
From: LIA01 Hoc
Sent: Saturday, March 19, 2011 4:10 PM
To: Liaison Japan
Cc: LIA11 Hoc; LIA06 Hoc; LIA08 Hoc; ET07 Hoc
Subject: USAID Teleconference Call-In Number

Hi Rick,

The HOO has set up a "Pump Shipment Bridge" for this call. Please ask the USAID participant to call (b)(6) prior to the 6pm EDT meeting and ask for the Pump Shipment Bridge.

Jeff Lynch is now the Federal Liaison POC. His station is LIA11 at x5208 or x5210.

Thanks,
Russ

Russ Chazell
Federal Liaison

IIII/66

From: PMT07 Hoc
Sent: Saturday, March 19, 2011 12:40 PM
To: RST01 Hoc; RST01A Hoc; RST01B Hoc
Cc: PMT01 Hoc; Hoc, PMT12
Subject: FW: IAEA Emergency Notification website

ENAC website with continual updates on documents related to Japan

<https://www-emergency.iaea.org/documents.asp?SortColumn=2&SortOrder=1&EventID=171&CategoryID=0>

ENAC user name: (b)(6)

Pw: (b)(6)

From: LIA02 Hoc
Sent: Saturday, March 19, 2011 12:28 PM
To: PMT07 Hoc
Subject:

From: Emche, Danielle
Sent: Saturday, March 19, 2011 10:23 PM
To: LIA03 Hoc
Subject: Re: Request to establish TEPCO connection through NISA for rad info

I agree but think we should go about it with the turnover a bit differently so it doesn't get lost. I'm not working again until Mon. and there will be an opportunity to at least discuss with Kirk first during the night shift call. Can you call me (b)(6)

(b)(6)

Danielle

Sent from an NRC BlackBerry.

From: LIA03 Hoc
To: Emche, Danielle
Sent: Sat Mar 19 22:20:12 2011
Subject: RE: Request to establish TEPCO connection through NISA for rad info

Danielle,

The PMT room thought they had requested this before (maybe they were turned down). It sounds like you might want to consult with the higher-ups on this one?

From: Emche, Danielle
Sent: Saturday, March 19, 2011 10:19 PM
To: LIA03 Hoc
Subject: Re: Request to establish TEPCO connection through NISA for rad info

Hi Jenny,

Are you asking me what I think? I don't recall this, is it new? Maybe you want to give me a call.

Danielle

Sent from an NRC BlackBerry.

From: LIA03 Hoc
To: Emche, Danielle
Sent: Sat Mar 19 22:16:41 2011
Subject: FW: Request to establish TEPCO connection through NISA for rad info

Danielle,

Is this possible? I'm not sure if you need/want to contact Margie/Nader about this topic before you interact with NISA.

Thanks!

-Jenny

From: Hoc, PMT12
Sent: Saturday, March 19, 2011 10:10 PM
To: LIA11 Hoc; LIA01 Hoc; LIA06 Hoc; LIA03 Hoc; LIA08 Hoc; Hoc, PMT12; PMT07 Hoc; PMT03 Hoc
Subject: Assistance

Can the liaison team assist in the following:

- establish communication with TEPCO through NISA to obtain regular radiological information, including offsite plume monitoring data on a routine and expedited frequency.
- contact EPA to follow up on their monitoring efforts along the western US coast line.

Thanks,

Kevin

From: LIA01 Hoc
Sent: Saturday, March 19, 2011 4:04 PM
To: RMTPACTSU_ELNRC
Cc: LIA11 Hoc; LIA06 Hoc; LIA08 Hoc; ET07 Hoc
Subject: RE: ACTION NEEDED: 6 PM Teleconference Re: Bechtel Pump Issue

NRC – Mr. Brian Shearon, Executive Team Director
State – Mr. Joe Young, US Embassy Japan, Political/Military Affairs and Rick Devercelly from the NRC in Japan
Naval Nuclear Reactors – We don't yet know who is participating but the ET director-level should be the baseline level of participation.

The HOO has set up a "Pump Shipment Bridge" for this call. Please ask the USAID participant to call (b)(6) prior to the 6pm EDT meeting and ask for the Pump Shipment Bridge.

Jeff Lynch is now the Federal Liaison POC. His station is LIA11 at x5208 or x5210.

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Saturday, March 19, 2011 3:09 PM
To: LIA01 Hoc; LIA11 Hoc
Cc: LIA06 Hoc; LIA08 Hoc; RMTPACTSU_RM; RMTPACTSU_DMP; RMTPACTSU_DMO; LIA02 Hoc; LIA12 Hoc; LIA04 Hoc; LIA03 Hoc; McDermott, Brian; Erlanger, Craig
Subject: ACTION NEEDED: 6 PM Teleconference Re: Bechtel Pump Issue

USAID will participate in 6 pm conference call; however, they are asking for the titles (management level) and names of individuals from NRC, State (Embassy) and Naval Reactors who will be participating in call, so that they can have appropriate level of representation on call. Also, please provide me the conference bridge information at your earliest opportunity for the 6 pm call.

From: LIA01 Hoc [mailto:LIA01.Hoc@nrc.gov]
Sent: Saturday, March 19, 2011 1:25 PM
To: RMTPACTSU_ELNRC
Cc: LIA06 Hoc; LIA08 Hoc
Subject: Teleconference Regarding Bechtel Pump Issue

Hi Michael and Joe,

The ET director, Mr. Wiggins, has requested that USAID participate in a teleconference at 1800 EDT to discuss the issue with the Bechtel pumps and perhaps reconsider sending at least one of the pump trains.

Please let us know who from USAID will participate. We'll send the call-in information once we have it.

Thanks,
Russ

Russell Chazell
Federal Liaison

From: ET02 Hoc
Sent: Monday, March 21, 2011 5:23 PM
To: LIA02 Hoc; LIA03 Hoc; OST02 HOC; ET07 Hoc; HOO Hoc
Cc: ET02 Hoc
Subject: List of Blackerry Numbers deployed to Japan
Attachments: List of Blackberry Phone Numbers.docx

As of 03/21/11 17:18

List of Blackberry Phone Numbers

Name	User ID	Wireless Number
John Monninger	JDM	(b)(6)
Chuck Casto	CAC1	
Tony Nakanishi	TTN1	
Timothy Kolb	TCK	
Jack Foster	JWF	
Richard Devercelly	RWD1	
William Cook	WAC1	
James Trapp	JMT1	
Dan Dorman	DHD	
Michael Scott	MLS3	
Alan Blamey	AJB3	
John Giessner	JBG	
Robert Taylor	RXT2	
Todd Jackson	TJJ	
Marie Miller	MTM1	
Syed Ali	SAA3	
Abdul Sheikh	AXS9	
Ralph Way	RXW5	
Jack Ramsey*	JER2	
Steve Bloom	SDB1	

*International cell phone

Trip to Japan on 3/14/11

Richard DeVercelly	(b)(6)	37569G
Timothy Kolb		37544G
Chuck Casto		37108G
William Cook		37565G
Tony Nakanishi		37107G
Jack Foster		35655G
James Trapp		36888G

From: LIA07 Hoc
Sent: Saturday, March 19, 2011 11:54 AM
To: RST01 Hoc; Hoc, PMT12; OST04 Hoc
Subject: FW: Info. from NISA and JAIF
Attachments: NISA 33rd update.pdf; milk and spinach.pdf; updated jaif assessments.pdf

Follow Up Flag: Follow up
Flag Status: Completed

-----Original Message-----

From: LIA02 Hoc
Sent: Saturday, March 19, 2011 11:48 AM
To: LIA07 Hoc
Subject: FW: Info. from NISA and JAIF

-----Original Message-----

From: Danielle Emche [mailto:(b)(6)]
Sent: Saturday, March 19, 2011 10:27 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: Info. from NISA and JAIF

Can you forward these or print them out as you would like? I think they would be of interest to all teams including the LT. Danielle

March 19, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 33rd Release)
(As of 13:30 March 19th, 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 (NPS)

● Fukushima Dai-ichi NPS

<Situation of Water Spray>

Hyper Rescue Unit of Tokyo Fire Department is scheduled to carry out water spray.

Start water spray : 14:00 (to be scheduled)

< Situation of operations in the site and recovery of the power supply >

- 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 site is being carried out. (As of 13:30 March 19th)

(Attached sheet)

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

● Fukushima Dai-ichi NPS, TEPCO

(Okuma Town and Futaba Town, Futaba County, Fukushima Prefecture)

(1) The status 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
 Unit 6 (1,100MWe): in periodic inspection outage

(2) Major Plant Parameters (12:00 March 19th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.297(A) 0.252(B)	0.092(A) 0.078(B)	0.078(C) 0.078(B)	---	1.359	0.825
CV Pressure (D/W) [kPa]	170	135	160	—	—	—
Reactor Water Level*2 [Mm]	-1,800(A) -1,700(B)	-1,400(A) Not available(B)	-1,950(A) -2,300(B)	---	1,984	1,620
Suppression Pool Water Temperature (S/C) [°C]	—	---	---	---	—	—
Suppression Pool Pressure (S/C) [kPa]	170	down scale	down scale	---	—	—
Spent Fuel Pool Water Temperature [°C]	—	—	—	84	66.6	66.5
Time of Measurement	11:00 March 19th	11:00 March 19th	11:15 March 19th	04:08 March 14th	11:00 March 19th	11:00 March 19th

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

- TEPCO reported to NISA the event in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi. (15:42 March 11th)
- TEPCO reported to NISA the event (Loss of reactor cooling function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Units 1 and 2 of Fukushima Dai-ichi. (16:36 March 11th)
- The cable for receiving electricity from the transmission line of Tohoku Electric Power Company was installed. It is scheduled to be connected to Unit 2 after the completion of discharge work. (17:30 March 17th)
The content of operations for recovery of external power supply to Unit 1 to 4 (Power supply from Electric transmission grid of Tohoku Electric Power Co., and from the route via transformer sub-station of TEPCO) is being confirmed. (06:30 March 18th)

<Unit 1>

- Seawater was injected to RPV via the Fire Extinguishing System Line (Started up 11:55 March 13th)
→Temporary interruption of the injection (01:10 March 14th)
- The sound of explosion in Unit 1 occurred. (15:36 March 12nd)
- Seawater is being injected. (12:00 March 19th)

<Unit 2>

- Water injection function was sustained. (14:00 March 13th)
- The Blow-out Panel of reactor building was opened due to the explosion of the Unit 3 reactor building. (After 11:00 March 14th)
- Reactor water level was decreasing. (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 was ready through the Fire Extinguishing System line. (19:20 March 14th)
- TEPCO evaluated core damage of Unit 2 was "less than 5%" (22:14 March 14th)
- Water level in RPV in Unit 2 is decreasing. (22:50 March 14th)

- A sound of explosion was made in Unit 2. As the pressure in Suppression Chamber decreased (06:10 March 15th), there was a possibility that an incident occurred in the Chamber. (06:20 March 15th)
- Seawater injection to RPV continued. (12:00 March 19th)
- Access to the substation for reserve power supply from external transmission line was completed and cable connection is under preparation. Today's work was completed. (13:30 March 19th)

<Unit 3>

- Fresh water was injected to RPV via the Fire Extinguishing System Line (FESL). (11:55 March 13th)
- Seawater was injected to RPV via FESL. (13:12 March 13th)
- Injection of seawater for Unit 1 and Unit 3 was interrupted due to the lack of seawater in pit. (01:10 March 14th)
- For Unit 3 injection of seawater into PCV was restarted (03:20 March 14th)
- The pressure in PCV of Unit 3 rose unusually. (7:44 March 14th) TEPCO reported to NISA the event (Loss of reactor cooling function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (7:52 March 14th)
- For 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 central control room of Unit 3 and 4 (common control room). (10:45 March 16th) Thereafter the operators returned to the room and restarted the operation for 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 grand discharge. (16:10 March 17th)
- The Self-Defence Force started the water spray from 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-Defence Force using 5 cars (March 17th)
(The starting time of water spray by each car: 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 per car) 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)
- Seawater is being injected to RPV. (As of 10:00 March 19th)
- Hyper Rescue Unit (14 vehicles) arrived at the Main Gate (23:10 March 18th) and 6 vehicles of them entered the NPS in order to spray water from the ground. (23:30 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department is scheduled to carry out water spray (14:00 March 19th)

<Unit 4>

- 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 temperature of water in the Spent Fuel Pool at Unit 4 had increased. (84 °C at 04:08 March 14th)
- The fire occurred at Unit 4. (5:45 March 15th) TEPCO reported that no fire could be confirmed on the ground. (06:15 March 16th)
- Because of the replacement work of the Shroud of RPV, no fuel was inside the PRV.

<Units 5 and 6>

- Emergency Diesel Generator (1 unit) for Unit 6 is operable and supplying electricity to Units 5 and 6. Water injection to the PRV and Spent Fuel Pool through MUWC is progressing.
- The second unit of Emergency Diesel Generator (A) for Unit 6 has started up. (04:22 March 19th)
- Pump for Residual Heat Removal (RHR)(C) for Unit 5 started up and cooling of Spent Fuel Storage Pool has started. (Power supply :

Emergency Diesel Generator for Unit 6) (05:00 March 19th)

<Common Spent Fuel Pool>

- It was confirmed that the water level of spent fuel pool was maintained full at after 06:00 March 18.
- As of 11:19 March 18th, the water temperature in the pool is 55°C.

● Fukushima Dai-ichi NPS (TEPCO)

(Naraha Town / Tomioka Town, Futaba County, Fukushima Prefecture.)

(1) The status of operation

- Unit1 (1,100MWe): automatic shutdown, cold shut down at 17:00, March 14th
- Unit2 (1,100MWe): automatic shutdown, cold shut down at 18:00, March 14th
- Unit3 (1,100MWe): automatic shutdown, cold shut down at 12:15, March 12th
- Unit4 (1,100MWe): automatic shutdown, cold shut down at 07:15, March 15th

(2) Major plant parameters (As of 12:00 March 19th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.18	0.11	0.13	0.15
Reactor water temperature	°C	37.5	34.2	27.0	31.1
Reactor water level*2	Mm	10,596	9,896	7,488	8,785
Suppression pool water temperature	°C	29	25	41	30
Suppression pool pressure	kPa (abs)	142	115	107	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) 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 of Fukushima Dai-ni NPS. (18:08 March 11th)
- TEPCO reported to NISA the events in accordance with the Article 10 regarding Units 1, 2 and 4 of Fukushima Dai-ni NPS. (18:33 March 11th)
- TEPCO reported to NISA the event (Loss of pressure suppression function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 1 of Fukushima Dai-ni NPS. (5:22 March 12th)
- TEPCO reported to NISA the event (Loss of pressure suppression function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 2 of Fukushima Dai-ni NPS. (5:32 March 12th)
- TEPCO reported to NISA the event (Loss of pressure suppression function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 4 of Fukushima Dai-ni NPS. (6:07 March 12th)

● Onagawa NPS (Tohoku Electric Power Co. Inc.)

(Onagawa Town, Ōga County and Ishinomaki City, Miyagi Prefecture)

(1) The status 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

Reading of monitoring post:

MP2 (Monitoring at the North End of Site Boundary)

approx. 6,500 nGy/h (19:00 March 14th)

→approx. 5,400 nGy/h (19:00 March 15th)

(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 (Loss of cooling function) 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-ichi 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-ichi NPS, TEPCO reported to NISA in accordance with the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 19:03 Government declared the state of nuclear emergency. (Establishment of Government Nuclear Emergency Response Headquarters and Local Emergency Response Headquarters)
- 20:50 Fukushima Prefecture's Emergency Response Headquarters issued a direction for the residents within 2 km radius from Unit 1 of Fukushima Dai-ichi NPS to evacuate. (The population of this area is 1,864.)
- 21:23 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayor of Okuma Town and the Mayor of Futaba Town were issued regarding the event occurred at Fukushima Dai-ichi NPS, TEPCO, in accordance with the Paragraph 3, the

Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:

- Direction for the residents within 3km radius from Unit 1 to evacuate
- Direction for the residents within 10km radius from Unit 1 to stay in-house

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

(March 12th)

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 Direction.

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 the Containment Vessel of Units 1 and 2 of Fukushima Dai-ichi NPS.

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

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

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

17:00 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

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

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

19:55 Directives from Prime Minister was issued regarding seawater injection to Unit No.1 of Fukushima Dai-ichi NPS.

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

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

(March 13th)

05:38 TEPCO reported to NISA the event (Total loss of coolant injection function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS. Recovering efforts by TEPCO of the power source and coolant injection function and work on venting are 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 in the Containment Vessel and fresh water injection started at 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 The order was issued for the Governor of Fukushima Prefecture, the Mayors of Okuma Town, Futaba Town, Tomioka Town and Namie Town in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity

decontamination screening.

09:38 TEPCO reported to NISA that Unit 1 of Fukushima Dai-ichi NPS reached a situation specified in the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

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

13:12 Fresh water injection was switched to seawater injection at 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 at Unit 1 and Unit 3 of Fukushima Dai-ichi NPS were temporarily interrupted due to the lack of seawater in pit.

03:20 Seawater injection at 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 cooling function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

22:13 TEPCO reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness

regarding Fukushima Dai-ni NPS.

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

(March 15th)

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

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

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

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

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

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

10:30 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the directives 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 is decided that the function of the Local Emergency Response Headquarter is moved to the Fukushima Prefectural Office.
- 11:00 Prime Minister directed the in-house stay area.
In-house stay was additionally directed to the residents in the area from 20 km to 30 km radius from Fukushima Dai-ichi NPS considering in-reactor situation.
- 16:30 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 22:00 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following directive.
For Unit 4: To implement the injection of water to the Spent Fuel Pool.
- 23:46 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 18th)

- 13:00 Ministry of Education, Culture, Sports, Science and Technology decided to reinforce the nation-wide monitoring survey in the emergency of Fukushima Dai-ichi and Dai-ni NPS.
- 15:55 TEPCO reported to NISA Accidents and Failures with regard to Fukushima Dai-ichi Unit 1,2,3&4 (Leakage of the radioactive materials inside of the reactor building to non-controlled area) pursuant to the Paragraph 3, the Article 62 of the Nuclear Regulation Act.
- 16:48 JAPCO reported to NISA Accidents and Failures with regard to Tokai Unit 2 (Failure of the seawater pump moter of the emergency diesel generator 2C) pursuant to the Paragraph 3, the Article 62 of the Nuclear Regulation Act.

< Possibility on radiation exposure (As of 08:00 March 19th) >

<Exposure of residents>

- (1) Including the 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 were divided into two groups which joined later to Nihonmatsu City Fukushima Gender Equality Centre.

No. of Counts	No. of Persons
18,000cpm	1
30,000-36,000cpm	1
40,000cpm	1
little less than 40,000cpm*	1
very small counts	5

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

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

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

- (5) The Fukushima Prefecture carried out the evacuation of patients and

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

<Exposure of workers>

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

One worker: 106.3 mSv. At the level of exposure no internal exposure and medical treatment was not required.

Other workers: No threat of internal exposure and no medical treatment needed.

- (2) The 6 out of 7 people working at the time of explosion at the Unit 3 of Fukushima Dai-ichi NPS injured and were conscious. The detailed measurement data are not available.

<Others>

- (1) Fukushima Prefecture has started the screening from 13 March at two health office in the prefecture. It is undertaken rotating the evacuation sites, and at 12 health offices (set up permanently), etc. The results of screening are being totalled up.
- (2) 5 members of Self-Defence Force who worked for water supply in Fukushima Dai-ichi NPS were exposed. After the work (March 12th), 30,000 cpm was counted by the measurement at Off site Centre. The counts after decontamination were between 5,000 and 10,000 cpm. One member was transferred to National Institute of Radiological Science. No other exposure of the Self-Defence Force member was confirmed at the Ministry of Defence.
- (3) As for policeman, the decontaminations of two policemen were confirmed by the National Police Agency. Nothing unusual was reported.

<Direction of administrating stable Iodine during evacuation>

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 (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).

<Situation of the injured (As of 08:00 March 19th)>

1. Injury due to earthquake
 - Two employees (slightly)
 - Two subcontract employees (one fracture in both legs)
 - Two missing (TEPCO's employee, missing in the turbine building of Unit 4)
 - One emergency patient (According to the local prefecture, one patient of cerebral infarction was transported by the ambulance).
 - Ambulance was requested for one employee complaining the pain at left chest outside of control area (conscious).
 - Two employees complaining discomfort wearing full-face mask in the main control room were transported to the industrial doctor of Fukushima Dai-ni NPS.
2. Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS
 - Four employees were injured at the explosion and smoke of Unit 1 around turbine building (out of control area) and were examined by Kawauchi clinic.
3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS
 - Four TEPCO's employees
 - Three subcontractor employees
 - Four members of Self-Defence Force (one of them was transported to National Institute of Radiological Sciences considering internal possible exposure. The examination resulted in no internal exposure. The member was discharged from the institute on March 16th.)
4. Other injuries

- A person who visited the clinic in Fukushima Dai-ni NPS from a transformer sub-station, claiming of a stomachache, was transferred to a clinic in Iwaki city, because the person was not contaminated.

<Situation of Resident Evacuation (As of 08:00 March 19th)>

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

Regarding the evacuation as far as 20-km from Fukushima Dai-ichi NPS and 10-km from Fukushima Dai-ni, 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.

(Contact Person)

Mr. Toshihiro Bannai

Director, International Affairs Office,
NISA/METI

Phone: +81-(0)3-3501-1087

Earthquake Report - JAIF

No.14

“Chief cabinet secretary Edano’s press briefing on radiation detected from food collected in Fukushima’s neighboring areas”

The following is the summary of the chief cabinet secretary Edano’s press briefing held at 16:00, March 19, 2011, on the consequence of the Fukushima #1 NPS.

- Reports were made by the related authorities that radiation exceeding the government-set radiation level was detected from the sampled milk in Fukushima Prefecture and the 6 samples of spinach in neighboring Ibaraki Prefecture. The limits are stipulated as provisional regulation values under the national Food Sanitation Law.

- At the Ministry of Health, Labor and Welfare and the Prefectural governments, monitoring and analysis will be conducted on the detected samples identifying where the food were collected and bound to be shipped. The national government will consider on taking necessary actions including ban on the product shipment and/or setting limits to the food intake, on assumption that these radiation detections are associated with the Fukushima NPS.

- These radiation limits have been set in accordance with International Committee on Radiation Protection’s recommendations. The limits are provisional regulation values based on the amount of food concerned in case that these would be continued to taken in all through one’s life. The radiation measured from the samples pose no immediate threat to health. For reference, the radiation detected in the milk, even if taken in all through a year, is just equivalent to radiation dose of one-time conduct of CT scanning. The radiation detected from the spinach is equivalent to one-fifth of one-time CT scanning.

- The point where the milk was collected in the Fukushima Prefecture is more 30km distance from the Fukushima #1 NPS. The radiation-detected spinach was collected in Ibaraki Prefecture, neighboring to the south of the Fukushima Prefecture. The prefectural boundary is 65 km distant from the NPS.

End

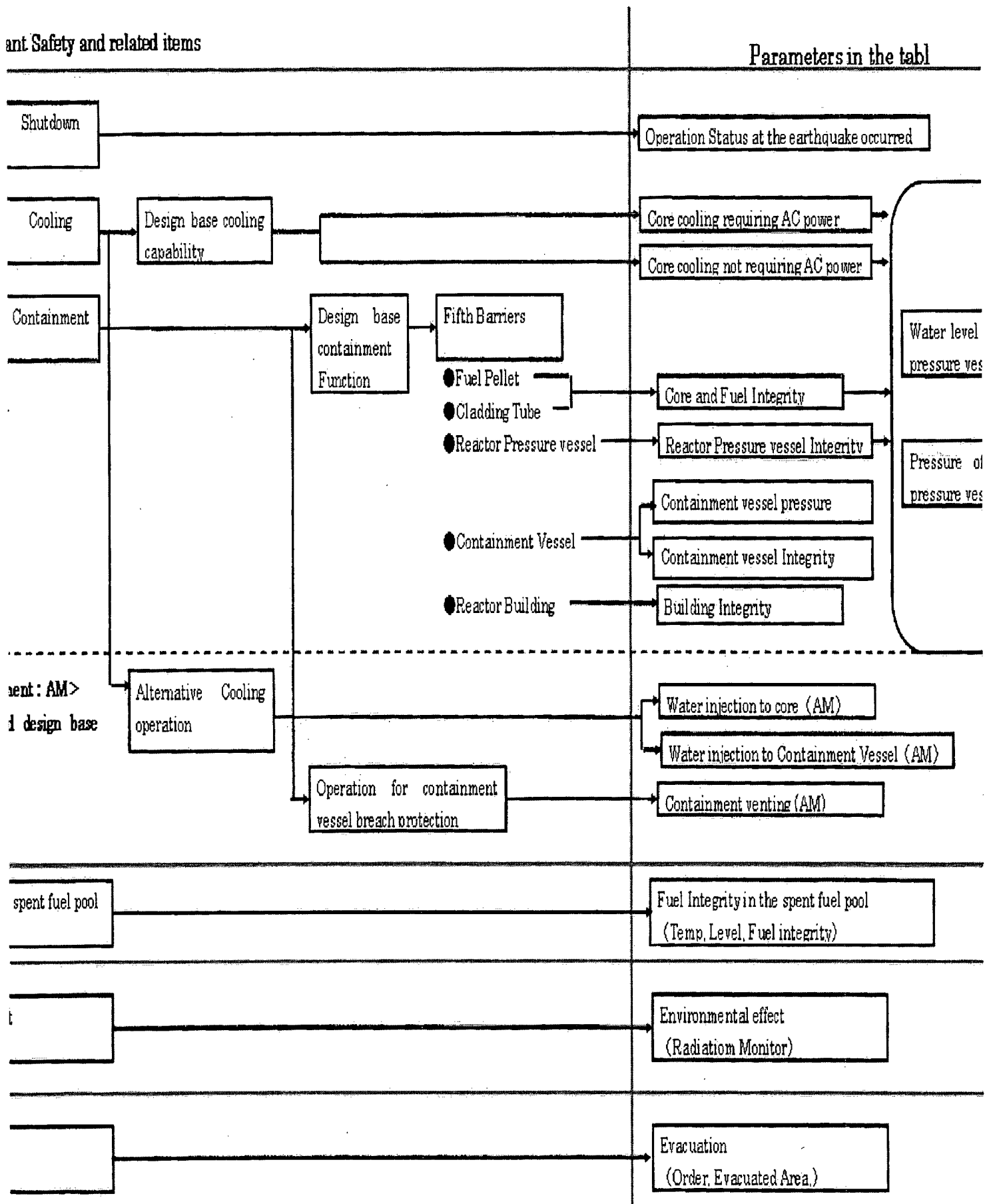
	Not Damaged	Damage Suspected	Might be "Not damaged"	Not Damaged	Not Damaged
er	Not Functional	Not Functional	Not Functional	Not necessary	Not necessary
power	Not Functional	Not Functional	Not Functional	Not necessary	Not necessary
	Severely Damaged	Slightly Damaged	Severely Damaged	Severely Damaged	Open a vent hole on the r hydrogen explosion
ssure Vessel	Fuel exposed partially or fully	Fuel exposed partially or fully	Fuel exposed partially or fully	Safe	Safe
ure Vessel	Stable	Unknown	Stable	Safe	Safe
	Unknown	Low	Low	Safe	Safe
ent Management)	Continuing (Seawater)	Continuing(Seawater)	Continuing(Seawater)	Not necessary	Not necessary
t Vessel (AM)	Continuing(Seawater)	to be decided(Seawater)	Continuing(Seawater)	Not necessary	Not necessary
	Temporally stopped	Temporally stopped	Temporally stopped	Not necessary	Not necessary
pool	Water injection to be considered	(No info.)	Water level low Water injection continue	Water level low Preparing Water Injection Hydrogen from the pool exploded	Pool Temp. High but decreasing
The West Gate: 313.1 μ Sv/h at 11:30, Mar. 19 North of Service Building: 2972.0 μ Sv/h at 19:00, Mar. 19					
20km from NPS * People who live between 20km to 30km from the Fukushima #1NPS are to stay indoors.					
	Level 5	Level 5	Level 5	Level 3	—
Immediate threat is damage of the fuels in the fuel pool outside the containment vessel. The operation for filling the pool with water has been conducted Unit-3. Unit-3 is now in operation to fill the water for more than 7 hours from about 14:00 March 19. Unit-4 is now in preparation for filling the water. Attempting to receive external power supply, TEPCO is laying a power cable between the transmission line. The line to Unit-1 and 2 was connected, and are scheduled tomorrow. Unit 3 to 6 are scheduled to be connected until March 20.					

	Fukushima Daini Nuclear Power Station			
	1	2	3	4
ut (MW)	1100 / 3293			
	BWR-5	BWR-5	BWR-5	BWR-5
quake occurred	In Service → Automatic Shutdown			
	All the units are in cold shutdown.			
	Level 3	Level 3	Level 3	Level 3
Unit-1, 2, 3 & 4, which were in full operation when the earthquake occurred, all shutdown automatically. External power supply was available after the quake. While injecting water into the reactor pressure vessel using make-up water system, TEPCO recovered the core cooling function and made the unit into cold shutdown state one by one. Latest Monitor Indication: 15.9 μ Sv/h at 12:00, Mar. 17 at NPS border Evacuation Area: 10km from NPS				

	Onagawa Nuclear Power Station		
	1	2	3
quake occurred	In Service -> Automatic Shutdown		
	All the units are in cold shutdown.		
	Unit-1, 2 & 3 all shutdown automatically when the earthquake occurred. Unit-2 & 3 were then led into cold shutdown state. Unit-2, which had just started operation after planned outage, got into cold shutdown immediately.		

	Tokai Daini
quake occurred	In Service => Automatic Shutdown
	In cold shutdown
	Tokai Daini NPP, which was in full operation when the earthquake occurred, shutdown automatically. Core cooling function was gotten into service after external power supply

ment". Then we create the chart. The following diagram is to show the correspondence relation of these parameters in the table to nuclear power plant safety.



re is scheduled to start in the afternoon.
shima Dai-ichi 6 supply power to Unit 5 and 6.
or circulation in the spent fuel pools of Unit 5.
ition in the spent fuel pools of Unit 6.(not cooling)

ns

	Unit 1	Unit 2	Unit 3	Unit 4	
ceasing Nuclear	11th 15:42 Report IAW Article 10* (Loss of power)	11th 15:42 Report IAW Article 10* (Loss of power)	11th 15:42 Report IAW Article 10* (Loss of power)	14th 04:08 Water temperature in Spent Fuel Storage Pool increased at 84°C	Water tempe is increasing
	11th 16:36 Event falling under Article 15* occurred (Incapability of water injection by core cooling function)	11th 16:36 Event falling under Article 15* occurred (Incapability of water injection by core cooling function)	13th 05:10 Event falling under Article 15* occurred (Loss of reactor cooling functions)	15th 09:38 Fire occurred on 3rd floor (extinguished spontaneously)	18th Vent hc rooftop for av
	12th 00:49 Event falling under Article 15* occurred (Abnormal rise of CV pressure)	14th 13:25 Event falling under Article 15* occurred (Loss of reactor cooling functions)	13th 08:41 Start venting	16th 05:45 Fire occurred (extinguished spontaneously)	19th 05:00 R restarted.
	12th 14:30 Start venting	14th 16:34 Seawater injection to RPV	13th 13:12 Seawater injection to RPV		
	12th 15:36 Hydrogen explosion	14th 22:50 Report IAW Article 15* (Abnormal rise of CV pressure)	14th 07:44 Event falling under Article 15* occurred (Abnormal rise of CV		
	12th 20:20 Seawater injection to RPV	15th 00:00 Start venting	14th 11:01 Hydrogen explosion		
		15th 06:10 Sound of explosion, Suppression Pool damaged	15th 10:22 Radiation dose 400mSv/h		
		15th 08:25 White smoke reeked	16th 06:40, 08:47 Radiation dose 400mSv/h		
			16th 08:34, 10:00 White smoke reeked		
			17th 09:48 Water discharge by SDF helicopters		
			17th 19:05 Water discharge by riot police (once)		
			17th 19:35 Water discharge by SDF (5 times)		
			18th 14:00 Water discharge by SDF		
			18th 14:42 Water discharge by TEPCO using US forces' water cannon truck (once)		
			19th 00:30 Ground-based water discharge by Tokyo Fire Department (~		
			19th P.M. Ground-based water discharge will restart		
External power supply of Unit-1 and 2 are scheduled to be connected until March 19.			External power supply of Unit 3 to 6 are scheduled to be connected until Ma		
	Water level (19th 03:30) (A) -1750mm (B) -1750mm	Water level (19th 03:30) -1400mm	Water level (19th 06:10) (A) -1200mm, (B) -2300mm	Water temperature of SF Storage Pool Unmesurable (since 14th 04:08)	Water tempe (18th 22:00) Unit 5 67.6° Unit 6 65.0°
	Reactor pressure (19th 03:30) (A) 0.205MPaG, (B) 0.155MPaG	Reactor pressure (19th 03:30) (A) -0.005MPaG, (B) -0.018MPaG	Reactor pressure (19th 06:10) (A) 0.005MPaG, (B) 0.045MPaG		
	CV pressure (19th 03:30) Unmesurable (14th 10:30-)	CV pressure (19th 03:30) 0.135MPaabs	CV pressure (19th 06:10) 0.045MPaabs		

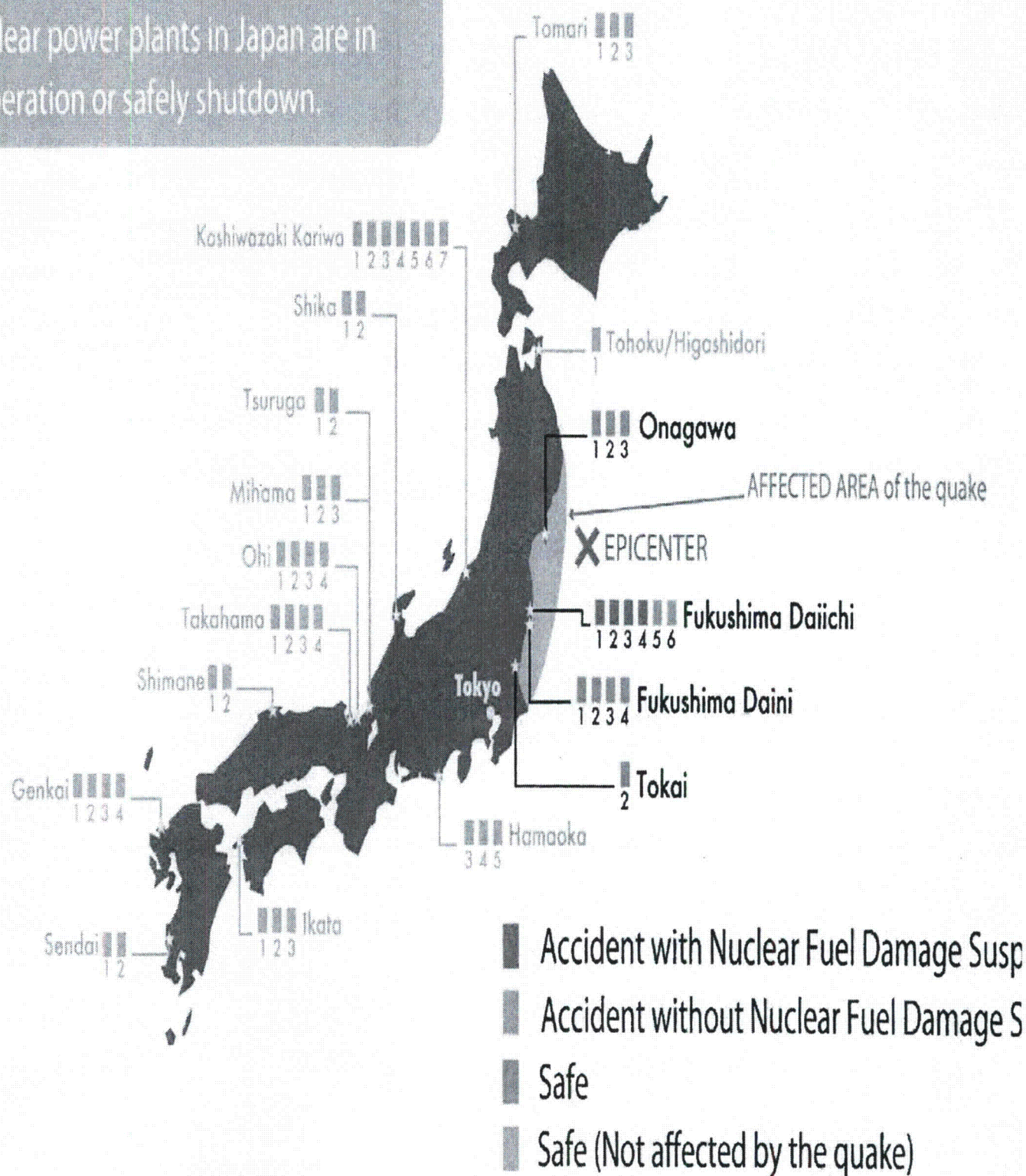
2, 4 have been recovered from a event falling under Article 15*)

n

ency was declared (Fukushima Dai-ichi NPS)
ency was declared (Fukushima Dai-ichi NPS)

STATUS OF THE NUCLEAR POWER PLANTS AFTER THE EARTHQUAKE

Very efforts and measures have been taken at Fukushima Daiichi nuclear power plants. Other nuclear power plants in Japan are in normal operation or safely shutdown.



From: OST01 HOC
Sent: Sunday, March 20, 2011 11:47 AM
To: PMT02 Hoc; PMT11 Hoc; ET07 Hoc; RST01 Hoc
Subject: FW: [Update] Ratings of Fukushima Dai-ichi
Attachments: en20110320-1.pdf; en20110319-6.pdf

-----Original Message-----

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Sunday, March 20, 2011 11:44 AM
To: HOO Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: [Update] Ratings of Fukushima Dai-ichi

From: NITOPS[SMTP:NITOPS@NNSA.DOE.GOV]
Sent: Sunday, March 20, 2011 11:43:43 AM
To: CMHT; HOO Hoc; NARAC; PMT01 Hoc; PMT02 Hoc; Hoc, PMT12; Blumenthal, Daniel; Brown, Courtney M (NST); Buntman, Steven; dartdoeliaison1@ofda.gov; dblumenthal@ofda.gov; DOE LNO to USAID; Froh, William; McClelland, Vince; Johnson, Steven; Thompson, Roger (NEV); (b)(6)
Cc: NITOPS
Subject: FW: [Update] Ratings of Fukushima Dai-ichi Auto forwarded by a Rule

For your information.

Nuclear Incident Team (NIT)
Office of Emergency Response (NA-42)
National Nuclear Security Administration U.S. Department of Energy nitops@nnsa.doe.gov nit@doe.sgov.gov 202-586-8100

-----Original Message-----

From: Kelly, John E (NE)
Sent: Saturday, March 19, 2011 10:58 PM
To: NITOPS; PWG
Subject: FW: [Update] Ratings of Fukushima Dai-ichi

-----Original Message-----

From: Bisconti, Giulia
Sent: Saturday, March 19, 2011 10:36 PM
To: DL-NERT-All; McGinnis, Edward
Subject: Fw: [Update] Ratings of Fukushima Dai-ichi

...Updated information from METI (press releases)....

----- Original Message -----

From: 山形 宏之 <yamagata-hiroyuki@meti.go.jp>

To: Bisconti, Giulia; okada-hideichi@meti.go.jp <okada-hideichi@meti.go.jp>; jun@hudson.org <jun@hudson.org>;

(b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; akahoshi-yasushi@meti.go.jp <akahoshi-yasushi@meti.go.jp>; okamoto-susumu@meti.go.jp <okamoto-susumu@meti.go.jp>; kenji.goto-3@mofa.go.jp <kenji.goto-3@mofa.go.jp>; arai-masayoshi@meti.go.jp <arai-masayoshi@meti.go.jp>; okuya-toshikazu@meti.go.jp <okuya-toshikazu@meti.go.jp>; ishizuka-yasushi@meti.go.jp <ishizuka-yasushi@meti.go.jp>; ishikawa-yasushi2@meti.go.jp <ishikawa-yasushi2@meti.go.jp>; takenaka-kensei@meti.go.jp <takenaka-kensei@meti.go.jp>; kurihara-yuko@meti.go.jp <kurihara-yuko@meti.go.jp>; McGinnis, Edward

Sent: Sat Mar 19 20:59:44 2011

Subject: [Update] Ratings of Fukushima Dai-ichi

Dear Ms. Giulia Bisconti,

Here are 2 new press releases.

1. The newest version of the situation of Fukushima Dai-ichi and Fukushima Dai-ni (NISA/METI) which I sent you yesterday.
2. Ratings of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi (NPS).

For further information

<http://www.nisa.meti.go.jp/english/index.html>

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: Bisconti, Giulia [mailto:Giulia.Bisconti@nuclear.energy.gov]

Sent: Sunday, March 20, 2011 12:07 AM

To: 'yamagata-hiroyuki@meti.go.jp'; 'okada-hideichi@meti.go.jp'; 'jun@hudson.org';

(b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp'; 'kenji.goto-3@mofa.go.jp'; 'arai-masayoshi@meti.go.jp'; 'okuya-toshikazu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp'; 'ishikawa-yasushi2@meti.go.jp'; 'takenaka-kensei@meti.go.jp'; 'kurihara-yuko@meti.go.jp'; McGinnis, Edward

Subject: Re: [Update] Radioactivity Level Map

Dear Yamagata-san:

Thank you very much. These updates are very helpful. I forwarded this information to our teams.

Giulia Bisconti

----- Original Message -----

From: 山形 宏之 <yamagata-hiroyuki@meti.go.jp>

To: Bisconti, Giulia; okada-hideichi@meti.go.jp <okada-hideichi@meti.go.jp>; jun@hudson.org <jun@hudson.org>;

(b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; akahoshi-yasushi@meti.go.jp <akahoshi-yasushi@meti.go.jp>; okamoto-susumu@meti.go.jp <okamoto-susumu@meti.go.jp>; 'GOTO KENJI' <kenji.goto-3@mofa.go.jp>; arai-masayoshi@meti.go.jp <arai-masayoshi@meti.go.jp>; okuya-toshikazu@meti.go.jp <okuya-toshikazu@meti.go.jp>; ishizuka-yasushi@meti.go.jp <ishizuka-yasushi@meti.go.jp>; 石

川 靖' <ishikawa-yasushi2@meti.go.jp>; 竹中 謙正 <takenaka-kensei@meti.go.jp>; 栗原 優子 <kurihara-yuko@meti.go.jp>

Sent: Sat Mar 19 09:51:26 2011

Subject: [Update] Radioactivity Level Map

Dear Ms. Giulia Bisconti,

Our office has made a map which shows radioactivity level by area.
It is based on press releases of MEXT, Fukushima prefecture and Miyagi prefecture.

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: 山形 宏之 [mailto:yamagata-hiroyuki@meti.go.jp]

Sent: Saturday, March 19, 2011 9:47 PM

To: 'Bisconti, Giulia'; 'okada-hideichi@meti.go.jp'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'jun@hudson.org'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp'; '石川 靖'; 竹中 謙正 (takenaka-kensei@meti.go.jp); 栗原 優子 (kurihara-yuko@meti.go.jp)

Subject: [Update]Information of Fukushima Daiichi

Dear Ms. Giulia Bisconti,

Here are two new materials.

1. Monitoring by prefectures at 9:30 19th March.

It is released by the Ministry of Education, Culture, Sports, Science and Technology(=MEXT).

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/19/1303840_8_1.pdf

2. The newest version of the situation of Fukushima Dai-ichi and Fukushima Dai-ni(NISA/METI), which Vice Minister Okada sent you two hours ago.

<http://www.nisa.meti.go.jp/english/index.html>

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: Bisconti, Giulia [mailto:Giulia.Bisconti@nuclear.energy.gov]

Sent: Saturday, March 19, 2011 8:32 PM

To: 'okada-hideichi@meti.go.jp'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'jun@hudson.org'; 'yamagata-hiroyuki@meti.go.jp'; 'ishikawa-yasushi2@meti.go.jp'

Subject: Re: Information of Fukushima Daiichi

Dear Okada-san:

Thank you very much for this information. I have shared it with my colleagues.

Giulia Bisconti

----- Original Message -----

From: 岡田 秀一 <okada-hideichi@meti.go.jp>

To: Bisconti, Giulia; [REDACTED] (b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; jun@hudson.org <jun@hudson.org>; '石川 靖' <ishikawa-yasushi2@meti.go.jp>; yamagata-hiroyuki@meti.go.jp <yamagata-hiroyuki@meti.go.jp>

Sent: Sat Mar 19 06:20:34 2011

Subject: Information of Fukushima Daiichi

Dear Ms. Giulia Bisconti,

Please find attached updates.

