactor continued.
-On March 18th, power was delivered up to substation for backup power through offsite transmission line. We completed laying cable further to unit receiving facility in the building, and at 3:46 pm, March 20th the load-side power panel of the receiving facility started to be energized.
-From approximately 3:05 pm to approximately 5:20 pm on March 20th, about 40 tons of seawater was injected into Unit 2 by TEPCO employees.
-At approximately 6:20 pm on March 21st, white smoke was confirmed arising from the top of the reactor building. As of 7:11 am on March 22nd, smoke decreased to the level where we could hardly confirm.
-From around 4:00 pm to 5:00 pm on March 22nd, approximately 18 tons of sea water was injected into the spent fuel pool by TEPCO employees.
-From 10:10 am on March 26th, freshwater (with boric acid) injection was initiated. (switched from the seawater injection) At 6:31pm, March 27th, transfer from the fire fighting pump to a temporary motor driven pump was made. From 10:22am to 0:06pm on April 3rd, we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-From 10:30 am on March 25th, seawater injection through Fuel Pool Cooling and Filtering System was initiated. The work was finished at 12:19 pm, March 25th. From 4:30 pm, March 29th, freshwater injection through Fuel Pool Cooling and Filtering System was initiated. (We switched from seawater to freshwater). The work was finished at 6:25 pm on March 29th. At 9:25 am, March 30th, we started fresh water injection by a temporary motor driven pump, but we switched the pump to the fire fighting pump due to the pump trouble. At 1:10 pm, March 30th, freshwater injection was suspended, because we found the crack on a part of the hose. At 7:05 pm, March 30th, freshwater injection was resumed and finished at 11:50 pm, March 31.
-At approximately 4:46 pm, March 26th, lights in the main control room were restored.
-At approximately 4:45 pm, March 29th, the water in a condensate storage tank was being transferred to suppression pool water surge-tanks to prepare for water transfer from a condenser to a condensate storage tank in order to drain water on the underground floor of the turbine building into a condenser. At 11:50 am, April 1st, transfer was completed.
-At 2:56 pm, April 1st, water injection into spent fuel pool in Unit 2 by temporary motor driven pump was initiated. At 5:05 pm on April 1st, the water injection was finished.
-The water transfer from the condenser to the condensate storage tank has been implemented since 5:10 pm, April 2nd.It was finished at 1:10 pm, April 9th.
-Some of turbine building lights were turned on April 2nd.
-At 11:05 am, April 4th, water injection into spent fuel pool in Unit 2 by a temporary motor driven pump was initiated. At 1:37 pm, April 4th, the water injection was finished.
-At 1:29 pm, April 7th, water injection into spent fuel pool in Unit 2 by a temporary motor driven pump was initiated. At 2:34 pm, April 7th, the water injection was finished.
-At 10:37 am on April 10th, water injection into a spent fuel pool of Unit 2 by a temporary motor driven pump was initiated. At 0:38 pm on April 10th, the water injection was finished.

*Unit 3
-At 6:50 am, March 14th, while water injection to the reactor was under operation (injection of boric acid was done on Mar 13th), the pressure in the reactor containment vessel increased to 530 kPa. As a result, at 7:44 am, it was determined that a specific incident stipulated in the Article 15, the Clause 1 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (abnormal increase of the pressure of reactor containment vessel). Afterwards, the pressure gradually decreased (as of 9:05 am, 490 kPa).
-At approximately 11:01 am, March 14th, an explosion followed by white smoke occurred near Unit 3. 4 TEPCO employees and 3 workers from other companies (all of them were conscious) sustained injuries and were taken to the hospital by ambulances.
-As the temperature of water in the spent fuel pool rose, spraying water by helicopters with the support of the Self Defense Force was considered. However the operation on March 16th was cancelled.
-At 6:15 am, March 17th, the pressure of the Suppression Chamber temporarily increased, but currently it is stable within a certain range. On March 20th, we were preparing to implement measures to reduce the pressure of the reactor containment vessel (partial discharge of air containing radioactive material to outside) in order to fully secure

safety. However, at present, it was not a situation to immediately implement measures and discharge air containing radioactive material to outside. We will continue to monitor the status of the pressure of the reactor containment vessel.
-In order to cool spent fuel pool, water was sprayed by helicopters on March 17th with the cooperation of Self-Defense Forces.
-At approximately past 7:00 pm, March 17th, Self-Defense Forces and the police started spraying water by water cannon trucks upon our request for the cooperation. At 8:09 pm, March 17th, they finished the operation.
-Before 2:00 pm, March 18th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At 2:45 pm, March 18th, the operation was finished.
-At approximately 12:30 am, March 19th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 1:10 am, March 19th, the operation was finished. They resumed spraying water at 2:10 pm and finished at approximately 3:40 am, March 20th.
-At approximately 9:30 pm, March 20th, spraying water was started with the cooperation of Fire Rescue Task Forces of Tokyo Fire Department. At approximately 3:58 am, March 21st, the operation was finished.
-At approximately 3:55 pm, March 21st, light gray smoke was confirmed arising from the southeast side of the 5th floor roof of the Unit 3 building. The situation was reported to the fire department at approximately 4:21 pm. The parameters of reactor pressure vessel, reactor containment vessel, and monitored environmental data remained stable without significant change. However, employees working around Unit 3 evacuated to a safe location. On March 22nd, the color of smoke changed to somewhat white and it was slowly dissipating.
-At approximately 3:10 pm on March 22nd, spraying water to Unit 3 by Tokyo Fire Department's Hyper Rescue and Osaka City Fire Department was conducted, and completed at approximately 4:00 pm on the same day.
-At approximately 10:45 pm on March 22nd, lights in the main control room were restored.
-At approximately 11:00 am on March 23rd, the injection of sea water to spent fuel pool was conducted, and finished approximately at 1:20 pm on the same day.
-At 4:20 pm on March 23rd, light gray smoke was observed belching from Unit 3 building. The situation was reported to the fire department at 4:25 pm on March 23rd. The parameters of the reactor, the reactor containment vessel of Unit 3, and monitored figures around the site's immediate surroundings remained stable without significant change. To be safe, workers in the main control room of Unit 3 and around Unit 3 evacuated to a safe location. At approximately 11:30 pm on March 23rd and 4:50 am on March 24th, TEPCO employees confirmed the smoke has disappeared. Accordingly, workers evacuation was lifted.
-From approximately 5:35 am on March 24th, sea water injection through Fuel Pool Cooling and Filtering System was initiated, and finished at approximately 4:05 pm on the same day.
-From 1:28 pm on March 25th, Hyper Rescue team started water spray. The work finished at 4:00 pm on March 25th.
-From 6:02 pm on March 25th, the injection of freshwater to the reactor was started (switched from the seawater injection). At 8:30 pm on March 28th, the injection of fresh water was switched to temporary electricity pumps from the fire engine pumps. From 10:03am to 0:16pm on April 3rd, we temporarily switched the pump to the fire fighting pump to inject fresh water to use power through off-site transmission line. We're now injecting fresh water to the reactor by a motor driven pump powered by off-site transmission line.
-At approximately 12:34pm March 27th, the injection of water by the concrete pump truck was started. At approximately 2:36 pm, March 27th, the operation was finished.
-At approximately 2:17pm March 29th, the injection of fresh water by the concrete pump truck was started. (Sea water had been injected so far and transfer from seawater to freshwater was made). The water injection was finished at 6:18 PM, March 29th.
-At approximately 5:40 pm, March 28th, the water in a condensate storage tank was being transferred to suppression pool water surge-tanks to prepare for water transfer from a condenser to a condensate storage tank in order to drain water on the underground floor of the turbine building into a condenser. We finished the transfer work at approximately 8:40 am, March 31st.
-From 4:30 pm, March 31st, the water spray by the concrete pumping vehicle was started, and finished at 7:33 pm.
-From 9:52 am, April 2nd, the water spray by the concrete pumping vehicle was started, and finished at 0:54 pm.
-Some of turbine building lights were turned on April 2nd.
-From 5:03 am, April 4th, the water spray by the concrete pumping vehicle was started, and finished at 07:19 pm.
-From 6:53 am, April 7th, water spray by the concrete pumping vehicle was started, and finished at 8:53 am.
-From 5:06 pm, April 8th, water spray by the concrete pumping vehicle was started, and finished at 8:00 pm.
-From 5:15 pm, April 10th, water spray by the concrete pumping vehicle was started, and finished at 7:15 pm.

*Unit 4
-At approximately 6:00 am, March 15th, an explosive sound was heard and

the damage in the 5th floor roof of Unit 4 reactor building was confirmed. At 9:38 am, the fire near the north-west part of 4th floor of Unit 4 reactor building was confirmed. At approximately 11:00 am, TEPCO employees confirmed that the fire was out.
-At approximately 5:45 am on March 16th, a TEPCO employee discovered a fire at the northwest corner of the Nuclear Reactor Building. TEPCO immediately reported this incident to the fire department and the local government and proceeded with the extinction of fire. At approximately 6:15 am, TEPCO staff confirmed at the site that there were no signs of fire.
-At approximately 8:21 am on March 20th, spraying water by fire engines was started with the cooperation of Self-Defense Forces and they finished the operation at approximately 9:40 am. At approximately 6:45 pm spraying water was started by Self-Defenses' water cannon trucks and finished at approximately 7:45 pm.
-At approximately 6:30 am, March 21st, spraying water by fire engines was started with the cooperation of Self-Defense Forces and the United States Armed Forces. At approximately 8:40 am, March 21, they had finished the operation.
-On March 21st, cabling has been completed from temporary substation to the main power center.
-From approximately 5:20 pm on March 22nd, spraying water from the concrete pumping vehicle was conducted and ended at approximately 8:30 pm on the same day.
-From approximately 10:00 am on March 23rd, spraying water from the concrete pumping vehicle was conducted and ended at approximately 1:00 pm on the same day.
-From approximately 2:35 pm on March 24th, spraying water by the concrete pumping vehicle was conducted and ended at approximately 5:30 pm on the same day.
-From 6:05 am on March 25th, seawater injection through Fuel Pool Cooling and Filtering System was initiated and finished at approximately 10:20 am on the same day.
-From 7:05 pm on March 25th, water spray by the concrete pumping vehicle was started and finished at 10:07 pm on March 25th.
-From 4:55 pm on March 27th, water spray by the concrete pumping vehicle was started and finished at 7:25 pm on March 27th.
-At approximately 11:50 am on March 29th, lights in the main control room were restored.
-From 2:04 pm on March 30th, water spray by the concrete pumping vehicle was started and finished at 6:33 pm on March 30th.
-Some of turbine building lights were turned on March 31st.
-From 8:28 am, April 1st, the water spray by the concrete pumping vehicle was started. At 2:14 pm, the water spray finished.
-From 5:14 pm, April 3rd, the water spray by the concrete pumping vehicle was started. At 10:16 pm, the water spray finished.
-From 5:35 pm, April 5th, the water spray by the concrete pumping vehicle was started. At 6:22 pm, the water spray finished.
-From 6:23 pm, April 7th, the water spray by the concrete pumping vehicle was started. At 7:40 pm, the water spray finished.
-From 5:07 pm, April 9th, the water spray by the concrete pumping vehicle was started. At 7:24 pm, the water spray finished.