Best,

Hideichi Okada

March 19, 2011
Nuclear and Industrial Safety Agency

Seismic Damage Information (the 34th Release)
(As of 20:30 March 19th, 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 (NPS)

● Fukushima Dai-ichi NPS

<Situation of Water Spray>

Hyper Rescue Unit of Tokyo Fire Department is carrying out the operations of water spray on the Spent Fuel Pool of Unit 3. (As of 20:30 March 19th)

Start of water spray (14:10)

Finish expected (24:30)

< Situation of operations in the site and recovery of the power supply >

- 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 site is being carried out. (As of 13:30 March 19th)

(Attached sheet)

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

● Fukushima Dai-ichi NPS, TEPCO

(Okuma Town and Futaba Town, 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
 Unit 6 (1,100MWe): in periodic inspection outage

(2) Major Plant Parameters (18:30 March 19th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.306(A) 0.261(B)	0.092(A) 0.076(B)	0.051(C) 0.187(B)	—	1.754	0.559
CV Pressure (D/W) [kPa]	180	135	210	—	—	—
Reactor Water Level*2 [mm]	—1,750(A) —1,750(B)	—1,300(A) Not available(B)	—1,850(A) —2,300(B)	—	1,928	2,590
Suppression Pool Water Temperature (S/C) [°C]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	170	down scale	down scale	—	—	—
Spent Fuel Pool Water Temperature [°C]	—	—	—	84	48.1	67.0
Time of Measurement.	16:50 March 19th	16:30 March 19th	17:25 March 19th	04:08 March 14th	18:00 March 19th	18:00 March 19th

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

- TEPCO reported to NISA the event in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (15:42 March 11th)
- TEPCO reported to NISA the event (Loss of reactor cooling function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Units 1 and 2. (16:36 March 11th)
- The cable for receiving electricity from the transmission line of Tohoku Electric Power Company was installed. It is scheduled to be connected to Unit 2 after the completion of discharge work. (17:30 March 17th)
The content of operations for recovery of external power supply to Units 1 to 4 (Power supply from electric transmission grid of Tohoku Electric Power Co. and from the route via transformer sub-station of TEPCO) is being confirmed. (06:30 March 18th)

<Unit 1>

- Seawater injection to the Reactor Pressure Vessel (RPV) via the Fire Extinguish Line started. (11:55 March 13th)
→Temporary interruption of the injection (01:10 March 14th)
- The sound of explosion in Unit 1 occurred. (15:36 March 12th)
- Seawater is being injected. (As of 12:00 March 19th)

<Unit 2>

- Water injection function was sustained. (14:00 March 13th)
- The Blow-out Panel of reactor building was opened due to the explosion in the reactor building of Unit 3. (After 11:00 March 14th)
- Reactor water level tended to decrease. (13:18 March 14th) TEPCO reported to NISA the event (Loss of reactor cooling functions) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (13:49 March 14th)
- Seawater injection to RPV via the Fire Extinguish line was ready. (19:20 March 14th)
- Water level in RPV of Unit 2 tended to decrease. (22:50 March 14th)
- A sound of explosion was made in Unit 2. As the pressure in Suppression Chamber decreased (06:10 March 15th), there was a

possibility that an incident occurred in the Chamber. (About 06:20 March 15th)

- Seawater injection to RPV continues. (As of 12:00 March 19th)
- 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. Today's work finished. (As of 13:30 March 19th)

<Unit 3>

- 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)
- The pressure in Primary Containment Vessel (PCV) of Unit 3 rose unusually. (07:44 March 14th) TEPCO reported to NISA on the event falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (7:52 March 14th)
- In Unit 3, the explosion like Unit 1 occurred around the Reactor Building (11:01 March 14th)
- The white smoke like steam generated from Unit 3. (08:30 March 16th)
- Because of the possibility that PCV of Unit 3 was damaged, the workers evacuated from the main control room of Units 3 and 4 (common control room). (10:45 March 16th) Thereafter the operators returned to the room and restarted the operation of water injection. (11:30 March 16th)
- Seawater was discharged 4 times to Unit 3 by the helicopters of the Self-Defence Force. (9:48, 9:52, 9:58 and 10:01 March 17th)
- The riot police arrived at the site for the water spray from the grand. (16:10 March 17th)
- The Self-Defence Force started the water spray from 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. (March 17th)

(The starting time of water spray by each engine: 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)
- Seawater is being injected to RPV. (As of 10:00 March 19th)
- Hyper Rescue Unit (14 vehicles) arrived at the Main Gate (23:10 March 18th) and 6 vehicles of them entered the NPS in order to spray water from the ground. (23:30 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department is carrying out water spray. (14:10 March 19th)

<Unit 4>

- 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 temperature of water in the Spent Fuel Pool at Unit 4 had increased. (84 °C as of 04:08 March 14th)
- The fire occurred at Unit 4. (5:45 March 15th) TEPCO reported that no fire could be confirmed on the ground. (06:15 March 16th)
- Because of the replacement work of the Shroud of RPV, no fuel was inside the RPV.

<Units 5 and 6>

- Emergency Diesel Generator (1 unit) for Unit 6 is operable and supplying electricity to Units 5 and 6. Water injection to RPV and Spent Fuel Pool through the system of Make up Water Condensate (MUWC) is being carried.
- The second unit of Emergency Diesel Generator (A) for Unit 6 started up. (04:22 March 19th)
- The pump for Residual Heat Removal (RHR) (C) for Unit 5 started up and recovered heat removal function. It cools Spent Fuel Storage Pool with priority. (Power supply : Emergency Diesel Generator for Unit 6)

(05:00 March 19th)

<Common Spent Fuel Pool>

- It was confirmed that the water level of Spent Fuel Pool was maintained full at after 06:00 March 18th.
- As of 11:19 March 18th, the water temperature in the pool is 55°C.

● Fukushima Dai-ichi 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 18:00 March 19th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.15	0.11	0.11	0.14
Reactor water temperature	°C	51.4	33.7	27.0	34.7
Reactor water level*2	mm	7,296	9,846	7,487	8,785
Suppression pool water temperature	°C	28	24	42	29
Suppression pool pressure	kPa (abs)	145	114	107	116
Remarks		cold shutdown	Cold shutdown	cold shutdown	cold shutdown

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

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

● Onagawa NPS (Tohoku Electric Power Co. Inc.)

(Onagawa Town, Oga County and Ishinomaki City, Miyagi Prefecture)

(1) The state of operation

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

(2) Readings of monitoring post, etc.

MP2 (Monitoring at the North End of Site Boundary)

approx. 6,500 nGy/h (19:00 March 14th)

→approx. 5,400 nGy/h (19:00 March 15th)

(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 (Loss of reactor cooling function) 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-ichi 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-ichi NPS, TEPCO reported to NISA in accordance with the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 19:03 The Government declared the state of nuclear emergency. (Establishment of Government Nuclear Emergency Response Headquarters and Local Emergency Response Headquarters)
- 20:50 Fukushima Prefecture's Emergency Response Headquarters issued a direction for the residents within 2 km radius from Unit 1 of Fukushima Dai-ichi NPS to evacuate. (The population of this area is 1,864.)
- 21:23 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayor of Okuma Town and the Mayor of Futaba Town were issued regarding the event occurred at Fukushima Dai-ichi NPS, TEPCO, in accordance with the Paragraph 3, the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
 - Direction for the residents within 3km radius from Unit 1 of

Fukushima Dai-ichi NPS to evacuate

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

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

(March 12th)

05:22 Regarding Unit 1 of Fukushima Dai-ichi 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-ichi 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 Direction.

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

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

07:45 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayors of Hirono Town, Naraha Town, Tomioka Town and Okuma Town were issued regarding the event occurred at Fukushima Dai-ichi 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-ichi NPS to evacuate
- Direction for the residents within 10km radius from Fukushima Dai-ichi NPS to stay in-house

17:00 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on

Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

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

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

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

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

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

(March 13th)

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

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

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

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

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

09:38 TEPCO reported to NISA that Unit 1 of Fukushima Dai-ichi NPS reached a situation specified in the Article 15 of the Act on Special

Measures Concerning Nuclear Emergency Preparedness.

- 13:09 Tohoku Electric Power Co. reported to NISA that Onagawa NPS reached a situation specified in the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 13:12 Fresh water injection was switched to seawater injection for Unit 3 of Fukushima Dai-ichi NPS.
- 14:36 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 14th)

- 01:10 Seawater injection for Units 1 and 3 of Fukushima Dai-ichi NPS were temporarily interrupted due to the lack of seawater in pit.
- 03:20 Seawater injection for Unit 3 of Fukushima Dai-ichi NPS was restarted.
- 04:40 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 05:38 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 07:52 TEPCO reported to NISA the event (Unusual rise of the pressure in PCV) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS.
- 13:25 Regarding Unit 2 of Fukushima Dai-ichi NPS, TEPCO recognised the event (Loss of reactor cooling function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 22:13 TEPCO reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 22:35 TEPCO reported to NISA the event (Unusual increase of radiation

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

(March 15th)

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

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

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

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

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

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

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

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

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

10:59 Considering the possibility of lingering situation, it was decided that the function of the Local Emergency Response Headquarter was moved to the Fukushima Prefectural Office.

11:00 Prime Minister directed the in-house stay area.

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

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

22:00 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following directive.

For Unit 4: To implement the injection of water to the Spent Fuel Pool.

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

(March 18th)

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

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

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

(March 19th)

07:44 The second unit of Emergency Diesel Generator (A) for Unit 6 started up.

TEPCO reported to NISA that the pump for RHR (C) for Unit 5 started up and started to cooling Spent Fuel Storage Pool. (Power supply: Emergency Diesel Generator for Unit 6)

< Possibility on radiation exposure (As of 20:30 March 19th) >

<Exposure of residents>

- (1) Including the about 60 evacuees from Futaba Public Welfare Hospital to Nihonmatsu City Fukushima Gender Equality Centre, as the result of measurement of 133 persons at the Centre, 23 persons counted more than 13,000 cpm were decontaminated.
- (2) The 35 residents transferred from Futaba Public Welfare Hospital to Kawamata Town Saiseikai Kawamata Hospital by private bus arranged by Fukushima Prefecture were judged to be not contaminated by the Prefectural Response Centre.
- (3) As for the about 100 residents in Futaba Town evacuated by bus, the results of measurement for 9 of the 100 residents were as follows. The evacuees, moving outside the Prefecture (Miyagi Prefecture), were divided into two groups, which joined later to Nihonmatsu City Fukushima Gender Equality Centre.

No. of Counts	No. of Persons
18,000cpm	1
30,000-36,000cpm	1
40,000cpm	1
little less than 40,000cpm*	1
very small counts	5

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

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

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

being decontaminated.

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

<Exposure of workers>

- (1) As for the 18 workers conducting operations in Fukushima Dai-ichi NPS, results of measurements are as follows:
One worker: At the level of exposure as 106.3 mSv, no risk of internal exposure and no medical treatment required.
Other workers: At the level of no risk for health but concrete numerical value is unknown.
- (2) As for the 6 out of 7 people working at the time of explosion at around the Unit 3 of Fukushima Dai-ichi NPS who were injured and conscious, the detailed measurement data are not available.

<Others>

- (1) Fukushima Prefecture has started the screening from 13 March. It is carried out by rotating the evacuation sites and at the 12 places (set up permanently) such as health offices. The results of screening are being totalled up.
- (2) 5 members of Self-Defence Force who worked for water supply in Fukushima Dai-ichi NPS were exposed. After the work (March 12th), 30,000 cpm was counted by the measurement at Off site Centre. The counts after decontamination were between 5,000 and 10,000 cpm. One member was transferred to National Institute of Radiological Science. No other exposure of the Self-Defence Force member was confirmed at the Ministry of Defence.

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

<Direction of administrating stable Iodine during evacuation>

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 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).

<Situation of the injured (As of 20:30 March 19th)>

1. Injury due to earthquake
 - Two employees (slightly)
 - Two subcontract employees (one fracture in both legs)
 - Two missing (TEPCO's employee, missing in the turbine building of Unit 4)
 - One emergency patient (According to the local prefecture, one patient of cerebral infarction was transported by the ambulance).
 - Ambulance was requested for one employee complaining the pain at left chest outside of control area (conscious).
 - Two employees complaining discomfort wearing full-face mask in the main control room were transported to Fukushima Dai-ichi NPS for a consultation with an industrial doctor.
2. Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS
 - Four employees were injured at the explosion and smoke of Unit 1 around turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic.
3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS
 - Four TEPCO's employees
 - Three subcontractor employees
 - Four members of Self-Defence Force (one of them was transported to National Institute of Radiological Sciences considering internal possible

exposure. The examination resulted in no internal exposure. The member was discharged from the institute on March 16th.)

4. Other injuries

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

<Situation of Resident Evacuation (As of 20:30 March 19th)>

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

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

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

(Contact Person)

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March 18, 2011

Nuclear and Industrial Safety Agency

INES Ratings on the Events in Fukushima Dai-ichi NPS and Fukushima Dai-ni NPS by the Tohoku Regional Pacific Ocean Offshore Earthquake

Ratings of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi Nuclear Power Station (NPS) and Fukushima Dai-ni NPS, Tokyo Electric Power Co. Inc. (TEPCO), by the Tohoku Regional Pacific Ocean Offshore Earthquake are as follows:

1. INES

- INES is the rating, which International Atomic Energy Agency (IAEA) and Nuclear Energy Agency, Organization for Economic Cooperation and Development (OECD/NEA) established and proposed to the Member States in March 1992, in order to indicate the impact on safety by the individual event in a nuclear facility and so on.
- Japan has utilized it since 1 August 1992. As a process, when an event occurs, firstly, Nuclear and Industrial Safety Agency (NISA) temporarily rates on it and then, considering the confirmed recurrence prevention measures based on the concrete causes found, the International Nuclear Event Scale Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering), which set up in the Nuclear and Industrial Safety subcommittee of the Advisory Committee for Natural Resources and Energy, technically evaluating from specialist view points, assess the official level.

2. Events in Fukushima Dai-ichi NPS and Fukushima Dai-ni NPS, TEPCO, by the Tohoku Regional Pacific Ocean Offshore Earthquake

(1) Units 1, 2 and 3 of Fukushima Dai-ichi NPS

In these Units, the coolant injection by the Turbine Driven Pump

became the only workable cooling function, due to total loss of alternative current power supply resulted from inability to provide services by the external power supply and pumps for emergency diesel power generator cooling system and Residual Heat Removal (RHR) seawater cooling system, caused by the flooding by tsunami.

It is considered that such total loss of cooling function led to the reactor core to be damaged, due to the inability to provide service by the Turbine Driven Pump resulted from the temperature rise in the Suppression Chamber caused by the operation of the pump.

The leakage of radioactive materials continues.

(Temporary rating of INES*)

Criterion 1	Criterion 2	Criterion 3	Rating
TBD	5	3	(5)

(2) Unit 4 of Fukushima Dai-ichi NPS

In the Unit, the cooling function and making up water function for the spent fuel pit failed to work, due to total loss of alternative current power supply resulted from inability to provide services by the external power supply and pumps for emergency diesel power generator cooling system and RHR seawater cooling system, caused by the flooding by tsunami.

The reactor building was damaged by an explosion assumed to be caused by hydrogen build-up, resulted from boiling-off and evaporation of the water in the pit due to decay heat of spent fuels.

(Temporary rating of INES*)

Criterion 1	Criterion 2	Criterion 3	Rating
TBD	TBD	3	(3)

The rating on Criteria 1 and 2 are to be determined later because the event is not led to be ceased.

(3) Units 1, 2 and 4 of Fukushima Dai-ni NPS

In these Units, decay heat could not be transferred to the sea, due to inability to provide services by the pump for RHR seawater cooling system, caused by the flooding by tsunami.

The Turbine Driven Pump became unworkable resulted from the temperature rise in the Suppression Chamber caused by the operation of the pump. However, the pump for RHR seawater cooling system was fixed

and its operation led the reactor to cold shutdown.

(Temporary rating of INES*)

Criterion 1	Criterion 2	Criterion 3	Rating
-	-	3	3

3. Procedures to be taken

The official level of INES is assessed by the International Nuclear Event Scale Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering), which set up in the Nuclear and Industrial Safety Subcommittee of the Advisory Committee for Natural Resources and Energy, through the technical evaluation from specialist view points, considering the confirmed recurrence prevention measures based on the concrete causes found.

(*Reference)

INES (International Nuclear and Radiological Event Scale) is rated by 3 criteria (Criterion 1: People and the Environment, Criterion 2: Radiological Barriers and Controls at facilities, Criterion 3: Defence in Depth). The highest level among the three becomes the rating of the event. The scale ranges from level 0 (No safety significance) to level 7 (Major accident).

(Ref. INES User's Manual 2008 Edition)

(Contact Person)

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Phone: +81-(0)3-3501-1087

From: OST01 HOC
Sent: Sunday, March 20, 2011 9:19 AM
To: LIA03 Hoc; RST01 Hoc; Hoc, PMT12
Subject: FW: Tokyo March 20

-----Original Message-----

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Sunday, March 20, 2011 9:13 AM
To: HOO Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Tokyo March 20

From: NITOPS[SMTP:NITOPS@NNSA.DOE.GOV]
Sent: Sunday, March 20, 2011 9:12:28 AM
To: DL-Policy Working Group; CMHT; HOO Hoc; NARAC; PMT01 Hoc; PMT02 Hoc;
Hoc, PMT12; Blumenthal, Daniel; Brown, Courtney M (NST); Buntman, Steven;
dartdoelais1@ofda.gov; dblumenthal@ofda.gov; DOE LNO to USAID;
Froh, William; McClelland, Vince; Thompson, Roger (NEV); (b)(6)
Subject: FW: Tokyo March 20
Auto forwarded by a Rule

-----Original Message-----

From: Lyons, Peter
Sent: Sunday, March 20, 2011 9:07 AM
To: NITOPS
Subject: FW: Tokyo March 20

Info from one of the NE representatives in Tokyo. I didn't see anything that was distinctly new, but your team may wish to review it to be sure.

Pete Lyons

-----Original Message-----

From: Peko, Damian
Sent: Sunday, March 20, 2011 8:58 AM
To: Regalbuto, Monica; Johnson, Shane; Kelly, John E (NE); Lange, Robert; McGinnis, Edward; Boudreau, Robert; Golub, Sal; Harlow, Susan; Herczeg, John; Stark, Richard; Miotla, Dennis; Griffith, Andrew; Goldner, Frank; Lyons, Peter; Pidlusky, Adrian
Subject: Tokyo March 20

Pete et al

Key issues from March 20.

Status: The cooperation with MOD and TEPCO continues to improve. At the site the situation remains the same though there was one emergent concern with reactor number, discussed below. Reactor building three had been being sprayed down by a series of fire trucks. TEPCO rigged a high capacity pump to a Super Pumper fire truck and were able to steadily wash down Reactor Building number three for 8 hours, poured 1,260 tons of water onto the spent fuel pool. They have also moved a concrete pump truck on site though I do not know if it has been used. They expect to eventually move the equipment spraying down Reactor Building number 4 to Reactor Building number 4.

Bechtel Water Cannon: The first of four Bechtel pumping system has been loaded onto an Australian C-17 and is enroute to Australia as of this writing. At this time there are no specific plans to ship the other three units.

NRC Response Team: The head of the NRC team, Chuck Costa, advised me that the focus of the NRC team was shifting from aggressively supporting the Japanese in responding to the ongoing events to transitioning to a more medium-longer term support of the Ambassador and of Japan in recovery and responding. The initial NRC team should be pulling out in the near future and another group will be coming in. NRC will tailor that staffing to be more familiar with radiological consequences of a nuclear accident and protective measures. This team will be a liaison with technical staff back at NRC on mitigation activities. Transitional activities may include:

----Developing and presenting to TEPCO approaches for conversion from salt water injection to fresh water injection in the three reactors.

----Helping TEPCO develop a prioritized list of activities (Target Set) for stabilization and recovery and also help with establishing access (e.g. shielded pathways, Robots, etc.) to key areas that need to be manned for recovery operations.

Chuck will recommend that in the longer run, after the replacement team departs, a small staff remain; an NRC liaison, and NNSA liaison, a DOE liaison, and an NR liaison.

TEPCO Meeting: I attended a meeting with TEPCO, along with an NRC representative. NRC was under the impression that the meeting would primarily focus on the issue of salt water in the reactor vessel. The Japanese were not prepared for the discussion of saltwater and wanted it instead discuss Japan's material and equipment needs. They were particularly focused on obtaining assets for remote interrogation such as robots that could enter the contaminated buildings and drones that could fly over the reactors and spent fuel pools. It was a much deeper conversation than we had had with TEPCO before and also very specific. They also discussed the water cannon systems being flown in from Australia. They were under the impression that this system was a hose on boom system that would enable them to pour water directly onto a specific area rather than a broad spray. Once they realized this was a water cannon only, they said they were not interested. The first of the four pumps will be delivered but the remaining three may not be brought up from Australia. One point that came out of this conversation was they were very concerned about the stability of the platform for the water delivery systems. TEPCO representatives said the ground was very soft and compressible (though not soggy). I asked if this was from the earthquake, possibly liquefactions, but I did not get an understandable answer.

There had been some indications that the pressure was increasing in Reactor 3. NHK had been reporting that TEPCO was going to vent Unit 3 to reduce pressure, which was causing some concern over the radioactive plume that would

result. I asked a TEPCO official about this and after placing a call he said that TEPCO has no plans to vent Unit three at this time. He went on to say that if conditions changed, they might vent. The NRC asked if venting had to be done manually and they responded that because the building has no power, it has to be done manually. After having reported that TEPCO was planning to gradually vent some radiation-tainted air from Reactor No. 3, NHK followed up at there original announcement with news that the pressure had stabilized and the venting plan had been scrapped.

Thanks

Damian

From: Way, Ralph
Sent: Sunday, March 20, 2011 11:27 AM
To: LIA03 Hoc
Subject: RE: Request for information for contact purposes

I'm scheduled to depart 3/24, can I provide the cable and othe USAID required info tomorrow moring or do trhey need it today?

r

From: LIA03 Hoc
Sent: Sunday, March 20, 2011 11:17 AM
To: Way, Ralph
Subject: RE: Request for information for contact purposes

Thanks, Ralph.

Cheers,

Karen

From: Way, Ralph
Sent: Sunday, March 20, 2011 10:50 AM
To: LIA03 Hoc
Cc: wayr@erols.com; Holahan, Patricia
Subject: RE: Request for information for contact purposes

From: LIA03 Hoc
Sent: Sunday, March 20, 2011 8:49 AM
To: Dorman, Dan; Scott, Michael; Blamey, Alan; Giessner, John; Taylor, Robert; Jackson, Todd; Miller, Marie; Ali, Syed; Sheikh, Abdul; Way, Ralph; Ramsey, Jack
Cc: LIA02 Hoc
Subject: Request for information for contact purposes

All,

Please respond only to me (not to all as your response will have PII) to provide the information requested below. We need this information for ongoing contact purposes, and to make sure you have the telephonic equipment you need. Also please note that other travelers in your group cannot sign for your dosimeters. You need to stop by the Ops Center, International Liaison desk, to personally sign for that equipment.

NRC TRAVELERS IN JAPAN

Name	Phone Number	Email	Flight Arrival (in Japan	Flight Arrival (in Eastern	Return date to U.S.	Home telephone #	Emergency contact name	Do you need a blackberry &/or has it been internationally	Have you picked up your dosimeter
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IIII/74

			Time)	Daylight Time)				enabled?	
Dan Dorman Deputy Director, NMSS		Daniel.Dorman@nrc.gov							
Mike Scott Deputy Director, Division of Systems Analysis, RES		Michael.Scott@nrc.gov							
Alan Blamey, RII TITLE?		Alan.Blamey@nrc.gov							
Jack Giessner, RIII TITLE?		@nrc.gov							
Rob Taylor SG Tube Integrity and Chemical Engineering Branch, NRR		Robert.Taylor@nrc.gov							
Todd Jackson Commercial and R&D Branch, DNMS, RI		Timothy.kelb@nrc.gov							
Marie Miller Chief, Material Security and Industrial Branch, RI		Marie.Miller@nrc.gov							
Syed Ali Senior Level Advisor, Div of Engineering, RES		Syed.Ali@nrc.gov							
Abdul Sheikh, NRR TITLE?		Abdul.Sheikh@nrc.gov							
Ralph Way, Senior Level Advisor, Divi of Seucrity Operations, NSIR	(b)(6)	Ralph.Way@nrc.gov			(b)(6)	(b)(6)	(b)(6) has NOT been internationally enabled	NO	
Jack Ramsey, Senior Level Advisor, OIP		Jack.Ramsey@nrc.gov							

From: McIntyre, David
To: Schogol, Jeffrey
Subject: RE: Is NRC tracking the path of the radioactive plume from Fukushima?
Date: Sunday, March 20, 2011 4:08:00 PM

The only guidance we have issued is the recommendation that US citizens evacuate from a 50-mile radius of the plant. I don't know if DOD has issued separate guidance for USFJ.

From: Schogol, Jeffrey [mailto:(b)(6)]
Sent: Sunday, March 20, 2011 4:03 PM
To: McIntyre, David
Subject: RE: Is NRC tracking the path of the radioactive plume from Fukushima?

Thank you.

Has the NRC issued any guidance so far for troops and military families living in Japan?

There are rumors that bases will be exposed to radiation.

Jeff Schogol

From: McIntyre, David [mailto:David.McIntyre@nrc.gov]
Sent: Sun 3/20/2011 4:01 PM
To: Schogol, Jeffrey
Subject: Re: Is NRC tracking the path of the radioactive plume from Fukushima?

I doubt we would, because that can change rapidly with the weather conditions. But we are tracking the readings in order to evaluate whether to change our protective action recommendations.

David McIntyre
NRC Office of Public Affairs
(b)(6) (mobile)
301-415-8200 (office)

Sent from my BlackBerry, which is wholly respsnble for all typos.

From: Schogol, Jeffrey <(b)(6)>
To: McIntyre, David
Sent: Sun Mar 20 15:55:27 2011
Subject: RE: Is NRC tracking the path of the radioactive plume from Fukushima?

If I sent you a map of where U.S. bases in Japan are located, could NRC say whether any might see elevated levels of radiation?

Jeff Schogol

1111/75

From: LIA07 Hoc
Sent: Sunday, March 20, 2011 12:11 PM
To: OST04 Hoc
Subject: FW: [Update] Radioactivity Level Map
Attachments: 110320-2 radioactivity level by area.pdf

Save it in foreign modeling folder.

-----Original Message-----

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Sunday, March 20, 2011 11:45 AM
To: HOO Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: [Update] Radioactivity Level Map

From: NITOPS[SMTP:NITOPS@NNSA.DOE.GOV]
Sent: Sunday, March 20, 2011 11:45:22 AM
To: Blumenthal, Daniel; Brown, Courtney M (NST); Buntman, Steven; dartdoeliasion1@ofda.gov;
dblumenthal@ofda.gov; DOE LNO to USAID; Froh, William; McClelland, Vince; Johnson, Steven; Thompson, Roger
(NEV); (b)(6) CMHT; HOO Hoc; NARAC; PMT01 Hoc; PMT02 Hoc; Hoc, PMT12
Cc: NITOPS
Subject: FW: [Update] Radioactivity Level Map Auto forwarded by a Rule

For your awareness.

Nuclear Incident Team (NIT)
Office of Emergency Response (NA-42)
National Nuclear Security Administration U.S. Department of Energy nitops@nnsa.doe.gov nit@doe.gov 202-586-8100

-----Original Message-----

From: Kelly, John E (NE)
Sent: Saturday, March 19, 2011 10:54 PM
To: NITOPS; PWG
Subject: FW: [Update] Radioactivity Level Map

-----Original Message-----

From: Bisconti, Giulia
Sent: Saturday, March 19, 2011 10:41 PM
To: DL-NERT-All
Cc: McGinnis, Edward
Subject: Fw: [Update] Radioactivity Level Map

Radioactivity map from METI, using MEXT data....

----- Original Message -----

From: 山形 宏之 <yamagata-hiroyuki@meti.go.jp>

To: Bisconti, Giulia; okada-hideichi@meti.go.jp <okada-hideichi@meti.go.jp>; jun@hudson.org <jun@hudson.org>;

(b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; akahoshi-yasushi@meti.go.jp <akahoshi-yasushi@meti.go.jp>; okamoto-susumu@meti.go.jp <okamoto-susumu@meti.go.jp>; kenji.goto-3@mofa.go.jp <kenji.goto-3@mofa.go.jp>; arai-masayoshi@meti.go.jp <arai-masayoshi@meti.go.jp>; okuya-toshikazu@meti.go.jp <okuya-toshikazu@meti.go.jp>; ishizuka-yasushi@meti.go.jp <ishizuka-yasushi@meti.go.jp>; ishikawa-yasushi2@meti.go.jp <ishikawa-yasushi2@meti.go.jp>; takenaka-kensei@meti.go.jp <takenaka-kensei@meti.go.jp>; kurihara-yuko@meti.go.jp <kurihara-yuko@meti.go.jp>; McGinnis, Edward; Kiichiro_Sato@jetro.go.jp <Kiichiro_Sato@jetro.go.jp>

Sent: Sat Mar 19 22:24:48 2011

Subject: [Update] Radioactivity Level Map

Dear Ms. Giulia Bisconti,

Here is the latest version of the radioactivity level map which our office has made.
It is based on press releases of MEXT, Fukushima prefecture and Miyagi prefecture.

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: 山形 宏之 [mailto:yamagata-hiroyuki@meti.go.jp]

Sent: Sunday, March 20, 2011 10:00 AM

To: 'Bisconti, Giulia'; 'okada-hideichi@meti.go.jp'; 'jun@hudson.org'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp'; 'kenji.goto-3@mofa.go.jp'; 'arai-masayoshi@meti.go.jp'; 'okuya-toshikazu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp'; 'ishikawa-yasushi2@meti.go.jp'; 'takenaka-kensei@meti.go.jp'; 'kurihara-yuko@meti.go.jp'; 'McGinnis, Edward'

Subject: [Update] Ratings of Fukushima Dai-ichi

Dear Ms. Giulia Bisconti,

Here are 2 new press releases.

1. The newest version of the situation of Fukushima Dai-ichi and Fukushima Dai-ni(NISA/METI) which I sent you yesterday.
2. Ratings of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi (NPS).

For further information

<http://www.nisa.meti.go.jp/english/index.html>

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: Bisconti, Giulia [mailto:Giulia.Bisconti@nuclear.energy.gov]

Sent: Sunday, March 20, 2011 12:07 AM

To: 'yamagata-hiroyuki@meti.go.jp'; 'okada-hideichi@meti.go.jp'; 'jun@hudson.org'; (b)(6)
Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp';
'kenji.goto-3@mofa.go.jp'; 'arai-masayoshi@meti.go.jp'; 'okuya-toshikazu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp';
'ishikawa-yasushi2@meti.go.jp'; 'takenaka-kensei@meti.go.jp'; 'kurihara-yuko@meti.go.jp'; McGinnis, Edward
Subject: Re: [Update] Radioactivity Level Map

Dear Yamagata-san:

Thank you very much. These updates are very helpful. I forwarded this information to our teams.

Giulia Bisconti

----- Original Message -----

From: 山形 宏之 <yamagata-hiroyuki@meti.go.jp>

To: Bisconti, Giulia; okada-hideichi@meti.go.jp <okada-hideichi@meti.go.jp>; jun@hudson.org <jun@hudson.org>; (b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; akahoshi-yasushi@meti.go.jp <akahoshi-yasushi@meti.go.jp>; okamoto-susumu@meti.go.jp <okamoto-susumu@meti.go.jp>; 'GOTO KENJI' <kenji.goto-3@mofa.go.jp>; arai-masayoshi@meti.go.jp <arai-masayoshi@meti.go.jp>; okuya-toshikazu@meti.go.jp <okuya-toshikazu@meti.go.jp>; ishizuka-yasushi@meti.go.jp <ishizuka-yasushi@meti.go.jp>; '石川 靖' <ishikawa-yasushi2@meti.go.jp>; 竹中 謙正 <takenaka-kensei@meti.go.jp>; 栗原 優子 <kurihara-yuko@meti.go.jp>

Sent: Sat Mar 19 09:51:26 2011

Subject: [Update] Radioactivity Level Map

Dear Ms. Giulia Bisconti,

Our office has made a map which shows radioactivity level by area.

It is based on press releases of MEXT, Fukushima prefecture and Miyagi prefecture.

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: 山形 宏之 [mailto:yamagata-hiroyuki@meti.go.jp]

Sent: Saturday, March 19, 2011 9:47 PM

To: 'Bisconti, Giulia'; 'okada-hideichi@meti.go.jp'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'jun@hudson.org'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp'; '石川 靖'; 竹中 謙正 (takenaka-kensei@meti.go.jp); 栗原 優子 (kurihara-yuko@meti.go.jp)

Subject: [Update]Information of Fukushima Daiichi

Dear Ms. Giulia Bisconti,

Here are two new materials.

1. Monitoring by prefectures at 9:30 19th March.

It is released by the Ministry of Education, Culture, Sports, Science and Technology(=MEXT).

http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/19/1303840_8_1.pdf

2. The newest version of the situation of Fukushima Dai-ichi and Fukushima Dai-ni(NISA/METI), which Vice Minister Okada sent you two hours ago.

<http://www.nisa.meti.go.jp/english/index.html>

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: Bisconti, Giulia [mailto:Giulia.Bisconti@nuclear.energy.gov]

Sent: Saturday, March 19, 2011 8:32 PM

To: 'okada-hideichi@meti.go.jp'; [REDACTED] (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'jun@hudson.org'; 'yamagata-hiroyuki@meti.go.jp'; 'ishikawa-yasushi2@meti.go.jp'

Subject: Re: Information of Fukushima Daiichi

Dear Okada-san:

Thank you very much for this information. I have shared it with my colleagues.

Giulia Bisconti

----- Original Message -----

From: 岡田 秀一 <okada-hideichi@meti.go.jp>

To: Bisconti, Giulia [REDACTED] (b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; jun@hudson.org <jun@hudson.org>; '石川 靖' <ishikawa-yasushi2@meti.go.jp>; yamagata-hiroyuki@meti.go.jp <yamagata-hiroyuki@meti.go.jp>

Sent: Sat Mar 19 06:20:34 2011

Subject: Information of Fukushima Daiichi

Dear Ms. Giulia Bisconti,

Please find attached updates.

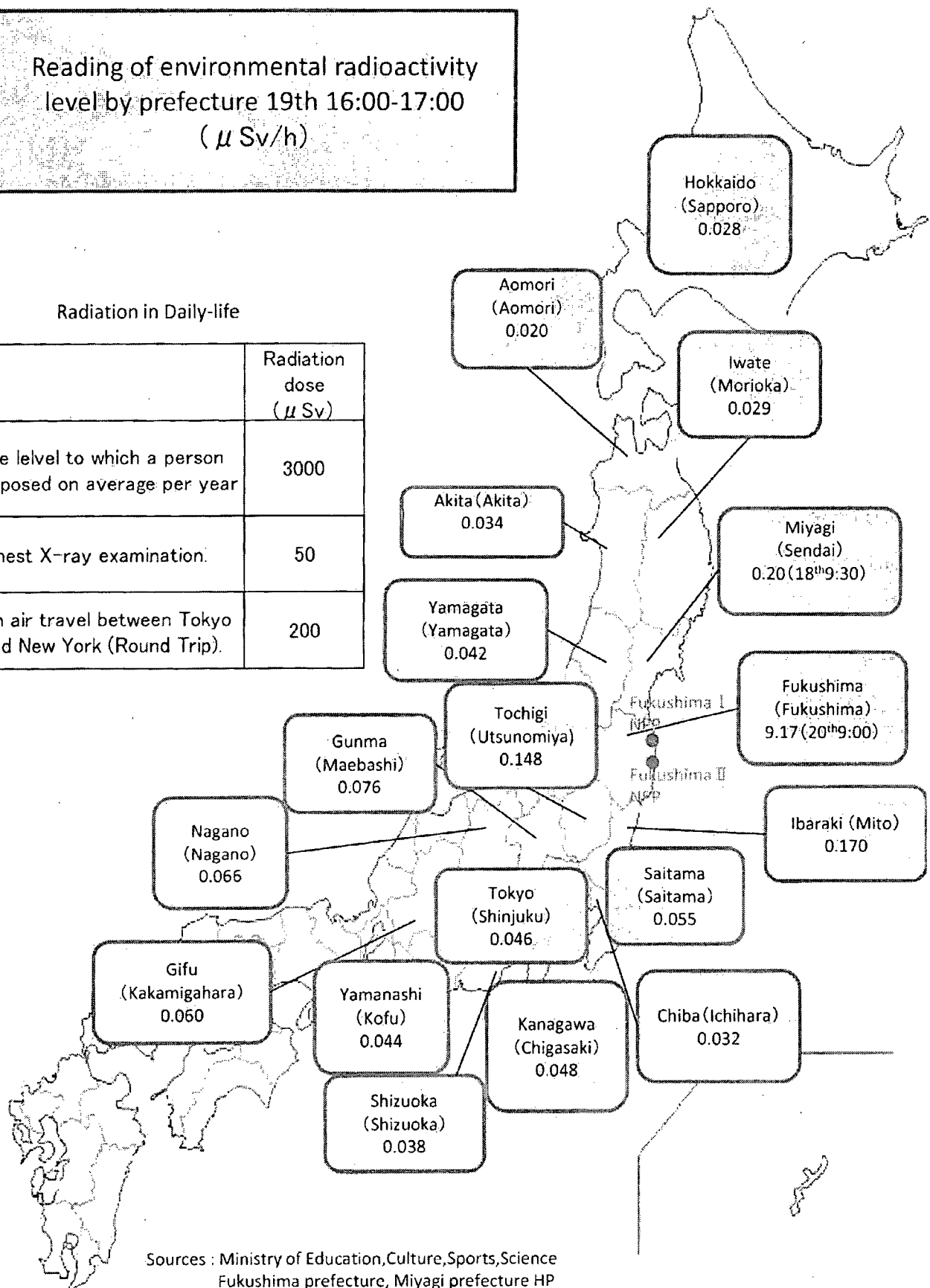
Best,

Hideichi Okada

Reading of environmental radioactivity
level by prefecture 19th 16:00-17:00
($\mu\text{Sv/h}$)

Radiation in Daily-life

	Radiation dose (μSv)
the 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
Fukushima prefecture, Miyagi prefecture HP

From: LIA07 Hoc
Sent: Sunday, March 20, 2011 12:16 PM
To: OST04 Hoc
Subject: FW: [Update] Ratings of Fukushima Dai-ichi
Attachments: en20110320-1.pdf; en20110319-6.pdf

Two METI news releases. Please save and print for books.

-----Original Message-----

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Sunday, March 20, 2011 11:44 AM
To: HOO Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: [Update] Ratings of Fukushima Dai-ichi

From: NITOPS[SMTP:NITOPS@NNSA.DOE.GOV]
Sent: Sunday, March 20, 2011 11:43:43 AM
To: CMHT; HOO Hoc; NARAC; PMT01 Hoc; PMT02 Hoc; Hoc, PMT12; Blumenthal, Daniel; Brown, Courtney M (NST); Buntman, Steven; dartdoelais1@ofda.gov; dblumenthal@ofda.gov; DOE LNO to USAID; Froh, William; McClelland, Vince; Johnson, Steven; Thompson, Roger (NEV); (b)(6)
Cc: NITOPS
Subject: FW: [Update] Ratings of Fukushima Dai-ichi Auto forwarded by a Rule

For your information.

Nuclear Incident Team (NIT)
Office of Emergency Response (NA-42)
National Nuclear Security Administration U.S. Department of Energy nitops@nnsa.doe.gov nit@doe.gov 202-586-8100

-----Original Message-----

From: Kelly, John E (NE)
Sent: Saturday, March 19, 2011 10:58 PM
To: NITOPS; PWG
Subject: FW: [Update] Ratings of Fukushima Dai-ichi

-----Original Message-----

From: Bisconti, Giulia
Sent: Saturday, March 19, 2011 10:36 PM
To: DL-NERT-All; McGinnis, Edward
Subject: Fw: [Update] Ratings of Fukushima Dai-ichi

...Updated information from METI (press releases)...

----- Original Message -----

From: 山形 宏之 <yamagata-hiroyuki@meti.go.jp>

To: Bisconti, Giulia; okada-hideichi@meti.go.jp <okada-hideichi@meti.go.jp>; jun@hudson.org <jun@hudson.org>;

(b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; akahoshi-yasushi@meti.go.jp <akahoshi-yasushi@meti.go.jp>; okamoto-susumu@meti.go.jp <okamoto-susumu@meti.go.jp>; kenji.goto-3@mofa.go.jp <kenji.goto-3@mofa.go.jp>; arai-masayoshi@meti.go.jp <arai-masayoshi@meti.go.jp>; okuya-toshikazu@meti.go.jp <okuya-toshikazu@meti.go.jp>; ishizuka-yasushi@meti.go.jp <ishizuka-yasushi@meti.go.jp>; ishikawa-yasushi2@meti.go.jp <ishikawa-yasushi2@meti.go.jp>; takenaka-kensei@meti.go.jp <takenaka-kensei@meti.go.jp>; kurihara-yuko@meti.go.jp <kurihara-yuko@meti.go.jp>; McGinnis, Edward

Sent: Sat Mar 19 20:59:44 2011

Subject: [Update] Ratings of Fukushima Dai-ichi

Dear Ms. Giulia Bisconti,

Here are 2 new press releases.

1. The newest version of the situation of Fukushima Dai-ichi and Fukushima Dai-ni (NISA/METI) which I sent you yesterday.
2. Ratings of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi (NPS).

For further information

<http://www.nisa.meti.go.jp/english/index.html>

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: Bisconti, Giulia [mailto:Giulia.Bisconti@nuclear.energy.gov]

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To: 'yamagata-hiroyuki@meti.go.jp'; 'okada-hideichi@meti.go.jp'; 'jun@hudson.org'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp'; 'kenji.goto-3@mofa.go.jp'; 'arai-masayoshi@meti.go.jp'; 'okuya-toshikazu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp'; 'ishikawa-yasushi2@meti.go.jp'; 'takenaka-kensei@meti.go.jp'; 'kurihara-yuko@meti.go.jp'; McGinnis, Edward

Subject: Re: [Update] Radioactivity Level Map

Dear Yamagata-san:

Thank you very much. These updates are very helpful. I forwarded this information to our teams.

Giulia Bisconti

----- Original Message -----

From: 山形 宏之 <yamagata-hiroyuki@meti.go.jp>

To: Bisconti, Giulia; okada-hideichi@meti.go.jp <okada-hideichi@meti.go.jp>; jun@hudson.org <jun@hudson.org>;

(b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; akahoshi-yasushi@meti.go.jp <akahoshi-yasushi@meti.go.jp>; okamoto-susumu@meti.go.jp <okamoto-susumu@meti.go.jp>; 'GOTO KENJI' <kenji.goto-3@mofa.go.jp>; arai-masayoshi@meti.go.jp <arai-masayoshi@meti.go.jp>; okuya-

toshikazu@meti.go.jp <okuya-toshikazu@meti.go.jp>; ishizuka-yasushi@meti.go.jp <ishizuka-yasushi@meti.go.jp>; '石川 靖' <ishikawa-yasushi2@meti.go.jp>; 竹中 謙正 <takenaka-kensei@meti.go.jp>; 栗原 優子 <kurihara-yuko@meti.go.jp>
Sent: Sat Mar 19 09:51:26 2011
Subject: [Update] Radioactivity Level Map

Dear Ms. Giulia Bisconti,

Our office has made a map which shows radioactivity level by area.
It is based on press releases of MEXT, Fukushima prefecture and Miyagi prefecture.

Best regards,

Hiroyuki Yamagata

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Sent: Saturday, March 19, 2011 9:47 PM

To: 'Bisconti, Giulia'; 'okada-hideichi@meti.go.jp'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'jun@hudson.org'; 'akahoshi-yasushi@meti.go.jp'; 'okamoto-susumu@meti.go.jp'; 'ishizuka-yasushi@meti.go.jp'; '石川 靖'; 竹中 謙正 (takenaka-kensei@meti.go.jp); 栗原 優子 (kurihara-yuko@meti.go.jp)

Subject: [Update]Information of Fukushima Daiichi

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http://www.mext.go.jp/component/a_menu/other/detail/_icsFiles/afieldfile/2011/03/19/1303840_8_1.pdf

2. The newest version of the situation of Fukushima Dai-ichi and Fukushima Dai-ni(NISA/METI), which Vice Minister Okada sent you two hours ago.

<http://www.nisa.meti.go.jp/english/index.html>

Best regards,

Hiroyuki Yamagata

-----Original Message-----

From: Bisconti, Giulia [mailto:Giulia.Bisconti@nuclear.energy.gov]

Sent: Saturday, March 19, 2011 8:32 PM

To: 'okada-hideichi@meti.go.jp'; (b)(6)

Cc: 'hoshi-yukihiko@meti.go.jp'; 'takita-yui@meti.go.jp'; 'jun@hudson.org'; 'yamagata-hiroyuki@meti.go.jp'; 'ishikawa-yasushi2@meti.go.jp'

Subject: Re: Information of Fukushima Daiichi

Dear Okada-san:

Thank you very much for this information. I have shared it with my colleagues.