*Unit 5 and 6
-At 5:00 am on March 19th, we started the Residual Heat Removal System Pump (C) of Unit 5 in order to cool the spent fuel pool. At 10:14 pm, we started the Residual Heat Removal System Pump (B) of Unit 6 in order to cool the spent fuel pool.
-Unit 5 has been in reactor cold shutdown since 2:30 pm on March 20th. Unit 6 has been in reactor cold shutdown since 7:27 pm on March 20th.
-At Units 5 and 6, in order to prevent hydrogen gas from accumulating within the buildings, we have made three holes on the roof of the reactor building for each unit.
-At approximately 5:24 pm on March 23rd, the temporary Residual Heat Removal System Seawater Pump automatically stopped when its power source was switched. We restarted the pump at around 4:14 pm, March 24th, and resumed cooling of reactor at around 4:35 pm.

*On March 18th, regarding the spent fuel in the common spent fuel pool, we have confirmed that the water level of the pool was secured. At around 10:37 am March 21st, water spraying to common spent fuel pool and finished at 3:30 pm. At around 6:05 pm, fuel pool cooling pump was started to cool the pool.
*common spent fuel pool: a spent fuel pool for common use set in a separate building in a plant site in order to preserve spent fuel which are transferred from the spent fuel pool in each Unit building.

*On March 17th, we patrolled buildings for dry casks and found no signs of abnormal situation for the casks by visual observation. A detailed inspection was under preparation.
*dry cask: a measure to store spent fuel in a dry storage casks in storages. Fukushima Daiichi Nuclear Power Station started to utilize the measure from August 1995.

*On March 21st, 23rd to April 9th we detected radioactive materials from the seawater around the discharge canal of the station. The data of detected three nuclides (Iodine-131, Cesium-134 and Cesium-137) was

reported as fixed data. Other nuclides figures are to be re-evaluated based on the improved measures for recurrence prevention which have been prepared in accordance to a strong warning by NISA on April 1st.

*On March 20th, 21st, 23rd to April 9th, we detected radioactive materials in the air collected at the site of Fukushima Daiichi Nuclear Power Station. The data of detected three nuclides (Iodine-131, Cesium-134 and Cesium-137) was reported as fixed data. Other nuclides figures are to be re-evaluated based on the improved measures for recurrence prevention. which have been prepared in accordance to a strong warning by NISA on April 1st.

*Plutonium has been detected from the sample of soil at the site of Fukushima Daiichi Nuclear Power Station collected on 21st, 22nd, 25th and 28th of March, Concentration level of Plutonium detected was same as that of under usual environment and it was thought not to be harmful to human health. We will strengthen environmental monitoring of power station and surrounding environment.
Additionally Iodine, Cesium, Tellurium, Barium, Niobium, Ruthenium, Molybdenum, Technetium, Lanthanum, Beryllium, Silver have been detected from the sample of soil collected at Fukushima Daiichi Nuclear Power Station on 21st, 22nd, 25th and 28th of March.

*We detected radioactive materials contained in the puddles found in the turbine building of Unit 1 to 4. We are planning to conduct water analysis in preparation for treating the water. The analysis will be carried out in Fukushima Daini Nuclear Power Station with support from other nuclear companies (Japan Atomic Energy Agency, Japan Nuclear Fuel Limited).

*At approximately 3:30 pm, March 27th, we found water pooling in the vertical shaft of the trench outside of the turbine buildings for Units 1 to 3. The radiation dose at the surface of the water amounted 0.4 mSv/h in Unit 1 and over 1,000 mSv/h in Unit 2. We could not confirm the amount of the radiation dose in Unit 3. We will keep observing the condition of the water in the vertical shaft.
On March 29th, we detected niobium, tellurium, ruthenium, silver, tellurium, iodine, cesium, and ruthenium in the water collected at the trench of unit 1.
On March 30th, we took samples from the water in the trench of Unit 2 and 3, and conducted nuclide analysis on them. We are now confirming the results of the analysis.

*At approximately 9:30 am, April 2nd, we found that there was water in the shaft for storing power cable (concrete product) near the intake of water for Unit 2, the radioactive air dose was over 1,000mSv/h and the water spilled into the sea from the crack (approximately 20 cm) on the side of the shaft. We injected fresh concrete to the shaft twice, however, we could not observe a change in the amount of water flowing into the sea. Therefore, we considered that a new method of stopping the water and determined to use the polymer. Necessary equipment and experts of water shutoff will be dispatched to the site and after checking the condition, we began to stop water shutoff and were injecting polymer on April 3rd. On April 4th, we injected the tracer from the vertical shaft of the trench to start to examine the water current. We did not observe reduction of flow or change of color or water leaking. We checked the diagram and confirmed the route. At the same time, we checked the situation of the pit in detail and considered the possibility that the water was not from the pit, rather, from the joint between the piping upstream of the pit and the duct, then the water seeped through a layer of gravel below the piping. In order to stop that seepage from the layer of gravel, we decided to conduct the water sealing to the bedrock around the piping. We arranged for the specialist and gathered equipments. On April 5th, liquid glass was injected to the bedrock. Tracer was put through the two new holes drilled near the pit to investigate the water flow. At 2:15 pm, April 5th, it was observed the water with tracer came out from the crack on the concrete wall of the pit. At 3:7 pm, April 5th, injection of coagulant from the holes was initiated and we have confirmed the outflow from the crack on the concrete wall of the pit has stopped at 5:38 am, April 6th. We confirmed water level has not been rising in the turbine building of unit 2. On April 6th, a countermeasure by using rubber plate and fixer was implemented to prevent discharge of radioactive materials, and we are continuously monitoring for any existence of leakage. From 3:00pm April 5th, a construction of installing large sandbags around the pier to prevent the outflow of the contaminated water from station's port on the south side to the ocean was started. Also we are preparing spillage prevention fences as countermeasures for lowering the outflow to the ocean.
Iodine and Cesium were detected from the water sampled in the pit and in the sea near the water discharge. Additional nuclide analysis will be implemented.
In addition, from April 2nd, we will implement sampling at 15km offshore Fukushima Daiichi and Fukushima Daini Nuclear Power Stations(3 points have been added since April 5th) and will evaluate these samples comprehensively.

*Since approximately 9:20 am, March 31st, the water transfer from the

vertical shaft of Unit 1 to the reservoir of the centralized environmental facility was conducted. We finished the task around 11:25 am of the same day.

*We found a puddle of water at the main building of the centralized environmental facility process. We analyzed and detected approximately 1.2 x 10^1Bq/cm3 of radioactivity in full dose in the Controlled Area and 2.2 x 10^1Bq/cm3 in full dose in the Non-Controlled Area on March 29. From April 3rd, the water level in the trench of Unit 3 increased by 15 cm. The route is not yet known, but there is a possibility that water in the turbine building of Unit 4 may be running to the trench of Unit 3. To be safe, at 09:22am, April 4th, we stopped transferring water to the turbine building of Unit 4. At this moment, the water level in the trench of Unit 3 became stable after stopping the water transfer.

*There is plenty of radioactive wastewater in the turbine buildings. Especially, Unit 2's wastewater is very highly radioactive. To store this stably, it was decided that this needed to be transferred to the Central Radioactive Waste Disposal Facility. However, within that facility, we are storing ten thousand tons of low level radioactive wastewater. In order to transfer more wastewater, we need to discharge the low level radioactive wastewater. In addition, as low radioactive subsurface water is piling up in sub-drain pits of Units 5 and 6 and a part of subsurface water is running into buildings. We are concerned that important equipment to secure the safety of reactors may be submerged.
Based on the Section 1 of the Article 64 of the Nuclear Reactor Regulation Law, we have decided to discharge to the sea approximately ten thousand tons of the accumulated low level radioactive water and a total of fifteen hundred tons of the low level radioactive subsurface water stored in the sub drain pits of Unit 5 and 6 as soon as we get ready. From 7:03 pm, April 4th, we are discharging the low level radioactive wastewater stored in the Central Radioactive Waste Disposal Facility to the south of the water discharge canal. We're confirming whether there is stored waste water or not. Also, from 9:00 pm, April 4th, we are discharging the low level radioactive wastewater stored in the sub drain pits of Unit 5 and 6 by using one pump via the water discharge canal of Units 5 and 6. After that, at 6:52 pm, April 9th we finished discharging water. The amount of water was approximately 1,323 tons.
We evaluate the impact on the discharge of the low radioactive wastewater to the sea as approximately 0.6 mSv per year per an adult if an adult eats adjacent fish and seaweeds everyday. The amount (0.6 mSv of effective radioactive doses per year) is one-forth of annual radioactive dose (2.4 mSv) to which the general public is exposed from nature.

*On April 7th, we knocked holes in the external walls of turbine buildings at Units 2 to 4 for the preparation of draining the puddles to the centralized waste treatment facility. We are checking the heath in the building of centralized waste treatment facility.