Giulia Bisconti

----- Original Message -----

From: 岡田 秀一 <okada-hideichi@meti.go.jp>

To: Bisconti, Giulia; (b)(6) (b)(6)

Cc: hoshi-yukihiko@meti.go.jp <hoshi-yukihiko@meti.go.jp>; takita-yui@meti.go.jp <takita-yui@meti.go.jp>; jun@hudson.org <jun@hudson.org>; '石川 靖' <ishikawa-yasushi2@meti.go.jp>; yamagata-hiroyuki@meti.go.jp <yamagata-hiroyuki@meti.go.jp>

Sent: Sat Mar 19 06:20:34 2011

Subject: Information of Fukushima Daiichi

Dear Ms. Giulia Bisconti,

Please find attached updates.

Best,

Hideichi Okada

March 19, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 34th Release)
(As of 20:30 March 19th, 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 (NPS)

● Fukushima Dai-ichi NPS

<Situation of Water Spray>

Hyper Rescue Unit of Tokyo Fire Department is carrying out the operations of water spray on the Spent Fuel Pool of Unit 3. (As of 20:30 March 19th)

Start of water spray (14:10)

Finish expected (24:30)

< Situation of operations in the site and recovery of the power supply >

- 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 site is being carried out. (As of 13:30 March 19th)

(Attached sheet)

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

● Fukushima Dai-ichi NPS, TEPCO

(Okuma Town and Futaba Town, 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
Unit 6 (1,100MWe):	in periodic inspection outage

(2) Major Plant Parameters (18:30 March 19th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.306(A) 0.261(B)	0.092(A) 0.076(B)	0.051(C) 0.187(B)	—	1.754	0.559
CV Pressure (D/W) [kPa]	180	135	210	—	—	—
Reactor Water Level*2 [mm]	−1,750(A) −1,750(B)	−1,300(A) Not available(B)	−1,850(A) −2,300(B)	—	1,928	2,590
Suppression Pool Water Temperature (S/C) [°C]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	170	down scale	down scale	—	—	—
Spent Fuel Pool Water Temperature [°C]	—	—	—	84	48.1	67.0
Time of Measurement	16:50 March 19th	16:30 March 19th	17:25 March 19th	04:08 March 14th	18:00 March 19th	18:00 March 19th

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

- TEPCO reported to NISA the event in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (15:42 March 11th)
- TEPCO reported to NISA the event (Loss of reactor cooling function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Units 1 and 2. (16:36 March 11th)
- The cable for receiving electricity from the transmission line of Tohoku Electric Power Company was installed. It is scheduled to be connected to Unit 2 after the completion of discharge work. (17:30 March 17th)
The content of operations for recovery of external power supply to Units 1 to 4 (Power supply from electric transmission grid of Tohoku Electric Power Co. and from the route via transformer sub-station of TEPCO) is being confirmed. (06:30 March 18th)

<Unit 1>

- Seawater injection to the Reactor Pressure Vessel (RPV) via the Fire Extinguish Line started. (11:55 March 13th)
→Temporary interruption of the injection (01:10 March 14th)
- The sound of explosion in Unit 1 occurred. (15:36 March 12th)
- Seawater is being injected. (As of 12:00 March 19th)

<Unit 2>

- Water injection function was sustained. (14:00 March 13th)
- The Blow-out Panel of reactor building was opened due to the explosion in the reactor building of Unit 3. (After 11:00 March 14th)
- Reactor water level tended to decrease. (13:18 March 14th) TEPCO reported to NISA the event (Loss of reactor cooling functions) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (13:49 March 14th)
- Seawater injection to RPV via the Fire Extinguish line was ready. (19:20 March 14th)
- Water level in RPV of Unit 2 tended to decrease. (22:50 March 14th)
- A sound of explosion was made in Unit 2. As the pressure in Suppression Chamber decreased (06:10 March 15th), there was a

possibility that an incident occurred in the Chamber. (About 06:20 March 15th)

- Seawater injection to RPV continues. (As of 12:00 March 19th)
- 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. Today's work finished. (As of 13:30 March 19th)

<Unit 3>

- 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)
- The pressure in Primary Containment Vessel (PCV) of Unit 3 rose unusually. (07:44 March 14th) TEPCO reported to NISA on the event falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (7:52 March 14th)
- In Unit 3, the explosion like Unit 1 occurred around the Reactor Building (11:01 March 14th)
- The white smoke like steam generated from Unit 3. (08:30 March 16th)
- Because of the possibility that PCV of Unit 3 was damaged, the workers evacuated from the main control room of Units 3 and 4 (common control room). (10:45 March 16th) Thereafter the operators returned to the room and restarted the operation of water injection. (11:30 March 16th)
- Seawater was discharged 4 times to Unit 3 by the helicopters of the Self-Defence Force. (9:48, 9:52, 9:58 and 10:01 March 17th)
- The riot police arrived at the site for the water spray from the grand. (16:10 March 17th)
- The Self-Defence Force started the water spray from 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. (March 17th)

(The starting time of water spray by each engine: 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)
- Seawater is being injected to RPV. (As of 10:00 March 19th)
- Hyper Rescue Unit (14 vehicles) arrived at the Main Gate (23:10 March 18th) and 6 vehicles of them entered the NPS in order to spray water from the ground. (23:30 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department is carrying out water spray. (14:10 March 19th)

<Unit 4>

- 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 temperature of water in the Spent Fuel Pool at Unit 4 had increased. (84 °C as of 04:08 March 14th)
- The fire occurred at Unit 4. (5:45 March 15th) TEPCO reported that no fire could be confirmed on the ground. (06:15 March 16th)
- Because of the replacement work of the Shroud of RPV, no fuel was inside the RPV.

<Units 5 and 6>

- Emergency Diesel Generator (1 unit) for Unit 6 is operable and supplying electricity to Units 5 and 6. Water injection to RPV and Spent Fuel Pool through the system of Make up Water Condensate (MUWC) is being carried.
- The second unit of Emergency Diesel Generator (A) for Unit 6 started up. (04:22 March 19th)
- The pump for Residual Heat Removal (RHR) (C) for Unit 5 started up and recovered heat removal function. It cools Spent Fuel Storage Pool with priority. (Power supply : Emergency Diesel Generator for Unit 6)

(05:00 March 19th)

<Common Spent Fuel Pool>

- It was confirmed that the water level of Spent Fuel Pool was maintained full at after 06:00 March 18th.
- As of 11:19 March 18th, the water temperature in the pool is 55°C.

● 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 18:00 March 19th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.15	0.11	0.11	0.14
Reactor water temperature	℃	51.4	33.7	27.0	34.7
Reactor water level*2	mm	7,296	9,846	7,487	8,785
Suppression pool water temperature	℃	28	24	42	29
Suppression pool pressure	kPa (abs)	145	114	107	116
Remarks		cold shutdown	Cold shutdown	cold shutdown	cold shutdown

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

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

● Onagawa NPS (Tohoku Electric Power Co. Inc.)

(Onagawa Town, Oga County and Ishinomaki City, Miyagi Prefecture)

(1) The state of operation

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

(2) Readings of monitoring post, etc.

MP2 (Monitoring at the North End of Site Boundary)

approx. 6,500 nGy/h (19:00 March 14th)

→approx. 5,400 nGy/h (19:00 March 15th)

(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 (Loss of reactor cooling function) 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-ichi 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-ichi NPS, TEPCO reported to NISA in accordance with the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 19:03 The Government declared the state of nuclear emergency. (Establishment of Government Nuclear Emergency Response Headquarters and Local Emergency Response Headquarters)
- 20:50 Fukushima Prefecture's Emergency Response Headquarters issued a direction for the residents within 2 km radius from Unit 1 of Fukushima Dai-ichi NPS to evacuate. (The population of this area is 1,864.)
- 21:23 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayor of Okuma Town and the Mayor of Futaba Town were issued regarding the event occurred at Fukushima Dai-ichi NPS, TEPCO, in accordance with the Paragraph 3, the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
 - Direction for the residents within 3km radius from Unit 1 of

Fukushima Dai-ichi NPS to evacuate

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

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

(March 12th)

05:22 Regarding Unit 1 of Fukushima Dai-ichi 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-ichi 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 Direction.

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

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

07:45 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayors of Hirono Town, Naraha Town, Tomioka Town and Okuma Town were issued regarding the event occurred at Fukushima Dai-ichi 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-ichi NPS to evacuate
- Direction for the residents within 10km radius from Fukushima Dai-ichi NPS to stay in-house

17:00 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on

Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

- 17:39 Prime Minister directed evacuation of the residents within the 10 km radius from Fukushima Dai-ichi NPS.
- 18:25 Prime Minister directed evacuation of the residents within the 20km radius from Fukushima Dai-ichi NPS.
- 19:55 Directives from Prime Minister was issued regarding seawater injection to Unit 1 of Fukushima Dai-ichi NPS.
- 20:05 Considering the Directives from Prime Minister and pursuant to the Paragraph 3, the Article 64 of the Nuclear Regulation Act, order was issued to inject seawater to Unit 1 of Fukushima Dai-ichi NPS and so on.
- 20:20 At Unit 1 of Fukushima Dai-ichi NPS, seawater injection started.

(March 13th)

- 05:38 TEPCO reported to NISA the event (Total loss of coolant injection function) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS. Recovering efforts by TEPCO of the power source and coolant injection function and the work on venting were under way.
- 09:01 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 09:08 Pressure suppression and fresh water injection started for Unit 3 of Fukushima Dai-ichi NPS.
- 09:20 The Pressure Vent Valve of Unit 3 of Fukushima Dai-ichi NPS was opened.
- 09:30 The order was issued for the Governor of Fukushima Prefecture, the Mayors of Okuma Town, Futaba Town, Tomioka Town and Namie Town in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity decontamination screening.
- 09:38 TEPCO reported to NISA that Unit 1 of Fukushima Dai-ichi NPS reached a situation specified in the Article 15 of the Act on Special

Measures Concerning Nuclear Emergency Preparedness.

- 13:09 Tohoku Electric Power Co. reported to NISA that Onagawa NPS reached a situation specified in the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 13:12 Fresh water injection was switched to seawater injection for Unit 3 of Fukushima Dai-ichi NPS.
- 14:36 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 14th)

- 01:10 Seawater injection for Units 1 and 3 of Fukushima Dai-ichi NPS were temporarily interrupted due to the lack of seawater in pit.
- 03:20 Seawater injection for Unit 3 of Fukushima Dai-ichi NPS was restarted.
- 04:40 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 05:38 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 07:52 TEPCO reported to NISA the event (Unusual rise of the pressure in PCV) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS.
- 13:25 Regarding Unit 2 of Fukushima Dai-ichi NPS, TEPCO recognised the event (Loss of reactor cooling function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 22:13 TEPCO reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 22:35 TEPCO reported to NISA the event (Unusual increase of radiation

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

(March 15th)

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

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

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

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

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

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

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

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

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

10:59 Considering the possibility of lingering situation, it was decided that the function of the Local Emergency Response Headquarter was moved to the Fukushima Prefectural Office.

11:00 Prime Minister directed the in-house stay area.

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

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

22:00 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following directive.

For Unit 4: To implement the injection of water to the Spent Fuel Pool.

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

(March 18th)

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

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

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

(March 19th)

07:44 The second unit of Emergency Diesel Generator (A) for Unit 6 started up.

TEPCO reported to NISA that the pump for RHR (C) for Unit 5 started up and started to cooling Spent Fuel Storage Pool. (Power supply: Emergency Diesel Generator for Unit 6)

< Possibility on radiation exposure (As of 20:30 March 19th) >

<Exposure of residents>

- (1) Including the about 60 evacuees from Futaba Public Welfare Hospital to Nihonmatsu City Fukushima Gender Equality Centre, as the result of measurement of 133 persons at the Centre, 23 persons counted more than 13,000 cpm were decontaminated.
- (2) The 35 residents transferred from Futaba Public Welfare Hospital to Kawamata Town Saiseikai Kawamata Hospital by private bus arranged by Fukushima Prefecture were judged to be not contaminated by the Prefectural Response Centre.
- (3) As for the about 100 residents in Futaba Town evacuated by bus, the results of measurement for 9 of the 100 residents were as follows. The evacuees, moving outside the Prefecture (Miyagi Prefecture), were divided into two groups, which joined later to Nihonmatsu City Fukushima Gender Equality Centre.

No. of Counts	No. of Persons
18,000cpm	1
30,000-36,000cpm	1
40,000cpm	1
little less than 40,000cpm*	1
very small counts	5

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

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

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

being decontaminated.

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

<Exposure of workers>

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

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

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

- (2) As for the 6 out of 7 people working at the time of explosion at around the Unit 3 of Fukushima Dai-ichi NPS who were injured and conscious, the detailed measurement data are not available.

<Others>

- (1) Fukushima Prefecture has started the screening from 13 March. It is carried out by rotating the evacuation sites and at the 12 places (set up permanently) such as health offices. The results of screening are being totalled up.
- (2) 5 members of Self-Defence Force who worked for water supply in Fukushima Dai-ichi NPS were exposed. After the work (March 12th), 30,000 cpm was counted by the measurement at Off site Centre. The counts after decontamination were between 5,000 and 10,000 cpm. One member was transferred to National Institute of Radiological Science. No other exposure of the Self-Defence Force member was confirmed at the Ministry of Defence.

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

<Direction of administrating stable Iodine during evacuation>

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 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).

<Situation of the injured (As of 20:30 March 19th)>

1. Injury due to earthquake
 - Two employees (slightly)
 - Two subcontract employees (one fracture in both legs)
 - Two missing (TEPCO's employee, missing in the turbine building of Unit 4)
 - One emergency patient (According to the local prefecture, one patient of cerebral infarction was transported by the ambulance).
 - Ambulance was requested for one employee complaining the pain at left chest outside of control area (conscious).
 - Two employees complaining discomfort wearing full-face mask in the main control room were transported to Fukushima Dai-ichi NPS for a consultation with an industrial doctor.
2. Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS
 - Four employees were injured at the explosion and smoke of Unit 1 around turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic.
3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS
 - Four TEPCO's employees
 - Three subcontractor employees
 - Four members of Self-Defence Force (one of them was transported to National Institute of Radiological Sciences considering internal possible

exposure. The examination resulted in no internal exposure. The member was discharged from the institute on March 16th.)

4. Other injuries

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

<Situation of Resident Evacuation (As of 20:30 March 19th)>

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

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

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

(Contact Person)

Mr. Toshihiro Bannai

Director, International Affairs Office,
NISA/METI

Phone: +81-(0)3-3501-1087

March 18, 2011

Nuclear and Industrial Safety Agency

INES Ratings on the Events in Fukushima Dai-ichi NPS and Fukushima Dai-ni NPS by the Tohoku Regional Pacific Ocean Offshore Earthquake

Ratings of the International Nuclear and Radiological Event Scale (INES) on the events in Fukushima Dai-ichi Nuclear Power Station (NPS) and Fukushima Dai-ni NPS, Tokyo Electric Power Co. Inc. (TEPCO), by the Tohoku Regional Pacific Ocean Offshore Earthquake are as follows:

1. INES

- INES is the rating, which International Atomic Energy Agency (IAEA) and Nuclear Energy Agency, Organization for Economic Cooperation and Development (OECD/NEA) established and proposed to the Member States in March 1992, in order to indicate the impact on safety by the individual event in a nuclear facility and so on.
- Japan has utilized it since 1 August 1992. As a process, when an event occurs, firstly, Nuclear and Industrial Safety Agency (NISA) temporarily rates on it and then, considering the confirmed recurrence prevention measures based on the concrete causes found, the International Nuclear Event Scale Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering), which set up in the Nuclear and Industrial Safety subcommittee of the Advisory Committee for Natural Resources and Energy, technically evaluating from specialist view points, assess the official level.

2. Events in Fukushima Dai-ichi NPS and Fukushima Dai-ni NPS, TEPCO, by the Tohoku Regional Pacific Ocean Offshore Earthquake

(1) Units 1, 2 and 3 of Fukushima Dai-ichi NPS

In these Units, the coolant injection by the Turbine Driven Pump

became the only workable cooling function, due to total loss of alternative current power supply resulted from inability to provide services by the external power supply and pumps for emergency diesel power generator cooling system and Residual Heat Removal (RHR) seawater cooling system, caused by the flooding by tsunami.

It is considered that such total loss of cooling function led to the reactor core to be damaged, due to the inability to provide service by the Turbine Driven Pump resulted from the temperature rise in the Suppression Chamber caused by the operation of the pump.

The leakage of radioactive materials continues.

(Temporary rating of INES*)

Criterion 1	Criterion 2	Criterion 3	Rating
TBD	5	3	(5)

(2) Unit 4 of Fukushima Dai-ichi NPS

In the Unit, the cooling function and making up water function for the spent fuel pit failed to work, due to total loss of alternative current power supply resulted from inability to provide services by the external power supply and pumps for emergency diesel power generator cooling system and RHR seawater cooling system, caused by the flooding by tsunami.

The reactor building was damaged by an explosion assumed to be caused by hydrogen build-up, resulted from boiling-off and evaporation of the water in the pit due to decay heat of spent fuels.

(Temporary rating of INES*)

Criterion 1	Criterion 2	Criterion 3	Rating
TBD	TBD	3	(3)

The rating on Criteria 1 and 2 are to be determined later because the event is not led to be ceased.

(3) Units 1, 2 and 4 of Fukushima Dai-ni NPS

In these Units, decay heat could not be transferred to the sea, due to inability to provide services by the pump for RHR seawater cooling system, caused by the flooding by tsunami.

The Turbine Driven Pump became unworkable resulted from the temperature rise in the Suppression Chamber caused by the operation of the pump. However, the pump for RHR seawater cooling system was fixed

and its operation led the reactor to cold shutdown.

(Temporary rating of INES*)

Criterion 1	Criterion 2	Criterion 3	Rating
-	-	3	3

3. Procedures to be taken

The official level of INES is assessed by the International Nuclear Event Scale Evaluation Subcommittee (Chairman: Dr. Naoto Sekimura, Professor of University of Tokyo, Nuclear Professional School Engineering), which set up in the Nuclear and Industrial Safety Subcommittee of the Advisory Committee for Natural Resources and Energy, through the technical evaluation from specialist view points, considering the confirmed recurrence prevention measures based on the concrete causes found.

(*Reference)

INES (International Nuclear and Radiological Event Scale) is rated by 3 criteria (Criterion 1: People and the Environment, Criterion 2: Radiological Barriers and Controls at facilities, Criterion 3: Defence in Depth). The highest level among the three becomes the rating of the event. The scale ranges from level 0 (No safety significance) to level 7 (Major accident).

(Ref. INES User's Manual 2008 Edition)

(Contact Person)

Mr. Toshihiro Bannai

Director, International Affairs Office,
NISA/METI

Phone: +81-(0)3-3501-1087

Greenwood, Carol -

From: Gibson, Kathy
Sent: Monday, March 21, 2011 6:35 AM
To: Uhle, Jennifer; Schaperow, Jason; Tinkler, Charles
Subject: Re: Continued discussion with KAPL

There seems to be conflicting info here in the PMT whether SPF4 has 30-day fuel or 105- day fuel or both. Do you guys have the real information? Thanks!

From: Uhle, Jennifer
To: Schaperow, Jason; Tinkler, Charles
Cc: Gibson, Kathy
Sent: Mon Mar 21 05:48:13 2011
Subject: Continued discussion with KAPL

Jason,

Please coordinate with Stephen Bell (he will be in the Ops Center) concerning discussion with KAPL on the differences in the KAPL and NRC/Sandia evaluation of Unit 4. The Chairman is meeting with the Admiral tomorrow and Naval Reactor will indicate that it is likely that KAPL analysis was conservative and that NRC's analysis is more accurate. However, KAPL and NRC will discuss the differences to assist KAPL in understanding the modeling differences. Feel free to get Sandia on the discussion as well. Please also send the input decks and reports to KAPL and cc (b)(6)

Thanks a lot,

Jennifer

From: LIA02 Hoc
Sent: Monday, March 21, 2011 3:12 PM
To: LIA02 Hoc; LIA03 Hoc; Fragoyannis, Nancy; Doane, Margaret; Mamish, Nader; Abrams, Charlotte; Wittick, Brian; Afshar-Tous, Mugeh; 'ShafferMR@state.gov'; Smith, Brooke; Foggie, Kirk; Bloom, Steven; Schwartzman, Jennifer; Tobin, Jennifer; Mayros, Lauren; Jones, Andrea; English, Lance; Smirolto, Elizabeth; Young, Francis; Henderson, Karen; Ramsey, Jack; Shepherd, Jill; Baker, Stephen; Emche, Danielle; Stahl, Eric
Subject: RE: TRANSITION REPORT 3/21 0700

~~OFFICIAL USE ONLY~~

TRANSITION REPORT FOR MARCH 21, 2011 1500

Charlotte/Nancy and Jen S. transition to Danielle and Lauren

UPDATES DURING THIS SHIFT

- **NRC Relief Team to Japan.**
 - USAID is currently making travel arrangements for the next group of travelers. As of 1425 arrangements have been made for Todd Jackson, Michael Scott, and Alan Blamey. Michael and Alan are leaving tomorrow and Todd leaves Wednesday. Michael Scott is supposed to come to the ops center to pick up Blackberries for him and Alan. He should also go to the health center to pick up KI. They already have dosimetry and Michael already has the items we requested he bring over to the current team (business cards and thumb drive).
 - Jack Geissner (Region III) will arrange to get a valid passport in his hometown.
 - LIA07 added new team members to the "Liaison Japan" group email distribution group. Team members were notified as well. No further action required.
- **IAEA Coordination.** The ET had tasked us with understanding the role of the IAEA's Incident and Emergency Centre (IEC) and what the extent of their role is if Japan does not make a formal request to them under the Assistance Convention. Mark Shaffer has been in touch with the IEC (the dialogue is in the log and Task Tracker) but there is still confusion. It appears that, during the course of these inquiries, the State Department may have gotten the misimpression that the NRC is trying to influence the Japanese directly to invoke the Convention. We are working to correct this. Jen Schwartzman sent a draft email to Margie Doane for her to review and send to Julie Herr of State Department's Legal office. We are hoping to then engage with Julie to contact the IAEA about clarifying their role. NRC believes the IEC should serve as a clearinghouse, keeping track of all requests for assistance from Japan, all offers to assist from other countries, who has provided what, and whether it satisfies the requests. At 1503, Margie emailed Mark Scheland at the U.S. Mission in Vienna with copies to Mark Shaffer and Julie Herr of State's Legal bureau to clarify what NRC means by "clearinghouse" and what we would like to see the IAEA do. The NRC should work closely with the State Department on this issue to get USG alignment on how to move forward, then NRC should work with State to discuss the matter with the IAEA. This issue is of particular interest to the ET and the Liaison Director will likely ask about the progress made. You will need to update both the log and the task tracker.
- **France** - At the request of the PMT, at 1538 on March 20, Eric Stahl sent email to IRSN (France TSO - ctc@irsn.fr) about releasing the results of the French simulation on possible source term and plume models to NRC. French requested a call at 1000 on March 21 to discuss. Jen Schwartzman and Michelle Hart of PMT participated in the call, which provided a good opportunity for PMT to ask clarifying questions of IRSN regarding the source term data IRSN has provided to us. Daniele Oudinot and Victor Hall are translating the 7-page source term document

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that was provided. Action: When either Daniele or Victor provides the translated document, provide it to the PMT.

- **Daily NRC Japan Team – RST/PMT Call.** Scheduled for 0300 RST and PMT have been notified of the call and international liaison should plan on participating (Brooke and Kirk don't necessarily participate). All parties should call into **301-816-5120** and use pass-code **6105**. 1500-2300 shift needs to pass this information to the 2300-0700 shift.
- **Conference Room.** Per Nancy's discussion with Brooke at 2015, the NRC Japan Team does not need a conference room at the hotel. Per Steve Baker's 1500 Transition, Barbara Gussack of Operations was going to submit an actual request for a conference room once the delegation agrees they need one. Jen Schwartzman contacted her this morning to let her know it was no longer needed. No further action is required.
- **Australian aircraft followup.** The first plane carrying the Bechtel pumps departed Australia around 0700 3/21. The second transport is supposed to depart at approximately 1700. As of the 1500 shift change, we had no information about any delays/problems with the second transport.

FUTURE ACTIONS

- **NRC Relief Team to Japan.**
 - On March 20 at 0900, International liaisons sent out an email to the new team members requesting BB numbers, email addresses and emergency contact information. Also awaiting flight arrival times. When this information is received we need to add it to applicable spreadsheet.
 - Dosimeters need to be given to the team members and located are in drawer at LIA03 location. Regional travelers will receive their dosimetry from the Region. Notes: Dosimetry should only be released directly to the travelers. They need to fill out the paperwork and leave it with the international liaison to return to NRR (Undine Shoop). They should take the back page which is instructions for use. Anyone who does not already have dosimetry needs to have a radiation brief before departure. All travelers are aware of this requirement. Action: We are trying to piggyback the radiation brief on the Japan culture brief that is to take place tomorrow, 3/22 from 2:30-3:30. Please contact Jane Kreuter to find out the location of the 2:30 culture brief, then contact Undine Shoop to find out if she or someone in her shop can do the radiation brief at 3:30. Then, contact the travelers with the information to confirm time and location for both briefings.
 - Travelers should go to the Health Center to pick up KI tablets.
 - Brooke, Kirk and Tony have requested an additional supply of business cards be provided to them. Mike Scott from RES, who is departing tomorrow, will take these along with Brooke's NRC thumb drive.
 - Cris Brown has advised that, rather than asking the relief team to carry additional satellite phones to Japan, the current team can turnover ownership of the two satellite phones already over there to a member of the relief team. The travelers have been advised to work with the current team to determine who should take ownership, then provide that name to Cris Brown and LIA02/LIA03. Action: When name is provided, ensure that Cris Brown has it.
- **International request for information.** The Indonesian Embassy in Washington requested information on how we arrived at the 50-mile evacuation announcement. We provided some very basic information. They have followed up with a request for a phone call or meeting with NRC and their Minister-Counselor. Action: Call will occur at 5PM on Monday, March 21 Don-Cool will participate from the PMT and an international liaison should sit in.
- **Industry Japan Team.** On March 20 at 1400, Karen Henderson, at request of LT Director, contacted INPO representative Randy Tropasso (b)(6) to discuss the logistics of industry representatives who may be sent to Japan. Mr. Tropasso stated that no individuals have yet been identified and that they are still evaluating what criteria/skills should be available on the team. Mr. Tropasso also noted that

they are awaiting resolution of how the US Government will organize itself to manage the team's efforts and interactions with the Japanese Government. International liaisons awaiting possible follow-up call – no action unless INPO calls again.

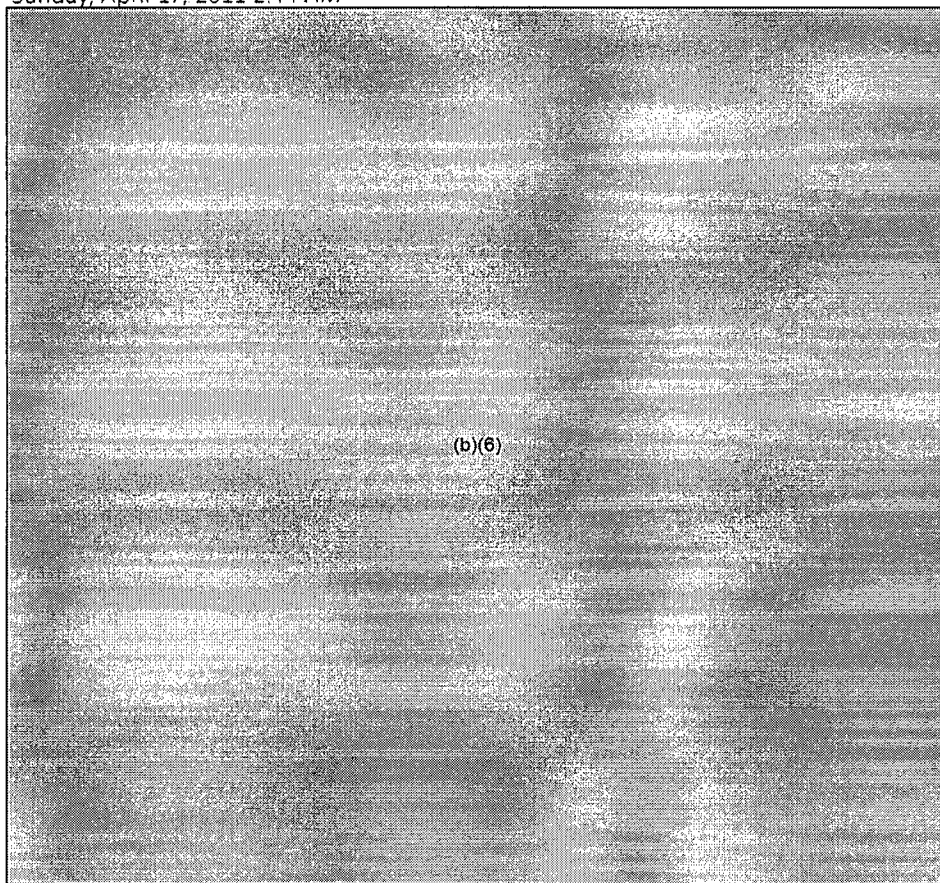
- **21:30 Interagency Call.** Next call will be 3/21 at 21:30 EST.
- **Daily calls with UK/France/Canada.** Calls will take place tomorrow, 3/22, at 0930 with RST and at 1500 with PMT to discuss reactor-related and radiation-related information, respectively, with regulatory representatives from these three countries. Everyone should call into the HOO to be connected. Action: Int'l liaison should inform the HOO in advance that the calls will take place.

DAILY ACTIONS/REMINDERS

- Information pertinent to the team in Japan can be forwarded to new email group, "Liaison Japan," in Outlook.
- International updates must now 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).
- 11 PM – 7 AM shift is responsible for the summary call with Kirk and Brooke, scheduled daily at 0500 EST unless rescheduled, and subsequent writeup of one-pager for Margie. Margie reminds us that the writeup should not contain technical details, which are already captured in other reports, and should be marked "Official Use Only – Foreign Government Information."
- The 11pm-7am shift is responsible for send all emails from the previous day to the FOIA email address (FOIA Response.hoc@nrc.gov).
- Kirk and Brooke requested that the international team to sit in on calls with the ET and Chuck to take notes and provide a short summary of what was discussed via email.
- Reminder to include names on watch bill emails and inform Brooke and Kirk when shift changes.
- 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 the 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.

~~OFFICIAL USE ONLY~~

From: saigai03@mext.go.jp
Sent: Sunday, April 17, 2011 2:44 AM
To:



Cc:
Subject:
Attachments:

Radiation data by MEXT
(Japanese)20110417_10.pdf; (Japanese)20110417_11.pdf; (Japanese)20110417_12.pdf;
(Japanese)20110417_13.pdf; (Japanese)20110417_14.pdf; (Japanese)20110417_15.pdf;
(unofficial)(Japanese)20110417_13.pdf

Dear Sir,

Please see attached the document.

Sincerely yours,

Eiko SENAMI

Eiko SENAMI (Ms.)

Office of International Relations, Nuclear Safety Division, Ministry of Education, Culture, Sports, Science and Technology
- Japan

福島第一原子力発電所の20km以遠のモニタリング結果について

平成23年4月17日 13時00分現在
文 部 科 学 省

○文部科学省が集計した結果

- * 1 GM(ガイガーミューラー計数管)における値
- * 2 電離箱における値
- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	天候	実施者
測定エリア【1】 福島市杉妻町 (約60km北西)	4月17日8時35分	1.0 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【31】 双葉郡浪江町津島仲沖 (約30km西北西)	4月17日10時37分	9.2 ^{*2}	降雨なし	文部科学省
測定エリア【32】 双葉郡浪江町赤字木手七郎 (約30km北西)	4月17日10時52分	23.1 ^{*2}	降雨なし	文部科学省
測定エリア【34】 双葉郡浪江町津島高木 (約30km北西)	4月17日9時39分	5.8 ^{*2}	降雨なし	文部科学省
測定エリア【36】 伊達郡川俣町山木屋大洪 (約40km北西)	4月17日9時20分	3.1 ^{*2}	降雨なし	文部科学省
測定エリア【74】 いわき市小川町高萩 (約35km南)	4月17日11時04分	0.1 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【75】 いわき市内郷御殿町 (約45km南)	4月17日10時36分	0.5 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【76】 双葉郡川内村上川内早渡 (約20km南西)	4月17日10時42分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【79】 双葉郡浪江町下津島萱深 (約30km北西)	4月17日10時09分	12.7 ^{*2}	降雨なし	文部科学省
測定エリア【83】 双葉郡浪江町赤字木柵平 (約20km北西)	4月17日10時24分	39.4 ^{*2}	降雨なし	文部科学省
測定エリア【84】 いわき市三和町差塩 (約40km南西)	4月17日9時52分	0.4 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【85】 福島市荒井原宿 (約60km北西)	4月17日6時00分	0.2 ^{*2}	降雨なし	防衛省
測定エリア【86】 郡山市大槻町長石工門林 (約55km西)	4月17日6時00分	0.8 ^{*2}	降雨なし	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内 (約30km西南西)	4月17日6時00分	1.2 ^{*2}	降雨なし	防衛省
測定エリア【104】 双葉郡葛尾村大字落合字落合 (約25km西北西)	4月17日9時52分	1.6 ^{*2}	降雨なし	文部科学省
測定エリア【105】 田村市都路町古道字寺ノ前 (約20km西)	4月17日11時07分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【106】 いわき市川前町小白井字将監小屋 (約30km南西)	4月17日10時09分	0.2 ^{*2}	降雨なし	文部科学省

茨城県におけるモニタリング状況(1/1)

文部科学省

H23.4.17 13:00

μSv/h(マイクロシーベルト毎時)

日時	日本原子力研究開発機構 原子力科学研究所 (茨城県東海村)	日本原子力研究開発機構 核燃料サイクル工学研究所 (茨城県東海村)	東京大学弥生 (茨城県東海村)
4月16日			
0:00	1.03	0.55	0.91
1:00	1.03	0.55	0.94
2:00	1.03	0.55	0.85
3:00	1.03	0.55	0.87
4:00	1.03	0.55	0.89
5:00	1.03	0.56	0.88
6:00	1.03	0.55	0.84
7:00	1.03	0.55	0.89
8:00	1.03	0.55	0.89
9:00	1.02	0.55	0.93
10:00	1.02	0.55	0.82
11:00	1.02	0.55	0.88
12:00	1.02	0.55	1.00
13:00	1.02	0.55	1.09
14:00	1.02	0.55	0.91
15:00	1.02	0.55	0.83
16:00	1.02	0.55	0.84
17:00	1.02	0.55	0.83
18:00	1.02	0.55	0.91
19:00	1.02	0.55	0.95
20:00	1.02	0.55	0.87
21:00	1.02	0.55	0.84
22:00	1.02	0.55	0.88
23:00	1.02	0.54	0.85
4月17日			
0:00	1.02	0.55	0.92
1:00	1.02	0.54	0.92
2:00	1.02	0.54	0.80
3:00	1.02	0.55	0.91
4:00	1.02	0.54	0.84
5:00	1.01	0.54	0.82
6:00	1.02	0.54	0.92
7:00	1.02	0.54	0.85
8:00	1.01	0.54	0.88
9:00	1.02	0.54	0.95
10:00	1.01	0.54	
11:00	1.01	0.54	
12:00	1.01	0.54	

※このデータは、表記の3カ所における空間線量率を1時間毎に計測したもの。日本原子力研究開発機構原子力科学研究所及び日本原子力研究開発機構核燃料サイクル工学研究所のデータは、それぞれ以下のホームページでも掲載されている。

日本原子力研究開発機構原子力科学研究所

<http://erms.jaea.go.jp/Chart.htm>

日本原子力研究開発機構核燃料サイクル工学研究所

http://www.jaea.go.jp/04/ztokai/kankyo/realtime/tbl_10mStPo01.html

	都道府県名	上水(蛇口)		
		放射性ヨウ素 I-131	放射性セシウム (Cs-134, Cs-137)	備考
1	北海道(札幌市)	不検出	不検出	
2	青森県(青森市)	不検出	不検出	
3	岩手県(盛岡市)	不検出	不検出	
4	宮城県	-	-	県が独自に調査・公表している (宮城県原子力安全対策室HP の「水道水及び農畜産物の放射 能測定結果」を参照: http://www.pref.miyagi.jp/gentai/Press/PressH230315.html)
5	秋田県(秋田市)	不検出	不検出	
6	山形県(山形市)	不検出	不検出	
7	福島県	-	-	県が独自に調査・公表している (福島県災害対策本部HPの「原 子力災害情報(県内各地方環境 放射能測定値(飲料水)につい て」を参照: http://www.pref.fukushima.jp/j/index.htm)
8	茨城県(ひたちなか市)	0.71 (指標を超えていない)	不検出	
9	栃木県(宇都宮市)	0.89 (指標を超えていない)	0.63 (指標を超えていない)	
10	群馬県(前橋市)	0.50 (指標を超えていない)	0.18 (指標を超えていない)	
11	埼玉県(さいたま市)	0.29 (指標を超えていない)	0.41 (指標を超えていない)	
12	千葉県(市原市)	不検出	不検出	
13	東京都(新宿区)	0.30 (指標を超えていない)	不検出	
14	神奈川県(茅ヶ崎市)	不検出	不検出	
15	新潟県(新潟市)	不検出	不検出	
16	富山県(射水市)	不検出	不検出	
17	石川県(金沢市)	不検出	不検出	
18	福井県(福井市)	不検出	不検出	
19	山梨県(甲府市)	不検出	不検出	
20	長野県(長野市)	不検出	不検出	
21	岐阜県(各務原市)	不検出	不検出	
22	静岡県(静岡市)	不検出	不検出	
23	愛知県(名古屋市)	不検出	不検出	
24	三重県(四日市市)	不検出	不検出	
25	滋賀県(大津市)	不検出	不検出	
26	京都府(京都市)	不検出	不検出	
27	大阪府(大阪市)	不検出	不検出	
28	兵庫県(神戸市)	不検出	不検出	
29	奈良県(奈良市)	-	-	機器調整中
30	和歌山県(和歌山市)	不検出	不検出	
31	鳥取県(東伯郡)	不検出	不検出	
32	島根県(松江市)	不検出	不検出	
33	岡山県(岡山市)	不検出	不検出	
34	広島県(広島市)	不検出	不検出	
35	山口県(山口市)	不検出	不検出	
36	徳島県(徳島市)	不検出	不検出	
37	香川県(高松市)	不検出	不検出	
38	愛媛県(八幡浜市)	不検出	不検出	
39	高知県(高知市)	不検出	不検出	
40	福岡県(太宰府市)	不検出	不検出	
41	佐賀県(佐賀市)	不検出	不検出	
42	長崎県(大村市)	不検出	不検出	
43	熊本県(宇土市)	不検出	不検出	
44	大分県(大分市)	不検出	不検出	
45	宮崎県(宮崎市)	不検出	不検出	
46	鹿児島県(鹿児島市)	不検出	不検出	
47	沖縄県(那覇市)	不検出	不検出	

*本データは、1Bq/Lを1Bq/kgとみなす

*文部科学省が各都道府県等からの報告に基づき作成

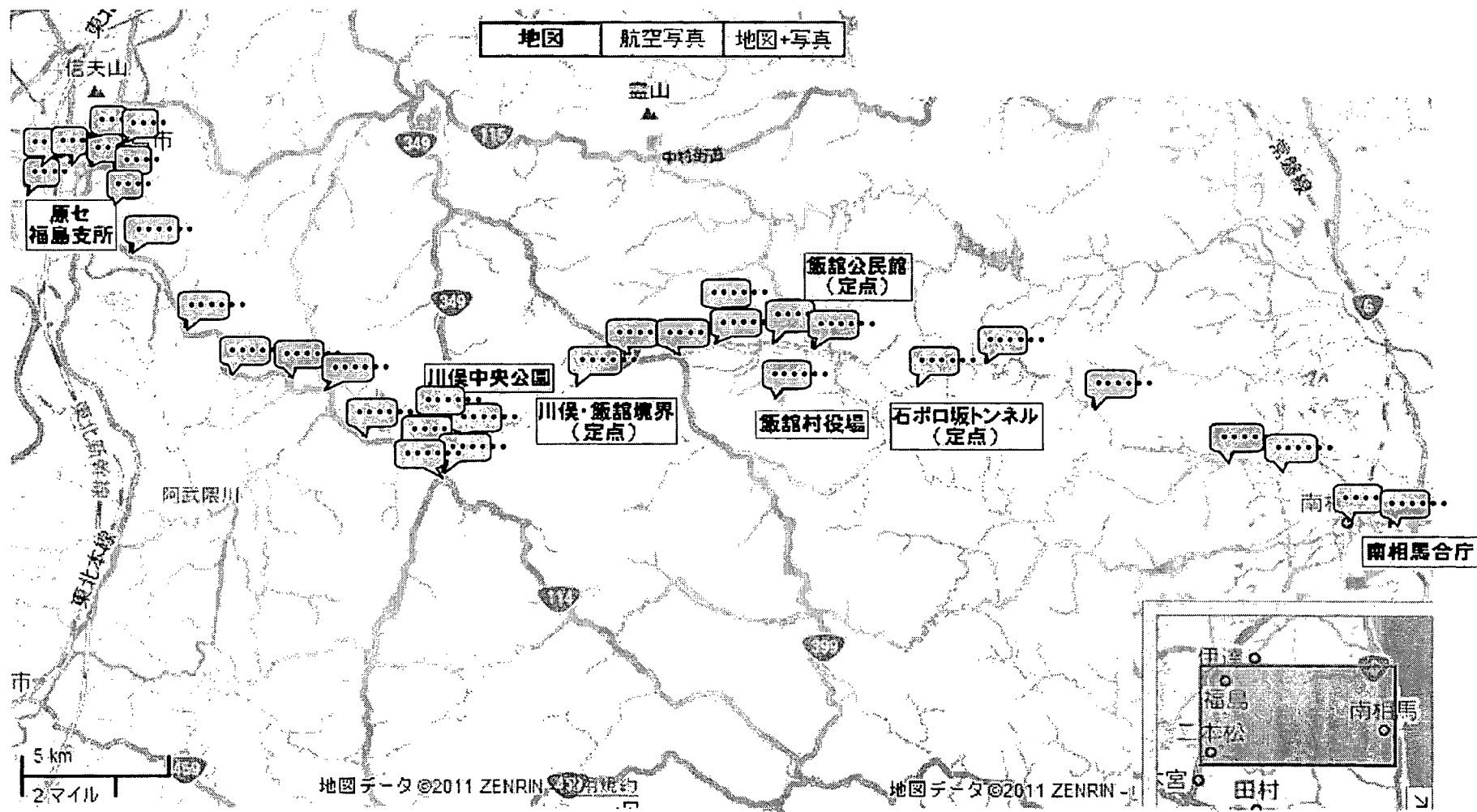
*「原子力施設等の防災対策について(原子力安全委員会)」飲食物の摂取制限に関する指標(飲料水)
放射性ヨウ素-131: 300Bq/kg以上、放射性セシウム: 200Bq/kg以上