*The first barge of the U.S. Forces with fresh water to be used to cool down reactors etc. was towed by a ship of Maritime Self-Defense Force and docked at 3:42 pm on March 31st 2011. At approximately 3:58 pm, April 1st, we started to replenish filtrate tanks with the fresh water, and finished at 4:25 pm. At approximately 10:20 am, April 2nd, we resumed replenishing filtrate tanks with the fresh water, and finished at 4:40 pm.
The second barge of the U.S. Forces with the fresh water towed by the ship of Maritime Self-Defense Force came alongside the pier at approximately 9:10 am, April 2nd. It was in preparation for replenishing filtrate tanks with the fresh water. We began to transfer fresh water from the second barge to the first barge on April 3rd at 9:52 am and continued until 11:15 am on April 3rd.

*At 11:35 am, April 1st, a worker fell into the sea while stepping into the ship from the pier during the hose laying work of the barge. Other crew immediately rescued the worker. While no injury or contamination was confirmed, whole body counter has been implemented to check the contamination inside the body just in case.

*At 9:19 am, April 9th, one contractor with a full-face mask who was working on cables in the water treatment building felt sick and got injured by stepping into the manhole whose cover was dislocated. This person was transported to the hospital. The result of medical examination was "contusion of right knee and doubt of medical collateral ligament injury on right knee." It is confirmed that there is no possibility of body contamination.

*From 3:00 pm, April 1st, we started spraying inhibitor in order to prevent diffusion of radioactive materials. This attempt was conducted on a trial basis at the mountain side area of the common spent fuel pool in the range of 500m^2. The spraying finished at 4:05 pm. On April 5th and 6th , we also sprayed the inhibitor in order to prevent the spread of radioactive materials on a trial basis at the mountain side area of the common spent fuel pool in the range of 600m^2. On April 8th, we conducted trial spraying of the inhibitor at the mountain side area of the common spent fuel pool in the range of 680m2. On April 10th, we sprayed it in the range of approximately 550 m^2.

*Monitoring posts (no.1 to no.8) which were installed around the site boundary have been restored. We will continue monitoring the measured value and make announcements on those values accordingly.

*At around 11:00 am on April 10th, at the yard of Unit 2, a worker who wore an anorak and a full face mask said that he felt sick while he was laying a discharging hose. A medical personnel rode on the same vehicle from Fukushima Daini Nuclear Power Station and sent him to J-Village with conducting a course of injections. And after that, at 2:27 pm, he was sent to Sougou Iwaki Kyoritsu Hospital by an ambulance. No radioactive material attached to his body.

*From 3:59 pm and 4:28 pm on April 10th , we conducted video recording of Unit 1 to 4 reactor buildings from the air by using an unmanned helicopter to check the current status of the buildings.

*We will continuously endeavor to securing safety, and monitoring of the surrounding environment.

Fukushima Daini Nuclear Power Station:
Units 1 to 4: shutdown due to the earthquake
*The national government has instructed evacuation for those local residents within 10km radius of the periphery.

*In order to achieve cold shutdown, reactor cooling function was restored and cooling of reactors was conducted. As a result, all reactors achieved cold shutdown: Unit 1 at 5:00 pm, March 14th, Unit 2 at 6:00 pm, March 14th, Unit 3 at 0:15 pm, March 12th, Unit 4 at 7:15 am, March 16th.

*At 2:30 pm on March 30th, the power source of the residual heat removal system (B) to cool the reactor of Unit 1 was secured from an emergency power source in addition to an offsite power. This means that all the units secure backup power sources (emergency power sources) for the residual heat removal system (B).

*Unit 1
As it was confirmed that the temperature of the Emergency Equipment Cooling Water System *1 has increased, at 3:20 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 4:25 pm, March 15th, after replacing the power facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

*Unit 4
As it was confirmed that the pressure at the outlet of the pumps of the Emergency Equipment Cooling Water System*1 has been decreased, at 8:05 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 9:25 pm, March 15th, after replacing the relevant facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

*1:emergency water system in which cooling water (pure water) circulates which exchanged the heat with sea water in order to cool down bearing pumps and/or heat exchangers etc.

Kashiwazaki Kariwa Nuclear Power Station:
Units 1, 5, 6, 7: normal operation
(Units 2 to 4: outage due to regular inspection)

[Thermal Power Station]
-Hirono Thermal Power Station Units 2 and 4: shutdown due to the earthquake
-Hitachinaka Thermal Power Station Unit 1: shutdown due to the earthquake
-Kashima Thermal Power Station Unit 6: shutdown due to the earthquake

[Hydro Power Station]
-Power supply has returned to normal, but facilities damaged by the earthquake are now being handled in a timely manner.

[Impacts on Transmission Facilities]
-Power supply has returned to normal, but facilities damaged by the earthquake are now being handled in a timely manner.