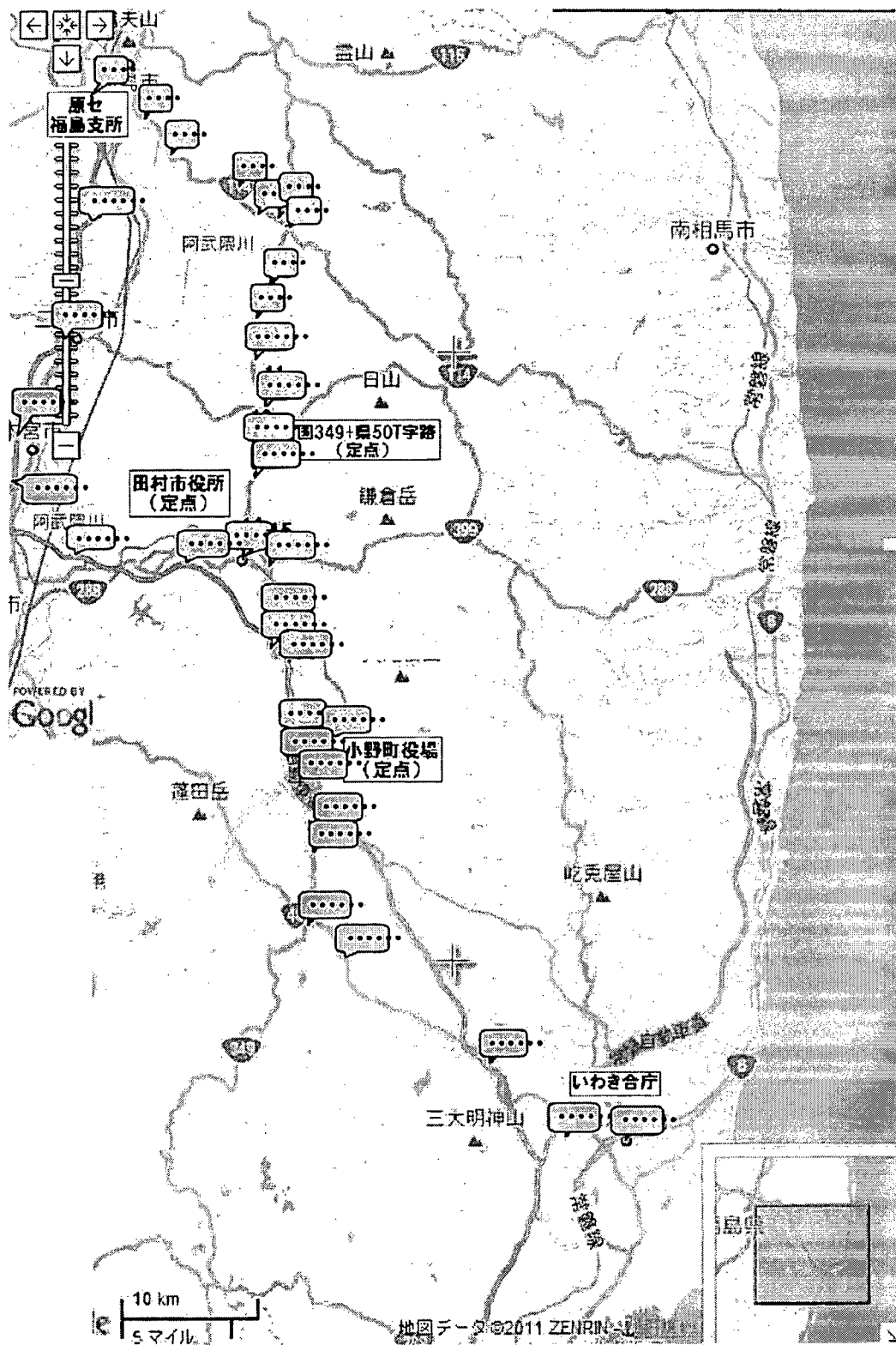
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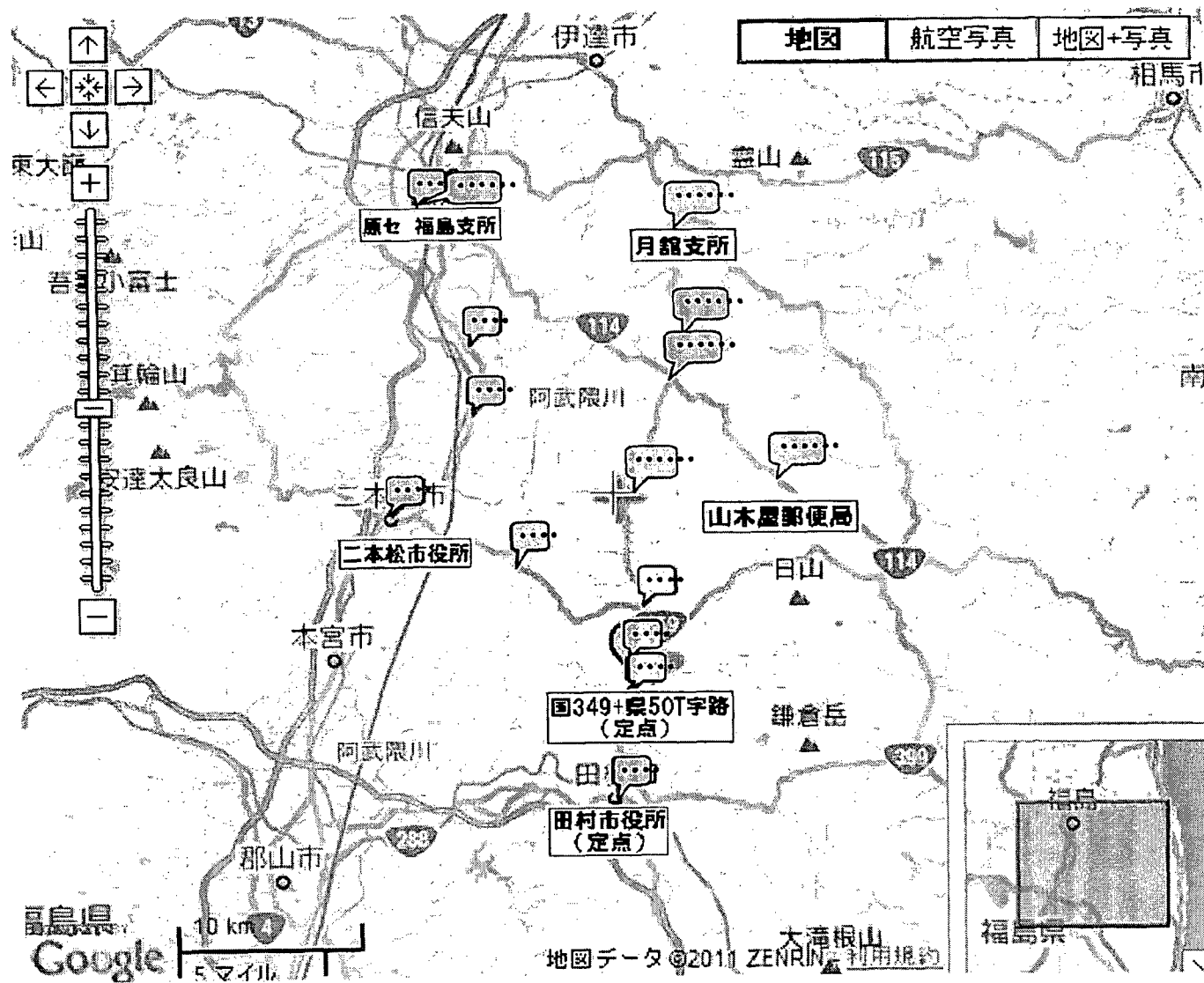
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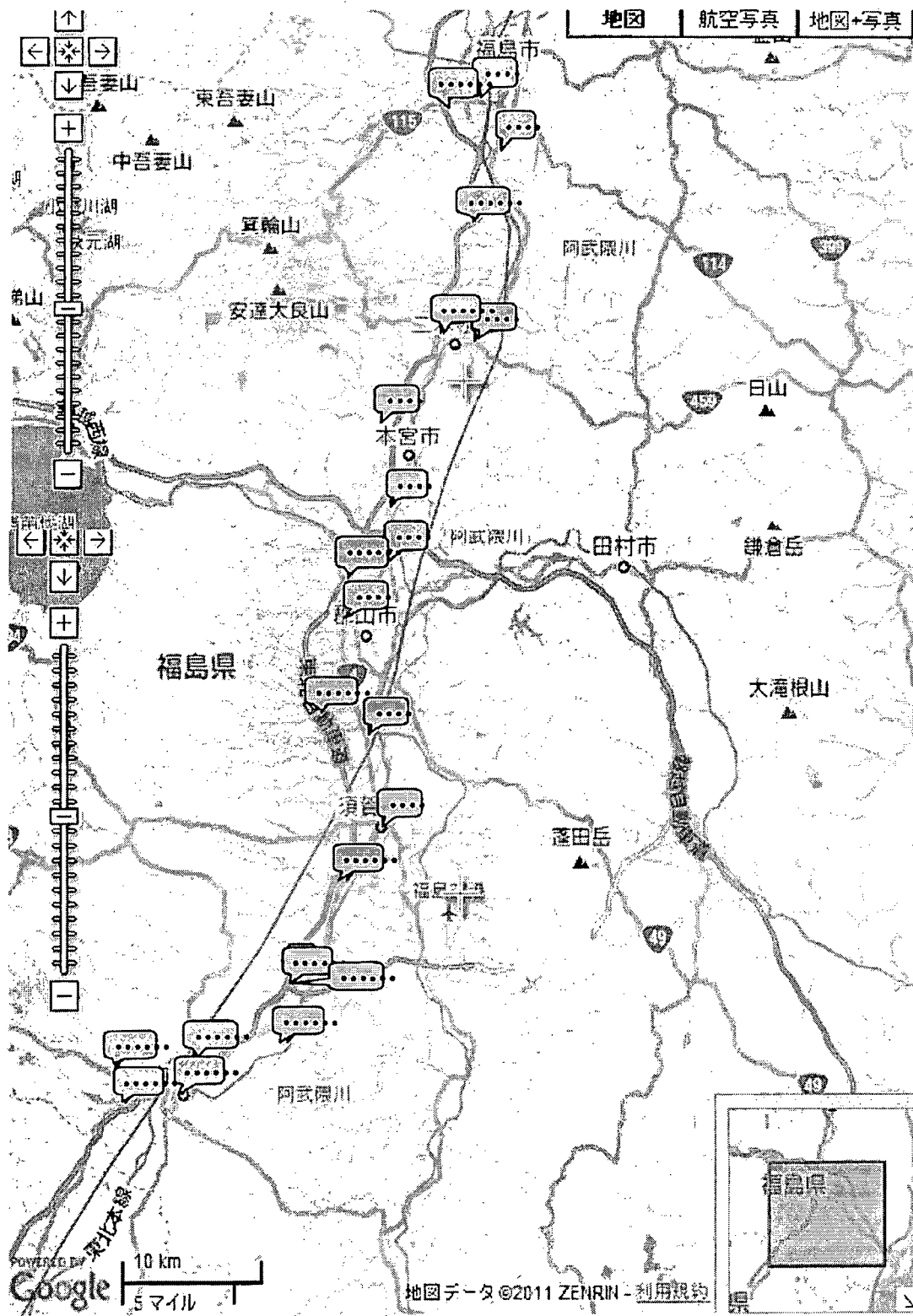
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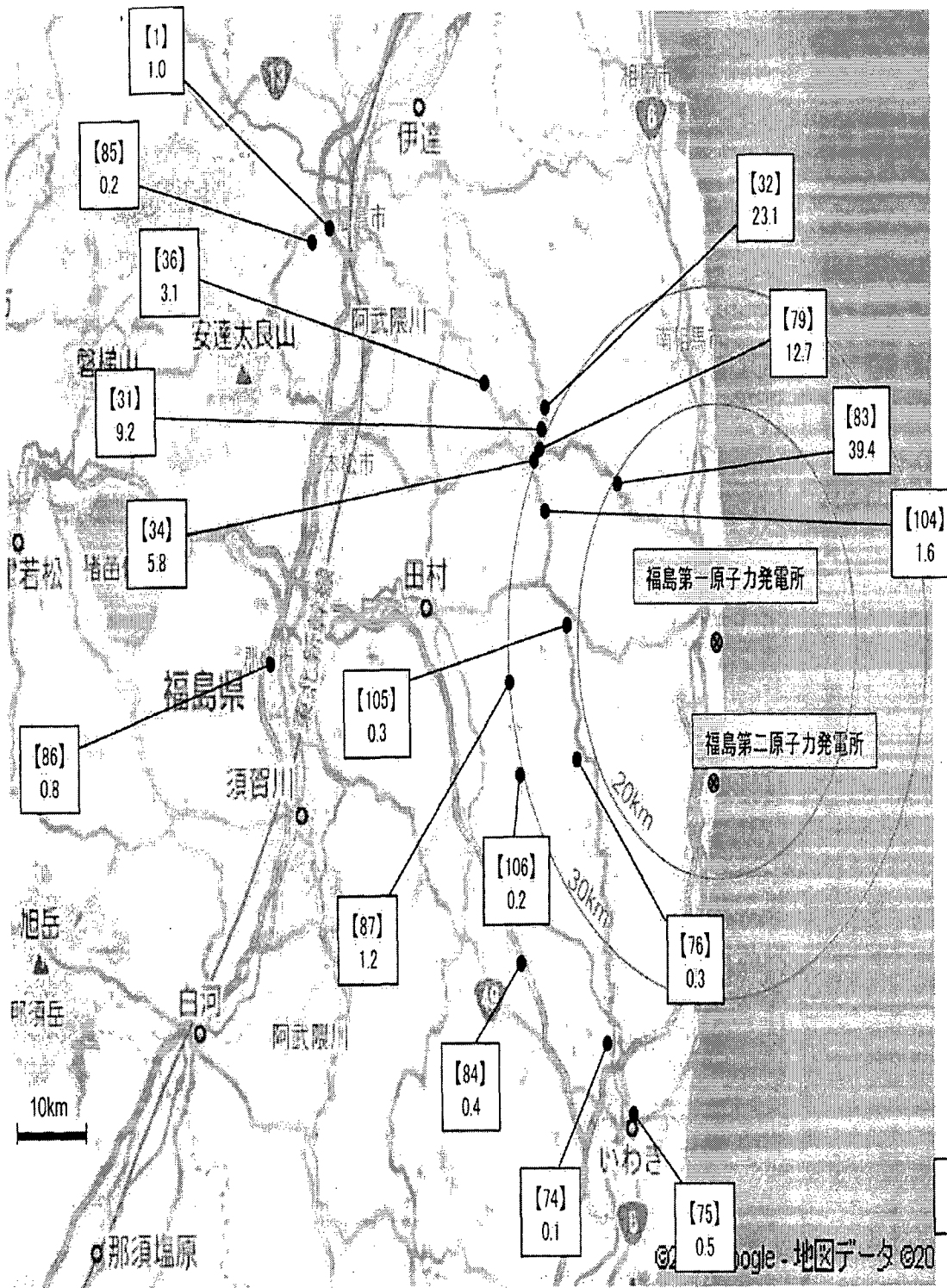




福島第一原子力発電所周辺のモニタリング結果

測定日時
4月17日
6時00分～11時00分

●測定箇所



単位:マイクロシーベルト毎時

円は範囲の概略を示す

福島第一原子力発電所の20km以遠のモニタリング結果について

平成23年4月17日 13時00分現在
文 部 科 学 省

○文部科学省が集計した結果

- * 1 GM(ガイガー・ミュラー計数管)における値
- * 2 電離箱における値
- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置 の備考	天候	実施者
測定エリア【1】 福島市杉妻町 (約60km北西)	4月17日8時35分	1.0 ^{*2}	N: 37' 44' 12.6" E: 140' 28' 02.9"	20110330 確認	降雨なし	日本原子力研究開発機構
測定エリア【31】 双葉郡浪江町津島仲沖 (約30km北西)	4月17日10時37分	9.2 ^{*2}	N: 37' 33' 45.0" E: 140' 44' 49.9"	20110330 確認	降雨なし	文部科学省
測定エリア【32】 双葉郡浪江町赤平木手七郎 (約30km北西)	4月17日10時52分	23.1 ^{*2}	N: 37' 35' 42.0" E: 140' 45' 14.5"	20110330 確認	降雨なし	文部科学省
測定エリア【34】 双葉郡浪江町津島大高木 (約30km北西)	4月17日9時39分	5.8 ^{*2}	N: 37' 36' 34.6" E: 140' 45' 09.1"	20110330 確認	降雨なし	文部科学省
測定エリア【36】 伊達郡川俣町山木屋大洪 (約40km北西)	4月17日9時20分	3.1 ^{*2}	N: 37' 36' 20.6" E: 140' 37' 58.9"	20110331 確認	降雨なし	文部科学省
測定エリア【74】 いわき市小川町高萩 (約35km南)	4月17日11時04分	0.1 ^{*2}			降雨なし	日本原子力研究開発機構
測定エリア【75】 いわき市内郷御殿町 (約45km南)	4月17日10時36分	0.5 ^{*2}			降雨なし	日本原子力研究開発機構
測定エリア【76】 双葉郡川内村上川内早渡 (約20km南西)	4月17日10時42分	0.3 ^{*2}	N: 37' 20' 25.3" E: 140' 48' 25.7"	20110402 確認	降雨なし	文部科学省
測定エリア【79】 双葉郡浪江町下津島萱深 (約30km北西)	4月17日10時09分	12.7 ^{*2}	N: 37' 33' 03.2" E: 140' 44' 25.0"	20110330 確認	降雨なし	文部科学省
測定エリア【83】 双葉郡浪江町赤平木橋平 (約20km北西)	4月17日10時24分	39.4 ^{*2}	N: 37' 33' 03.2" E: 140' 44' 25.0"	20110330 確認	降雨なし	文部科学省
測定エリア【84】 いわき市三和町釜塩 (約40km南西)	4月17日9時52分	0.4 ^{*2}	N: 37' 33' 03.2" E: 140' 44' 25.0"	20110330 確認	降雨なし	日本原子力研究開発機構
測定エリア【85】 福島市荒井原宿 (約60km北西)	4月17日6時00分	0.2 ^{*2}	N: 37' 42' 45.0" E: 140' 22' 59.0"	20110330 確認	降雨なし	防衛省
測定エリア【86】 郡山市大槻町長石工門林 (約55km西)	4月17日6時00分	0.8 ^{*2}	N: 37' 23' 57.0" E: 140' 19' 35.0"	20110330 確認	降雨なし	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内 (約30km西南西)	4月17日6時00分	1.2 ^{*2}	N: 37' 23' 57.0" E: 140' 19' 35.0"	20110330 確認	降雨なし	防衛省
測定エリア【104】 双葉郡葛尾村大字落合字落合 (約25km西北西)	4月17日9時52分	1.6 ^{*2}	N: 37' 23' 48.0" E: 140' 21' 50.7"	20110404 確認	降雨なし	文部科学省
測定エリア【105】 田村市郡路町古道字寺ノ前 (約20km西)	4月17日11時07分	0.3 ^{*2}	N: 37' 23' 48.0" E: 140' 21' 50.7"	20110404 確認	降雨なし	文部科学省
測定エリア【106】 いわき市川前町小白井字将監小屋 (約30km南西)	4月17日10時09分	0.2 ^{*2}	N: 37' 23' 48.0" E: 140' 21' 50.7"	20110404 確認	降雨なし	文部科学省

	都道府県名	4月16日														過去の平常値の範囲	
		9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20	20-21	21-22	22-23	23-24	
1	北海道(札幌市)	0.030	0.029	0.029	0.029	0.035	0.043	0.045	0.040	0.033	0.032	0.032	0.033	0.034	0.035	0.032	0.02~0.105
2	青森県(青森市)	0.039	0.042	0.043	0.050	0.046	0.033	0.029	0.029	0.031	0.031	0.029	0.027	0.027	0.029	0.029	0.017~0.102
3	岩手県(盛岡市)	0.029	0.028	0.037	0.040	0.041	0.031	0.026	0.025	0.027	0.026	0.025	0.024	0.024	0.024	0.024	0.014~0.084
4	宮城県(仙台市)	0.083	0.083	0.081	0.081	0.081	0.081	0.079	0.079	0.078	0.078	0.077	0.076	0.076	0.076	0.076	0.0176~0.0513
5	秋田県(秋田市)	0.045	0.049	0.054	0.047	0.033	0.036	0.035	0.036	0.036	0.036	0.035	0.035	0.035	0.034	0.034	0.022~0.086
6	山形県(山形市)	0.054	0.054	0.059	0.064	0.059	0.055	0.053	0.053	0.052	0.053	0.053	0.053	0.052	0.052	0.052	0.025~0.082
7	福島県(福島市)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.037~0.046
8	茨城県(水戸市)	0.135	0.135	0.136	0.137	0.136	0.136	0.136	0.136	0.134	0.133	0.134	0.134	0.133	0.133	0.133	0.036~0.056
9	栃木県(宇都宮市)	0.068	0.068	0.068	0.071	0.070	0.069	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.067	0.067	0.030~0.067
10	群馬県(前橋市)	0.039	0.039	0.039	0.040	0.039	0.039	0.039	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.017~0.049
11	埼玉県(さいたま市)	0.060	0.059	0.060	0.060	0.060	0.060	0.060	0.060	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.031~0.060
12	千葉県(市原市)	0.052	0.052	0.053	0.053	0.052	0.052	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.022~0.044
13	東京都(新宿区)	0.077	0.077	0.077	0.077	0.077	0.077	0.076	0.077	0.076	0.076	0.076	0.076	0.076	0.075	0.075	0.028~0.079
14	神奈川県(茅ヶ崎市)	0.056	0.057	0.056	0.057	0.057	0.057	0.057	0.057	0.056	0.057	0.056	0.056	0.056	0.057	0.057	0.035~0.069
15	新潟県(新潟市)	0.058	0.072	0.064	0.053	0.048	0.047	0.047	0.046	0.046	0.047	0.046	0.046	0.046	0.046	0.046	0.031~0.153
16	富山県(射水市)	0.055	0.055	0.051	0.048	0.048	0.047	0.047	0.047	0.048	0.047	0.047	0.047	0.047	0.047	0.048	0.029~0.147
17	石川県(金沢市)	0.052	0.051	0.049	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.048	0.0291~0.1275
18	福井県(福井市)	0.046	0.046	0.046	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.032~0.097
19	山梨県(甲府市)	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.040~0.086
20	長野県(長野市)	0.044	0.050	0.046	0.044	0.043	0.043	0.042	0.042	0.042	0.043	0.043	0.042	0.042	0.042	0.042	0.0299~0.0974
21	岐阜県(各務原市)	0.061	0.061	0.061	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.057~0.110
22	静岡県(静岡市)	0.041	0.041	0.042	0.041	0.042	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.040	0.040	0.0281~0.0765
23	愛知県(名古屋市)	0.041	0.040	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.035~0.074
24	三重県(四日市市)	0.048	0.047	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.0416~0.0789
25	滋賀県(大津市)	0.033	0.033	0.033	0.033	0.033	0.032	0.032	0.033	0.033	0.032	0.032	0.032	0.032	0.032	0.032	0.031~0.061
26	京都府(京都市)	0.039	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.037	0.037	0.038	0.037	0.038	0.038	0.033~0.087
27	大阪府(大阪市)	0.042	0.043	0.043	0.043	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.061
28	兵庫県(神戸市)	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.035~0.076
29	奈良県(奈良市)	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.046~0.080
30	和歌山県(和歌山市)	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031~0.056
31	鳥取県(東伯郡)	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.062	0.062	0.062	0.063	0.063	0.063	0.036~0.110
32	島根県(松江市)	0.045	0.045	0.045	0.045	0.045	0.045	0.045	0.046	0.045	0.045	0.046	0.045	0.045	0.045	0.046	0.037~0.131
33	岡山県(岡山市)	0.050	0.049	0.049	0.049	0.049	0.049	0.049	0.049	0.048	0.048	0.049	0.048	0.048	0.049	0.049	0.043~0.104
34	広島県(広島市)	0.047	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.035~0.069
35	山口県(山口市)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.084~0.128
36	徳島県(徳島市)	0.039	0.039	0.038	0.038	0.038	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.037~0.067
37	香川県(高松市)	0.062	0.060	0.053	0.056	0.059	0.059	0.054	0.057	0.062	0.062	0.054	0.056	0.062	0.059	0.053	0.051~0.077
38	愛媛県(松山市)	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.047	0.047	0.047	0.048	0.048	0.048	0.048	0.045~0.074
39	高知県(高知市)	0.026	0.026	0.026	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.019~0.054
40	福岡県(太宰府市)	0.037	0.036	0.036	0.037	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.034~0.079
41	佐賀県(佐賀市)	0.040	0.040	0.040	0.040	0.039	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.037~0.086
42	長崎県(大村市)	0.036	0.030	0.030	0.030	0.029	0.030	0.029	0.029	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.027~0.069
43	熊本県(宇土市)	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.027	0.021~0.067
44	大分県(大分市)	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.048~0.085
45	宮崎県(宮崎市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.0243~0.0664
46	鹿児島県(鹿児島市)	0.036	0.036	0.036	0.036	0.036	0.036	0.035	0.036	0.035	0.035	0.036	0.036	0.036	0.036	0.036	0.0306~0.0943
47	沖縄県(うるま市)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.0133~0.0575

*宮城県では、可搬型モニタリングポストによる測定。

また、過去の平常値の範囲については、仙台市に設置していた固定型モニタリングポストの値を記載。

*福島県では、双葉郡のモニタリングポストが避難区域に入っており、測定が困難であるため、代替地として福島県双葉郡山岡モニタリングポストで測定。

*島根県では、機器点検のため、4月4日17時から代替機器により測定。

*本データは、1μGy/h(マイクログレイ毎時)=1μSv/h(マイクロシーベルト毎時)と換算して算出。

*文部科学省が各都道府県等からの報告に基づき作成。

*過去の平常値の範囲は、震災発生前の観測値における上限値と下限値をしめたもの。

*群馬県、山梨県、高知県の過去の平常値の範囲の値は4月9日19時発表分より訂正。

H23.4.17 13:00

環境放射能水準調査結果

 $\mu\text{Sv/h}$ (マイクロシーベルト毎時)

	都道府県名	4月17日									過去の平常値の範囲
		0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	
1	北海道(札幌市)	0.032	0.035	0.037	0.036	0.035	0.033	0.031	0.030	0.029	0.02~0.105
2	青森県(青森市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.026	0.017~0.102
3	岩手県(盛岡市)	0.024	0.022	0.024	0.024	0.025	0.024	0.024	0.023	0.023	0.014~0.084
4	宮城県(仙台市)	0.075	0.075	0.074	0.074	0.075	0.074	0.075	0.075	0.077	0.0176~0.0513
5	秋田県(秋田市)	0.034	0.035	0.034	0.035	0.034	0.034	0.034	0.034	0.034	0.022~0.086
6	山形県(山形市)	0.052	0.052	0.052	0.053	0.052	0.052	0.053	0.052	0.053	0.025~0.082
7	福島県(福島市)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.037~0.046
8	茨城県(水戸市)	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.134	0.036~0.056
9	栃木県(宇都宮市)	0.067	0.068	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.030~0.067
10	群馬県(前橋市)	0.038	0.039	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.017~0.049
11	埼玉県(さいたま市)	0.059	0.059	0.059	0.059	0.059	0.060	0.059	0.059	0.059	0.031~0.060
12	千葉県(市原市)	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.022~0.044
13	東京都(新宿区)	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.076	0.076	0.028~0.079
14	神奈川県(茅ヶ崎市)	0.056	0.056	0.056	0.057	0.056	0.056	0.056	0.056	0.056	0.035~0.069
15	新潟県(新潟市)	0.046	0.046	0.046	0.047	0.046	0.047	0.047	0.046	0.047	0.031~0.153
16	富山県(射水市)	0.048	0.048	0.048	0.048	0.048	0.049	0.048	0.048	0.048	0.029~0.147
17	石川県(金沢市)	0.047	0.048	0.047	0.047	0.047	0.047	0.048	0.047	0.047	0.0291~0.1275
18	福井県(福井市)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.032~0.097
19	山梨県(甲府市)	0.043	0.044	0.043	0.044	0.044	0.044	0.044	0.044	0.043	0.040~0.066
20	長野県(長野市)	0.042	0.043	0.042	0.042	0.043	0.043	0.042	0.042	0.042	0.0299~0.0974
21	岐阜県(各務原市)	0.060	0.061	0.060	0.060	0.060	0.061	0.061	0.061	0.061	0.057~0.110
22	静岡県(静岡市)	0.040	0.039	0.038	0.038	0.038	0.037	0.037	0.038	0.039	0.0281~0.0765
23	愛知県(名古屋市)	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.035~0.074
24	三重県(四日市市)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.0416~0.0789
25	滋賀県(大津市)	0.033	0.033	0.033	0.033	0.033	0.034	0.034	0.033	0.033	0.031~0.061
26	京都府(京都市)	0.038	0.038	0.038	0.039	0.039	0.039	0.039	0.039	0.039	0.033~0.067
27	大阪府(大阪市)	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.061
28	兵庫県(神戸市)	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.036	0.035~0.076
29	奈良県(奈良市)	0.047	0.047	0.048	0.048	0.048	0.049	0.049	0.046	0.048	0.046~0.080
30	和歌山県(和歌山市)	0.031	0.031	0.031	0.032	0.031	0.031	0.031	0.032	0.031	0.031~0.055
31	鳥取県(東伯郡)	0.064	0.063	0.064	0.064	0.064	0.064	0.064	0.064	0.063	0.036~0.110
32	島根県(松江市)	0.045	0.046	0.046	0.046	0.046	0.046	0.047	0.046	0.046	0.037~0.131
33	岡山県(岡山市)	0.048	0.048	0.049	0.049	0.050	0.050	0.051	0.051	0.050	0.043~0.104
34	広島県(広島市)	0.046	0.046	0.047	0.047	0.047	0.048	0.048	0.047	0.048	0.035~0.069
35	山口県(山口市)	0.093	0.093	0.094	0.094	0.094	0.095	0.096	0.097	0.096	0.084~0.128
36	徳島県(徳島市)	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037~0.067
37	香川県(高松市)	0.060	0.062	0.057	0.055	0.061	0.062	0.058	0.053	0.060	0.051~0.077
38	愛媛県(松山市)	0.048	0.048	0.048	0.049	0.048	0.048	0.048	0.048	0.048	0.045~0.074
39	高知県(高知市)	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.026	0.026	0.019~0.054
40	福岡県(太宰府市)	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.034~0.079
41	佐賀県(佐賀市)	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.040	0.040	0.037~0.086
42	長崎県(大村市)	0.029	0.029	0.030	0.029	0.029	0.029	0.029	0.030	0.030	0.027~0.069
43	熊本県(宇土市)	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.029	0.028	0.021~0.067
44	大分県(大分市)	0.050	0.050	0.050	0.050	0.050	0.051	0.050	0.050	0.050	0.048~0.085
45	宮崎県(宮崎市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.0243~0.0664
46	鹿児島県(鹿児島市)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.0306~0.0943
47	沖縄県(うるま市)	0.021	0.021	0.023	0.023	0.022	0.022	0.022	0.021	0.021	0.0133~0.0575

*宮城県では、可搬型モニタリングポストによる測定。

また、過去の平常値の範囲については、仙台市に設置していた固定型モニタリングポストの値を記載。

*福島県では、双葉郡のモニタリングポストが避難区域に入っており、測定が困難であるため、代替地として福島市紅葉山局モニタリングポストで測定。

*鳥取県では、検定点検のため、4月4日17時から代替機器により測定。

*本データは、 $1\mu\text{Sv/h}$ (マイクログレイ毎時) $=1\mu\text{Sv/h}$ (マイクロシーベルト毎時)と換算して算出。

*文部科学省が各都道府県等からの報告に基づき作成。

*過去の平常値の範囲は、震災発生前の観測値における上限値と下限値をしめたもの。

*群馬県、山梨県、高知県の過去の平常値の範囲の値は4月9日19時発表分より訂正。

Rihm, Roger

From: Rihm, Roger
Sent: Monday, March 21, 2011 7:39 AM
To: Landau, Mindy; Ellmers, Glenn; Andersen, James
Subject: Fw: NEI Put This Out on Saturday - It Traces the History of BWR Mark I Containment Design Changes back to 1975
Attachments: Report_-_BWR_Mark_I_Containment_03192011_2.pdf

Fyi.

Sent from an NRC BlackBerry
Roger S. Rihm

(b)(6)

From: Barkley, Richard
To: Rihm, Roger; Trapp, James
Sent: Sun Mar 20 18:14:09 2011
Subject: FW: NEI Put This Out on Saturday - It Traces the History of BWR Mark I Containment Design Changes back to 1975

We will see more on this matter going forward – The cards and letters on the adequacy of Mark 1 containment designs in this country should be coming in shortly.

From: Barkley, Richard
Sent: Sunday, March 20, 2011 6:04 PM
To: Dean, Bill; Lew, David; Wilson, Peter; Weerakkody, Sunil; Doerflein, Lawrence; Roberts, Darrell; Clifford, James
Cc: Jackson, Donald; Setzer, Thomas
Subject: NEI Put This Out on Saturday - It Traces the History of BWR Mark I Containment Design Changes back to 1975

This will come up in public meetings as well as in press inquiries going forward.

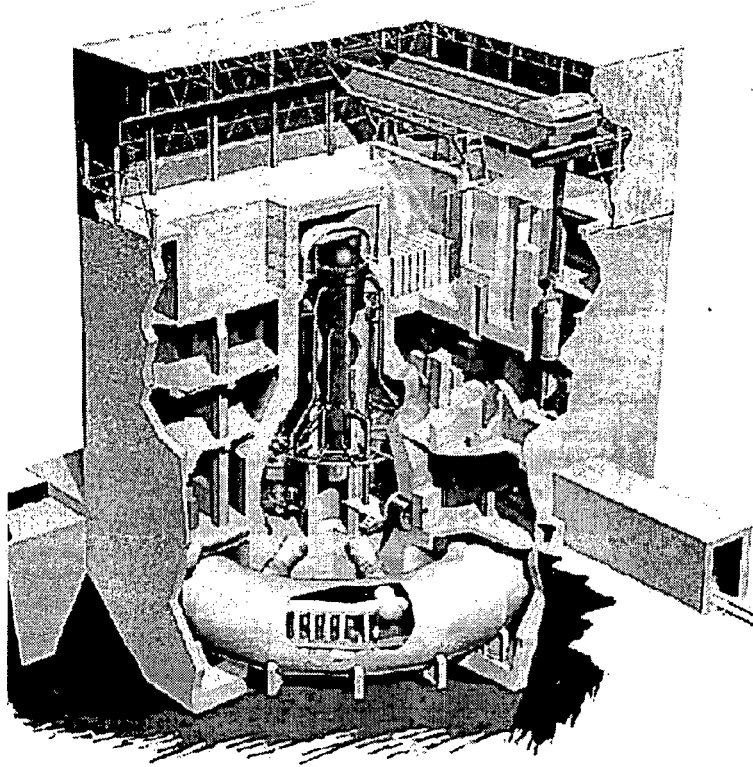
Hopefully we can learn before too long whether any of these modifications were ever made in Japan.

Richard S. Barkley, PE
Nuclear & Environmental Engineer
(610) 337-5065 Work

(b)(6)

Cell

NEI



Mark I Containment Report

March 19, 2011

PURPOSE

This paper describes the Mark I containment design in use in the 23 U.S. reactors and its ability to fulfill its safety function in containing fission product releases under design basis conditions. It also offers, as an initial matter, some observations about the performance of the Mark I containment under many beyond-design-basis events experienced at Fukushima Daiichi in March 2011.

PERFORMANCE OF MARK I CONTAINMENTS AT FUKUSHIMA DAIICHI

Fukushima Daiichi Units 1-4 are boiling water reactors ("BWRs") equipped with Mark I containments. Units 1-3 were operating; Unit 4 was in shutdown with fuel offloaded when the earthquake and tsunami occurred, which resulted in the loss all offsite and on-site power to all four units.

Early reports regarding Units 1-3 stated plant operators used safety relief valves to relieve pressure in the reactor pressure vessel. In addition, when the fuel rods became uncovered, hydrogen formed in the core (due to zirconium/water reaction) and was also transported into the wetwell when the reactor vessel safety relief valves opened. The combination of steam and hydrogen flowing into the wetwell increased the wetwell temperature and pressure. Since there was no on-site or off-site power available, there was no means available to cool the wetwell water. Over time, the pressure in the primary containment rose over the design pressure. To avoid containment breach, venting became necessary. Upon venting, it is believed that vented hydrogen gas caused explosions at these units.

The following should be noted:

- Coincident long-term loss of both on-site and off-site power for an extended period of time is a beyond-design-basis event for the primary containment on any operating nuclear power plant.
- The Mark I containment vessels appeared to have held pressure to well above the design pressure.
- The response of the reactor pressure vessel and reactor in general agree with severe accident management studies performed in the 1980s and early 1990s.

BACKGROUND

Description of the Mark I Containment System

Figure 1 shows a cutaway view of a typical Mark I Containment system. The major components shown in the figure include:

- The drywell, which surrounds the reactor pressure vessel (RPV) and recirculation loops. The drywell is light-bulb shaped steel-lined pressure vessel backed over most of its surface with reinforced concrete.

- A wetwell is situated beneath the drywell and connected to the drywell by a system of vent pipes. The wetwell is a toroidal-shaped (donut shaped) pressure vessel which is filled to about half of its height with water. The wetwell is often referred to as a torus (donut shape) or as a suppression pool (due to its function) and is made from either steel or concrete.
- An interconnecting vent network exists between the drywell and the wetwell. The vents are open on one end to the drywell and on the other end open into a header in the wetwell that has additional downcomer vents below the water level in the suppression pool.

The drywell, wetwell and vent system form the primary containment around the reactor pressure vessel and recirculation loops. The function of the containment system is to contain the energy released during a postulated design-basis loss-of-coolant accident of any size reactor coolant pipe and to protect the reactor from external events. The design-basis break is the largest reactor recirculation system pipe. The primary containment system is designed to withstand the combined seismic, pressure and temperature loads for this event and maintain integrity. The containment system accommodates this accident without exceeding the design leakage rate; in this way, the containment system limits the release of fission products during that event to offsite dose to levels significantly below the guideline values specified by regulation (10 CFR 100).

The primary containment is one of the three main barriers limiting release of fission products from the BWR nuclear fuel into the environment. Other barriers include the fuel rod cladding and the reactor pressure vessel together with its piping, which form the reactor coolant pressure boundary and the primary containment. In addition to the three fission product barriers, the secondary containment surrounds the primary containment and houses emergency core cooling systems and the spent fuel pool.

Note: Secondary Containment may vary from site to site

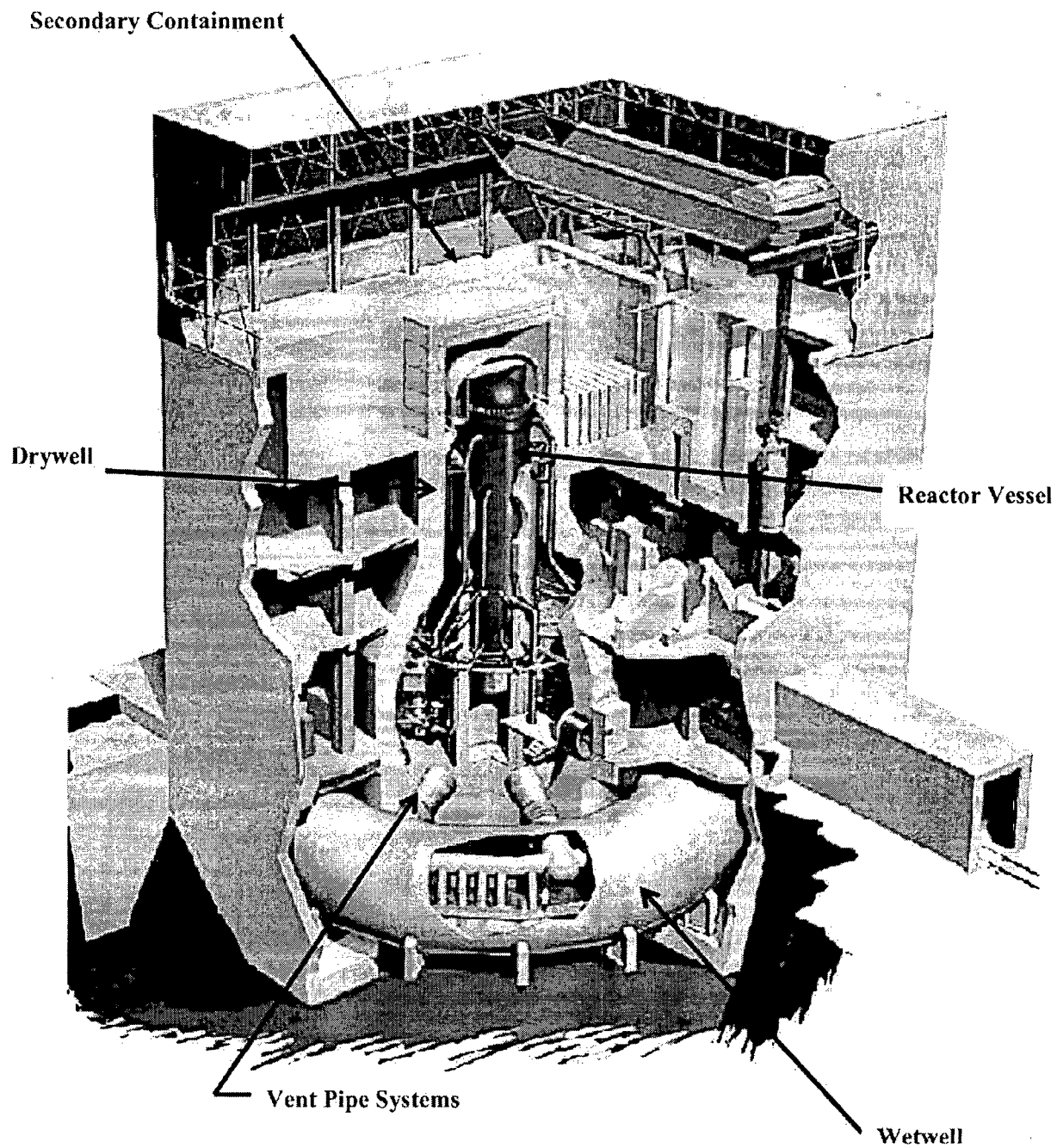


Figure 1 – Typical Mark I Containment System

CONTAINMENT OPERATION DURING A LOSS OF COOLANT ACCIDENT

During normal operation, the drywell atmosphere and the wetwell atmosphere is inerted (filled with nitrogen), and the wetwell water is at ambient temperature. In the event of a pipe break in the reactor coolant system inside the drywell, pressurized coolant escaping from inside the reactor coolant system will flash to steam and begin to pressurize and heat the drywell atmosphere. The reactor is automatically shut down. As the pressure rises in the drywell, the vent system will also pressurize, eventually forcing the steam into the wetwell below the water level. The steam contacting the water condenses in the wetwell. This reduces (suppresses) the pressure in primary containment following the loss of coolant accident by turning steam back into water.

Steam condensing in the wetwell gradually increases the wetwell temperature and pressure. As the accident progresses, plant instrumentation will sense the change in conditions in containment and in the reactor coolant system, and emergency systems will activate to cool the shut down reactor. Systems will also be activated to cool the water in the wetwell. These active emergency systems can be powered by off-site power or by on-site emergency diesel generators in the event of a loss of off-site power. With these emergency systems available, the Mark I containment system is designed to contain reactor water (and any fission products if present) without release during a range of pipe break scenarios, up to and including a full guillotine rupture of the largest pipe connected to the reactor vessel, such that the primary containment pressure does not exceed its design value (50 to 60 PSIG at expected accident temperature). This prevents discharge of any released water (and fission products if present) during the loss of coolant accident from escaping containment into the atmosphere.

Use of a wetwell for pressure suppression in primary containment is a feature of the General Electric BWR design.

DESIGN BASIS

Appendix A to 10 CFR 50 lists current general design criteria for nuclear power plants. Four General Design Criteria—2, 16, 50, and 51—are used for any reactor vendor containment design. Each of the criteria are provided below:

Criterion 2 – Design bases for protection against natural phenomena. Structures, systems and components important to safety shall be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis and seiches without loss of capability to perform their safety functions. The design bases for these structures, systems, and components shall reflect: (1) Appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena and (3) the importance of the safety functions to be performed.

Criterion 3 – Reactor containment and associated systems shall be provided to establish an essentially leak-tight barrier against the uncontrolled release of radioactivity to the

environment and to assure that the containment design conditions important to safety are not exceeded for as long as postulated accident conditions require.

Criterion 50 – Containment design basis. The reactor containment structure, including access openings, penetrations, and the containment heat removal system shall be designed so that the containment structure and its internal compartments can accommodate, without exceeding the design leakage rate and with sufficient margin, the calculated pressure and temperature conditions resulting from any loss-of-coolant accident. This margin shall reflect consideration of (1) the effects of potential energy sources which have not been included in the determination of the peak conditions, such as energy in steam generators and as required by § 50.44 energy from metal-water and other chemical reactions that may result from degradation but not total failure of emergency core cooling functioning, (2) the limited experience and experimental data available for defining accident phenomena and containment responses, and (3) the conservatism of the calculational model and input parameters.

Criterion 51 – Fracture prevention of containment pressure boundary. The reactor containment boundary shall be designed with sufficient margin to assure that under operating, maintenance, testing, and postulated accident conditions (1) its ferritic materials behave in a nonbrittle manner and (2) the probability of rapidly propagating fracture is minimized. The design shall reflect consideration of service temperatures and other conditions of the containment boundary material during operation, maintenance, testing, and postulated accident conditions, and the uncertainties in determining (1) material properties, (2) residual, steady state, and transient stresses, and (3) size of flaws.

The Mark I containment system has undergone extensive testing and analysis and in some cases has been modified to ensure that these criterion are satisfied, as described in the following sections.

ORIGINAL DESIGN OF THE MARK I CONTAINMENT

The original design of the Mark I containment system considered postulated accident loads associated with containment design. These included pressure and temperature loads associated with a loss-of-coolant accident (LOCA), seismic loads, dead loads, jet-impingement loads, and hydrostatic loads due to water in the suppression chamber.

The original design loads for the containment were based on large-scale tests performed by GE and other institutions. The purpose of these initial tests, performed from 1958 through 1962, was to demonstrate the viability of the pressure-suppression concept for reactor containment design. The tests were designed to simulate LOCAs with breaks in piping sized up to approximately twice the cross-sectional break area of the design-basis LOCA.

The tests were instrumented to obtain quantitative information associated with containment design pressures during these events. The data from these tests were the bases for the design and the initial NRC approval of the Mark I containment system.