[Avoidance of further Implementation on Planned Rolling Blackouts and Request for Conserving Electricity Consumption]
Currently, we are giving our utmost efforts to restore power supply after our nuclear and thermal power facilities are severely damaged by Tohoku-Taiheiyou-Oki Earthquake. The widespread understanding and cooperation to the conservation of electricity among each customer have contributed to the improvement in the tight power supply-demand balance. Amidst this backdrop, in principle, we have decided not to implement further rolling blackouts.
However, we must sincerely ask for your continued cooperation in

conserving electricity consumption due to the possible increase in demand caused by abrupt climate change or unexpected trouble in power stations that are currently being restored. In case the electricity supply-demand balance becomes tighter than expected, on the condition of prior announcement, we may reluctantly implement the rolling blackouts. We kindly ask for your cooperation.
Also, we will give our utmost efforts to maintain this policy of avoiding further implementation on rolling blackouts in summer.

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From: LIA02 Hoc
Sent: Monday, April 11, 2011 12:47 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Type of Passport

From: Mitman, Jeffrey
Sent: Monday, April 11, 2011 12:47 PM
To: LIA02 Hoc
Subject: RE: Type of Passport

Steve, I have a personal passport.

Jeff Mitman

From: LIA02 Hoc
Sent: Monday, April 11, 2011 12:46 PM
To: Garchow, Steve; Gepford, Heather; Huffert, Anthony; Mitman, Jeffrey; Moore, Carl; Reynolds, Steven
Subject: Type of Passport

Please let me know which type of passport you have, personal or official.

Steve

From: PMT10 Hoc
Sent: Monday, April 11, 2011 7:09 AM
To: eoctsu2@cdc.gov; eocreport@cdc.gov; eoctsutt2@cdc.gov
Cc: byw3@cdc.gov; pac4@cdc.gov; LIA12 Hoc
Subject: FW: High activity source inventory and retrieval

NRC Liaison Team informed me this morning that NRC and the Japanese government have covered the issue of securing uncontrolled radioactive sources in areas where the public might be allowed to return temporarily or permanently. This request can be considered closed.

Sam Keith
CDC Liaison to NRC

From: PMT10 Hoc
Sent: Sunday, April 10, 2011 12:33 AM
To: LIA08 Hoc; LIA12 Hoc
Subject: High activity source inventory and retrieval

It is recommended that authorities in Japan be cautioned about and encouraged to inventory all high activity radioactive sources, to identify those not currently under expert control, and to include source retrieval as part of the effort to allow individuals to return temporarily or permanently to areas where such sources might not be secured. This would be similar to efforts in Louisiana and Mississippi following Hurricane Katrina.

Sam Keith
CDC Liaison

0001310

From: Campbell, Andy
Sent: Monday, April 11, 2011 11:25 AM
To: LIA08 Hoc; Murray, Charles; Wright, Ned
Subject: RE: Request for Slide Package from Shaw Group

Thanks.

Andy

From: LIA08 Hoc
Sent: Monday, April 11, 2011 8:34 AM
To: Murray, Charles
Cc: Campbell, Andy
Subject: RE: Request for Slide Package from Shaw Group

Done. Ned tracked it down this morning

From: Murray, Charles
Sent: Monday, April 11, 2011 7:35 AM
To: LIA08 Hoc
Subject: FW: Request for Slide Package from Shaw Group

Lisa – I think you are it today. Andy wrote this up but sent it to my regular email instead of lia08.

Milt

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 9:47 PM
To: McMurtray, Anthony
Cc: Murray, Charles
Subject: FW: Request for Slide Package from Shaw Group

Slide package is in agency mail process – likely in mail room – need to follow-up first thing Monday AM.

Andy
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 9:42 PM
To: Carpenter, Cynthia; Blount, Tom; Virgilio, Martin
Subject: FW: Request for Slide Package from Shaw Group

I'll put this as an action item in turnover so that it can be followed up with mailroom in am.

Andy
Liaison Team Director
U.S. Nuclear Regulatory Commission

0222/309

Operations Center

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 9:19 PM
To: LIA06 Hoc
Subject: FW: Request for Slide Package from Shaw Group

As requested

From: Emche, Danielle
Sent: Sunday, April 10, 2011 9:14 PM
To: LIA02 Hoc
Cc: Liaison Japan; Stahl, Eric; LIA06 Hoc; Casto, Chuck
Subject: Re: Request for Slide Package from Shaw Group

Fedex tracking number is 8695-5112-8152.

It was delivered 4/8 at HQ and signed for by M. Costillo. Maybe someone needs to check. The Embassy said they can't scan them in because they are an odd paper size and the file will be too big to email. I'm not sure that their answer makes sense but that's what I'm told. Please confirm that Marty has his hands on the slides.

Danielle
Sent from an NRC BlackBerry.

From: LIA02 Hoc
To: Casto, Chuck
Cc: Liaison Japan; Emche, Danielle; Stahl, Eric; LIA06 Hoc
Sent: Sun Apr 10 19:53:51 2011
Subject: Request for Slide Package from Shaw Group

Chuck,

Marty Virgilio and the ET have asked that you forward to us the package of slides presented to the Site Team recently by the Shaw Group. Can you please send?

Thanks,

LIA02

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:36 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Have you returned to the U.S.?

From: Ali, Syed
Sent: Monday, April 11, 2011 10:36 AM
To: LIA02 Hoc; Sheikh, Abdul
Subject: RE: Have you returned to the U.S.?