EVOLUTION OF THE DESIGN

After the establishment of the original design criteria, additional loading conditions were identified which arise in the functioning of the pressure-suppression concept used in the Mark I containment system design. These conditions were noted in the course of performing large-scale testing of an advanced design pressure-suppression containment (Mark III). Specifically, during the large-scale testing of the Mark III containment system design in the period 1972 through 1974, new suppression pool hydrodynamic loads were identified for the postulated LOCAs. GE tested the Mark III containment concept in its Pressure Suppression Test Facility (PSTF). These tests were initiated for the Mark III concept because of configuration differences between the previous containment concept and the Mark III design. More sophisticated instrumentation was available for the Mark III tests, as were computerized methods for data analysis. It was from the PSTF testing that the short-term dynamic effects of drywell air being forced into the pool in the initial stage of the postulated LOCA were first identified. This air injection into the suppression pool water results in a pool swell event of short duration. In this event, a slug of water rises and impacts the underside of structural components within the suppression chamber.

In addition to the information obtained from the PSTF data, other LOCA-related dynamic load information were obtained from foreign testing programs for similar pressure-suppression containments. In these foreign tests, oscillatory condensation loads which occur during the later stages of a postulated LOCA were identified.

Also, experience at operating plants indicated that Safety Relief Valve (SRV) discharges to the suppression pool would cause oscillatory hydrodynamic loads within the suppression chamber. Both the LOCA and SRV discharge are characterized by an initial short period injection of air into the suppression pool, followed by a longer period of steam discharge into the suppression pool.

Further, during in-plant testing of Mark I containments, new suppression pool hydrodynamic loads which had not explicitly been included in the original Mark I containment design basis were identified. These additional loads result from dynamic effects of drywell air and steam being rapidly forced into the suppression pool (torus) during a postulated LOCA and from suppression pool response to safety relief valve (SRV) operation generally associated with plant transient conditions.

These hydrodynamic loads had not been considered in the original design of the Mark I containment, the NRC required that a detailed reevaluation of the Mark I containment system be made.

In February and April 1975, the NRC transmitted letters to all U.S. utilities owning BWR facilities with the Mark I containment system design, requesting that the owners quantify the hydrodynamic loads and assess the effect of these loads on the containment structure. The February 1975 letters reflected NRC concerns about the dynamic loads from SRV discharges, while the April 1975 letters indicated the need to evaluate the containment response to the newly identified dynamic loads associated with a postulated design basis LOCA.

As a result of these letters from the NRC, and recognizing that the additional evaluation effort would be very similar for all Mark I BWR plants, the affected utilities formed a Mark I Owners Group, and GE was designated as the Group's lead technical organization. The objectives of the group were to determine the magnitude and significance of these dynamic loads as quickly as possible and to identify courses of action needed to resolve any outstanding safety concerns. The Mark I Owners Group divided this task into two programs: A Short-Term Program and a Long-Term Program.

The objectives of the Short-Term Program (STP) were to verify that each Mark I containment system original configuration would maintain its integrity and functional capability when subjected to the most probable loads induced by a postulated design basis LOCA, and to verify that the licensed Mark I BWR facilities could continue to operate safely without endangering the health and safety of the public while a methodical, comprehensive Long-Term Program (LTP) was being conducted.

The STP structural acceptance criteria used to evaluate the design of the torus and related structures were based on providing adequate margins of safety; i.e., a safety-to-failure factor of 2, for continued operation of the plant's original configuration before the more detailed results of the LTP were available.

The NRC concluded that a sufficient margin of safety had been demonstrated in the STP to ensure the functional performance of the containment system and, therefore, any undue risk to the health and safety of the public was precluded. These conclusions were documented in the "Mark I Containment Short-Term Program Safety Evaluation Report," NUREG-0408, dated December 1977. The NRC granted the operating Mark I facilities an exemption relating to the structural factor of safety requirements of 10 CFR 50.55(a) for an interim period while the more comprehensive LTP was being conducted.

The objectives of the LTP were to establish conservative design basis loads that are appropriate for the anticipated life of each Mark I BWR facility, and to restore the originally intended design safety margins for each Mark I containment system. The plans for the LTP and the progress and results of the program were reviewed with the NRC throughout the performance of the program.

The LTP consisted of:

- The definition of loads for suppression pool hydrodynamic events
- The definition of structural assessment techniques
- The performance of a plant-unique analysis (PUA) for each Mark I facility in the U.S.

The generic aspects of the Mark I Owners Group effort were completed with the submittal of the "Mark I Containment Program Load Definition Report" (LDR) and the "Mark I Containment Program Structural Acceptance Criteria, Plant Unique Analysis Application Guide" (PUAAG). The NRC concluded that load definitions and structural acceptance criteria documented in these two reports were acceptable for use in the plant-unique analysis of each plant. The NRC conclusions and comments were presented in the "Mark I Containment Long-Term Program.

Safety Evaluation Report, NUREG-0661," dated July 1980 and Supplement Number 1 to NUREG-0661.

GE provided reports to each Mark I BWR facility with plant unique LOCA hydrodynamic loads. GE also prepared and provided a supplementary generic load definition report and supporting application guides which provided the load definition procedures for the postulated LOCA and SRV actuation events for use in the structural re-evaluation of the pressure suppression chamber, vent system, SRV discharge piping, and other Mark I containment components.

The NRC reviewed the generic criteria and analysis techniques developed for the LTP for re-assessment of the Mark I containment. The NRC provided an acceptance criteria for application of the LTP loads assessment process in US NRC NUREG-0661, "Safety Evaluation Report, Mark I Containment Long-Term Program," July 1980 and NUREG-0661, Supplement 1, issued August 1982 (Refer to Attachment 4 for additional information regarding NUREG-0661)

Each BWR Mark I plant performed a plant-unique re-assessment of the Mark I containment, applying the load definition process developed by the LTP and implementing the NRC acceptance criteria of NUREG-0661. The objective of this reassessment was to either demonstrate that the existing plant design has the required safety margin or to identify any additional plant modifications that were necessary to restore the intended margins of safety in the containment design. The reports included, as appropriate, documentation of evaluation performed for modifications to the original design (the plant-unique assessments led to structural modifications to the torus and vent system at most US BWR's with Mark I containments to ensure compliance with the applicable criteria). The plant-unique analyses documented the efforts to address each of the applicable NUREG-0661 requirements and demonstrated with the NUREG-0661 acceptance criteria that the design of the containment is adequate and that the original design safety margins are either confirmed with the original design or restored with the modifications. Each Mark I BWR facility submitted its plant-unique analysis report to the NRC for approval, since each plant has an individual license with the NRC.

CONTAINMENT OPERATION DURING A STATION BLACKOUT

In the late 1980s and early 1990s, BWR operators made procedure changes and modifications to cope with events which involved the loss of the normal offsite power and normally available emergency diesel generators as discussed in NRC Regulatory Guide 1.155 (Station Blackout).

To support safe operation in a variety of circumstances, the plants have been designed and have developed procedures to address a wide range of potential events. The Emergency Operating Procedures provide instructions for maintaining adequate core cooling and protection of the reactor vessel and containment under a variety of prescribed emergency conditions. If adequate core cooling cannot be maintained, radiological emergency response procedures provide instructions for plant staff to take actions to mitigate the consequences of an event that could lead to radioactive material release to the public and provides for making recommendations to state and local agencies to take action to protect the health of the public such as evacuation or sheltering. The industry has also implemented Severe Accident Management Guidelines (SAMG) to diagnose and mitigate severe accidents. These operating guidelines include steps for

dealing with challenges to containment integrity and reactor coolant loss beyond the original plant design basis. This includes methodology to use auxiliary equipment that is not driven by normal plant power sources to provide makeup water to the reactor vessel/containment. These guidelines interface with Emergency Operating Procedures to mitigate a loss of large areas of the plant and with state and local radiological emergency response procedures.

As a result of the September 11, 2001 terrorist attacks, additional actions and equipment were put in place at certain U.S. plants to allow water makeup to the reactor and the fuel pools should significant damage occur to the reactor buildings. These changes include pre-staged diesel-driven pumps, piping, and procedures that would support water makeup from various water supplies without the need for electrical power.

Also, as a result of the Industry Degraded Core Rulemaking (IDCOR) and NRC programs for Severe Accident Closure, recommended that all Mark I U.S. nuclear power plants add a containment venting capability. This containment vent was designed as a hard pipe that would discharge from the containment in the case of a BWR from the wetwell or drywell, and discharge to an elevated release, such as the plant stack. All U.S. Mark I nuclear reactors have installed this containment venting modification.

In summary, this vent allows operators to protect the integrity of the primary containment as well as preventing a ground-level release for the severe accident scenarios beyond the design and licensing basis (Refer to Attachment 5 for additional modification information specific to BWR Mark I containment).

CONCLUSION

The Mark I containments in currently operating BWRs have been designed to meet the specific provisions of 10 CFR 50 Appendix A, General Design Criteria 2, 16, 50 and 51 for containment design or the applicable equivalent regulation at the time of licensing.

The GE Mark I containment systems in U.S. BWRs have undergone extensive testing and analysis and have been modified to meet NRC regulations. The Mark I pressure suppression containment is a proven technology that has been enhanced with confirmatory testing, enhanced knowledge and advanced analysis over time. It meets all regulations and has been certified by review of the NRC through a Safety Evaluation Report (SER) at each Mark I plant under comprehensive, NRC-mandated Mark I Containment Program re-analyses performed to address the evolving design loading conditions.

The Mark I containment also has many features inherent in its design that make the probability of a severe accident extremely low. They have been modified throughout their operation to provide additional features and response capabilities to further reduce this probability.

Also, to ensure containment integrity, the drywell or primary containment, as called, is tested at established intervals (every 10 to 15 years) in accordance with 10 CFR 50 Appendix J Program (Primary Reactor Containment Leakage Testing). This test is used to demonstrate containment integrity and to demonstrate it will perform its safety function by verifying that leakage through

the containment, and systems and components penetrating the primary containment, shall not exceed established limits. The containment and associated systems and components penetrating containment are designed to provide the final barrier in preventing the release of quantities of radioactive material that would have a significant radiological effect on the health of the public. This program also uses periodic surveillance testing to demonstrate the leak tightness.

Additional procedures, hardware and resources have been planned and prepared for the beyond-design-basis scenarios to assure protection of the safety and health of the public. In addition, 10 CFR 50, Appendix B, also assures that any conditions adverse to quality be identified and resolved. It requires assuring that the cause of the condition is determined and corrective actions taken to preclude repetition.

Attachments

U.S. Nuclear Plants With Mark I Containment

Reactor Name	State
Browns Ferry 1	Alabama
Browns Ferry 2	Alabama
Browns Ferry 3	Alabama
Brunswick 1	North Carolina
Brunswick 2	North Carolina
Cooper	Nebraska
Dresden 2	Illinois
Dresden 3	Illinois
Duane Arnold	Iowa
Edwin I. Hatch 1	Georgia
Edwin I. Hatch 2	Georgia
Fermi 2	Michigan
Hope Creek 1	New Jersey
James A. Fitzpatrick	New York
Monticello	Minnesota
Nine Mile Point 1	New York
Oyster Creek 1	New Jersey
Peach Bottom 2	Pennsylvania
Peach Bottom 3	Pennsylvania
Pilgrim 1	Massachusetts
Quad Cities 1	Illinois
Quad Cities 2	Illinois
Vermont Yankee 1	Vermont

Analyzed Loading Conditions For Mark I Containments

Hydrodynamic Loads evaluated a spectrum of postulated pipe breaks to determine the worst loading condition for each structural element. For the long-term program, an intermediate liquid break accident (IBA) and a small steam break accident (SBA) were specified in addition to the Design Basis Accident DBA. All LOCA and seismic loads are added together as appropriate for the load combination scenario. Not all of the suppression pool hydrodynamic loads can occur at the same time. In addition, the load magnitudes and timing will vary, depending on the accident scenario under consideration. Therefore, combinations of loading conditions have been determined from typical plant primary system and containment response analyses, with considerations for automatic actuation, manual actuation, and single active failures of the various systems in each event. The typical new loads analyzed were:

- Pressure and temperature time histories for the suppression chamber wetwell and drywell
- Vent system pressurization and thrust loads
- Net vertical pool swell loads and average submerged pressures on the suppression chamber
- Pool swell impact and drag loads on the vent system
- Pool swell froth impingement loads
- Pool fallback loads
- Vent header deflector loads
- Condensation oscillation loads and chugging loads
- Fluid structure interaction
- Safety-relief valve discharge loads
- Submerged structure drag loads
- Secondary effects loads
- Seismic slosh/loads, which occurs due to horizontal seismic motion on the pool
- Post-pool-swell waves/loads, due to the wave action associated with continued flow through the downcomers
- Asymmetric vent system flow, resulting from asymmetric flowrates due to vent blockage
- Downcomer gas-clearing loads, resulting from the rapid clearing of gas from the vent system causing lateral loads as bubbles are being formed in the pool
- Sonic and compression wave loads, due to the shock wave propagating from the break location
- Safety-relief valve steam discharge loads

Original loads included pressure and temperature loads associated with a LOCA, seismic loads, dead weight loads, jet impingement loads, hydrostatic loads due to water in the suppression chamber, overload pressure test loads, and construction loads.

The generic aspects of the Mark I Owners Group LTP were completed with the submittal of the Mark I Containment Program Load Definition Report (LDR), and the Mark I Containment Program Structural Acceptance Guide (PUAAG), as well as supporting reports on the LTP experimental and analytical tasks. The generic analysis techniques were used to perform a plant unique analysis to confirm the adequacy of the modifications made to the containment structures and related piping. This analysis was documented in the Plant Unique Analysis Report (PUAR), which shows that the original margins of safety in the containment design have been restored.

Recommended Modifications For Mark I Containments

The Mark I containment was originally designed based on large-scale experimental tests in 1958 through 1962. More advanced large-scale tests in 1972 through 1974 and actual plant operations identified some new phenomena and issues needing resolution. The Mark I containment program began in 1975 when NRC sent letters to Mark I owners requiring Reevaluation of Containment Response to Hydrodynamic Loads. The BWR Owners Group embarked on a program to resolve the issues. The issues were highly scrutinized and reviewed for plant-specific applicability on operations and structural capability. In summary, dynamic effects of drywell air and steam being rapidly forced into the suppression pool (torus) during a postulated LOCA and from suppression pool response to SRV operation generally associated with plant transient operating conditions were addressed for:

- Loss-of-Coolant-Accident-Related Hydrodynamic Loads including Pool Swell Phenomena
- Loss-of-Coolant-Accident Steam Condensation Phenomena
- Safety-Relief Valve Discharge-Related Hydrodynamic Loads

The new experimental data and new analytical models extensively studied the issues. Immediate operability of the existing structures was demonstrated for the short-term then more robust structural improvements were implemented. Operational changes and strengthened structural supports at specific locations were implemented to meet ASME and other industry acceptance criteria. A typical list of hardware changes made:

- Torus: Additional ring girder reinforcement, Miter joint support saddles and saddle extension plates, Additional ring-girder-to-torus weld, Torus Temperature monitoring instrumentation, Torus tie-downs, Dynamic restraint snubbers
- Vent System: Downcomer/vent header stiffeners, Downcomer lateral bracing, Downcomer longitudinal bracing, Vent header deflector, Vent line drain reinforcement, Torus-to-drywell vacuum breakers, and Vacuum breaker header support
- Internal Structures: Catwalk midbay supports, Catwalk lateral bracing, Catwalk supports at ring girders, Conduit rerouted
- Wetwell Piping Modifications (Internal): Spray header supports, HPCI turbine drain pot support, HPCI turbine exhaust line support, ECCS suction strainer reinforcement, LPCI full-flow test line supports, modify external supports
- Relief Valve Discharge Line Piping: Reinforced vent line penetration, Added T-quenchers, Added T-quencher supports, Added SRV line support, SRVDL vacuum breaker

- Torus Hardened Vent
- Torus Vacuum Breaker orientation changes
- SRV operating – recommendations to minimize loading, discharge piping pressure switch, instrumentation to allow SRV position monitoring

NUREG - 0661 ABSTRACT July 1980

"This Safety Evaluation Report prepared by the staff of the Office of Nuclear Reactor Regulation discusses suppression pool hydrodynamic loads in boiling water reactor (BWR) facilities with the Mark I pressure-suppression containment design. The report finishes the NRC's Generic Technical Activity A-7 (Mark I Containment Long-Term Program), which has been designated an "Unresolved Safety Issue." The report describes the generic techniques for the definition of suppression pool hydrodynamic loads in a Mark I system and the related structural acceptance criteria.

On the basis of a review of the experimental and analytical programs conducted by the Mark I Owners Group, the staff has concluded that, with one exception, the proposed suppression pool hydrodynamic load definition procedures (as modified by the staff's requirements in Appendix A of this report) will provide conservative estimates of these loading conditions. The exception is the lack of an acceptable specification for the downcomer "condensation oscillation" loads. In addition, requirements for confirmatory analyses and testing have been identified. The resolution of these issues will be described in a supplement to this report.

The staff also has concluded that the proposed structural acceptance criteria are consistent with the requirements of the applicable codes and standards. In conjunction with the general structural analysis techniques, these criteria will provide an acceptable basis for establishing the margins of safety in the Mark I containment design."

NUREG-0661 SUPPLEMENT 1 ABSTRACT August 1982

"When the NRC staff published "Safety Evaluation Report, Mark I Containment Long-Term Program" (NUREG-0661) in July 1980 four areas were identified where the technical issues had not been fully resolved. These were:

1. Specification for condensation oscillation loads acting on the down comers
2. Adequacy of the data base for specifying torus wall pressures during condensation oscillations,
3. Possibility of asymmetric torus loading during condensation oscillations, and
4. Effect of fluid compressibility in the vent system on pool swell loads.

The first item, downcomer condensation oscillation loads, lacked an acceptable load definition. The remaining three items had acceptable specifications; however, the NRC requested additional confirmatory information to justify the adequacy of the load specifications.

This supplement addresses the resolution of the four issues listed above. In response to NRC concerns expressed in NUREG-0661, the Mark I Owners Group conducted additional experimental and analytical studies. The experimental studies consisted basically of two additional condensation oscillation tests in the Full-Test Facility (Norco, California). The staff has reviewed these efforts and has concluded that all technical issues connected with the generic Mark I Long-Term Program have been resolved."

Summary:

NUREG 661 Contains a safety evaluation of loading determination methods and acceptance criteria for the evaluations that resulted in the modifications made as part of the Long Term Program.

NUREG 661 Supplement 1 contains a safety evaluation of the four unresolved issues described in NUREG 0661.

Summary of Critical Modifications

The following modifications are the more significant examples of improvements to the Mark I containment design as enhancements to design margins or increased capability to address “beyond design basis conditions.”

Hardened Vent

In the 1980s, the NRC staff reviewed the potential for accidents more severe than those the plants were licensed and designed to mitigate. In order to enhance the ability of all containments to prevent and mitigate the consequences of severe accidents beyond the design basis accidents, the NRC requested that all plants install a hardened vent. In the event of a core damage accident, the hardened vent would allow reduction in containment post-accident pressure. Hardened meant that the vent would transport hydrogen, steam and other accident products and release them outside the reactor building. This would preclude damage to the reactor building and equipment from steam and the possible hydrogen explosions.

In response to the GL 89-16 and the results of their Individual Plant Examinations (IPEs), all of the nuclear power plants installed a hardened vent or demonstrated to the NRC’s satisfaction. This hardened vent capability would allow BWR plant operators to vent post-accident airborne materials by passing them through the water in the wetwell, thereby removing a large amount of the radioactive material contained in the vent stream before venting. This added capability increases the ability of the Mark I containment to mitigate the consequences of design-basis and beyond-design-basis accidents.

SRV Modifications

Mark I containments were designed for hydrostatic loads as part of the original design basis of the plants. During subsequent testing of the Mark III containment design, additional hydrodynamic loads were identified. The industry established a Mark I Owners’ Group and developed test regimes to define the hydrodynamic loads and establish design criteria for evaluation of the Mark I containment.

The hydrodynamic loads are defined in Plant Unique Load Definition Reports and each Mark I containment was evaluated against its own report. As a result of this effort, Mark I plants modified their piping and/or pipe supports inside containment to reduce the loads an SRV discharge would impose on the torus and to withstand post-LOCA loads on SRV discharge piping. These modifications included pipe supports, discharge line vacuum breakers, “rams head” discharge pipe fittings and T-quenchers. The modifications provide additional margin to ensure that SRV actuation will not damage the wetwell pressure boundary, any of the wetwell internal components or piping, and also ensure that the SRV piping will remain functional during postulated transients and accidents.

Torus Attached Piping

In addition to the SRV piping modifications discussed above, the plant-unique analysis identified new loads on torus attached piping (TAP). In order to ensure the structural integrity of the torus for all postulated loads, all TAP was re-evaluated and either removed or modified as necessary. The piping was evaluated, and upgrades were made to torus attachments and pipe supports to ensure that they would withstand all postulated loads with a significant factor of safety between the design load and the actual load. These modifications ensure that the Mark I containment will continue to perform its safety function during plant transients and postulated accidents as well as improve the capability to mitigate beyond-design-basis events.

ECCS Suction Strainers

NRC Bulletin 96-03 identified NRC concerns with the potential for debris plugging of Emergency Core Cooling System (ECCS) suction strainers inside the containment wetwell. These concerns resulted from an event in Sweden and two events in the U. S. that indicated the possibility that fibrous insulation material dislodged by a design-basis accident and particulate material suspended in the wetwell water could be entrained on strainer surfaces causing loss of the ECCS pumps. These pumps are used for normal reactor shutdown and to inject cooling water into the reactor following an accident that depressurizes it.

The plant owners employed the BWR Owners' Group (BWROG) and the Electric Power Research Institute (EPRI) to conduct testing to determine criteria for designing and, particularly, sizing the strainers to ensure ECCS pumps capability if needed. Each plant owner then designed and installed new larger strainers. These strainers provide additional assurance that ECCS pumps will perform their intended function in the unlikely event of an accident.

From: Coe, Doug
To: Drouin, Mary; Demoss, Gary; Correia, Richard
Subject: RE: contingency PRA analysis, note from Bob Budnitz
Date: Monday, March 21, 2011 1:00:57 PM

Thanks Mary – good point

I would also think that the best information on their temporary systems reliability will come from near-term experience over the next couple weeks. I would also hope that once the primary temp systems are in place and working they will begin adding backup temp system capabilities.

From: Drouin, Mary
Sent: Monday, March 21, 2011 12:39 PM
To: Demoss, Gary; Coe, Doug; Correia, Richard
Subject: FW: contingency PRA analysis, note from Bob Budnitz
Importance: High

Bob has recommended a "PRA team" be put together ASAP to analyze situation at Fukushima and he sent his recommendation to numerous individuals. He cc'd Brian so you may already have this email.

I am in agreement with Shawn Burns with regard to system information. There is way too much information we do not know regarding the design of those units that any PRA model would not provide the kind of information that would be needed. I do not see any benefit right now in trying to "jury-rig" a PRA.

Tks, mary

From: Lachance, Jeffrey Lynn [mailto:jllacha@sandia.gov]
Sent: Monday, March 21, 2011 10:58 AM
To: Drouin, Mary
Subject: FW: contingency PRA analysis, note from Bob Budnitz

Mary

Your name was mentioned in this email from Budnitz so I am forwarding it on to you.

In case you did not see it, Lehner was on CNN on Friday talking about spent fuel pools. His interview may still be on the CNN website.

Jeff Lachance

*Distinguished Member of the Technical Staff
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cell: (b)(6)*

IIII/82

From: Burns, Shawn
Sent: Sunday, March 20, 2011 9:45 PM
To: 'Kelly, John E (NE)'
Cc: Nowlen, Steven P; Forester, John A; Lachance, Jeffrey Lynn; Wheeler, Timothy
Subject: RE: contingency PRA analysis, note from Bob Budnitz

John,

Sorry for the delay. I will run this past my PRA team leads but right off the top of my head I can't say I think much of the proposal. Here are my issues:

- 1) A PRA requires a fair level of understanding of the system that is being analyzed. Under the present circumstances I doubt that even the people on the ground fully understand the "jury-rigged" system they are dealing with.
- 2) A PRA also requires some kind of data regarding component failure probabilities. Again, not something I feel sanguine about getting.
- 3) I suspect that it will take longer to construct a PRA that it will take for whatever is going to break to break and the people who just jury-rigged four reactors will probably be best able to handle it.

Once the situation is fully stabilized and the jury-rigging replaced with something more permanent, I foresee many years of the reactors existing a state very far from the original design basis. Additional complications will be thrown in by cleanup and decommissioning efforts. I think this is an ideal time to perform rigorous PRAs to analyze what essentially are new systems to help identify the greatest risks and components and systems that are safety critical in the new configuration.

That would be very useful in my view. A day-by-day PRA for the next couple months I feel would just be a diversion of resources.

Jeff, Tim, John, and Steve – To keep John Kelly's e-mail within limits could you please just send any thoughts you may have on Bundnitz's proposal to me and I will forward them to John.

Best regards,

Shawn

From: Kelly, John E (NE) [mailto:JohnE.Kelly@Nuclear.Energy.Gov]
Sent: Saturday, March 19, 2011 6:28 PM
To: Burns, Shawn
Subject: FW: contingency PRA analysis, note from Bob Budnitz

can you look at this and let me know what you think about Bob's proposal

From: Bob Budnitz [mailto:rjbudnitz@lbl.gov]
Sent: Friday, March 18, 2011 6:38 AM
To: Holdren, John P.; SCHU
Cc: Per F. Peterson; Marcia K McNutt; Koonin, Steven; Adams, Ian; Aoki, Steven; DAgostino, Thomas;

Dick Garwin; Garwin, Dick; Grossenbacher, John (INL); Hurlbut, Brandon; Lyons, Peter; Owens, Missy; Phillip.Finck@inl.gov; Poneman, Daniel; Fetter, Steve; Brinkman, Bill; 'Jane.Lubchenco@noaa.gov'; Kelly, John E (NE); brian.sheron@nrc.gov

Subject: contingency PRA analysis, note from Bob Budnitz

TO: Steve Chu & John Holdren

FROM: Bob Budnitz, LBNL

[I have put John Kelly DOE-NE and Brian Sheron NRC on distribution here. They should be getting all this stuff.]

CONTINGENCY PRA ANALYSIS: This is being written to write down explicitly my proposal from yesterday. I am concerned with the reliability of the temporary, untested, jury-rigged configurations of various equipment that our Japanese colleagues have rigged up in a valiant attempt to establish cooling etc. to the reactors and spent fuel pool(s). It seems to me that there is a genuine likelihood that some of it could fail in the next days and weeks. We have analysis methods (PRA methods) that could be brought to bear to provide some insights into the failure modes and the likelihoods of failure of these configurations, based on data and insights that experienced PRA analysts have used for years for just such analysis.

I therefore proposed that DOE/NRC, in conjunction with GE, put together a small group of PRA experts -- 4 or 5, say -- who could work through the issues, bring in the relevant data, and rather quickly get some insights into where failures might likely occur and with what expected probability per day. Remedial or compensatory measures could then be brought to bear to mitigate these potential failures BEFORE they might occur.

Within DOE, the best place to start in my view is probably with the PRA experts at INL who work for the NRC on LWRs. At NRC itself, it is the PRA folks in the Office of Research, starting with Mary Drouin or Nathan Siu, or the recently retired Gareth Parry of NRC. At GE, the name that comes to my mind immediately is Dennis Henneke at GE-Wilmington NC <dennis.henneke@ge.com> 910-675-6780, and whoever contacts GE should mention that name in my view, or start with him. He is tops. And on the industry-consultants side, two of the very best are Doug True of Erin Engineering in Walnut Creek CA <detrue@erineng.com> 925-943-7077 and Jim Chapman of Curtiss-Wright <JChapman@CURTISSWRIGHT.com> 407-536-5338. There are none better! I have email and contacts for everyone, but so does DOE through John Kelly. This PRA crowd is the crowd I've worked with much of my working life.

Bob Budnitz

Robert J. Budnitz
Lawrence Berkeley National Laboratory
University of California

Earth Sciences Division, Mail Stop 90R-1116

Berkeley CA 94720

(Phone) 510-486-7829

(Fax) 510-486-5686

Email: RJBudnitz@lbl.gov

Home in Berkeley:

Robert J. Budnitz

(b)(6)

From: Monninger, John
Sent: Tuesday, March 22, 2011 8:11 PM
To: LIA03 Hoc
Cc: Kolb, Timothy
Subject: Re: Dosimeter Numbers

Also, Tim Kolb has the paperwork on dosimeter assignments.

Unfortunately, I lost mine in the battle

Flow. Can you assign the dose that any other team member receives to me? We have all been essentially together the whole time.

John Monninger

(b)(6)

From: LIA03 Hoc
To: Liaison Japan
Cc: O'Donnell, John
Sent: Tue Mar 22 19:56:26 2011
Subject: Dosimeter Numbers

Dear Team – When you get the chance, please email the International Liaison Team your dosimeter number. In our haste to get you out to Japan, we neglected to get that information from you and the RSO needs it for NRC records. In addition, if you are planning to stay past the end of March, please let us know, as we will need to get you a new dosimeter. The ones you have now are only for use during the second quarter.

Thank you for your help.

The International Liaison Team

From: LIA02 Hoc
Sent: Tuesday, March 22, 2011 1:18 PM
To: RMTPACTSU_ELNRC
Cc: Foggie, Kirk; Smith, Brooke; Emche, Danielle; LIA03 Hoc
Subject: FW: bios

Please see below the biographical information for the NRC relief team, with the exception of Alan Blamey, who was already on a plane and unable to respond to our request for information.

Thank you!

From: LIA03 Hoc
Sent: Tuesday, March 22, 2011 1:14 PM
To: LIA02 Hoc
Subject: bios

Please send this info to USAID contact and copy to Kirk and Brooke. Please note that file is missing bio for Alan Blamey.

Japanese Relief Team Biographies

1. Michael Scott

Michael (Mike) Scott currently serves as Acting Deputy Director of the Division of Systems Analysis in the Office of Nuclear Regulatory Research. Prior to this appointment, Mike worked as Chief, Safety Issues Resolution Branch, in the Division of Safety Systems, Office of Nuclear Reactor Regulation (NRR). In this role he was responsible for leading activities to resolve Generic Safety Issue 191, Pressurized Water Reactor Sump Performance. Mike joined the NRC in 2001 as a project manager in NRR. He also served as Chief of the Technical Support Branch on the staff of the Advisory Committee on Reactor Safeguards. Prior to his employment at the NRC, he held several positions in the nuclear industry, including Manager of NSSS Systems and Reactor Engineering at the H. B. Robinson nuclear plant, Senior Evaluator at the Institute of Nuclear Power Operations, and Licensing Supervisor for Duke Engineering and Services on the Yucca Mountain Project. Mike also completed (b)(6)

Mike graduated from the U.S. Naval Academy with a Bachelors degree in physics and from the Georgia Institute of Technology with a Masters degree in nuclear engineering. He is a licensed professional engineer and a graduate of the Senior Executive Service Candidate Development Program class of 2009.

2. John Giessner

John (Jack) Giessner served (b)(6) 10 years of this time were in the Nuclear Navy and included two tours on submarines (served as Engineer Officer). Mr. Giessner served three years as a Joint Staff Officer, US military (US Strategic Command). He left the military in (b)(6) and went into the commercial nuclear industry at Salem Nuclear plant and then DC Cook in increasingly more responsible positions serving as procedure supervisor, procedure manager, Assistant Operations Manager and Engineering Director. He completed training and qualification as Shift Technical Adviser and Senior Reactor Operator and obtained his SRO license at Salem Plant. He served as one team's

Emergency response Director (Emergency Director) at DC Cook. In 2004, Mr. Giessner joined the NRC and as a Reactor Engineer and supported inspections at Point Beach (when they were in column IV). He served as Resident Inspector at Palisades (2005-2008) and performed the first B5B inspection at that site. He is currently the Branch Chief, in Division of Reactor Projects in NRC's Region III, for Palisades, Fermi and Prairie Island Nuclear Power Plants..

Mr. Giessner holds degrees BS Physics, MA National Security Affairs. License / certifications: Joint Staff Officer - US military (b)(6); SRO license - Salem (2000); STA certification - Salem (2000); NRC IMC 1245 qualification 2004.

3. Abdul Sheikh

Mr. Sheikh has more than 30 years experience in nuclear power plant design, construction, startup, operation, and license renewal. He has worked at NRC for the last six years. During the first four years, he worked in the Office of Research and performed structural evaluation and analysis of existing and all the five new nuclear power plants (containment and spent fuel pools) for aircraft impact, and BWR and PWR containment structural evaluation during a severe accident. Currently, Mr. Sheikh works in the NRR's Division of License Renewal, and has performed audits and prepared safety evaluations of the structural aging management programs of 10 plants.

Prior to joining Mr. Sheikh worked with Bechtel Power Corporation for 25 years where he designed nuclear containment and other complex structures, supervised engineering groups, prepared portions of FSARs and Bechtel Design Guides, designed and executed steam generator replacement and reactor head replacement projects on tight schedules. His work also included six years in Korea where he was involved with design, procurement, and site engineering support for two unit nuclear power plants from start of excavations to plant startup.

Dr. Ralph Way

Dr. Ralph Way is a Senior level Advisor in the Office of Nuclear Security and Incident Response. He served in the U.S. Marine Corps from (b)(6)

(b)(6) During his military career, he gained considerable expertise in Explosive Operations, Weapons of Mass Destruction (WMD), WMD countermeasures, threat reduction technologies, and organizational responses to create sustainable security and safeguards programs. Among his specialized qualifications, he is a Department of Defense Certified Systems Acquisition Program Manager and Test and Evaluation Engineer; a Master EOD Technician; and an Occupational Safety and Health Administration qualified Supervisor of Hazardous Waste Management and Emergency Response Operations. He is a member International Society of Explosive Engineers; and serves on the Advisory Board of the International Association of Bomb Technicians and Investigators and as a Member of the International Association of Chiefs of Police's, Arson and Explosives Committee. He is a Distinguished Fellow at George Mason University's, Center for Infrastructure Protection and also served on the Advisory Board of Fairleigh Dickinson University's Master of Science in Homeland Security Program, from 2007- 2010.

Dr. Way earned a Bachelor of Science degree in Business Administration from the University of the State of New York, a Masters of Business Administration from National University, and a Doctor of Philosophy degree in Technology Management from Walden University.

Todd Jackson

Todd Jackson has 21 years of NRC experience, with a 12 year midpoint break working in the nuclear power industry. Mr. Jackson is currently a Senior Health Physicist in NRC's Region I where he performs inspections and licensing for a wide range of radioactive materials uses in research, industry and medicine. Previous positions include: Project Engineer in RI/Division of Reactor Projects

supporting Indian Point, and in Div of Nuclear Materials Safety as decommissioning inspector for Maine Yankee, Millstone 1, West Valley Project (lead inspector for NRC oversight of Millstone missing fuel issue and Vermont Yankee missing fuel); Chemistry Manager for Philadelphia Electric (PECO) at Limerick Station (2 unit BWR) and Engineer in corporate office; Manager with Westinghouse, performing consulting in emergency planning, radiation safety and chemistry at operating plants and new plant startups; Radiation Specialist

with NRC, doing routine inspections of operating plant effluent/radwaste measurements and environmental monitoring. Mr. Jackson hold a BS degree in Biology, MS in Environmental Engineering/Radiological Health, both from Rensselaer Polytechnic Institute. He is a Certified Health Physicist.

Mr. Jackson's emergency response experience includes NRC initial response to TMI (performing independent measurements in NRC mobile lab), Limerick chemistry team leader, PECO dose assessment for Limerick and Peach Bottom, and NRC dose assessment and protective measures site team/base team.

Robert Taylor

Mr. Taylor holds Bachelor's and Master's degrees in Chemical Engineering. Prior to joining the NRC in 2001, he served as a naval nuclear instructor with Bechtel Bettis Atomic Power Laboratories at the Navy's Nuclear Power Training Unit in Charleston, South Carolina, where he was responsible for training officer and enlisted naval personnel in a wide variety of engineering disciplines but specialized in reactor physics and accident analysis and response. After joining the NRC, Mr. Taylor worked in the Reactor Systems Branch of the Office of Nuclear Reactor Regulation (NRR) on core and fuel design, design basis accident and transient analyses, and criticality and thermal-hydraulic spent fuel pool analyses. He subsequently joined the office of the Executive Director for Operations (EDO) as a Senior Technical Communications Assistant for the Deputy EDO for Reactor and Preparedness Programs. In that capacity, he supported the Chairman's office and EDO on high-profile safety and security issues. He coordinated the agency's response on a number of issues working with the Offices of Congressional Affairs and Public Affairs to ensure NRC's message was effectively communicated to external stakeholders. This included preparation of Congressional testimony, communications plans, briefings of federal and state officials, and the general public. After leaving the EDO's office, he assumed the position of Chief of the Accident Dose Branch in NRR. In this role he was responsible for overseeing engineers and meteorologists responsible for conducting reviews of the radiological consequences of severe accidents. This included determining the source term for the accident, integrity assessments of primary and secondary containment buildings, reviews of site meteorological conditions for dispersal of radioactive materials, and dose calculations for plant workers and members of the public. Currently, Mr. Taylor is the Chief of the Steam Generator Tube Integrity and Chemical Engineering Branch in NRR which has responsibility for a variety of material and chemical engineering issues within the agency including support to long term core cooling issues resulting from GSI-191.

Since the beginning of the events in Japan, Mr. Taylor has served in the NRC Incident Response Center as the Technical Briefer for the Office of Public Affairs. In that capacity he is responsible for translating the technical information prepared by the Reactor Safety Team and Protective Measures Team into communication materials, such as press releases, talking points, Q&As, that can be used by the Chairman, EDO, and other senior NRC managers to communicate on the ongoing events. He also has been responsible for responding to media and public inquiries on the event.

Marie Miller

Marie Miller will provide support to the NRC team in the areas of Protective Measures based on 30 years of NRC experience in areas of emergency preparedness, in-plant and effluent radiation protection for nuclear power facilities, decommissioning, and radioactive materials safety and security. Since 2004, Ms. Miller has served as a Branch Chief in the Division of Nuclear Materials and

Safety in NRC's Region I, but had previously held positions as Senior Health Physicist, Regional State Liaison and Emergency Preparedness Specialist. Ms. Miller's effective risk communications skills were developed as a result of assignments related to low level waste storage policies, independent spent fuel storage installations, and nuclear power and complex site decommissioning projects. She is qualified as a first responder for Protective Measures Management, Dose Assessment and Government Liaison. Ms. Miller obtained her MS in Radiation Science and a BA in Chemistry from Rutgers University.

Syed Ali

Dr. Syed Ali serves as Senior Technical Advisor to the Director of the Division of Engineering (DE), with broad responsibilities in civil and structural engineering, and related generic safety issues. He was the technical lead for the structural aspects of the aircraft impact assessments for operating plants and new reactor designs. The assessments informed the Part 52 rulemaking associated with consideration of aircraft impacts for new power reactor designs and contributed to the development of the regulatory guidance and inspection procedures for the assessment of the effects of aircraft impact. He is also the Project Manager and technical lead for the project on U.S.-Japanese collaboration on seismic issues; the IMPACT project in cooperation with the Technical Research Center of Finland (VTT); and aircraft impact assessment research to support the Committee on the Safety of Nuclear Installations (CSNI) of Nuclear Energy Agency (NEA) project on improving robustness assessment methodologies for structures impacted by missiles.

Dr. Ali has been with the NRC since 1993. He worked in NRR from 1993-2002, and in RES from 200-present. Before joining the NRC, Dr. Ali worked for the major architect-engineering firms United Engineers and Stone and Webster Engineering. He was involved in the analysis and design of nuclear power plant structures, mechanical components, and equipment. Dr. Ali also held teaching positions at various universities such as Washington University, Drexel University and Temple University.

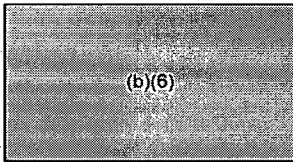
Dr. Ali graduated from University of Pennsylvania with a Ph. D in Civil Engineering in (b)(6)

Daniel Dorman

Mr. Dorman joined the NRC in 1991 as a Project Engineer in the Office of Nuclear Reactor Regulation (NRR). In 1999, he was selected as Chief, Quality Assurance and Safety Assessment Section in the Division of Inspection Program Management, NRR. In 2001, Mr. Dorman was selected for the Senior Executive Service (SES) position of Chief, Engineering Research Applications Branch, Office of Nuclear Regulatory Research. In 2003, he joined the Office of Nuclear Security and Incident Response as Deputy Director, Division of Nuclear Security, and in 2006 was appointed Director, Division of Security Operations. In 2008, he was appointed as Director, Division of Fuel Cycle Safety and Safeguards in NMSS. On August 1, 2010, he was appointed to his current position as Deputy Director, Office of Nuclear Material Safety and Safeguards. Prior to joining the NRC, Mr. Dorman served in the U.S. Navy's nuclear power program. He received a Bachelor's degree in Naval Architecture and Marine Engineering from the Webb Institute of Naval Architecture.

From: Jackson, Todd
Sent: Tuesday, March 22, 2011 1:16 PM
To: LIA03 Hoc
Subject: RE: Instructions for NRC Deployees

Do you know if this is the correct address and phone of the Tokyo hotel where we will be staying? I would like to inform my family.



Thanks,
Todd

Todd J. Jackson, CHP

Sr. Health Physicist
Division of Nuclear Materials Safety
USNRC Region I
475 Allendale Road
King of Prussia, PA 19406
(610)337-5308 / Fax (610)337-5269

Cell: (b)(6)

Email: Todd.Jackson@nrc.gov

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 8:41 AM
To: LIA11 Hoc; LIA03 Hoc
Subject: RE: Hotel (b)(6)
Attachments: image001.png

Got it – they also sent us confirmation numbers. Thanks!

From: LIA11 Hoc
Sent: Wednesday, March 23, 2011 8:40 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: FW: Hotel (b)(6)

FYI

Ted

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Wednesday, March 23, 2011 8:16 AM
To: Jackson, Todd
Cc: LIA11 Hoc; LIA01 Hoc
Subject: FW: Hotel (b)(6)

Mr. Jackson – Per USAID RMT Admin. Coordinator, a block of rooms have been reserved at hotel and your name was included on list of travelers provided to hotel. Please see instructions below, as well as POC for USAID contact staying at hotel.

From: RMTPACTSU_AC
Sent: Wednesday, March 23, 2011 8:12 AM
To: RMTPACTSU_ELNRC
Subject: FW: Hotel (b)(6)

Please forward this to Todd Jackson.

From: Johnson, Natalya
Sent: Tuesday, March 22, 2011 7:44 PM
To: RMTPACTSU_ELNRC
Cc: RMTPACTSU_AC
Subject: Hotel (b)(6)

Greetings,

DART team is staying at (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the other hotels (e.g. Intercon) and then catch a taxi to Hotel (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

Bus ticket costs about 3,000 yen (exchange rate is about 79/80 to 1 USD); people at the bus desk office will provide your travellers with the best options on how to get to the hotel.

Upon arrival at the hotel please advise your travellers to mention that rooms have been reserved by the US Embassy. They will be required to present their credit cards for any incidental charges.

Please have them contact me with any questions at (b)(6) I am in room (b)(6) if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

Admin Coordinator

Pacific Tsunami and Japan Earthquake DART

Office: (211) (3) 3274 5016

BB: (b)(6)

From: Miller, Chris
Sent: Wednesday, March 23, 2011 12:56 AM
To: McGinty, Tim; RST08 Hoc; LIA07 Hoc; LIA08 Hoc; RST04 Hoc
Subject: Fw: F1 plant parameters on Marc 23
Attachments: FukushimaF1 parameters March 23 06000.docx

Follow Up Flag: Follow up
Flag Status: Flagged

From: Uchida, Koichi <UchidaKX@state.gov>
To: Cherry, Ronald C <CherryRC@state.gov>; NITOPS <NITOPS@nnsa.doe.gov>; JapanEmbassy, TaskForce <JapanEmbassyTaskForce@state.gov>
Cc: Alan Remick <DartDOELiaison1@OFDA.gov>; Aleshia Duncan <Aleshia.Duncan@nuclear.energy.gov>; Duncan, Aleshia D <DuncanAD@state.gov>; Trapp, James; James Trapp (BB) <(b)(6)>; Mears, Jeremy M <MearsJM@state.gov>; Morales, Russell A <MoralesRA@state.gov>; Ulses, Anthony; OConnor, Rod <Rod.OConnor@hq.doe.gov>; Bryan, William <william.bryan@hq.doe.gov>; Williams, Melvin <Melvin.Williams@Hq.Doe.Gov>; Hurlbut, Brandon <Brandon.Hurlbut@hq.doe.gov>; Anderson, Margot <Margot.Anderson@hq.doe.gov>; Mueller, Stephanie <Stephanie.Mueller@hq.doe.gov>; LaVera, Damien <Damien.LaVera@nnsa.doe.gov>; Damian Peko <Damian.Peko@nuclear.energy.gov>; Reynolds, Tom <Tom.Reynolds@hq.doe.gov>; Hunsaker, Christopher <Christopher.Hunsaker@nnsa.doe.gov>; Koontz, Thomas <Thomas.Koontz@nnsa.doe.gov>; Leistikow, Dan <Dan.Leistikow@hq.doe.gov>; Zubarev, Jill E <ZubarevJE@state.gov>; Cherry, Ronald C <CherryRC@state.gov>; Miller, Chris; Sano, Mikako <SanoMX@state.gov>
Sent: Tue Mar 22 23:09:17 2011
Subject: F1 plant parameters on Marc 23

Plant parameters of Fukushima -1 as of 06:00 on March 23 is attached.

<http://www.meti.go.jp/press/20110323002/20110323002-3.pdf>

Uchida
DOE Tokyo

This email is UNCLASSIFIED.

Fukushima Dai-ichi (F-1) Major Plant Parameters

(As of 06:00, March 23)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Conditions of water injection	Sea water injection through fire extinguish line flow rate : 300 liters /min (March 23,02:33)	Sea water injection through fire extinguish line flow rate : hunting (March 23, 04:20)	Sea water injection through fire extinguish line Flow rate: hunting (March 23, 04:00)	-	-	-
Reactor Water level (Distance from the top of fuel)	A area: minus 1750 mm B area: Minus 1750 mm (March 23, 04:00)	A area: minus 1300 mm (March 23. 04:20)	A area: minus 1900 mm B area: minus 2300 mm (March 23, 04:00)	-	1814mm (March 23, 06:00)	2655mm (March 23, 06:00)
Reactor pressure	0.302 MPag (A) 0.270 MPag (B) (March 23, 04:00)	Minus 0.025 MPag (A) Minus 0.025 MPag (B) (March 23, 04:20)	Minus 0.101 MPag (C) 0.036 MPag (A) (March 23, 04:00)	-	0.00 6 MPag (March 23, 06:00)	0.008 MPag (March 23, 06:00)
Reactor water temperature	-	-	-	-	34.2 C (March 23, 06:00)	54.0 C (March 23, 06:00)
Pressure Vessel Temperature	Supply water nozzle: above 400 C Bottom of Pressure Vessel: above 400 C (March 23, 04:00))	Supply water nozzle: 102 C Bottom of Pressure Vessel: 109 C (March 23, 04:20)	Supply water nozzle: 279 C Bottom of Pressure Vessel: 253 C (March 23, 04:00, Under investigation)	No fuels in the pressure vessel	Under observation by the reactor water temperature	Under observation by the reactor water temperature
D/W, S/C pressure S/C water temperature	D/W: 0.26 MPaas S/W: 0.24 MPaas (March 23, 04:00)	D/W: 0.11 MPaabs S/W: Down scale (March 23, 04:20)	D/W:0.100 Paabs S/W: Down scale (March 23, 04:00)	-	-	-
CAMS	D/W: 4.60*10¹ Sv/h S/C:3.16*10¹ Sv/h (March 23, 04:00)	D/W:5.20*10¹ Sv/h S/C: 1.80*10⁰ Sv/h (March 23, 04:20)	D/W:6.05*10¹ Sv/h S/C: 1.75*10⁰ Sv/h (March 23, 04:00)	-	-	-
D/W design utilization	384 kPag	384 kPag	384 kPag			

pressure						
D/W maximum utilization pressure	427 kPag	427 kPag	427 kPag			
SNF pool water temperature	-	51C (Mar 23, 04:20)	-	84 C (Mar 14,04:08)	36.6 C (Mar 23,06:00)	21.0 C (Mar 23,06:00)
Power	Receiving external power (P/C 2D)		Receiving external power (P/C 4D)		Receiving external power	

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 3:22 PM
To: LIA02 Hoc; LIA03 Hoc; Fragoyannis, Nancy; Doane, Margaret; Mamish, Nader; Abrams, Charlotte; Wittick, Brian; Afshar-Tous, Mugeh; 'ShafferMR@state.gov'; Bloom, Steven; Schwartzman, Jennifer; Tobin, Jennifer; Mayros, Lauren; Jones, Andrea; English, Lance; Smirolfo, Elizabeth; Young, Francis; Henderson, Karen; Ramsey, Jack; Shepherd, Jill; Baker, Stephen; Emche, Danielle; Stahl, Eric
Subject: TRANSITION REPORT 3/23 - 1500

TRANSITION REPORT FOR MARCH 23, 2011 - 1500

Charlotte and Jen transitioning to Danielle and Lauren

UPDATES DURING THIS SHIFT

- **Open ET action items.** Tasks #2310 and 2314 on the Task Tracker have been assigned to the international liaison. Both are follow-ups to a call Chuck Casto had with the ET this morning regarding a meeting Chuck attended at the Japanese Cabinet. We contacted Rick Devercelly, who was on the night shift today, to see if he had the answers. He didn't, so he said he'd contact Chuck as soon as it became a reasonable hour. Action: Expect an email from Chuck probably mid-way through your shift. If you do not hear from him, please followup. Then close out the actions in the Task Tracker.
- **NRC Travelers Return Checklist.** Completed a draft of the checklist and sent it to Michele Evans. Document is located on LIA02 desktop. **No further action until Michele responds.**
- **Japan Relief Team.**
 - **Departures:** Michael Scott and Alan Blamey have arrived in Tokyo. Ralph Way, Syed Ali, Abdul Sheikh, and Rob Taylor have picked up their Blackberries and laptops (if applicable). Ralph is carrying Blackberries for Marie Miller and Jack Giessner. Rob Taylor is carrying the calling cards for the team. None of the travelers plan to come into the office tomorrow.
 - **Giessner laptop.** Action: Ask the HOO to connect you to John Giessner so you can inform him that none of the HQ travelers were able to carry the NRC laptop he requested because each is already carrying a laptop.
 - **Change of OIP plans:** Danielle Emche will be departing for Japan on Saturday, 3/26. Eric Stahl will be departing on Monday, 3/28. Jack Ramsey will not be going to Japan. We have provided this information to USAID and to the IT personnel in the Ops Center so that travel arrangements, Blackberries, etc. can be arranged. Neither Danielle nor Eric plan to take NRC laptops.
- **Daily calls with UK/France/Canada.** We participated on the 0930 daily call with the RST and the 1400 call with the PMT. 0930 – the UK referenced a presentation by one of their chief scientists. They subsequently sent everyone a copy, which we sent to the RST. 1400 – discussion focused on source term data and radiation monitoring. Countries compared drinking water guidelines for I-131. US and UK are very similar, Canada's is substantially lower. We were advised to keep the data Canada provided us yesterday from the Australians as a close hold. Canada will be sharing source term data with us and France (have already shared with UK). Germany and UK have shared source term data bilaterally and a comparison indicates they are similar. We reiterated our commitment to provide US data once we reach agreement within the federal family.
- **Request for meteorological data.** PMT sent a request for us to pass to the Japan Embassy Task Force regarding a need for specific meteorological data. We forwarded the request to the Task Force and received a reply from

a Mona Camacho indicating she was passing it to the appropriate people. Action: If you receive a reply, please send to PMT and walk a hard copy back to the meteorologists.

FUTURE ACTIONS/OPEN ITEMS

- **Japan Relief Team.**
 - LIA03 sent an email to LiasonJapan (original team) asking for them to email back their dosimetry numbers. The initial team sent over was in such a rush that the Headquarters Radiation Safety Officer, John O'Donnell, never recorded which dosimeter was assigned to which staff member. If dosimeter numbers (on the back) are received directly to the international liaison desks they should be forwarded to John O'Donnell and entered into a word document on LIA03. The RSO has also asked original team members to indicate whether they intend to stay in Japan past the end of the month. If they do, then they will need to have their dosimeters replaced, as the ones they have now are only for use until the end of the month. If an original team member indicates that they intend to stay past the end of the month, we need to inform the RSO and ensure that an outgoing team member bring that person a replacement dosimeter.
 - Possible extension of travel orders: We have contacted the Japan Team to find out if any members of the original team plan to remain in Japan beyond March 31. Information is needed because travelers may require supplemental travel orders. We've asked them to reply to LIA02 and LIA03 with this information. Please inform Mary Matheson if you get any affirmative replies to this inquiry.
 - Cris Brown has advised that, rather than asking the relief team to carry additional satellite phones to Japan, the current team should turn ownership of the two satellite phones already over there to a new member of the relief team. The travelers have been advised to work with the current team to determine who should take ownership, then provide that name to Cris Brown and LIA02/LIA03. Action: When name is provided, ensure that Cris Brown has it.
- **Jim Trapp/Tony Ulses Travel.** Mary Carter will have to make Jim and Tony's travel reservations back home since they do not have travel authorizations through USAID. Kirk already emailed Mary and NRC liaisons at USAID. Action: Waiting for passport info, dates of birth, full names (as it appears on passport), passport expiration dates and type of passport from both of them. Provide to Mary Carter when received. Will need to provide travel information to Jim and Tony once their reservations are made. Please keep NRC liaisons at USAID on CC.
- **Japan Lessons Learned.** ET inquired about OIP plans (existing or future) to rehire Bruce Mallet. They want him to work on Japan lessons learned. Danielle inquired with Jack. Report to the ET as soon as we get an answer (specifically Marty Virgilio).
- **Request from U.S. Forces Japan.** LT Director received a request for specific reactor information from USFJ in preparation for some bilateral meetings they are having tomorrow. International liaisons gave NRC team in Japan a heads up that the request had come in. LT Director replied to the request indicating that we have a team in Japan and that, rather than duplicate the requests the USG is making of the Japanese, it would be more efficient for USFJ to coordinate with us. LIA02 and 03 were provided as email addresses for USFJ to communicate with. You may receive a request for information from USFJ that you would then coordinate with our team in Japan.
- **Request from IAEA.** Mike Modro of the IAEA reached out to Jen Schwartzman seeking NRC assistance with source term-related analysis. In particular, they are looking for severe accident management procedures for BWRs. Jen passed the request to the PMT to see what assistance we can provide, and provided Mike with a copy of NUREG-1465, "Accident Source Terms for Light-Water Power Plants," in the meantime. Jen set up a phone call for Mike with Don Cool for 9 AM EDT Thursday. Jen will sit in.

- **IAEA Coordination.** The ET had tasked us with understanding the role of the IAEA's Incident and Emergency Centre (IEC) and what the extent of their role is if Japan does not make a formal request to them under the Assistance Convention. We suggested that the IEC serve as a clearinghouse, keeping track of all requests for assistance from Japan, all offers to assist from other countries, who has provided what, and whether it satisfies the requests. Mark Shaffer met with Elena Buglova, Acting Director of the IEC, at approximately 0600 EDT. He provided a write-up of that meeting (in LIA02 and 03 email inboxes) to Margie. Subsequently, Ms. Buglova wrote to thank Mark for the meeting and she posted the current spreadsheet of what IAEA is tracking on ENAC (hard copy on LIA02 desk). Update: Ms. Buglova has asked the U.S. to update its entries on the spreadsheet. Jen sent the request to Margie for her views. There is still an open task on the task tracker, but we have tried to manage expectations about the extent to which NRC can "complete a task" on this subject. We have told the LT Director that OIP will keep the ET informed of developments on this issue. Action: We need to talk to Margie about how she'd like us to proceed with responding to IAEA's request. Continue to follow this and expect questions from ET and LT Director.
- **International requests for information.** AIT/TECRO (Taiwan) has requested a briefing on the 50-mile evacuation zone and the plume modeling. Danielle Emche is handling this request. Plans to meet with AIT/TECRO on Thursday.
- **Translators.** The translators are working very hard but we are starting to notice duplication of efforts. This is largely due to shift changes here and in the technical teams that results in a lack of knowledge/awareness that previous versions of a document (especially monitoring data) were already translated. The result is that multiple translators are working on the same document or working to translate an entire document when a previous version was already provided to the appropriate team and only the numbers have been updated. Also, translators are often working for a long time on a document which has subsequently been published in English. Action 1: Please monitor NISA's English language site and ENAC and make sure that you inform the translators when a document is posted in English, so that if they are working on it they can stop and move on to something else. Action 2: Please ensure that the PMT and RST are keeping the translated data we provide them, in particular if a document can serve as a "key" to interpreting future data.
- **Daily calls with UK/France/Canada.** Calls will take place tomorrow, 3/22, at 0930 with RST and at 1500 with 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.
- **Daily NRC Japan Team – RST/PMT Call.** Next call scheduled for 0300. RST and PMT have been notified of the call and international liaison should plan on participating (Brooke and Kirk don't necessarily participate). All parties should call into **301-816-5120** and use pass-code **(b)(6)**.
- **21:30 Interagency Call.** Next call will be 3/23 at 21:30 EST.

DAILY ACTIONS/REMINDERS

- International updates must now 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).
- 11 PM – 7 AM shift is responsible for the summary call with Kirk and Brooke, scheduled daily at 0500 EST unless rescheduled, and subsequent write-up of one-pager for Margie. 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."
- The 11pm-7am shift is responsible for sending all emails from the previous day to the FOIA email address (FOIA Response.hot@nrc.gov).
- Kirk and Brooke requested that the international team to sit in on calls with the ET and Chuck to take notes and provide a short summary of what was discussed via email.
- 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 the international call.

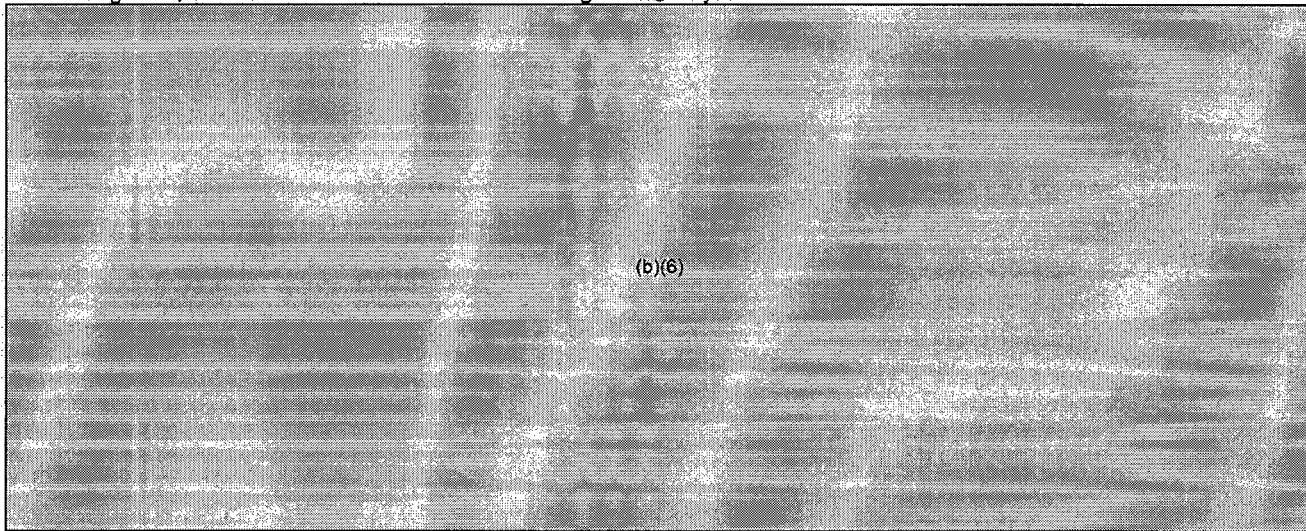
- Reminder to Keep Mark Shaffer in-the-loop at shaffermr@state.gov, regardless of time of day, regardless of whether he is in the office or asleep. Especially cc Mark on all communication to IAEA.

~~OFFICIAL USE ONLY~~

From: Miller, Chris
Sent: Wednesday, March 23, 2011 1:15 PM
To: RST04 Hoc; LIA08 Hoc
Cc: Glitter, Joseph
Subject: Fw: F1 plant parameters on Marc 23

----- Original Message -----

From: Singleton, Thomas W USN USFJ J5 <Thomas.Singleton@usfj.mil>



Sent: Wed Mar 23 12:41:48 2011
Subject: FW: F1 plant parameters on Marc 23

RCM Team,
Links to some unique plant information.

VR/Kind Regards,
CDR Tom Singleton

From: Sano, Mikako
Sent: Wednesday, March 23, 2011 2:16 PM
To: Uchida, Koichi; Cherry, Ronald C; 'NITOPS'; JapanEmbassy, TaskForce
Cc: 'Alan Remick'; 'Aleshia Duncan'; Duncan, Aleshia D; 'James Trapp'; 'James Trapp (BB)'; Mears, Jeremy M; Morales, Russell A; 'Tony Ulses'; 'OConnor, Rod'; Bryan, William; 'Williams, Melvin'; 'Hurlbut, Brandon'; 'Anderson, Margot'; 'Mueller, Stephanie'; 'LaVera, Damien'; 'Damian Peko'; 'Reynolds, Tom'; 'Hunsaker, Christopher'; 'Koontz, Thomas'; 'Leistikow, Dan'; Zubarev, Jill E; Cherry, Ronald C; 'Chris.Miller@nrc.gov'
Subject: RE: F1 plant parameters on Marc 23

Dear all,

You may have already seen them, but just in case.

NISA releases updated information on seismic damage including F1 plant parameters.

English version is released a several hours later than Japanese one.

As of 18:00 of March 22 (English)

<http://www.nisa.meti.go.jp/english/files/en20110322-4-1.pdf>

As of 8:00 of March 23 (Japanese)

<http://www.meti.go.jp/press/20110323002/20110323002-1.pdf>

Mikako Sano/ ECON

From: Uchida, Koichi

Sent: Wednesday, March 23, 2011 12:09 PM

To: Cherry, Ronald C; 'NITOPS'; JapanEmbassy, TaskForce

Cc: 'Alan Remick'; 'Aleshia Duncan'; Duncan, Aleshia D; 'James Trapp'; 'James Trapp (BB)'; Mears, Jeremy M; Morales, Russell A; 'Tony Ulses'; 'OConnor, Rod'; Bryan, William; 'Williams, Melvin'; 'Hurlbut, Brandon'; 'Anderson, Margot'; 'Mueller, Stephanie'; 'LaVera, Damien'; 'Damian Peko'; 'Reynolds, Tom'; 'Hunsaker, Christopher'; 'Koontz, Thomas'; 'Leistikow, Dan'; Zubarev, Jill E; Cherry, Ronald C; 'Chris.Miller@nrc.gov'; Sano, Mikako

Subject: F1 plant parameters on Marc 23

Plant parameters of Fukushima -1 as of 06:00 on March 23 is attached.

<http://www.meti.go.jp/press/20110323002/20110323002-3.pdf>

Uchida

DOE Tokyo

This email is UNCLASSIFIED.

From: LIA11 Hoc
Sent: Wednesday, March 23, 2011 9:06 AM
To: RMTPACTSU_ELNRC
Cc: LIA06 Hoc; LIA08 Hoc
Subject: RE: Hotel (b)(6)
Attachments: image001.png

Thanks!

Ted
Fed Desk

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Wednesday, March 23, 2011 9:01 AM
To: LIA11 Hoc
Subject: RE: Hotel (b)(6)

Day Shift today:

- Joe Anderson
- Mike Dudek

Jason Kozal may be in later in the day.

From: LIA11 Hoc [mailto:LIA11.Hoc@nrc.gov]
Sent: Wednesday, March 23, 2011 9:00 AM
To: RMTPACTSU_ELNRC
Subject: RE: Hotel (b)(6)

Who is on for NRC at USAID?

Ted

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Wednesday, March 23, 2011 8:16 AM
To: Jackson, Todd
Cc: LIA11 Hoc; LIA01 Hoc
Subject: FW: Hotel (b)(6)

Mr. Jackson – Per USAID RMT Admin. Coordinator, a block of rooms have been reserved at hotel and your name was included on list of travelers provided to hotel. Please see instructions below, as well as POC for USAID contact staying at hotel.

From: RMTPACTSU_AC
Sent: Wednesday, March 23, 2011 8:12 AM
To: RMTPACTSU_ELNRC
Subject: FW: Hotel (b)(6)

Please forward this to Todd Jackson.

From: Johnson, Natalya
Sent: Tuesday, March 22, 2011 7:44 PM
To: RMTPACTSU_ELNRC
Cc: RMTPACTSU_AC
Subject: Hotel (b)(6)

Greetings,

DART team is staying at Hotel (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the other hotels (e.g. Intercon) and then catch a taxi to Hotel (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

Bus ticket costs about 3,000 yen (exchange rate is about 79/80 to 1 USD); people at the bus desk office will provide your travellers with the best options on how to get to the hotel.

Upon arrival at the hotel please advise your travellers to mention that rooms have been reserved by the US Embassy. They will be required to present their credit cards for any incidental charges.

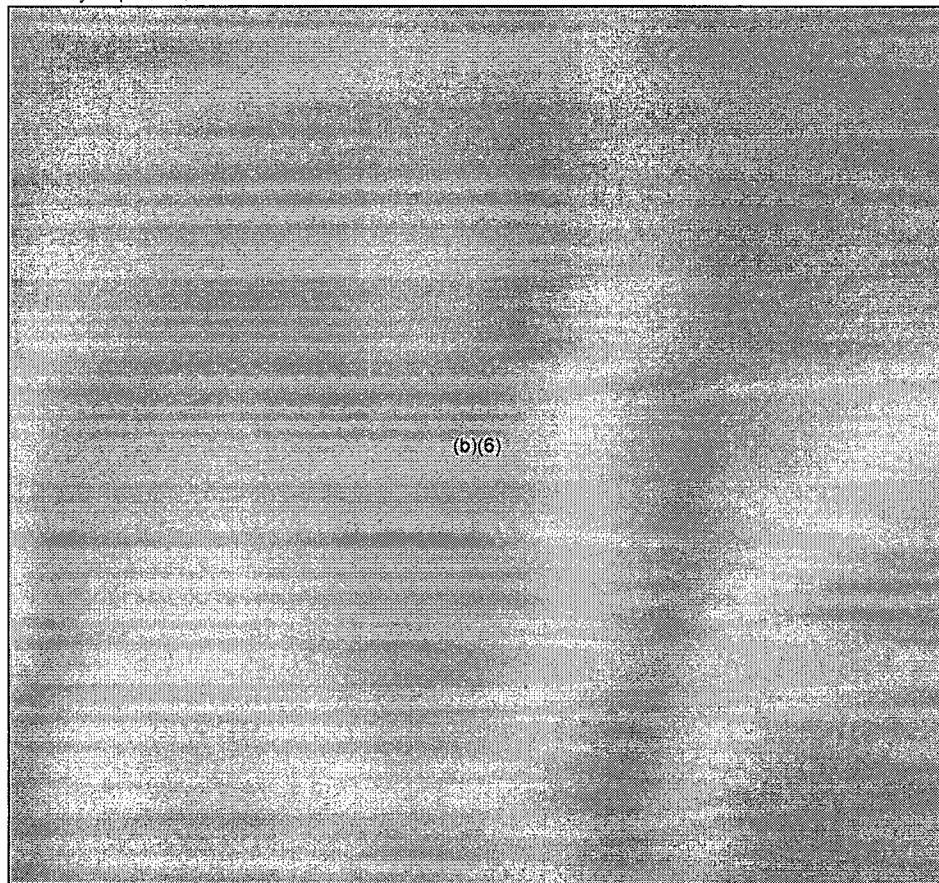
Please have them contact me with any questions at (b)(6). I am in room (b)(6) if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

*Amelia Coordinator
Pacific Tsunami and Japan Earthquake Relief
Office (01) (3) 3224 5015
ES: (b)(6)*

From: saigai03@mext.go.jp
Sent: Sunday, April 17, 2011 7:40 AM
To:



Cc:
Subject: Radiation data by MEXT
Attachments: (Japanese)20110417_18.pdf; (Japanese)20110417_19.pdf; (Japanese)20110417_20.pdf;
(Japanese)20110417_21.pdf; (Japanese)20110417_22.pdf; (Japanese)20110417_23.pdf;
(unofficial)(Japanese)20110417_21.pdf

Dear Sir,

Please see attached the document.

Sincerely yours,

Eiko SENAMI

Eiko SENAMI (Ms.)
Office of International Relations, Nuclear Safety Division, Ministry of Education, Culture, Sports, Science and Technology
- Japan

福島第一原子力発電所の20km以遠のモニタリング結果について

平成23年4月17日 19時00分現在
文 部 科 学 省

○文部科学省が集計した結果

注)太字下線データが今回追加分

- * 1 GM(ガイガー・ミュラー計数管)における値
- * 2 電離箱における値
- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第一発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置の 備考	天候	実施者
測定エリア【1】 福島市杉妻町 (約60km北西)	4月17日16時10分	1.2 ^{*2}	N: 37° 44' 12.6" E: 140° 28' 02.9"	20110330確認	降雨なし	文部科学省
測定エリア【1】 福島市杉妻町 (約60km北西)	4月17日8時35分	1.0 ^{*2}	N: 37° 44' 12.6" E: 140° 28' 02.9"	20110330確認	降雨なし	日本原子力研究開発機構
測定エリア【4】 伊達郡川俣町大字鶴沢字川端 (約50km北西)	4月17日15時07分	0.3 ^{*2}	N: 37° 39' 30.0" E: 140° 35' 54.0"	20110330確認	降雨なし	文部科学省
測定エリア【10】 二本松市針道中島 (約40km北西)	4月17日14時50分	1.6 ^{*2}	N: 37° 36' 02.9" E: 140° 35' 07.3"	20110403確認	降雨なし	文部科学省
測定エリア【11】 二本松市太田字下田 (約40km北西)	4月17日14時32分	1.0 ^{*2}	N: 37° 34' 00.0" E: 140° 34' 48.0"	20110330確認	降雨なし	文部科学省
測定エリア【12】 田村市船引町船引字小沢川代 (約40km西)	4月17日12時22分	0.2 ^{*2}	N: 37° 25' 53.6" E: 140° 35' 44.2"	20110330確認	降雨なし	文部科学省
測定エリア【13】 田村市常葉町西向屋形 (約40km西)	4月17日12時07分	0.3 ^{*2}	N: 37° 26' 21.5" E: 140° 37' 20.7"	20110330確認	降雨なし	文部科学省
測定エリア【14】 田村市常葉町常葉内町 (約35km西)	4月17日11時53分	0.2 ^{*2}	N: 37° 26' 09.4" E: 140° 38' 49.5"	20110330確認	降雨なし	文部科学省
測定エリア【15】 田村市常葉町山根鹿島 (約35km西)	4月17日11時34分	0.4 ^{*2}	N: 37° 26' 54.0" E: 140° 40' 53.2"	20110330確認	降雨なし	文部科学省
測定エリア【20】 田村市船引町新館下 (約45km北西)	4月17日14時03分	0.2 ^{*2}	N: 37° 30' 18.9" E: 140° 34' 40.6"	20110330確認	降雨なし	文部科学省
測定エリア【21】 田村市船引町上移 (約30km西北西)	4月17日13時30分	3.5 ^{*2}	N: 37° 30' 18.9" E: 140° 34' 40.6"	20110330確認	降雨なし	文部科学省
測定エリア【22】 田村市船引町上移字後田 (約35km西北西)	4月17日13時46分	0.2 ^{*2}	N: 37° 26' 54.0" E: 140° 40' 53.2"	20110330確認	降雨なし	文部科学省
測定エリア【23】 田村市船引町南移水中内 (約35km西北西)	4月17日13時54分	0.3 ^{*2}	N: 37° 30' 18.9" E: 140° 34' 40.6"	20110330確認	降雨なし	文部科学省
測定エリア【31】 双葉郡浪江町津島仲沖 (約30km西北西)	4月17日10時37分	9.2 ^{*2}	N: 37° 33' 45.0" E: 140° 44' 49.9"	20110330確認	降雨なし	文部科学省
測定エリア【32】 双葉郡浪江町赤字木手七郎 (約30km北西)	4月17日10時52分	23.1 ^{*2}	N: 37° 35' 42.0" E: 140° 45' 14.5"	20110330確認	降雨なし	文部科学省
測定エリア【33】 相馬郡飯館村長泥 (約30km北西)	4月17日11時08分	11.2 ^{*2}	N: 37° 36' 34.6" E: 140° 45' 09.1"	20110330確認	降雨なし	文部科学省
測定エリア【34】 双葉郡浪江町津島大高木 (約30km北西)	4月17日9時39分	5.8 ^{*2}	N: 37° 36' 34.6" E: 140° 45' 09.1"	20110330確認	降雨なし	文部科学省
測定エリア【36】 伊達郡川俣町山木屋大洪 (約40km北西)	4月17日9時20分	3.1 ^{*2}	N: 37° 36' 20.6" E: 140° 37' 58.9"	20110331確認	降雨なし	文部科学省

- * 1 GM(ガイガーミューラー計数管)における値
- * 2 電離箱における値
- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置の 備考	天候	実施者
測定エリア【38】 いわき市四倉町白岩保木田 (約35km南)	4月17日11時29分	0.3 ^{*2}	N: 37° 07' 18.4" E: 140° 57' 03.8"	20110401確 認	降雨なし	日本原子力研究開発機構
測定エリア【41】 田村市都路町古道 (約20km西)	4月17日13時00分	0.6 ^{*2}			降雨なし	電力会社
測定エリア【41】 田村市都路町古道 (約20km西)	4月17日9時20分	0.6 ^{*2}			降雨なし	電力会社
測定エリア【42】 田村市常葉町山根富岡 (約30km西)	4月17日13時10分	0.8 ^{*2}			降雨なし	電力会社
測定エリア【42】 田村市常葉町山根富岡 (約30km西)	4月17日10時00分	0.8 ^{*2}			降雨なし	電力会社
測定エリア【43】 双葉郡川内村下川内宮達 (約20km南西)	4月17日15時00分	0.4 ^{*2}			降雨なし	電力会社
測定エリア【43】 双葉郡川内村下川内宮達 (約20km南西)	4月17日11時00分	0.4 ^{*2}			降雨なし	電力会社
測定エリア【44】 いわき市太田町太田久ノ目沢 (約30km南)	4月17日13時00分	0.6 ^{*2}			降雨なし	電力会社
測定エリア【44】 いわき市太田町太田久ノ目沢 (約30km南)	4月17日10時00分	0.6 ^{*2}			降雨なし	電力会社
測定エリア【45】 双葉郡増葉町山田岡美し森 (約20km南)	4月17日12時45分	0.9 ^{*2}			降雨なし	電力会社
測定エリア【45】 双葉郡増葉町山田岡美し森 (約20km南)	4月17日9時40分	0.9 ^{*2}			降雨なし	電力会社
測定エリア【46】 伊達郡川俣町山木屋向出山 (約30km北西)	4月17日12時55分	4.3 ^{*2}			降雨なし	電力会社

- *1 GM(ガイガーミューラー計数管)における値
- *2 電離箱における値
- *3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- *4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置の 備考	天候	実施者
測定エリア【46】 伊達郡川俣町山木屋向出山 (約30km北西)	4月17日9時50分	4.3 ^{*2}			降雨なし	電力会社
測定エリア【71】 双葉郡広野町下北迫苗代替 (約25km南)	4月17日12時52分	1.0 ^{*2}	N: 37° 12' 32.4" E: 140° 57' 08.2"	20110323確 認	降雨なし	日本原子力研究開発機構
測定エリア【71】 双葉郡広野町下北迫苗代替 (約25km南)	4月17日7時40分	0.5 ^{*2}	N: 37° 12' 32.4" E: 140° 57' 08.2"	20110323確 認	降雨なし	警察(NBC対策部隊)
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (約30km南)	4月17日12時27分	0.8 ^{*2}			降雨なし	日本原子力研究開発機構
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (約30km南)	4月17日8時27分	0.5 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【73】 いわき市四倉町 (約35km南)	4月17日12時01分	1.1 ^{*2}			降雨なし	日本原子力研究開発機構
測定エリア【73】 いわき市四倉町 (約35km南)	4月17日8時50分	0.3 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【74】 いわき市小川町高萩 (約35km南)	4月17日11時04分	0.1 ^{*2}			降雨なし	日本原子力研究開発機構
測定エリア【74】 いわき市小川町高萩 (約35km南)	4月17日9時17分	0.5 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【75】 いわき市内郷御殿町 (約45km南)	4月17日10時36分	0.5 ^{*2}			降雨なし	日本原子力研究開発機構
測定エリア【75】 いわき市内郷御殿町 (約45km南)	4月17日7時00分	0.3 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【76】 双葉郡川内村上川内早渡 (約20km南西)	4月17日10時42分	0.3 ^{*2}	N: 37° 20' 25.3" E: 140° 48' 25.7"	20110402確 認	降雨なし	文部科学省
測定エリア【76】 双葉郡川内村上川内早渡 (約20km南西)	4月17日10時27分	0.3 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【77】 いわき市小川町上小川 (約25km南西)	4月17日10時03分	1.3 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【79】 双葉郡浪江町下津島萱深 (約30km北西)	4月17日10時09分	12.7 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330確 認	降雨なし	文部科学省
測定エリア【80】 南相馬市原町区高見町 (約25km北)	4月17日8時15分	0.3 ^{*2}			降雨なし	警察(NBC対策部隊)
測定エリア【83】 双葉郡浪江町赤宇木櫛平 (約20km北西)	4月17日10時24分	39.4 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330確 認	降雨なし	文部科学省
測定エリア【84】 いわき市三和町差塩 (約40km南西)	4月17日9時52分	0.4 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330確 認	降雨なし	日本原子力研究開発機構
測定エリア【85】 福島市荒井原宿 (約60km北西)	4月17日14時00分	0.6 ^{*2}	N: 37° 42' 45.0" E: 140° 22' 59.0"	20110330確 認	降雨なし	防衛省
測定エリア【85】 福島市荒井原宿 (約60km北西)	4月17日6時00分	0.2 ^{*2}	N: 37° 42' 45.0" E: 140° 22' 59.0"	20110330確 認	降雨なし	防衛省
測定エリア【86】 郡山市大槻町長右工門林 (約55km西)	4月17日14時00分	1.0 ^{*2}	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110330確 認	降雨なし	防衛省
測定エリア【86】 郡山市大槻町長右工門林 (約55km西)	4月17日6時00分	0.8 ^{*2}	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110330確 認	降雨なし	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内	4月17日14時00分	0.0 ^{*2}	N: 37° 23' 57.0"	20110330確 認	降雨なし	防衛省

- * 1 GM(ガイガーミューラー計数管)における値
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- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置の 備考	天候	実施者
測定エリア【87】 双葉郡川内村上川内花ノ内 (約30km西南西)	4月17日6時00分	1.2 ^{*2}	E: 140° 19' 35.0"	20110330確認	降雨なし	防衛省
測定エリア【88】 福島市光が丘 (約55km西北西)	4月16日17時00分	1.6 ^{*2}	N: 37° 41' 24.2" E: 140° 28' 17.4"	201100404確認	降雨なし	防衛省
測定エリア【89】 郡山市豊田町 (約60km西)	4月16日17時00分	2.3 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	防衛省
測定エリア【102】 伊達市月館町月館字町 (約50km北西)	4月17日14時55分	0.3 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省
測定エリア【103】 南相馬市原町区高字大豆柄内 (約20km北)	4月17日12時44分	0.3 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省
測定エリア【104】 双葉郡葛尾村大字落合字落合 (約25km西北西)	4月17日9時52分	1.6 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省
測定エリア【105】 田村市都路町古道字寺ノ前 (約20km西)	4月17日11時07分	0.3 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省
測定エリア【106】 いわき市川前町小白井字将監小屋 (約30km南西)	4月17日10時09分	0.2 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省
測定エリア【107】 南相馬市原町区馬場字中内 (約25km北北西)	4月17日12時30分	2.4 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省
測定エリア【108】 南相馬市原町区大原台畑 (約30km北北西)	4月17日12時12分	4.1 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404確認	降雨なし	文部科学省

環境放射能水準調査結果(定時降下物)
(4月16日9時～4月17日9時採取)

H23.4.17 19:00

(MBq/km²)

	都道府県名	定 時 降 下 物		
		I-131	Cs-137	備考
1	北海道(札幌市)	不検出	不検出	
2	青森県(青森市)	不検出	不検出	
3	岩手県(盛岡市)	不検出	不検出	
4	宮城県	-	-	震災被害によって計測不能
5	秋田県(秋田市)	不検出	不検出	
6	山形県(山形市)	不検出	49	
7	福島県(福島市)	-	-	現在測定中
8	茨城県(ひたちなか市)	不検出	不検出	
9	栃木県(宇都宮市)	不検出	19	
10	群馬県(前橋市)	不検出	不検出	
11	埼玉県(さいたま市)	不検出	12	
12	千葉県(市原市)	不検出	5.1	
13	東京都(新宿区)	不検出	6.3	
14	神奈川県(茅ヶ崎市)	不検出	不検出	
15	新潟県(新潟市)	不検出	不検出	
16	富山県(射水市)	不検出	不検出	
17	石川県(金沢市)	不検出	不検出	
18	福井県(福井市)	不検出	不検出	
19	山梨県(甲府市)	不検出	不検出	
20	長野県(長野市)	不検出	不検出	
21	岐阜県(各務原市)	不検出	不検出	
22	静岡県(御前崎市)	不検出	不検出	
23	愛知県(名古屋市)	不検出	不検出	
24	三重県(四日市市)	不検出	不検出	
25	滋賀県(大津市)	不検出	不検出	
26	京都府(京都市)	不検出	不検出	
27	大阪府(大阪市)	不検出	不検出	
28	兵庫県(神戸市)	不検出	不検出	
29	奈良県(奈良市)	-	-	機器調整中
30	和歌山県(和歌山市)	不検出	不検出	
31	鳥取県(東伯郡)	不検出	不検出	
32	島根県(松江市)	不検出	不検出	
33	岡山県(岡山市)	不検出	不検出	
34	広島県(広島市)	不検出	不検出	
35	山口県(山口市)	不検出	不検出	
36	徳島県(徳島市)	不検出	不検出	
37	香川県(高松市)	不検出	不検出	
38	愛媛県(八幡浜市)	不検出	不検出	
39	高知県(高知市)	不検出	不検出	
40	福岡県(太宰府市)	不検出	不検出	
41	佐賀県(佐賀市)	不検出	不検出	
42	長崎県(大村市)	不検出	不検出	
43	熊本県(宇土市)	不検出	不検出	
44	大分県(大分市)	不検出	不検出	
45	宮崎県(宮崎市)	不検出	不検出	
46	鹿児島県(鹿児島市)	不検出	不検出	
47	沖縄県(南城市)	不検出	不検出	

*文部科学省が各都道府県等からの報告に基づき作成

茨城県におけるモニタリング状況(1/1)

文部科学省

H23.4.17 19:00

μSv/h(マイクロシーベルト毎時)

日時	日本原子力研究開発機構 原子力科学研究所 (茨城県東海村)	日本原子力研究開発機構 核燃料サイクル工学研究所 (茨城県東海村)	東京大学弥生 (茨城県東海村)
4月17日			
0:00	1.02	0.55	0.92
1:00	1.02	0.54	0.92
2:00	1.02	0.54	0.80
3:00	1.02	0.55	0.91
4:00	1.02	0.54	0.84
5:00	1.01	0.54	0.82
6:00	1.02	0.54	0.92
7:00	1.02	0.54	0.85
8:00	1.01	0.54	0.88
9:00	1.02	0.54	0.95
10:00	1.01	0.54	0.90
11:00	1.01	0.54	0.87
12:00	1.01	0.54	0.83
13:00	1.01	0.54	0.84
14:00	1.01	0.54	0.86
15:00	1.01	0.54	0.83
16:00	1.01	0.54	0.82
17:00	1.01	0.54	0.89
18:00	1.01	0.54	

※このデータは、表記の3カ所における空間線量率を1時間毎に計測したもの。日本原子力研究開発機構原子力科学研究所及び日本原子力研究開発機構核燃料サイクル工学研究所のデータは、それぞれ以下のホームページでも掲載されている。

日本原子力研究開発機構原子力科学研究所

<http://erms.jaea.go.jp/Chart.htm>

日本原子力研究開発機構核燃料サイクル工学研究所

http://www.jaea.go.jp/04/ztokai/kankyo/realtime/tbl_10mStPo01.html

福島第一原子力発電所の20km以遠のモニタリング結果について

平成23年4月17日 19時00分現在
文 部 科 学 省

○文部科学省が集計した結果

注)太字下線データが今回追加分

- * 1 GM(ガイガーミューラー計数管)における値
- * 2 電離箱における値
- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	天候	実施者
測定エリア【1】 福島市杉妻町 (約60km北西)	4月17日18時10分	1.2 ^{*2}	降雨なし	文部科学省
測定エリア【1】 福島市杉妻町 (約60km北西)	4月17日8時35分	1.0 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【4】 伊達郡川俣町大字鶴沢字川端 (約50km北西)	4月17日15時07分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【10】 二本松市針道中島 (約40km北西)	4月17日14時50分	1.6 ^{*2}	降雨なし	文部科学省
測定エリア【11】 二本松市太田字下田 (約40km北西)	4月17日14時32分	1.0 ^{*2}	降雨なし	文部科学省
測定エリア【12】 田村市船引町船引字小沢川代 (約40km西)	4月17日12時22分	0.2 ^{*2}	降雨なし	文部科学省
測定エリア【13】 田村市常葉町西向屋形 (約40km西)	4月17日12時07分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【14】 田村市常葉町常葉内町 (約35km西)	4月17日11時53分	0.2 ^{*2}	降雨なし	文部科学省
測定エリア【15】 田村市常葉町山根鹿島 (約35km西)	4月17日11時34分	0.4 ^{*2}	降雨なし	文部科学省
測定エリア【20】 田村市船引町新館下 (約45km北西)	4月17日14時03分	0.2 ^{*2}	降雨なし	文部科学省
測定エリア【21】 田村市船引町上移 (約30km西北西)	4月17日13時30分	3.5 ^{*2}	降雨なし	文部科学省
測定エリア【22】 田村市船引町上移字後田 (約35km西北西)	4月17日13時46分	0.2 ^{*2}	降雨なし	文部科学省
測定エリア【23】 田村市船引町南移水中内 (約35km西北西)	4月17日13時54分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【31】 双葉郡浪江町津島仲沖 (約30km西北西)	4月17日10時37分	9.2 ^{*2}	降雨なし	文部科学省
測定エリア【32】 双葉郡浪江町赤宇木手七郎 (約30km北西)	4月17日10時52分	23.1 ^{*2}	降雨なし	文部科学省
測定エリア【33】 相馬郡飯館村長泥 (約30km北西)	4月17日11時08分	11.2 ^{*2}	降雨なし	文部科学省
測定エリア【34】 双葉郡浪江町津島大高木 (約30km北西)	4月17日9時39分	5.8 ^{*2}	降雨なし	文部科学省
測定エリア【36】 伊達郡川俣町山木屋大洪 (約40km北西)	4月17日9時20分	3.1 ^{*2}	降雨なし	文部科学省
測定エリア【38】 いわき市四倉町白岩保木田 (約35km南)	4月17日11時29分	0.3 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【41】 田村市都路町古道 (約20km西)	4月17日13時00分	0.6 ^{*2}	降雨なし	電力会社
測定エリア【41】 田村市都路町古道 (約20km西)	4月17日9時20分	0.6 ^{*2}	降雨なし	電力会社
測定エリア【42】 田村市常葉町山根富岡 (約30km西)	4月17日13時10分	0.8 ^{*2}	降雨なし	電力会社
測定エリア【42】 田村市常葉町山根富岡 (約30km西)	4月17日10時00分	0.8 ^{*2}	降雨なし	電力会社
測定エリア【43】 双葉郡川内村下川内宮渡 (約20km南西)	4月17日15時00分	0.4 ^{*2}	降雨なし	電力会社
測定エリア【43】 双葉郡川内村下川内宮渡 (約20km南西)	4月17日11時00分	0.4 ^{*2}	降雨なし	電力会社
測定エリア【44】 いわき市大久町大久矢ノ目沢 (約30km南)	4月17日13時00分	0.6 ^{*2}	降雨なし	電力会社
測定エリア【44】 いわき市大久町大久矢ノ目沢 (約30km南)	4月17日10時00分	0.6 ^{*2}	降雨なし	電力会社
測定エリア【45】 双葉郡楢葉町山田岡美し森 (約20km南)	4月17日12時45分	0.9 ^{*2}	降雨なし	電力会社
測定エリア【45】 双葉郡楢葉町山田岡美し森 (約20km南)	4月17日9時40分	0.9 ^{*2}	降雨なし	電力会社
測定エリア【46】 伊達郡川俣町山木屋向出山 (約30km北西)	4月17日12時55分	4.3 ^{*2}	降雨なし	電力会社

- * 1 GM(ガイガーミューラー計数管)における値
 * 2 電離箱における値
 * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
 * 4 測定時間内における測定値の変動範囲