I returned on April 4, 2011.

Thanks,
Syed Ali

From: LIA02 Hoc
Sent: Saturday, April 09, 2011 10:45 AM
To: Ali, Syed; Sheikh, Abdul
Subject: Have you returned to the U.S.?

Would you please reply to this email to let us know if you have arrived in the U.S. as originally planned on April 7th ?

Thanks.
Mugeh

aaa 371

From: LIA02 Hoc
Sent: Monday, April 11, 2011 11:42 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: TEPCO Earthquake Information Update on April 11: Status of Fukushima Daiichi NPS
Attachments: image004.jpg; image005.jpg; image006.jpg

From: Hidehiko Yamachika [mailto:yamachika-hidehiko@jnes-usa.org]
Sent: Monday, April 11, 2011 11:41 AM
To: LIA02 Hoc
Cc: Aono, Kenjiro; Michael W. Chinworth
Subject: FW: TEPCO Earthquake Information Update on April 11: Status of Fukushima Daiichi NPS

FYI
This is from TEPCO Washington Office.

From: 松尾　建次 [mailto:matsuo.kenji@wash.tepco.com] **On Behalf Of** matsuo.kenji@tepco.co.jp
Sent: Monday, April 11, 2011 11:21 AM
To: matsuo.kenji@tepco.co.jp
Subject: TEPCO Earthquake Information Update on April 11: Status of Fukushima Daiichi NPS

Dear Friends,

Here are updates on Work Progress at Fukushima Daiichi NPS as of 9:00 pm, April 11.

--- There was a aftershock at Hamadori area (close to Fukushima Daiichi and Daini NPS) at 5:16 pm on April 11. Richter scale magnitude was 7.1. All workers in the field evacuated to TSC building in the Fukushima Daiichi site.

Due to the earthquake, off-site power for units 1, 2 and 3 tripped and water injection to the reactor vessel was stopped temporarily. Then the power supply to the pumps resumed at 6:00 pm.

Though no significant damages were made by the earthquake, radioactive water transfer and nitrogen gas injection were suspended.

Contacts:
TEPCO Washington Office 202-457-0790

312

Kenji Matsuo, Director and General Manager
Yuichi Nagano, Deputy General Manager,
Masayuki Yamamoto, Manager, Nuclear Power Programs

<Injection of Nitrogen Gas to Primary Containment Vessel of Unit 1>

- Total amount of injected nitrogen was about 3,000 m^3 at 5:00 pm, April 11. Drywell Pressure is 199.0 kPa(abs) at 8:00 pm
- There was an earthquake at 5:16. Epicenter was Hamadori Region (near Fukushima Daiichi and Daini NPS area) and Richter scale magnitude was 7.1. Due to this earthquake, hydrogen injection pumps stopped. We are checking the status of equipment.
- When we started nitrogen injection on April 7, we announced that we would continue injection until about 250 kPa (100 kPa above the original pressure), and it would take 6 days. However, drywell pressure has been stable at about 190-195 kPa. We assume there might be some leakage path from the PCV, and because of the leak, drywell pressure does not increase as planned. Considering hydrogen and oxygen generation by water radiolysis, we determined to continue nitrogen gas injection to PCV.

<Water Injection to the Reactors>

【Unit 1】 Injecting fresh water
Reactor pressure vessel temperature: 4/11 12:00 pm
<Water feed nozzle> 220.8C
<Bottom of reactor pressure vessel> 119.9C
【Unit 2】 Injecting fresh water
Reactor pressure vessel temperature :
4/11 12:00 pm <Water feed nozzle> 154.8C
【Unit 3】 Injecting fresh water
Reactor pressure vessel temperature :
4/11 12:00 pm <Bottom of reactor pressure vessel> 111.0C
【Unit 4】 No particular changes on parameters.
【Units 5/6】 Reactor cold shutdown. No particular changes on parameters.
【Common spent fuel pool】 No particular changes on parameters.

<Water Spray/Injection to Spent Fuel Pools>

- April 11: No spraying conducted.
- April 12(schedule) : Unit 3 16:00～
  Unit 4 11:00～ Sampling spent fuel pool water sampling for analysis

<Draining Water from Underground Floor in Turbine Building>

- Unit 1: Completed transfer from condenser to CST at 9:30 am on April 10.
- Unit 2: Completed transfer from condenser to CST at 1:30 pm on April 9.

Planning to check for leakage in transfer piping between unit 2 trench to condenser (hotwell).

- Unit 3: Planning to transfer from condenser to CST.
- Preparation work to receive radioactive water in the Central Waste Treatment Facility.
  - ➢ Construction of temporary piping, setting up power supply and installing shields in progress.

<Prevention of Contaminated Water Leakage from Unit2 Trench>

- Completed installment of spillage prevention fences in the south side breakwater. (see picture bellow)
- On April 12, steal plate is scheduled to be installed in front of the screen room at unit 2, spillage prevention fences (Silt Fence) for units 3 and 4 will be installed.