測定場所 (福島第1発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	天候	実施者
測定エリア【46】 伊達郡川俣町山本屋向出山 (約30km北西)	4月17日9時50分	4.3 ^{*2}	降雨なし	電力会社
測定エリア【71】 双葉郡広野町下北迫苗代替 (約25km南)	4月17日12時52分	1.0 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【71】 双葉郡広野町下北迫苗代替 (約25km南)	4月17日7時40分	0.5 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (約30km南)	4月17日12時27分	0.8 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (約30km南)	4月17日8時27分	0.5 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【73】 いわき市四倉町 (約35km南)	4月17日12時01分	1.1 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【73】 いわき市四倉町 (約35km南)	4月17日8時50分	0.3 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【74】 いわき市小川町高萩 (約35km南)	4月17日11時04分	0.1 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【74】 いわき市小川町高萩 (約35km南)	4月17日9時17分	0.5 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【75】 いわき市内郷御殿町 (約45km南)	4月17日10時36分	0.5 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【75】 いわき市内郷御殿町 (約45km南)	4月17日7時00分	0.3 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【76】 双葉郡川内村上川内早渡 (約20km南西)	4月17日10時42分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【76】 双葉郡川内村上川内早渡 (約20km南西)	4月17日10時27分	0.3 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【77】 いわき市小川町上小川 (約25km南西)	4月17日10時03分	1.3 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【79】 双葉郡浪江町下津島登深 (約30km北西)	4月17日10時09分	12.7 ^{*2}	降雨なし	文部科学省
測定エリア【80】 南相馬市原町区高見町 (約25km北)	4月17日8時15分	0.3 ^{*2}	降雨なし	警察(NBC対策部隊)
測定エリア【83】 双葉郡浪江町赤宇木櫛平 (約20km北西)	4月17日10時24分	39.4 ^{*2}	降雨なし	文部科学省
測定エリア【84】 いわき市三和町差塩 (約40km南西)	4月17日9時52分	0.4 ^{*2}	降雨なし	日本原子力研究開発機構
測定エリア【85】 福島市荒井原宿 (約60km北西)	4月17日14時00分	0.5 ^{*2}	降雨なし	防衛省
測定エリア【85】 福島市荒井原宿 (約60km北西)	4月17日6時00分	0.2 ^{*2}	降雨なし	防衛省
測定エリア【86】 郡山市大槻町長右工門林 (約55km西)	4月17日14時00分	1.0 ^{*2}	降雨なし	防衛省
測定エリア【86】 郡山市大槻町長右工門林 (約55km西)	4月17日6時00分	0.8 ^{*2}	降雨なし	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内 (約30km西南西)	4月17日14時00分	0.9 ^{*2}	降雨なし	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内 (約30km西南西)	4月17日6時00分	1.2 ^{*2}	降雨なし	防衛省
測定エリア【88】 福島市光が丘 (約55km北西)	4月16日17時00分	1.6 ^{*2}	降雨なし	防衛省
測定エリア【89】 郡山市豊田町 (約60km西)	4月16日17時00分	2.3 ^{*2}	降雨なし	防衛省
測定エリア【102】 伊達市月館町月館字町 (約50km北西)	4月17日14時55分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【103】 南相馬市原町区高字大豆柄内 (約20km北)	4月17日12時44分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【104】 双葉郡葛尾村大字落合字落合 (約25km北西)	4月17日9時52分	1.6 ^{*2}	降雨なし	文部科学省
測定エリア【105】 田村市都路町古道寺ノ前 (約20km西)	4月17日11時07分	0.3 ^{*2}	降雨なし	文部科学省
測定エリア【106】 いわき市川前町小白井字将監小屋 (約30km南西)	4月17日10時09分	0.2 ^{*2}	降雨なし	文部科学省
測定エリア【107】 南相馬市原町区馬場字中内 (約25km北北西)	4月17日12時30分	2.4 ^{*2}	降雨なし	文部科学省
測定エリア【108】 南相馬市原町区大原台畑 (約30km北北西)	4月17日12時12分	4.1 ^{*2}	降雨なし	文部科学省

	都道府県名	4月16日							4月17日							過去の平常値の範囲
		17-18	18-19	19-20	20-21	21-22	22-23	23-24	0-1	1-2	2-3	3-4	4-5	5-6	6-7	
1	北海道(札幌市)	0.033	0.032	0.032	0.033	0.034	0.035	0.032	0.032	0.035	0.037	0.036	0.035	0.033	0.031	0.02~0.105
2	青森県(青森市)	0.031	0.031	0.029	0.027	0.027	0.029	0.028	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.017~0.102
3	岩手県(盛岡市)	0.027	0.026	0.025	0.024	0.024	0.024	0.024	0.024	0.023	0.024	0.024	0.025	0.024	0.024	0.014~0.084
4	宮城県(仙台市)	0.078	0.078	0.077	0.076	0.076	0.076	0.076	0.075	0.075	0.074	0.074	0.075	0.074	0.075	0.0176~0.0513
5	秋田県(秋田市)	0.036	0.036	0.035	0.035	0.035	0.034	0.034	0.034	0.035	0.034	0.035	0.034	0.034	0.034	0.022~0.086
6	山形県(山形市)	0.062	0.053	0.053	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.053	0.052	0.052	0.053	0.025~0.082
7	福島県(福島市)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.037~0.046
8	茨城県(水戸市)	0.134	0.133	0.134	0.134	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.133	0.036~0.056
9	栃木県(宇都宮市)	0.066	0.066	0.066	0.066	0.066	0.067	0.067	0.067	0.068	0.067	0.067	0.067	0.067	0.067	0.030~0.067
10	群馬県(前橋市)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.036	0.036	0.036	0.017~0.049
11	埼玉県(さいたま市)	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.060	0.031~0.060
12	千葉県(市原市)	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.022~0.044
13	東京都(新宿区)	0.076	0.076	0.076	0.076	0.076	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.075	0.028~0.079
14	神奈川県(茅ヶ崎市)	0.056	0.057	0.056	0.056	0.056	0.057	0.057	0.056	0.056	0.056	0.057	0.056	0.056	0.056	0.035~0.069
15	新潟県(新潟市)	0.046	0.047	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.047	0.047	0.031~0.153
16	富山県(富山市)	0.048	0.047	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.048	0.048	0.048	0.049	0.048	0.029~0.147
17	石川県(金沢市)	0.047	0.047	0.047	0.047	0.047	0.046	0.047	0.047	0.048	0.047	0.047	0.047	0.047	0.048	0.0291~0.1275
18	福井県(福井市)	0.045	0.045	0.045	0.045	0.045	0.045	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.032~0.097
19	山梨県(甲府市)	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.044	0.043	0.044	0.044	0.044	0.044	0.040~0.066
20	長野県(長野市)	0.042	0.043	0.043	0.042	0.042	0.042	0.042	0.042	0.043	0.042	0.042	0.042	0.043	0.043	0.0299~0.0974
21	岐阜県(各務原市)	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.061	0.060	0.060	0.060	0.061	0.061	0.057~0.110
22	静岡県(静岡市)	0.041	0.041	0.041	0.041	0.041	0.040	0.040	0.040	0.039	0.038	0.038	0.038	0.037	0.037	0.0281~0.0765
23	愛知県(名古屋市中区)	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.035~0.074
24	三重県(四日市市)	0.048	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.0416~0.0789
25	滋賀県(大津市)	0.033	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.033	0.033	0.033	0.033	0.034	0.034	0.031~0.061
26	京都府(京都市)	0.038	0.037	0.037	0.038	0.037	0.038	0.038	0.038	0.038	0.038	0.038	0.039	0.039	0.039	0.033~0.087
27	大阪府(大阪市)	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.061
28	兵庫県(神戸市)	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.035~0.076
29	奈良県(奈良市)	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.049	0.049	0.046~0.080
30	和歌山県(和歌山市)	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.032	0.031	0.031	0.031	0.031~0.056
31	鳥取県(鳥取市)	0.063	0.062	0.062	0.063	0.063	0.063	0.063	0.064	0.063	0.064	0.064	0.064	0.064	0.064	0.036~0.110
32	島根県(松江市)	0.045	0.045	0.046	0.045	0.045	0.045	0.046	0.045	0.045	0.046	0.046	0.046	0.046	0.047	0.037~0.131
33	岡山県(岡山市)	0.048	0.043	0.049	0.048	0.048	0.049	0.049	0.048	0.048	0.049	0.049	0.050	0.050	0.051	0.043~0.104
34	広島県(広島市)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.047	0.047	0.047	0.048	0.048	0.035~0.069
35	山口県(山口市)	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.093	0.094	0.094	0.094	0.095	0.096	0.064~0.123
36	徳島県(徳島市)	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.027~0.067
37	香川県(高松市)	0.062	0.062	0.054	0.056	0.062	0.059	0.053	0.060	0.062	0.057	0.055	0.061	0.062	0.058	0.051~0.077
38	愛媛県(松山市)	0.047	0.047	0.047	0.048	0.045	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.045~0.074
39	高知県(高知市)	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.019~0.054
40	福岡県(太宰府市)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.034~0.079
41	佐賀県(佐賀市)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.037~0.086
42	長崎県(大村市)	0.030	0.030	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.030	0.029	0.029	0.029	0.029	0.027~0.069
43	熊本県(宇土市)	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.027	0.028	0.028	0.028	0.028	0.028	0.028	0.021~0.067
44	大分県(大分市)	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.051	0.048~0.085
45	宮崎県(宮崎市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.0243~0.0664
46	鹿児島県(鹿児島市)	0.035	0.035	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.0306~0.0943
47	沖縄県(うるま市)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.023	0.023	0.022	0.022	0.022	0.0133~0.0575

*宮城県では、可搬型モニタリングポストによる測定。

また、過去の平常値の範囲については、仙台市に設置していた固定型モニタリングポストの値を記載。

*福島県では、双葉郡のモニタリングポストが避難区域に入っており、測定が困難であるため、代替地として福島市紅葉山局モニタリングポストで測定。

また、福島県のデータは本日19時までに入手したものを掲載。

*鳥根県では、機器点検のため、4月4日17時から代替機器により測定。

*本データは、1μCy/h(マイクログレイ毎時)=1μSv/h(マイクロシーベルト毎時)と換算して算出

*文部科学省が各都道府県等からの報告に基づき作成

*過去の平常値の範囲は、震災発生前の観測値における上限値と下限値を記したものの。

*群馬県、山梨県、高知県の過去の平常値の範囲の値は4月9日19時発表分より訂正。

H23.4.17 19:00

環境放射能水準調査結果

μSv/h(マイクロシーベルト毎時)

	都道府県名	4月17日										過去の平常値の範囲
		7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	
1	北海道(札幌市)	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.028	0.029	0.02~0.105
2	青森県(青森市)	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.017~0.102
3	岩手県(盛岡市)	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.014~0.084
4	宮城県(仙台市)	0.075	0.077	0.078	0.078	0.080	0.079	0.080	0.081	0.078	0.078	0.0178~0.0513
5	秋田県(秋田市)	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.022~0.086
6	山形県(山形市)	0.052	0.053	0.052	0.052	0.052	0.052	0.052	0.052	0.053	0.052	0.023~0.082
7	福島県(福島市)	2.0	2.0	2.0	2.0	2.0	2.0	2.0				0.037~0.046
8	茨城県(水戸市)	0.133	0.134	0.134	0.133	0.134	0.134	0.134	0.133	0.133	0.133	0.036~0.056
9	栃木県(宇都宮市)	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.067	0.030~0.067
10	群馬県(前橋市)	0.038	0.038	0.038	0.038	0.038	0.038	0.037	0.038	0.038	0.038	0.017~0.049
11	埼玉県(さいたま市)	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.059	0.031~0.060
12	千葉県(市原市)	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.052	0.022~0.044
13	東京都(新宿区)	0.076	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.075	0.028~0.079
14	神奈川県(茅ヶ崎市)	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.055	0.056	0.035~0.069
15	新潟県(新潟市)	0.046	0.047	0.046	0.046	0.046	0.046	0.047	0.046	0.046	0.046	0.031~0.153
16	富山県(射水市)	0.048	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.029~0.147
17	石川県(金沢市)	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.0291~0.1275
18	福井県(福井市)	0.046	0.046	0.045	0.045	0.045	0.045	0.045	0.044	0.045	0.045	0.032~0.097
19	山梨県(甲府市)	0.044	0.043	0.043	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.040~0.066
20	長野県(長野市)	0.042	0.042	0.042	0.042	0.042	0.041	0.042	0.042	0.042	0.042	0.0299~0.0974
21	岐阜県(各務原市)	0.061	0.061	0.061	0.061	0.060	0.060	0.060	0.060	0.060	0.060	0.057~0.110
22	静岡県(静岡市)	0.038	0.039	0.037	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.0281~0.0765
23	愛知県(名古屋市)	0.039	0.040	0.040	0.039	0.039	0.039	0.039	0.039	0.039	0.039	0.035~0.074
24	三重県(四日市市)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.0416~0.0789
25	滋賀県(大津市)	0.033	0.033	0.032	0.033	0.032	0.032	0.032	0.032	0.032	0.032	0.031~0.061
26	京都府(京都市)	0.039	0.039	0.038	0.038	0.038	0.038	0.037	0.038	0.037	0.037	0.033~0.087
27	大阪府(大阪市)	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.061
28	兵庫県(神戸市)	0.037	0.036	0.036	0.037	0.036	0.036	0.036	0.037	0.036	0.036	0.035~0.076
29	奈良県(奈良市)	0.048	0.048	0.047	0.048	0.048	0.047	0.047	0.047	0.047	0.047	0.046~0.080
30	和歌山県(和歌山市)	0.032	0.031	0.031	0.032	0.031	0.031	0.031	0.031	0.031	0.031	0.031~0.056
31	鳥取県(東伯郡)	0.064	0.063	0.063	0.062	0.063	0.063	0.063	0.063	0.063	0.062	0.036~0.110
32	島根県(松江市)	0.046	0.046	0.046	0.046	0.045	0.046	0.046	0.046	0.046	0.046	0.037~0.131
33	岡山県(岡山市)	0.051	0.050	0.049	0.049	0.049	0.049	0.048	0.048	0.048	0.049	0.043~0.104
34	広島県(広島市)	0.047	0.048	0.047	0.047	0.047	0.047	0.047	0.046	0.047	0.046	0.035~0.069
35	山口県(山口市)	0.097	0.096	0.095	0.095	0.095	0.095	0.095	0.094	0.094	0.094	0.064~0.126
36	徳島県(徳島市)	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037~0.067
37	香川県(高松市)	0.053	0.060	0.061	0.056	0.054	0.059	0.061	0.058	0.053	0.056	0.051~0.077
38	愛媛県(松山市)	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.047	0.045~0.074
39	高知県(高知市)	0.026	0.026	0.025	0.025	0.025	0.025	0.025	0.025	0.024	0.024	0.019~0.054
40	福岡県(太宰府市)	0.037	0.037	0.036	0.036	0.036	0.036	0.037	0.036	0.036	0.036	0.034~0.079
41	佐賀県(佐賀市)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.037~0.086
42	長崎県(大村市)	0.030	0.030	0.030	0.030	0.030	0.030	0.029	0.030	0.030	0.029	0.027~0.069
43	熊本県(宇土市)	0.029	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.021~0.067
44	大分県(大分市)	0.050	0.050	0.050	0.049	0.049	0.050	0.050	0.050	0.050	0.050	0.048~0.085
45	宮崎県(宮崎市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.0243~0.0664
46	鹿児島県(鹿児島市)	0.036	0.036	0.036	0.036	0.035	0.035	0.035	0.036	0.035	0.035	0.0306~0.0943
47	沖縄県(うるま市)	0.021	0.021	0.021	0.021	0.021	0.021	0.022	0.032	0.030	0.025	0.0133~0.0575

*宮城県では、可搬型モニタリングポストによる測定。

また、過去の平常値の範囲については、仙台市に設置していた固定型モニタリングポストの値を記載。

*福島県では、双葉郡のモニタリングポストが避難区域に入っており、測定が困難であるため、代替地として福島市紅葉山局モニタリングポストで測定。

また、福島県のデータは本日19時までに入手したものを掲載。

*鳥取県では、機器点検のため、4月4日17時から代替機器により測定。

*本データは、1μGy/h(マイクログレイ毎時)=1μSv/h(マイクロシーベルト毎時)と換算して算出

*文部科学省が各都道府県等からの報告に基づき作成

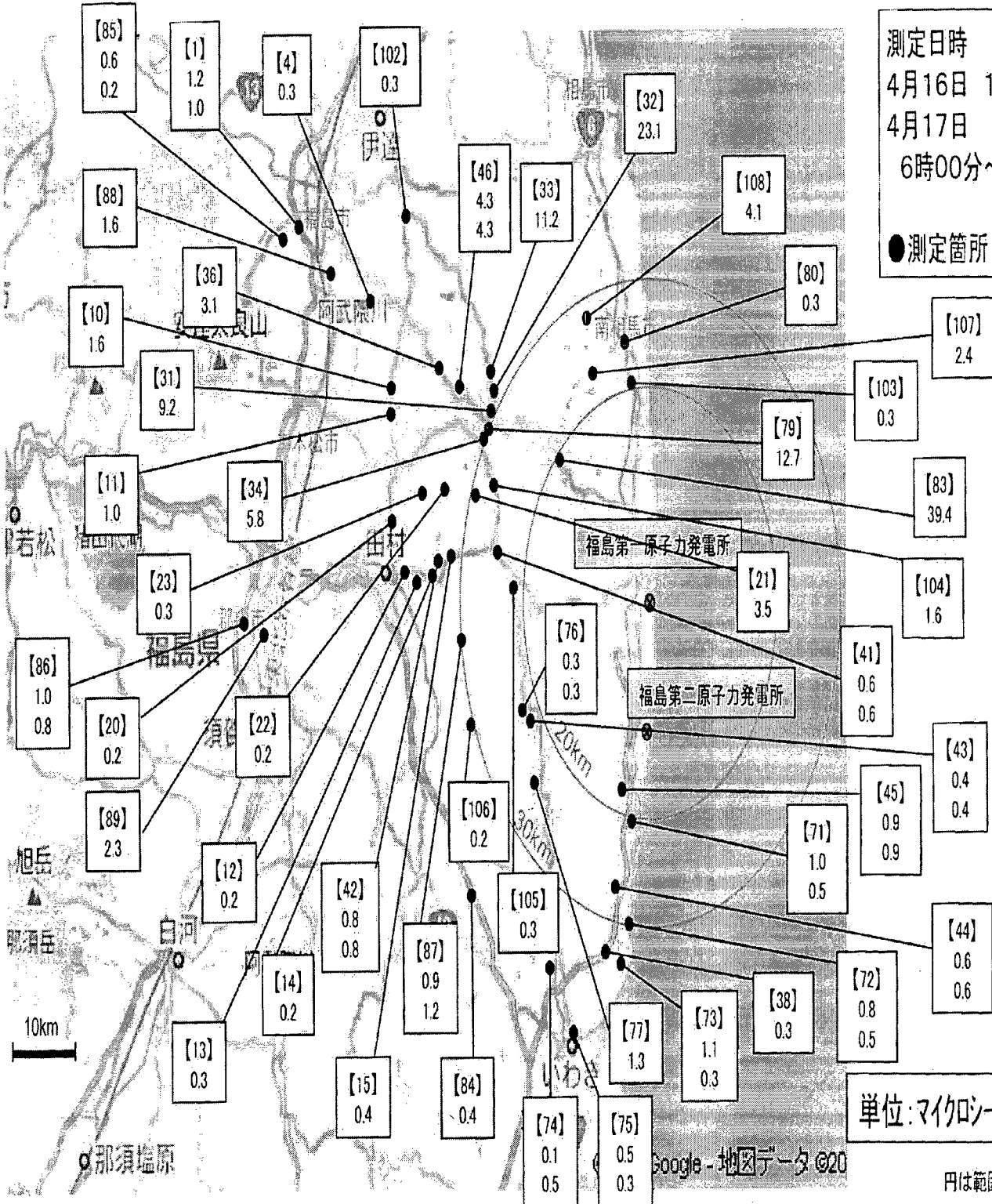
*過去の平常値の範囲は、震災発生前の観測値における上限値と下限値をしめたもの。

*群馬県、山梨県、高知県の過去の平常値の範囲の値は4月9日19時発表分より訂正。

福島第一原子力発電所周辺のモニタリング結果

測定日時
4月16日 17時00分
4月17日
6時00分～17時00分

●測定箇所



全国大学等の協力による空間放射線量

上段: 24時間の積算値
下段: 上段の値を1時間あたりに換算した参考値

都道府県名	測定地点 番号	地区名	4月16日～4日17日
北海道	1	室蘭市	2 μ Sv (0.08 μ Sv/h)
	2	帯広市	2 μ Sv (0.08 μ Sv/h)
	3	旭川市	1 μ Sv (0.04 μ Sv/h)
	4	北見市	2 μ Sv (0.08 μ Sv/h)
	5	釧路市	2 μ Sv (0.08 μ Sv/h)
	6	函館市	1 μ Sv (0.04 μ Sv/h)
青森県	7	弘前市	1 μ Sv (0.04 μ Sv/h)
	8	八戸市	1 μ Sv (0.04 μ Sv/h)
宮城県	9	仙台市	3 μ Sv (0.13 μ Sv/h)
山形県	10	米沢市	2 μ Sv (0.08 μ Sv/h)
	11	鶴岡市	2 μ Sv (0.08 μ Sv/h)
福島県	12	福島市	10 μ Sv (0.42 μ Sv/h)
茨城県	13	つくば市	3 μ Sv (0.13 μ Sv/h)
栃木県	14	小山市	3 μ Sv (0.13 μ Sv/h)
群馬県	15	桐生市	2 μ Sv (0.08 μ Sv/h)
千葉県	16	千葉市	4 μ Sv (0.17 μ Sv/h)
	17	木更津市	3 μ Sv (0.13 μ Sv/h)
東京都	18	文京区	3 μ Sv (0.13 μ Sv/h)
	19	府中市	3 μ Sv (0.13 μ Sv/h)
	20	目黒区	3 μ Sv (0.13 μ Sv/h)
	21	港区	2 μ Sv (0.08 μ Sv/h)
	22	八王子市	2 μ Sv (0.08 μ Sv/h)
神奈川県	23	横浜市	1 μ Sv (0.04 μ Sv/h)
新潟県	24	長岡市	2 μ Sv (0.08 μ Sv/h)
長野県	25	松本市	3 μ Sv (0.12 μ Sv/h)
	26	上田市	2 μ Sv (0.08 μ Sv/h)

富山県	27	高岡市	1 μ Sv (0.04 μ Sv/h)
石川県	28	能美市	2 μ Sv (0.08 μ Sv/h)
福井県	29	吉田郡永平寺町	2 μ Sv (0.08 μ Sv/h)
岐阜県	30	岐阜市	2 μ Sv (0.08 μ Sv/h)
静岡県	31	浜松市	2 μ Sv (0.08 μ Sv/h)
	32	沼津市	2 μ Sv (0.08 μ Sv/h)
愛知県	33	豊橋市	2 μ Sv (0.08 μ Sv/h)
三重県	34	津市	2 μ Sv (0.08 μ Sv/h)
滋賀県	35	彦根市	1 μ Sv (0.04 μ Sv/h)
京都府	36	宇治市	-
大阪府	37	吹田市	2 μ Sv (0.08 μ Sv/h)
兵庫県	38	明石市	2 μ Sv (0.08 μ Sv/h)
奈良県	39	生駒市	2 μ Sv (0.08 μ Sv/h)
和歌山県	40	御坊市	2 μ Sv (0.08 μ Sv/h)
鳥取県	41	鳥取市	2 μ Sv (0.08 μ Sv/h)
岡山県	42	津山市	2 μ Sv (0.08 μ Sv/h)
広島県	43	東広島市	2 μ Sv (0.08 μ Sv/h)
山口県	44	宇部市	1 μ Sv (0.04 μ Sv/h)
徳島県	45	阿南市	1 μ Sv (0.04 μ Sv/h)
香川県	46	三豊市	2 μ Sv (0.08 μ Sv/h)
愛媛県	47	新居浜市	2 μ Sv (0.08 μ Sv/h)
高知県	48	南国市	2 μ Sv (0.08 μ Sv/h)
福岡県	49	福岡市	2 μ Sv (0.08 μ Sv/h)
長崎県	50	長崎市	1 μ Sv (0.04 μ Sv/h)
熊本県	51	熊本市	1 μ Sv (0.04 μ Sv/h)
宮崎県	52	都城市	2 μ Sv (0.08 μ Sv/h)
鹿児島県	53	霧島市	1 μ Sv (0.04 μ Sv/h)
沖縄県	54	中頭郡西原町	1 μ Sv (0.04 μ Sv/h)

*1 毎日14時前後から翌日にかけて24時間の積算線量を測定

*2 ポケット線量計の測定範囲の下限値は1 μ Svのため、下段は参考値

*3 「-」となっている箇所については大学等の協力機関からの報告が未到達

*4 4/16～4/17の松本市については25.5時間の積算線量

From: LIA02 Hoc
Sent: Wednesday, March 23, 2011 9:23 AM
To: Scott, Michael
Cc: LIA03 Hoc
Subject: RE: Directions for Deployment Team to get to Hotel
Attachments: image001.png

Hi Mike,

I'm sorry this happened. I've forwarded your message to USAID and told them to look into it soonest and advise us what you should do. I'm hopeful that someone there who is based in Japan will go to the hotel and straighten it out. We received actual confirmation numbers from AID for the travelers leaving tomorrow. Hopefully this will help this not happen to anyone else.

Jen Schwartzman

From: Scott, Michael
Sent: Wednesday, March 23, 2011 9:21 AM
To: LIA02 Hoc
Subject: Re: Directions for Deployment Team to get to Hotel

I got to hotel and they had no reservation for me so room now on my nrc card. What do I do about this? If everyone else is direct billed to embassy? And what of those arriving next two days? Do they have reservations? Please look into this and let me know. Thanks

Sent from my NRC blackberry
Michael Scott

(b)(6)

From: LIA02 Hoc
To: Blamey, Alan; Scott, Michael; Dorman, Dan; Giessner, John; Taylor, Robert; Jackson, Todd; Miller, Marie; Ali, Syed; Sheikh, Abdul; Way, Ralph
Sent: Tue Mar 22 19:52:04 2011
Subject: FW: Directions for Deployment Team to get to Hotel

From: Johnson, Natalya
Sent: Tuesday, March 22, 2011 7:44 PM
To: RMTPACTSU_ELNRC
Cc: RMTPACTSU_AC
Subject: Hotel Okura

Greetings,

DART team is staying at (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the

other hotels (e.g. Intercon) and then catch a taxi to Hotel (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

Bus ticket costs about 3,000 yen (exchange rate is about 79/80 to 1 USD); people at the bus desk office will provide your travellers with the best options on how to get to the hotel.

Upon arrival at the hotel please advise your travellers to mention that rooms have been reserved by the US Embassy. They will be required to present their credit cards for any incidental charges.

Please have them contact me with any questions at (b)(6). I am in room (b)(6), if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

Admin Coordinator

Pacific Tsunami and Japan Earthquake DART

Office: (8.) (3) 3224 5016

BB: (b)(6)

From: LIA11 Hoc
Sent: Wednesday, March 23, 2011 9:47 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: FW: Directions for Deployment Team to get to Hotel
Attachments: image001.png

I assume this is already completed, but was sitting in my mailbox, so I'm forwarding along.

T

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Tuesday, March 22, 2011 7:46 PM
To: LIA11 Hoc; LIA01 Hoc
Subject: Directions for Deployment Team to get to Hotel

FYI, can you please see that this is forwarded to the new deployment team. Thanks.

Jeff

From: Johnson, Natalya
Sent: Tuesday, March 22, 2011 7:44 PM
To: RMTPACTSU_ELNRC
Cc: RMTPACTSU_AC
Subject: Hotel (b)(6)

Greetings,

DART team is staying at (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the other hotels (e.g. Intercon) and then catch a taxi to Hotel (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

Bus ticket costs about 3,000 yen (exchange rate is about 79/80 to 1 USD); people at the bus desk office will provide your travellers with the best options on how to get to the hotel.

Upon arrival at the hotel please advise your travellers to mention that rooms have been reserved by the US Embassy. They will be required to present their credit cards for any incidental charges.

Please have them contact me with any questions at (b)(6). I am in room (b)(6), if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

Admin Coordinator

Pacific Tsunami and Japan Earthquake DART

Office: (81) (3) 3224 5016

BB: (b)(6)

From: RMTPACTSU_ELNRC <RMTPACTSU_ELNRC@ofda.gov>
Sent: Wednesday, March 23, 2011 11:32 AM
To: Taylor, Robert; Miller, Marie; Jackson, Todd; Giessner, John; Sheikh, Abdul; Ali, Syed; Way, Ralph; LIA01 Hoc; LIA02 Hoc; ET07 Hoc
Subject: Rooms at the (b)(6)
Attachments: image001.png

FYI – See below.

From: Johnson, Natalya (DCHA/OFDA) [mailto:njohnson@USAID.GOV]
Sent: Wednesday, March 23, 2011 11:24 AM
To: RMTPACTSU_ELNRC; Johnson, Natalya; RMTPACTSU_AC
Subject: Re: Directions for Deployment Team to get to Hotel

Just to confirm:

There are reserved rooms for people coming to serve on the DART. The hotel requests credit cards for incidental charges. Please let your teammates know that OFDA is paying for lodging.

Thanks
Natalya

From: RMTPACTSU_ELNRC <RMTPACTSU_ELNRC@ofda.gov>
To: njohnson; OFDAGOV: RMTPACTSU_AC
Sent: Wed Mar 23 10:45:55 2011
Subject: RE: Directions for Deployment Team to get to Hotel
Surin, Natalya:

I'm just trying to double check... again. Looks like Michael Scott and Alan Blamey are confused and fear that they might not have a reservation at the hotel.

**The guidance is that he is just supposed to ask for the USAID block of rooms correct? See his e-mail below.

Sorry... and thanks!
Michael I. Dudek

From: LIA02 Hoc [mailto:LIA02.Hoc@nrc.gov]
Sent: Wednesday, March 23, 2011 9:22 AM
To: RMTPACTSU_ELNRC
Subject: FW: Directions for Deployment Team to get to Hotel

Please look into this for us. Michael Scott arrived at Hotel (b)(6) and there was no record of his reservation so he is now booked in on his NRC charge card. Please let us know as soon as possible what he should do.

From: Scott, Michael
Sent: Wednesday, March 23, 2011 9:21 AM

To: LIA02 Hoc

Subject: Re: Directions for Deployment Team to get to Hotel

I got to hotel and they had no reservation for me so room now on my nrc card. What do I do about this? If everyone else is direct billed to embassy? And what of those arriving next two days? Do they have reservations? Please look into this and let me know. Thanks

Sent from my NRC blackberry

Michael Scott

(b)(6)

From: LIA02 Hoc

To: Blamey, Alan; Scott, Michael; Dorman, Dan; Giessner, John; Taylor, Robert; Jackson, Todd; Miller, Marie; Ali, Syed; Sheikh, Abdul; Way, Ralph

Sent: Tue Mar 22 19:52:04 2011

Subject: FW: Directions for Deployment Team to get to Hotel

From: Johnson, Natalya

Sent: Tuesday, March 22, 2011 7:44 PM

To: RMTPACTSU_ELNRC

Cc: RMTPACTSU_AC

Subject: Hotel (b)(6)

Greetings,

DART team is staying at (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the other hotels (e.g. Intercon) and then catch a taxi to Hotel (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

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Please have them contact me with any questions at (b)(6). I am in room (b)(6) if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

Admin Coordinator

Pacific Tsunami and Japan Earthquake DART

Office: (81) (3) 3224 5016

(b)(6)

Imboden, Andy

From: Imboden, Andy ~
Sent: Thursday, March 24, 2011 5:17 PM
To: Mazaika, Michael; PMT01 Hoc; Brown, David
Cc: Harvey, Brad; Quinlan, Kevin; Galletta, Thomas; Harvey, Brad; Brandon, Lou
Subject: RE: Radiation data

Need to keep in mind these data are

- a) Taken way too close to ground level (2 meters?)
- b) Possibly influenced by buildings/obstructions

The transport over 30 km or whatever it is would have been by winds further aloft. Also, do we know any of the building heights (main admin building)? Would suspect a factor in the winds parallel the shoreline because the reactor buildings parallel the shoreline and are making a canyon at the very close to ground level.

Also, Embassy had a clarifying question during 3d shift last night, they are working on the JMA data request.

Andy Imboden
Chief, Environmental Review Branch
NRR/DLR
301-415-2327

From: Mazaika, Michael
Sent: Thursday, March 24, 2011 11:37 AM
To: PMT01 Hoc; Brown, David
Cc: Harvey, Brad; Quinlan, Kevin; Galletta, Thomas; Imboden, Andy; Harvey, Brad; Brandon, Lou
Subject: FW: Radiation data

Folks/Dave:

Don't know if any of you have had a chance to look at the e-mails that the Japan Embassy Task Force has been forwarding lately. I selected one before the end of my shift yesterday. It appears that the file labeled as "TEPCO-Rad Data at Plant-March 20.xlsx" includes transcribed wind direction and wind speed for the site. The data also appear to be associated with the hardcopy mobile sampling summaries that we have been receiving since about last Wed or Thurs.

My initial look was to see if these data contain measurements during the "gap" that was identified – that is (as relayed to me by Kevin):

- specifically - 13 March Hr 19 JST to 14 March Hr 06 JST, and
- generally - 13 March Hr 10 JST to 15 March Hr 02 JST

Except for only a few hours, these Met data entries appear to cover the above time periods. This particular spreadsheet includes radiation monitoring / sampling results and Met data for the period from 11 March to 20 March, 2011.

The second thing I wanted to take a quick look at was the occurrence of SSE and SE winds, especially for the 13 to 15 March time frame to see if there was any corroboration with the high radiation levels that Dave has indicated have been mapped out to about 30 km to the northwest. I sorted the above MS Excel file on wind various directions and color-coded certain cells as follows (appended the phrase "mdm review1" to the original file name:

- Green = SE or SSE winds (to directly correspond with the observed impact path)
- Blue = N or S winds (which generally parallel the shoreline and could have been meandering towards the preferential transport direction), and
- Yellow = NW or NNW (at this point I do not necessarily assume that the wind directions recorded by the field sampling teams represent "direction from", which is the standard convention, and may actually represent "direction to")

Given that we've had to work with offsite data from JMA stations or summarized elsewhere, in the case of SSE and SE winds from the onsite data, there appears to be some evidence that releases could have been transported to the northwest quadrant.

- March 13 – SSE winds during some portion of 7 clock hours (i.e., Hrs 3, 8-9, and 14-17 JST), and SE winds during some portion of 11 clock hours (i.e., Hrs 1-3, 5, 8, 11, 13-17 JST)
- March 14 – SSE winds during some portion of 3 clock hours (i.e., Hrs 8-9 and JST), and SE winds during some portion of 8 clock hours (i.e., Hrs 1-3, 5, 9, 13, 19, and 21 JST)
- March 15 – SSE winds during some portion of 6 clock hours (i.e., Hrs 13-16 and 20-21 JST), and SE winds during some portion of 5 clock hours (i.e., Hrs 0, 15, 17-18, and 22 JST).

The overlap of clock hours on any given day is due to the fact that more than one value was generally recorded during a given clock hour. I will work with Liaison on my shift tomorrow to try and clear up sampling methodologies and other measurement questions.

In any case, this info suggests that there may be some evidence for explaining the impacted area to the northwest.

Possible Terrain Effects

Dave, you and I have discussed the apparent end to the plume at about 30 km downwind and the possibility that terrain could have dispersed the material to the point that it was less detectable after that distance. You've also indicated that the direction is to the NW. How precise is that relative direction or is the material found to be to the NNW?

If that is the case, there is a marked increase in terrain height (increases to about 200 to 300 m above MSL at the nearest edge) about 6 or 7 km inland. An impact pathway in a NNW direction would generally correspond to the air parcel encountering the rising terrain at a downwind distance of about 30 km. The impact direction might be something to refine as we go forward.

Status of Request for JMA Data

Don't know if you had a chance to see my request from yesterday afternoon to JMA thru the Japan Embassy Task Force via LIA 02 to get hourly data for specific stations during the early days of the accident. Just curious if we've seen a response yet. The Embassy has been a fairly responsive partner for our info needs.

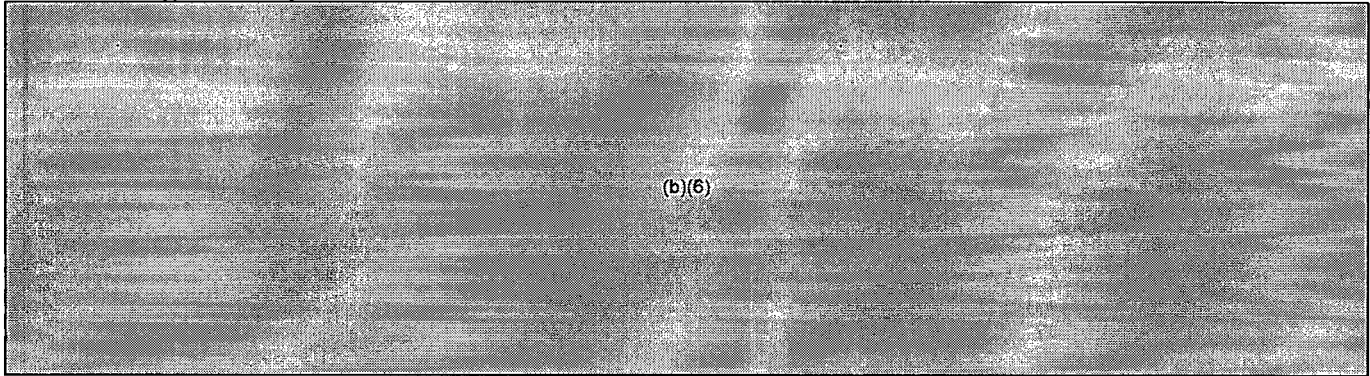
Please let me know if you have any questions.

Thanks,

Mike

From: PMT01 Hoc
Sent: Wednesday, March 23, 2011 2:31 PM
To: Mazaika, Michael
Subject: FW: Radiation data

From: JapanEmbassy, TaskForce [mailto:JapanEmbassyTaskForce@state.gov]
Sent: Monday, March 21, 2011 4:49 AM



Subject: FW: Radiation data

Attached is most recent radiation data from TEPCO and MEXT. Original data can be viewed at following websites:

http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303723.htm

<http://www.tepco.co.jp/nu/monitoring/index-j.html>

SBU

This email is UNCLASSIFIED.

From: Mikako Sano [mailto:(b)(6)]
Sent: Monday, March 21, 2011 5:39 PM
To: Walcott, Naomi
Cc: JapanEmbassy, TaskForce; 'Akiko Chiba'
Subject: Radiation data

Naomi-san,

Attached are radiation data at Fukushima no.1 NPP and in prefectures.

Both data are uploaded in the web of TEPCO and MEXT.

I changed a format of MEXT data per Russ's request. The original data might be easier to see for others.

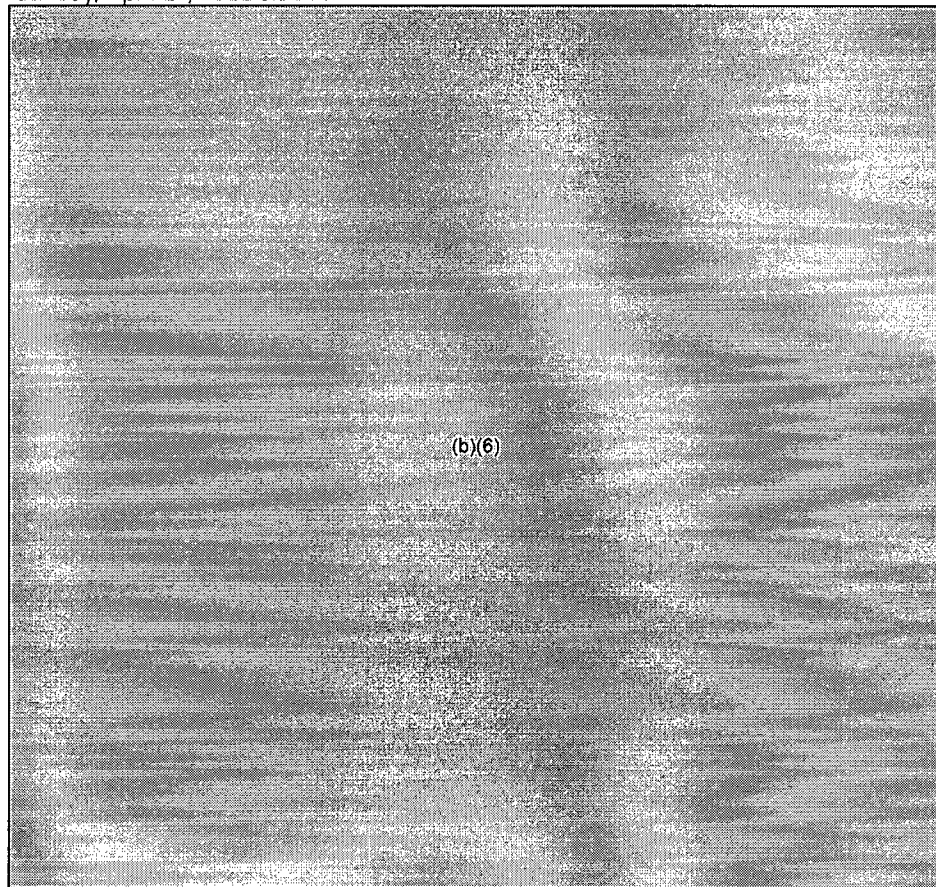
http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303723.htm

<http://www.tepco.co.jp/nu/monitoring/index-j.html>

Obviously I have a problem to receive e-mails from state department. I didn't see your previous reply e-mail. Chiba-san forward it to me.

Please keep Chiba-san in a loop for a while. Thanks, Sano

From: saigai03@mext.go.jp
Sent: Sunday, April 17, 2011 8:32 PM
To:



Cc:
Subject: Radiation data by MEXT
Attachments: (English)20110417_01.pdf; (English)20110417_02.pdf; (English)20110417_03.pdf;
(English)20110417_04.pdf; (English)20110417_05.pdf; (English)20110417_06.pdf;
(English)20110417_07.pdf; (English)20110417_08.pdf; (unofficial)(English)20110417_01.pdf; (unofficial)(English)20110417_04.pdf

Dear Sir,

Please see attached the document.

Sincerely yours,

Eiko SENAMI

Eiko SENAMI (Ms.)

Office of International Relations, Nuclear Safety Division, Ministry of Education, Culture, Sports, Science and Technology
- Japan

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 10:00 April 17, 2011
Ministry of Education, Culture, Sports, Science and Technology (MEXT)

Monitoring Outputs by MEXT

*Boldface and underlined readings are new.