<Discharge of Low level Radioactive Accumulated Water in Central Waste Disposal Facility and Units 5 & 6 to the sea>

【Central Waste Treatment Facility 】

- We had discharged approximately 9,070 tons of water (tentative estimation) from the discharge canal of Units 1 to 4 from April 4 to April 10.
- On April 11, we are evaluating the situation after discharge.

【Sub drain of Unit 5 and 6】

- From April 4th, we started the discharge from the water discharge canal of Units 5 & 6 and at 6:52 pm, April 9, we completed it.

<Spraying of anti-scattering agent>

- April 11: About 1,200m^2 was sprayed on the mountain side of the common spent fuel pool at 12:00 pm – 1:00 pm.
- April 12(schedule): About 500m^2 will be sprayed on the same location.
  - Tentative results of test spraying on April 1 and 5 were as below.
    - April 1: Before spray 1 mSv/h → After 0.8 mSv/h (as of April 3)
    - April 5: Before spray 1.6 mSv/h → After 1.5 mSv/h (as of April 6th)

<Additional Developments>

- Shooting from the air using the unmanned small chopper: 15:59---16:28, April 10
  - Planned flight on April 11 was cancelled due to extra preparation time for setting the devise.
- Rubble removal using remote control robots: 9:00—16:00, April 11.
  - From April 10, two containers (3.2m x 1.6m x 1.1 m) of rubbles were removed.
  - Pictures of robot and operators are shown bellow.


クローラダンプ CD110R

From: LIA02 Hoc
Sent: Monday, April 11, 2011 12:04 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update
Attachments: USNRC Earthquake-Tsunami Update.041111.1200EDT.pdf

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From: LIA07 Hoc
Sent: Monday, April 11, 2011 12:04 PM
Subject: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 11, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Starting today, the NRC is transitioning a great portion of its response support efforts to its line organizations, resulting in a reduction in staffing at the Headquarters Operations Center. As such, we will only be issuing the status update once a day at 1200 EDT. The timing and frequency of the updates may change to support evolving needs of the NRC Site Team in Japan.

Please note that this information is "Official Use Only" and is not intended to be shared with other stakeholders without NRC approval.

Please call the NRC's Headquarters Operations Officer at 301-816-5100 with questions.

Thank you,
Sara

Sara Mroz
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

qqq1 313

From: CountryClearance Resource
Sent: Tuesday, April 12, 2011 4:01 PM
To: Sullivan, Randy
Subject: Thank You for Using the Country Clearance Email Address

Your email has been auto-forwarded to OIP staff (Emily Larson, Daphene Floyd, Kia Jackson, and Stephen Dembek) for processing into the Department of State's eCountryClearance system. Once it has been processed, each traveler will receive a "pending" e-mail from the eCountryClearance system. They will also receive an "approved" e-mail when it is cleared by the respective country's contact.

If you have any questions, please feel free to send another email to CountryClearance@nrc.gov .

000/374

From: LIA02 Hoc
Sent: Tuesday, April 12, 2011 2:30 AM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: Laptops

From: Emche, Danielle
Sent: Tuesday, April 12, 2011 2:30 AM
To: LIA02 Hoc; Bloom, Steven
Cc: Foggie, Kirk
Subject: Re: Laptops

I plan to leave my working laptop and take back a broken one.
Danielle
Sent from an NRC BlackBerry.

From: Stahl, Eric
To: LIA02 Hoc; Emche, Danielle
Sent: Mon Apr 11 18:07:02 2011
Subject: RE: Laptops

I had brought my own laptop and forgot/didn't think to grab one of the non-working ones. Sorry.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 2:08 PM
To: Emche, Danielle; Stahl, Eric
Subject: Laptops

Are either of you planning on bringing back the laptops that were not working correctly.

Steve

0001315

From: Blamey, Alan
Sent: Thursday, April 14, 2011 5:43 PM
To: LIA08 Hoc; LIA06 Hoc; LIA03 Hoc
Subject: FW: EPA personnel radiation dosimeters sent to Japan

Does anyone have a status on this issue?

From: Berger, William [mailto:wberger@ofda.gov]
Sent: Thursday, April 14, 2011 2:15 AM
To: Blamey, Alan; CipulloTL@state.gov
Cc: Nakatsuma, Alfred
Subject: FW: EPA personnel radiation dosimeters sent to Japan

Alan, Tim,

Did this get on the matrix? Has anyone contacted them?

Bill

From: Wittick, Brian [mailto:Brian.Wittick@nrc.gov]
Sent: Thursday, April 14, 2011 7:06 AM
To: Berger, William
Cc: Bellamy, Ronald
Subject: FW: EPA personnel radiation dosimeters sent to Japan

Bill,

Please see below for offer of dosimeters for the matrix.

Thanks,
Brian

From: LIA08 Hoc
Sent: Wednesday, April 13, 2011 8:00 PM
To: Wittick, Brian
Subject: FW: EPA personnel radiation dosimeters sent to Japan

FYI-This offer of electronic dosimeters was passed to NRC HQ by the CDC liaison. I'm not sure if that is something for your Asks and Offers matrix or not.
Contact information for EPA Region V can be found at the bottom of this note-
Thanks
Lisa

Lisa Gibney Wright
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

QQQ/316