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	測定位置	測定位置 の備考	Weather	Reading by
Reading Point [1] <u>Fukushima city Sugitsuma town</u> (About 60km North/West)	2011/4/16 14:57	<u>2.1</u> ^{*2}	N: 37' 44' 12.6" E: 140' 28' 02.9"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [1] Fukushima city Sugitsuma town (About 60km North/West)	2011/4/16 8:39	1.3 ^{*2}	N: 37' 40' 12.6" E: 140' 28' 02.9"	20110330 確認	No Rain	MEXT
Reading Point [2] Fukushima city Onami Takinori (About 55km North/West)	2011/4/16 8:57	1.7 ^{*2}	N: 37' 41' 12.7" E: 140' 33' 29.3"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [3] Date city Ryozen town Ishida Hikohei (About 45km North/West)	2011/4/16 9:58	2.6 ^{*2}	N: 37' 45' 40.5" E: 140' 44' 19.9"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [4] Date county Kavamata town oaza Tsurusawa aza Kawabata (About 50km North/West)	2011/4/16 9:11	1.0 ^{*2}	N: 37' 39' 30.0" E: 140' 35' 54.0"	20110330 確認	No Rain	MEXT
Reading Point [5] Soma city Nakanoteramae (About 45km North)	2011/4/16 10:48	0.4 ^{*2}	N: 37' 47' 17.4" E: 140' 55' 59.1"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [6] Minami Soma city Kashima ward Nishimachi (About 35km North)	2011/4/16 11:11	0.7 ^{*2}	N: 37' 47' 17.4" E: 140' 55' 59.1"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [7] Minami Soma city Kashima ward Terauchi Motoyashiki (About 35km North)	2011/4/16 11:23	0.6 ^{*2}	N: 37' 47' 17.4" E: 140' 55' 59.1"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [10] Nihonmatsu city Harimichi Nakajima (About 40km North/West)	2011/4/16 13:40	1.0 ^{*2}	N: 37' 36' 02.9" E: 140' 35' 07.3"	20110403 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [10] Nihonmatsu city Harimichi Nakajima (About 40km North/West)	2011/4/16 13:28	1.0 ^{*2}	N: 37' 36' 02.9" E: 140' 35' 07.3"	20110403 確認	No Rain	MEXT
Reading Point [11] Nihonmatsu city Ota aza Shimoda (About 40km North/West)	2011/4/16 13:29	1.2 ^{*2}	N: 37' 34' 00.0" E: 140' 34' 48.0"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [11] Nihonmatsu city Ota aza Shimoda (About 40km North/West)	2011/4/16 12:43	1.0 ^{*2}	N: 37' 34' 00.0" E: 140' 34' 48.0"	20110330 確認	No Rain	MEXT
Reading Point [12] Tamura city Funehiki town Funehiki aza Ozawakawashiro (About 40km West)	2011/4/16 12:50	0.3 ^{*2}	N: 37' 25' 53.6" E: 140' 35' 44.2"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [13] Tamura city Takiwa town Nishimuki Yakata (About 40km West)	2011/4/16 12:38	0.8 ^{*2}	N: 37' 26' 21.5" E: 140' 37' 20.7"	20110330 確認	Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [14] Tamura city Takiwa town Takiwa Uchimachi (About 35km West)	2011/4/16 12:00	0.4 ^{*2}	N: 37' 26' 09.4" E: 140' 38' 49.5"	20110330 確認	Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [15] Tamura city Tokiwa town Yamane Kashima (About 35km West)	2011/4/16 11:37	0.5 ^{*2}	N: 37' 26' 54.0" E: 140' 40' 53.2"	20110330 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [20] Tamura city Funehiki town Nitate shimo (About 45km North/West)	2011/4/16 12:23	0.3 ^{*2}	N: 37' 30' 18.9" E: 140' 34' 40.6"	20110330 確認	No Rain	MEXT
Tamura city Funehiki town			N: 37' 30' 18.9" E: 140' 34' 40.6"	20110330		

- * 1 measured by Geiger-Müller counter
 * 2 measured by ionization chamber type survey meter
 * 3 measured by NaI scintillator detector
 * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: μ Sv/h)	測定位置	測定位置 の備考	Weather	Reading by
Reading Point [21] Kamiutsushi (About30kmWest/North/West)	2011/4/16 11:58	3.0 ^{*2}	N: 140' 34' 40.6" E: 140' 34' 40.6"	20110330 確認	No Rain	MEXT
Reading Point [22] Tamura city Funehiki town Kamiutsushi Ushirota (About35kmWest/North/West)	2011/4/16 12:09	0.0 ^{*2}	N: 37' 26' 54.0" E: 140' 40' 53.2"	20110330 確認	Rain	MEXT
Reading Point [23] Tamura City Funehiki town Minamitsushi Suicyuuchi (About35kmWest/North/West)	2011/4/16 12:15	0.5 ^{*2}	N: 37' 30' 18.9" E: 140' 34' 40.6"	20110330 確認	No Rain	MEXT
Reading Point [31] Futaba county Namie town Tsushima Nakaoki (About30kmWest/North/West)	2011/4/16 9:57	8.3 ^{*2}	N: 37' 33' 45.0" E: 140' 44' 49.9"	20110330 確認	No Rain	MEXT
Reading Point [32] Futaba county Namie town Akougi Teshichiro (About30kmNorth/West)	2011/4/16 10:13	25.3 ^{*2}	N: 37' 35' 42.0" E: 140' 45' 14.5"	20110330 確認	No Rain	MEXT
Reading Point [33] Soma county Iitate village Nagadoro (About30kmNorth/West)	2011/4/16 10:30	15.2 ^{*2}	N: 37' 36' 34.6" E: 140' 45' 09.1"	20110330 確認	No Rain	MEXT
Reading Point [34] Futaba county Namie town Tsushima Taikougi (About30kmNorth/West)	2011/4/16 11:27	4.4 ^{*2}	N: 37' 36' 34.6" E: 140' 45' 09.1"	20110330 確認	No Rain	MEXT
Reading Point [36] Date county Kawamata town Yamakura Oriukan (About40kmNorth/West)	2011/4/16 9:35	2.9 ^{*2}	N: 37' 36' 20.6" E: 140' 37' 58.9"	20110331 確認	No Rain	MEXT
Reading Point [37] Date city Ryozen town Ishida Hojizawa (About50kmNorth/West)	2011/4/16 9:48	3.2 ^{*2}	N: 37' 45' 06.7" E: 140' 41' 29.2"	20110402 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [38] Iwaki City Yotsukura town Shiraiwa Hokita (About35kmSouth)	2011/4/16 13:09	0.9 ^{*2}	N: 37' 07' 18.4" E: 140' 57' 03.8"	20110401 確認	Rain	MEXT

- * 1 measured by Geiger-Müller counter
 * 2 measured by ionization chamber type survey meter
 * 3 measured by NaI scintillator detector
 * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	測定位置	測定位置 の備考	Weather	Reading by
Reading Point [39] Soma city Yamakami Kaminamiki (About 45km North)	2011/4/16 10:22	0.8 ^{*2}	N: 37° 45' 52.7" E: 140° 51' 47.1"	20110402 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [41] Tamura City Miyakoji town Hurumichi (About 20km West)	2011/4/16 13:10	0.7 ^{*2}			No Rain	Electric power company
Reading Point [41] Tamura City Miyakoji town Hurumichi (About 20km West)	2011/4/16 9:45	0.7 ^{*2}			No Rain	Electric power company
Reading Point [42] Tamura city Tokiwa town Yamane Tomioka (About 30km West)	2011/4/16 13:20	0.8 ^{*2}			No Rain	Electric power company
Reading Point [42] Tamura city Tokiwa town Yamane Tomioka (About 30km West)	2011/4/16 10:20	0.8 ^{*2}			No Rain	Electric power company
Reading Point [43] Futaba county Kawauchi village Shimokawauchi Miyawata (About 20km South/West)	2011/4/16 15:00	0.4 ^{*2}			No Rain	Electric power company
Reading Point [43] Futaba county Kawauchi village Shimokawauchi Miyawata (About 20km South/West)	2011/4/16 11:00	0.4 ^{*2}			No Rain	Electric power company
Reading Point [44] Iwaki city Ohisa town Ohisa Yanomezawa (About 30km South)	2011/4/16 13:00	0.6 ^{*2}			Rain	Electric power company
Reading Point [44] Iwaki city Ohisa town Ohisa Yanomezawa (About 30km South)	2011/4/16 10:00	0.6 ^{*2}			No Rain	Electric power company
Reading Point [45] Futaba county Naraha town Yamadaoka Utsukushimori (About 20km South)	2011/4/16 13:31	1.0 ^{*2}			No Rain	Electric power company
Reading Point [45] Futaba county Naraha town Yamadaoka Utsukushimori (About 20km South)	2011/4/16 10:00	1.0 ^{*2}			No Rain	Electric power company
Reading Point [46] Date county Kawamata town Yamakoya Mukaidayama (About 30km North/West)	2011/4/16 13:05	4.4 ^{*2}			No Rain	Electric power company
Reading Point [46] Date county Kawamata town Yamakoya Mukaidayama (About 30km North/West)	2011/4/16 10:10	4.5 ^{*2}			No Rain	Electric power company
Reading Point [71] Futaba county Hirano town Shimokitaba Nawashirogae (About 25km South)	2011/4/16 14:45	0.9 ^{*2}	N: 37° 12' 32.4" E: 140° 57' 08.2"	20110323 確認	No Rain	Police (counter NBC operations unit)
Reading Point [71] Futaba county Hirano town Shimokitaba Nawashirogae (About 25km South)	2011/4/16 14:01	0.6 ^{*2}	N: 37° 12' 32.4" E: 140° 57' 08.2"	20110323 確認	No Rain	MEXT
Reading Point [71] Futaba county Hirano town Shimokitaba Nawashirogae (About 25km South)	2011/4/16 8:22	0.5 ^{*2}	N: 37° 45' 52.7" E: 140° 51' 47.1"	20110402 確認	No Rain	Police (counter NBC operations unit)
Reading Point [72] Iwaki city Hisanohama town Hisanohama aza Kitaramaki (About 30km South)	2011/4/16 15:35	0.9 ^{*2}	N: 37° 45' 52.7" E: 140° 51' 47.1"	20110402 確認	No Rain	Police (counter NBC operations unit)
Reading Point [72] Iwaki city Hisanohama town Hisanohama aza Kitaramaki (About 30km South)	2011/4/16 13:43	0.6 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	MEXT
Reading Point [72] Iwaki city Hisanohama town Hisanohama aza Kitaramaki (About 30km South)	2011/4/16 9:02	0.8 ^{*2}	N: 37° 45' 52.7" E: 140° 51' 47.1"	20110402 確認	No Rain	Police (counter NBC operations unit)

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv/h}$)	測定位置	測定位置 の備考	Weather	Reading by
Reading Point [73] Iwaki city Yotsukura town (About 35km South)	2011/4/16 15:32	0.6 ^{*2}	E: 140' 21' 50.7"	20110402 確認	No Rain	Police (counter NBC operations unit)
Reading Point [73] Iwaki city Yotsukura town (About 35km South)	2011/4/16 13:30	0.8 ^{*2}	N: 37' 23' 48.0" E: 140' 21' 50.7"	20110404 確認	No Rain	MEXT
Reading Point [73] Iwaki city Yotsukura town (About 35km South)	2011/4/16 9:23	0.6 ^{*2}	E: 140' 21' 50.7"	20110402 確認	No Rain	Police (counter NBC operations unit)
Reading Point [74] Iwaki city Ogawa town Takahagi (About 35km South)	2011/4/16 12:48	0.2 ^{*2}			Rain	MEXT
Reading Point [74] Iwaki city Ogawa town Takahagi (About 35km South)	2011/4/16 9:50	0.3 ^{*2}			No Rain	Police (counter NBC operations unit)
Reading Point [75] Iwaki city Uchigoumiyamaya town (About 45km South)	2011/4/16 17:00	0.1 ^{*2}			No Rain	Police (counter NBC operations unit)
Reading Point [75] Iwaki city Uchigoumiyamaya town (About 45km South)	2011/4/16 11:36	0.4 ^{*2}			No Rain	MEXT
Reading Point [75] Iwaki city Uchigoumiyamaya town (About 45km South)	2011/4/16 7:00	0.1 ^{*2}			No Rain	Police (counter NBC operations unit)
Reading Point [76] Futaba county Kawauchi village Kamikawauchi Hayawata (About 20km South/West)	2011/4/16 11:08	0.2 ^{*2}			No Rain	Police (counter NBC operations unit)
Reading Point [76] Futaba county Kawauchi village Kamikawauchi Hayawata (About 20km South/West)	2011/4/16 10:40	0.0 ^{*2}	N: 37' 25.3" E: 140' 48' 25.7"	20110402 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [77] Iwaki city Ogawa town Kamiogawa (About 28km South/West)	2011/4/16 10:46	1.2 ^{*2}			No Rain	Police (counter NBC operations unit)

- * 1 measured by Geiger-Mueller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	測定位置	測定位置 の備考	Weather	Reading by
Reading Point [79] Futaba county Namie town shimotsushima kayabuka (About30kmNorth/West)	2011/4/16 10:59	10.9 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330 確認	No Rain	MEXT
Reading Point [80] Minami Soma city Haramachi ward Takami town (About25kmNorth)	2011/4/16 11:52	0.3 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [80] Minami Soma city Haramachi ward Takami town (About25kmNorth)	2011/4/16 8:00	0.4 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330 確認	No Rain	Police (counter NBC operations unit)
Reading Point [83] Futaba county Namie town Akougi Kunugidaira (About20kmNorth/West)	2011/4/16 11:15	43.8 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330 確認	No Rain	MEXT
Reading Point [84] Iwaki city Miwa town Saiso (About40kmSouth/West)	2011/4/16 10:29	0.2 ^{*2}	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110330 確認	No Rain	MEXT
Reading Point [85] Fukushima city Arai Harajiku (About60kmNorth/West)	2011/4/16 14:00	0.5 ^{*2}	N: 37° 42' 45.0" E: 140° 22' 59.0"	20110330 確認	No Rain	Ministry of Defense
Reading Point [85] Fukushima city Arai Harajiku (About60kmNorth/West)	2011/4/16 6:00	0.6 ^{*2}	N: 37° 42' 45.0" E: 140° 22' 59.0"	20110330 確認	No Rain	Ministry of Defense
Reading Point [86] Koriyamashi Ootsuki town Choemonbayashi (About55kmWest)	2011/4/16 14:00	0.8 ^{*2}	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110330 確認	No Rain	Ministry of Defense
Reading Point [86] Koriyamashi Ootsuki town Choemonbayashi (About55kmWest)	2011/4/16 6:00	0.9 ^{*2}	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110330 確認	No Rain	Ministry of Defense
Reading Point [87] Futaba county Kawauchi village Kamikawauchi Hananouchi (About30kmWest/South/West)	2011/4/16 14:00	0.9 ^{*2}	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110330 確認	No Rain	Ministry of Defense
Reading Point [87] Futaba county Kawauchi village Kamikawauchi Hananouchi (About30kmWest/South/West)	2011/4/16 6:00	1.0 ^{*2}	N: 37° 21' 42.0" E: 140° 42' 54.0"	20110330 確認	No Rain	Ministry of Defense
Reading Point [88] Fukushima city Hikarigaoka (About55kmWest/North/West)	2011/4/15 17:00	1.2 ^{*2}	N: 37° 41' 24.2" E: 140° 28' 17.4"	20110404 確認	No Rain	Ministry of Defense
Reading Point [89] Koriyama city Toyota town (About60kmWest)	2011/4/15 17:00	2.2 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	Ministry of Defense
Reading Point [101] Date city Ryozen town Cishi aza Minowa (About55kmNorth/West)	2011/4/16 9:19	1.2 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [102] Date city Tsukidate town Tsukidate aza Machi (About50kmNorth/West)	2011/4/16 14:09	1.7 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [103] Minami Soma city Haramachi ward Izaka aza Mamegarauchi (About20kmNorth)	2011/4/16 12:32	0.4 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [104] Futaba county Katsurao village Oaza Ochiai aza Ochiai (About25kmWest/North/West)	2011/4/16 11:42	1.5 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	MEXT
Reading Point [105] Tamura city Miyakoji town Furumichi aza Taranomae (About20kmWest)	2011/4/16 11:11	0.0 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [106] Iwaki city Kawamae town Ojiroi aza Syokangoya (About30kmSouth/West)	2011/4/16 10:08	0.0 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [107] Minami Soma city Haramachi ward Baba aza Nakouchi (About25kmNorth/North/West)	2011/4/16 12:55	1.8 ^{*2}	N: 37° 23' 48.0" E: 140° 21' 50.7"	20110404 確認	No Rain	JAEA (Japan Atomic Energy Agency)
Minami Soma city Haramachi ward			N: 37° 23' 48.0"	20110404		JAEA (Japan Atomic

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	測定位置				測定位置 の備考	Weather	Reading by
Resding Post (108) Ohara Daihata (About 30km North/North-West)	2011/4/16 13:10	2.6 ^{1,2}	E	140'	21'	50.7'	確認	No Rain	Energy Agency

Readings of integrated Dose at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 10:00 April 17, 2011

Ministry of Education, Culture, Sports, Science and Technology (MEXT)

* 1 the readings are measured by pocket dosimeter

Monitoring Post (length from NPP)	Installation Date and Time	Date and Time (last monitoring) (x)	Readings (last monitoring) (a) (μ Sv)	Monitoring Date and Time (y)	Reading of Integrated Dose (b) (μ Sv)	Accumulated Time (z = y - x)	Reading of integrated Dose (c = b - a) (μ Sv)	測定位置	Weather
Monitoring Area [31] Futaba county Itoha town, Tsushima Nakatsu (About 23km North-West)	2011/3/23 11:43	2011/4/15 10:44	7498 ⁺	2011/4/16 9:59	7693 ⁺	23hour15minutes	195 ⁺ (8.4 μ Sv/h)	N: 37 47 53.8 E: 140 55 24.7	No Rain
Monitoring Area [32] Futaba county Naria town, Arago Taketoko (About 30km North-West)	2011/3/23 12:14	2011/4/15 10:24	17010 ⁺	—	—	—	— ⁺	N: 37 35 42.0 E: 140 45 14.5	—
Monitoring Area [33] Soma county Futa, village Natsuno (About 30km North-West)	2011/3/23 12:32	2011/4/15 10:06	9850 ⁺	2011/4/16 10:31	10120 ⁺	24hour25minutes	270 ⁺ (11.1 μ Sv/h)	N: 37 36 34.6 E: 140 45 09.1	No Rain
Monitoring Area [34] Futaba county Naria town, Tsushima Taketoko (About 30km North-West)	2011/3/23 13:08	2011/4/15 11:20	3568 ⁺	2011/4/16 11:28	3673 ⁺	24hour08minutes	105 ⁺ (4.4 μ Sv/h)	N: 37 33 03.2 E: 140 44 28.6	No Rain
Monitoring Area [38] Iwaki City Tsukagawa town, Shin-ya Haka (About 40km South)	2011/3/31 16:23	2011/4/15 13:38	291 ⁺	2011/4/16 13:10	300 ⁺	23hour32minutes	9 ⁺ (0.4 μ Sv/h)	N: 37 12 52.5 E: 140 59 40.2	Rain
Monitoring Area [71] Futaba county Horokanai Shirokawa (About 30km South)	2011/3/23 13:00	2011/4/15 14:24	763 ⁺	2011/4/16 14:00	777 ⁺	23hour36minutes	14 ⁺ (0.6 μ Sv/h)	N: 37 12 52.5 E: 140 59 40.2	No Rain
Monitoring Area [79] Futaba county Naria town, Tsushima Taketoko (About 30km North-West)	2011/3/23 14:09	2011/4/15 11:00	8122 ⁺	2011/4/16 11:00	8358 ⁺	24hour00minutes	236 ⁺ (10.3 μ Sv/h)	N: 37 12 52.5 E: 140 59 40.2	No Rain
Monitoring Area [7] Misaki Soma city, Kadoma ward, Tsuruoka (About 30km North)	2011/3/23 12:06	2011/4/15 11:49	495 ⁺	2011/4/16 11:28	509 ⁺	23hour39minutes	14 ⁺ (0.6 μ Sv/h)	N: 37 12 52.5 E: 140 59 40.2	No Rain
Monitoring Area [1] Fukushima city, Saitama town (About 30km North-West)	2011/3/24 15:20	2011/4/15 15:55	596 ⁺	2011/4/16 15:05	614 ⁺	23hour10minutes	18 ⁺ (0.8 μ Sv/h)	N: 37 44 45.2 E: 140 28 10.6	No Rain
Monitoring Area [15] Tama city, Tama town, Tama town (About 30km North)	2011/3/24 10:58	2011/4/15 11:41	822 ⁺	2011/4/16 11:38	848 ⁺	23hour57minutes	26 ⁺ (1.1 μ Sv/h)	N: 37 27 08.1 E: 140 40 39.7	No Rain
Monitoring Area [84] Iwaki city, Misaki town, Soma (About 40km South-West)	2011/3/25 10:40	2011/4/15 10:12	110 ⁺	2011/4/16 10:30	115 ⁺	24hour18minutes	5 ⁺ (0.2 μ Sv/h)	N: 37 12 52.5 E: 140 59 40.2	No Rain
Monitoring Area [39] Soma city Tanaka (About 30km North)	2011/4/1 10:45	2011/4/15 10:44	238 ⁺	2011/4/16 10:24	253 ⁺	23hour40minutes	15 ⁺ (0.6 μ Sv/h)	N: 37 45 52.7 E: 140 51 47.1	No Rain
Monitoring Area [76] Futaba county Naria town, Tsushima Taketoko (About 30km North-West)	2011/4/2 11:35	2011/4/15 10:51	158 ⁺	2011/4/16 10:41	168 ⁺	23hour50minutes	10 ⁺ (0.4 μ Sv/h)	N: 37 45 52.7 E: 140 51 47.1	No Rain
Monitoring Area [80] Misaki Soma city, Kadoma ward, Tsuruoka (About 30km North)	2011/4/3 11:56	2011/4/15 12:41	162 ⁺	2011/4/16 11:55	174 ⁺	23hour14minutes	12 ⁺ (0.5 μ Sv/h)	N: 37 45 52.7 E: 140 51 47.1	No Rain
Monitoring Area [21] Tama city, Tama town, Tama town (About 30km North-West)	2011/4/8 13:18	2011/4/15 12:04	584 ⁺	2011/4/16 12:00	655 ⁺	23hour56minutes	81 ⁺ (3.4 μ Sv/h)	N: 37 45 52.7 E: 140 51 47.1	No Rain

notes: The parenthetic figures in the column "Integrated Dose" indicates the values of readings of integrated dose divided by accumulated time (c/z).

•Reading by MEXT

•The figures of 0.0 in the column "Date and Time (last monitoring)" indicate that there was new installation in the area.

About estimate of integrated Dose at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP from 6 o'clock March 12 to 24 o'clock April 5, please refer to No.1-2 of material of Nuclear Safety Commission the 22nd Special meeting held on April 10, 2011

•Reading of [32] on April 16th is to be measured on the day after 17th, since the battery run down.

Readings of dust sampling (1/2)

☐ : the readings in this thick-frame box are new.

As of 10:00 April 17, 2011
Ministry of Education, Culture, Sports, Science and Technology (MEXT)

Sampling Point		Sampling Time and Date	Radioactivity Concentration(Bq/m ³)		Reading (μ Sv/h)	Monitoring Point by monitoring car
			¹³¹ I	¹³⁷ Cs		
[1-1](About45kmNorth/West)	Souma County litate Village Sasu Nameri	3/23 10:45~10:55	4.0	1.2	5.5	[3]
[1-2](About40kmNorth/West)	Date county Kawamata town Yamakiya Nagahashi	3/23 10:50~11:10	5.2	<1.2	9.0	[36]
[1-3](About30kmWest/North/West)	Futaba County Katsurao Village Kaminogawa	3/23 13:54~14:17	8.0	<1.4	9.4	[21]
[1-4](About35kmWest)	Tamura City Tokiwa Town Yamare	3/23 12:40~13:02	2.8	<1.1	2.3	[15]
[1-4](About35kmWest) Survey 1st		3/24 10:58~11:09	3.1	<0.99	2	
[1-4](About35kmWest) Survey 2nd		3/24 11:58~12:09	2.4	1.3	2.8	
[1-4](About35kmWest) Survey 3rd		3/24 12:58~13:09	2.5	<1.2	2.5	
[1-4](About35kmWest) Survey 4th		3/24 13:58~14:09	2.2	1.6	2.2	
[1-4](About35kmWest) Survey 5th		3/24 14:58~15:09	2.8	<1.2	2.5	
[1-4](About35kmWest) Survey 6th		3/24 15:58~16:09	2.1	<1.0	2.2	
[1-5](About25kmSouth) Vehicle-Borne Survey 1st	Futaba county Hirono town Shimokitaba	3/23 13:15~13:58	530.0	6.6	5.5~14.0	[71]
[1-5](About25kmSouth) Vehicle-Borne Survey 2nd		3/23 14:30~15:10	180.0	2.3	5.5~14.0	
[1-5](About25kmSouth) Vehicle-Borne Survey 3rd		3/23 15:20~15:59	110.0	2.1	5.5~14.0	
[1-5](About25kmSouth) Vehicle-Borne Survey 1st		3/24 10:06~10:44	5.9	<0.66	5.6	
[1-5](About25kmSouth) Vehicle-Borne Survey 2nd		3/24 10:53~11:33	9.2	<0.71	5.6	
[1-5](About25kmSouth) Vehicle-Borne Survey 3rd		3/24 11:44~12:26	12.0	1.1	5.6	
[1-5](About25kmSouth) Vehicle-Borne Survey 1st		3/25 11:51~12:38	43.0	2.0	4.1~5.5	
[1-5](About25kmSouth) Survey 1st		3/25 13:12~13:42	23.0	1.4	2	
[1-5](About25kmSouth) Survey 2nd		3/25 14:12~14:42	19.0	1.3	2.8	
[1-5](About25kmSouth) Survey 3rd		3/25 15:12~15:42	24.0	2.5	2.5	
[1-5](About25kmSouth) Survey 4th		3/25 16:12~16:42	10.0	1.3	2.2	
[1-5](About25kmSouth) Survey 1st		3/26 12:47~13:21	13.0	1.3	3.9	
[1-5](About25kmSouth) Survey 2nd		3/26 14:21~14:57	10.0	1.5	3.9	
[1-5](About25kmSouth) Vehicle-Borne Survey 1st		3/27 12:36~13:26	20.0	0.8	2.8~3.8	
[1-5](About25kmSouth) Survey 1st		3/27 13:58~14:33	7.1	<0.98	3.8	
[1-5](About25kmSouth) Survey 2nd		3/27 15:33~16:08	6.6	<1.0	3.8	
[1-5](About25kmSouth) Survey 3rd		3/27 16:16~16:53	10.0	<1.1	3.8	
[1-5](About25kmSouth) Vehicle-Borne Survey 2nd		3/27 14:43~15:18	5.5	1.2	2.8~3.8	
[1-5](About25kmSouth) Survey 1st		3/28 9:48~13:03	6.6	0.57	3.0	
[1-5](About25kmSouth) Survey 2nd		3/28 13:23~14:07	54.0	8.0	3.0	
[1-5](About25kmSouth) Survey 3rd		3/28 14:18~15:19	20.0	3.0	3.0	
[1-5](About25kmSouth) Survey 1st		3/31 12:22~13:12	24.0	4.5	2.1	
[1-5](About25kmSouth) Survey 2nd		3/31 13:17~14:01	18.0	1.3	2.0	
[1-5](About25kmSouth) Survey 3rd		3/31 14:06~14:50	13.0	1.0	1.9	
[1-5](About25kmSouth) Survey 4th		3/31 15:00~15:44	13.0	<0.79	2.0	
[1-7](About35kmNorth) Survey 1st	Minamisouma City Kashima Ward	3/25 12:58~13:09	3.5	<0.99	3.2	[7]
[1-7](About35kmNorth) Survey 2nd		3/25 13:58~14:09	4.3	1.6	3.2	
[1-7](About35kmNorth) Survey 3rd		3/25 14:57~15:08	15.0	<0.98	3.2	
[1-7](About35kmNorth) Survey 4th		3/25 15:58~16:09	22.0	1.1	3.2	
[1-7](About35kmNorth) Survey 5th		3/26 11:27~11:38	2.9	1.0	1.5	
[1-7](About35kmNorth) Survey 6th		3/26 13:00~13:11	2.2	1.3	1.5	
[1-8](About45kmNorth) Survey 1st	Soma city Nakano	3/28 13:00~16:00	19.0	3.2	0.6~1.2	[5]

Sampling Point	Sampling Time and Date	Radioactivity Concentration(Bq/m ³)		Reading (μ Sv/h)	Monitoring Point by monitoring car
		¹³¹ I	¹³⁷ Cs		
(2-1)(About40kmNorth/West) Survey 1st	3/29 12:50~13:45	4.2	0.73	7.0	[61]
(2-1)(About40kmNorth/West) Survey 2nd	3/29 13:49~14:46	3.4	0.79	7.0	
(2-1)(About40kmNorth/West) Survey 3rd	3/29 14:47~15:50	2.9	<0.74	7.0	
(2-1)(About40kmNorth/West) Survey 1st	3/30 11:15~11:35	4.8	<1.8	6.7	
(2-1)(About40kmNorth/West) Survey 2nd	3/30 12:15~12:35	4.7	2.00	7.2	
(2-1)(About40kmNorth/West) Survey 3rd	3/30 13:15~13:35	3.4	1.80	7.0	
(2-1)(About40kmNorth/West) Survey 4th	3/30 14:15~14:35	28.0	20.00	7.4	
(2-1)(About40kmNorth/West) Survey 5th	3/30 15:15~15:35	7.7	1.90	7.5	
(2-4)(About25kmNorth) Survey 1st	3/29 11:17~12:15	75.0	46.0	1.7	[80]
(2-4)(About25kmNorth) Survey 2nd	3/29 12:15~13:15	29.0	34.0	0.4	
(2-4)(About25kmNorth) Survey 3rd	3/29 13:15~14:15	32.0	23.0	0.6	
(2-4)(About25kmNorth) Survey 4th	3/29 14:15~15:00	29.0	25.0	0.5	
(2-4)(About25kmNorth) Survey 1st	3/30 11:09~11:29	1.8	0.5	0.0	
(2-4)(About25kmNorth) Survey 2nd	3/30 12:10~12:30	1.6	0.5	0.8	
(2-4)(About25kmNorth) Survey 3rd	3/30 13:10~13:30	1.2	0.4	0.2	
(2-4)(About25kmNorth) Survey 4th	3/30 14:10~14:30	1.5	0.5	0.3	
(2-4)(About25kmNorth) Survey 5th	3/30 15:10~15:30	1.1	<0.49	0.6	
(2-4)(About25kmNorth) Survey 1st	4/1 12:33~12:48	1.5	1.0	1.2	
(2-4)(About25kmNorth) Survey 2nd	4/1 13:33~13:55	2.2	0.85	1.2	
(2-4)(About25kmNorth) Survey 3rd	4/1 14:33~14:53	1.9	<0.7	1.2	
(2-4)(About25kmNorth) Survey 4th	4/1 15:33~15:53	1.7	1.0	1.2	
(2-7)(About35kmNorth/West)	3/29 12:00~13:00	0.95	0.59	8.0	[46]
(2-7)(About35kmNorth/West)	3/29 13:00~14:00	0.66	<0.70	8.0	
(2-7)(About35kmNorth/West)	3/29 14:00~15:00	0.75	<0.76	8.0	
(2-7)(About35kmNorth/West)	3/29 15:00~16:00	0.90	<0.58	8.0	
(2-7)(About35kmNorth/West)	3/29 16:00~17:00	0.69	<0.59	8.0	
(2-7)(About35kmNorth/West) Survey 1st	3/30 12:11~12:31	1.9	1.0	13.9	
(2-7)(About35kmNorth/West) Survey 2nd	3/30 13:11~13:33	1.3	1.0	15.2	
(2-7)(About35kmNorth/West) Survey 3rd	3/30 14:11~14:32	89.0	91.0	14.6	
(2-7)(About35kmNorth/West) Survey 4th	3/30 15:11~15:32	180.0	140.0	15.0	
(3-1)(About30kmNorth/West) Survey 1st	3/24 11:20~11:41	43.0	2.0	30	[33]
(3-1)(About30kmNorth/West) Survey 2nd	3/24 12:20~12:40	3.3	<0.98	30	
(3-1)(About30kmNorth/West) Survey 3rd	3/24 13:20~13:42	3.8	<1.2	30	
(3-1)(About30kmNorth/West) Survey 4th	3/24 14:20~14:42	3.8	1.5	30	
(3-1)(About30kmNorth/West) Survey 5th	3/24 15:20~15:42	3.3	1.7	30	
(3-1)(About30kmNorth/West) Survey 1st	3/26 11:38~12:00	5.8	4.8	26	
(3-1)(About30kmNorth/West) Survey 2nd	3/26 13:18~13:39	5.2	2.2	26	
(3-1)(About30kmNorth/West) Survey 1st	3/28 11:31~11:52	2.6	1.8	26	
(3-1)(About30kmNorth/West) Survey 2nd	3/28 12:53~13:15	2.7	<1.2	26	
(3-1)(About30kmNorth/West) Survey 1st	3/29 11:18~11:40	2.4	1.1	18.9	[76]
(3-1)(About30kmNorth/West) Survey 2nd	3/29 13:23~13:50	1.9	<1.0	-	
(76)(About20kmSouth/West) Survey 1st	4/2 11:22~11:47	4.5	1.1	1.0	
(76)(About20kmSouth/West) Survey 2nd	4/2 11:54~12:36	2.0	<0.39	1.0	
(76)(About20kmSouth/West) Survey 3rd	4/2 12:42~13:47	1.3	0.45	1.0	
(76)(About20kmSouth/West) Survey 4th	4/2 13:50~14:56	1.6	<0.33	1.0	
(76)(About20kmSouth/West) Survey 5th	4/2 14:59~16:03	1.6	<0.33	1.0	
(76)(About20kmSouth/West) Survey 1st	4/3 11:35~12:34	2.1	0.56	0.7	
(76)(About20kmSouth/West) Survey 2nd	4/3 12:36~13:35	1.4	<0.31	0.7	
(76)(About20kmSouth/West) Survey 3rd	4/3 13:38~14:37	2.4	<0.39	0.7	
(76)(About20kmSouth/West) Survey 1st	4/4 12:00~13:00	1.3	1.60	0.8	
(76)(About20kmSouth/West) Survey 2nd	4/4 13:08~13:57	2.0	1.10	0.8	
(76)(About20kmSouth/West) Survey 3rd	4/4 14:01~14:50	2.3	0.94	0.8	

Readings are already announced in "Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP"
air dose rate: It has announced separately.

Readings of dust sampling(2/2)



the readings in this thick-frame box are new

Sampling Point	Sampling Time and Date	Radioactivity Concentration (Bq/m ³)		Reading (μSv/h)
		¹³⁷ I	¹³⁷ Cs	
[1](About60km North/West)	Fukushima City Sugitsuma Town	3/19 18:30~18:50	1.22	ND
		3/20 18:30~18:50	203.00	32.20
		3/21 18:30~18:50	2.50	ND
		3/22 18:30~18:50	3.06	ND
		3/23 19:38~19:58	3.69	1.20
		3/24 18:30~18:55	ND	ND
		3/25 19:10~19:20	24.00	14.20
		3/26 18:30~18:40	1.75	ND
		3/27 18:30~18:50	0.87	ND
		3/28 18:33~18:43	1.13	ND
		3/29 18:30~18:50	1.56	ND
		3/30 18:40~19:00	0.91	ND
		3/31 18:30~18:45	2.34	3.55
		4/1 18:30~18:40	2.92	1.28
		4/2 18:37~18:50	2.36	0.52
		4/3 18:30~18:40	1.86	ND
		4/4 18:33~18:43	0.72	ND
		4/5 19:09~19:12	1.99	LTD
		4/6 18:48~18:58	0.70	ND
		4/7 18:30~18:40	0.84	ND
		4/8 18:30~18:40	1.94	2.28
		4/9 18:30~18:40	1.12	0.874
		4/10 18:30~18:40	LTD	LTD
		4/11 18:32~18:42	0.626	ND
		4/12 18:30~18:40	ND	LTD
		4/13 18:30~18:50	ND	ND
		4/14 18:45~19:05	ND	ND
		4/15 18:30~18:40	LTD	0.766
[2-1](About40 kmNorth/West)	Soma county Iitate Village Yagisawa	3/21 13:00~13:20	12.80	2.37
		3/22 12:26~12:46	5.87	ND
		3/23 12:50~13:10	2.99	ND
		3/24 13:30~13:50	5.80	1.51
		3/25 12:45~13:05	5.87	ND
		3/26 12:28~12:46	5.39	1.33
		3/27 12:06~12:26	2.22	ND
		3/28 12:05~12:25	1.66	ND
		3/29 12:07~12:27	2.42	6.79
		3/30 13:22~13:42	3.47	LTD
		3/31 11:50~12:10	1.74	LTD
		4/1 12:00~12:20	1.78	1.69
		4/2 11:46~12:06	0.84	ND
		4/3 11:18~11:38	ND	0.78
		4/4 11:07~11:27	LTD	1.36
		4/5 11:55~12:15	LTD	ND
		4/6 11:45~12:05	LTD	ND
		4/7 11:29~11:49	ND	ND
		4/8 11:45~12:05	0.895	ND
		4/9 11:40~12:00	1.26	ND
		4/10 14:10~14:30	ND	LTD
		4/11 12:32~12:52	2.12	LTD
		4/12 12:04~12:24	ND	ND
		4/13 11:25~11:45	ND	ND
		4/14 11:35~11:55	ND	0.960
		4/15 11:50~12:10	5.55	1.470
[2-2](About45 kmNorth/West)	Date county Kawamata town	3/22 11:10~11:30	10.50	ND
		3/23 11:31~11:51	1.47	ND
		3/24 11:20~11:40	1.47	ND
		3/25 11:25~11:45	2.15	ND
		3/26 11:10~11:30	1.19	ND
		3/27 10:50~11:10	2.97	ND
		3/28 11:00~11:20	1.56	0.87
		3/29 11:30~11:53	1.10	2.07
		3/30 11:37~11:57	1.38	1.11
		3/31 10:40~11:00	1.36	ND
		4/1 10:40~11:00	ND	LTD
		4/2 10:31~10:51	ND	ND
		4/3 10:12~10:32	ND	ND
		4/4 10:05~10:25	LTD	ND
		4/5 10:45~11:05	4.07	ND
		4/6 10:37~10:57	ND	ND
		4/7 10:21~10:41	LTD	ND
		4/8 10:45~11:05	ND	ND
		4/9 10:29~10:49	ND	ND
		4/10 10:35~10:55	LTD	ND
		4/11 11:03~11:23	ND	ND
		4/12 10:40~11:00	1.38	ND
		4/13 10:22~10:42	ND	ND
		4/14 10:31~10:51	ND	0.868
		4/15 10:45~11:05	LTD	ND

Sampling Point		Sampling Time and Date	Radioactivity Concentration (Bq/m3)		Reading (μSv/h)
			¹³⁷ I	¹³⁷ Cs	
[2-3](About40kmWest)	Tamura City Funehiki Town Funehiki	3/21 12:30~12:50	3.74	ND	0.9
		3/22 11:32~11:52	3.92	ND	2.2
		3/23 11:50~12:10	1.75	ND	1.0
		3/24 12:12~12:32	0.97	ND	-
		3/25 13:33~13:53	37.00	1.45	0.8
		3/26 11:52~12:12	1.77	ND	0.0
		3/27 11:48~12:08	1.07	ND	0.8
		3/28 11:39~11:59	ND	ND	0.4
		3/29 13:44~13:54	2.29	0.63	0.7
		3/30 12:25~12:35	1.59	ND	0.5
		3/31 12:05~12:15	2.07	ND	0.5
		4/1 12:11~12:31	ND	ND	0.3
		4/2 11:24~11:44	LTD	ND	0.3
		4/3 11:18~11:38	ND	ND	0.3
		4/4 11:17~11:37	ND	ND	0.3
		4/5 11:45~11:55	LTD	LTD	0.43
		4/6 11:28~11:38	LTD	ND	0.39
		4/7 11:28~11:38	ND	ND	0.35
		4/8 11:27~11:37	LTD	0.905	0.36
		4/9 11:21~11:31	LTD	0.854	0.31
		4/10 11:07~11:17	ND	ND	0.39
		4/11 11:01~11:11	ND	ND	0.35
		4/12 11:18~11:28	ND	ND	0.42
		4/13 11:13~11:23	ND	0.656	0.34
		4/14 11:26~11:36	ND	LTD	0.29
		4/15 11:26~11:36	ND	0.613	0.34
[2-4](About25kmNorth)	Mnamisouma City Haremachu Ward Takami Town	3/21 14:20~14:40	13.20	0.74	2.8
		3/22 13:35~13:55	3.01	ND	1.8
		3/23 14:10~14:30	2.62	ND	1.1
		3/24 14:55~15:15	193.00	2.94	1.2
		3/25 14:20~14:40	16.10	ND	0.7
		3/26 13:57~14:17	2.62	ND	1.3
		3/27 13:38~13:58	1.31	ND	1.4
		3/28 13:30~13:50	18.40	2.80	0.7
		3/29 13:30~13:50	63.40	38.60	1.0
		3/30 14:50~15:10	ND	LTD	0.0~1.3
		3/31 13:20~13:40	5.02	1.63	1.4
		4/1 13:40~14:00	2.66	LTD	1.2
		4/2 13:14~13:34	0.60	ND	1.2
		4/3 12:38~12:58	LTD	ND	1.0
		4/4 12:26~12:46	0.85	1.80	0.7
		4/5 13:07~13:27	6.59	1.43	0.65
		4/6 12:01~12:21	6.81	2.88	0.62
		4/7 12:48~13:08	35.90	4.40	0.64
		4/8 12:55~13:15	1.05	ND	0.72
		4/9 12:57~13:17	LTD	ND	0.78
		4/10 12:55~13:15	1.15	ND	0.59
		4/11 14:03~14:23	LTD	ND	0.64
		4/12 13:35~13:55	ND	0.839	0.60
		4/13 12:38~12:58	ND	LTD	0.55
		4/14 12:56~13:16	5.51	1.71	0.54
		4/15 13:05~13:25	7.39	1.74	0.63
[2-5](About40 kmSouthWest)	Tamura county Gino town Ononamachi	3/20 13:57~14:17	24.60	1.75	0.6
		3/21 13:37~13:57	2.69	ND	0.5
		3/22 12:32~12:52	6.29	ND	0.4
		3/23 12:50~13:10	1.86	ND	0.5
		3/24 13:21~13:41	1.19	ND	-
		3/25 13:35~13:55	12.40	ND	0.4
		3/26 11:55~12:15	ND	ND	0.6
		3/27 11:05~11:25	1.04	ND	0.5
		3/28 11:25~11:45	0.82	ND	-
		3/29 11:25~11:45	0.89	ND	0.3
		3/30 11:00~11:20	ND	ND	0.3
		3/31 11:07~11:27	ND	ND	0.3
		4/1 10:49~11:09	0.74	ND	0.3
		4/2 10:42~11:02	LTD	ND	0.3
		4/3 10:21~10:41	ND	ND	0.3
		4/4 10:19~10:39	ND	ND	0.3
		4/5 10:51~11:11	ND	ND	0.25
		4/6 10:35~10:55	ND	ND	0.25
		4/7 10:51~11:11	ND	ND	0.22
		4/8 10:38~10:58	ND	ND	0.17
		4/9 10:53~11:13	ND	ND	0.25
		4/10 10:40~11:00	ND	ND	0.23
		4/11 10:45~11:05	ND	ND	0.24
		4/12 10:51~11:11	ND	ND	0.22
		4/13 10:36~10:56	ND	ND	0.21
		4/14 10:56~11:16	ND	ND	0.22
		4/15 10:57~11:17	ND	ND	0.20

Sampling Point		Sampling Time and Date	Radioactivity Concentration (Bq/m ³)		Reading (μSv/h)
			131I	137Cs	
【2-6】(About 45km South)	Iwaki City Taira Aza Umemoto	3/20 15:25~15:45	6.89	ND	0.6
		3/21 15:00~15:20	28.90	ND	1.5
		3/22 14:00~14:20	17.00	ND	0.6
		3/23 14:15~14:35	6.93	ND	1.0
		3/24 15:12~15:32	8.25	ND	1.4
		3/25 13:47~14:07	40.60	ND	1.1
		3/27 12:30~12:50	1.55	ND	0.8
		3/28 13:10~13:30	3.56	ND	0.3
		3/29 12:55~13:15	2.69	ND	0.7
		3/30 12:32~12:52	4.59	1.56	0.3
		3/31 12:42~13:02	1.65	ND	0.7
		4/1 12:16~12:36	1.00	ND	0.8
		4/2 12:02~12:22	47.3	5.93	1.4
		4/3 11:42~12:02	LTD	ND	0.4
		4/4 11:43~12:03	0.5	ND	0.7
		4/5 12:12~12:32	0.9	ND	0.42
		4/6 11:55~12:15	LTD	ND	0.37
		4/7 12:10~12:30	1.8	ND	0.35
		4/8 12:02~12:22	0.938	ND	0.32
		4/9 12:18~12:38	1.53	ND	0.33
		4/10 12:09~12:29	LTD	ND	0.35
		4/11 12:18~12:38	LTD	ND	0.30
		4/12 12:14~12:34	ND	ND	0.26
		4/13 12:00~12:20	LTD	ND	0.26
		4/14 12:28~12:48	1.00	ND	0.28
		4/15 12:34~12:54	ND	ND	0.28
【2-7】(About 35 km North/West)	Date County Kawamata town Yanakiya	3/25 15:05~15:25	555.00	12.40	12.0
		3/26 14:06~14:26	1.54	ND	8.8
		3/27 13:51~14:11	1.02	ND	8.7
		3/28 13:35~13:55	2.14	ND	8.4
		3/29 15:02~15:12	3.51	1.46	8.0
		3/30 14:05~14:15	1.33	0.69	13.9~15.4
		3/31 13:35~13:45	2.49	1.38	6.9
		4/1 14:13~14:33	LTD	ND	6.5
		4/2 13:22~13:42	LTD	ND	6.5
		4/3 13:12~13:32	ND	ND	6.1
		4/4 13:15~13:35	ND	ND	5.8
		4/5 13:43~13:53	ND	ND	3.02
		4/6 13:01~13:11	1.26	1.34	2.97
		4/7 13:06~13:16	LTD	LTD	-
		4/8 13:03~13:13	0.871	LTD	2.6
		4/9 12:50~13:00	1.13	LTD	2.4
		4/10 12:38~12:48	ND	ND	2.4
		4/11 12:25~12:35	ND	ND	2.4
		4/12 12:31~12:41	ND	ND	3.0
		4/13 12:46~12:56	ND	LTD	2.9
		4/14 12:44~12:55	ND	ND	2.8
		4/15 12:37~12:47	LTD	ND	2.9
【2-8】(About 50km North/West)	Date City Tsukidate Town	3/24 12:05~12:25	2.71	ND	-
		3/25 16:13~16:33	34.00	ND	-
		3/26 15:15~15:35	ND	ND	-
		3/27 14:52~15:12	ND	ND	-
		3/28 14:38~14:58	ND	ND	-
		3/29 15:59~16:09	1.60	ND	1.6
		3/30 16:05~16:15	2.09	0.77	-
		3/31 14:25~14:35	1.04	LTD	-
		4/1 15:09~15:29	ND	ND	-
		4/2 14:18~14:38	ND	ND	-
		4/3 14:07~14:27	ND	ND	-
		4/4 14:10~14:30	ND	ND	-
		4/5 14:24~14:34	ND	ND	1.29
		4/6 13:43~13:53	LTD	0.74	1.27
		4/7 13:48~13:58	LTD	ND	1.39
		4/8 13:50~14:00	LTD	ND	1.4
		4/9 13:38~13:48	LTD	LTD	0.9
		4/10 13:21~13:31	ND	ND	1.3
		4/11 13:06~13:16	ND	ND	1.3
		4/12 13:12~13:22	ND	ND	1.3
		4/13 13:36~13:56	ND	ND	1.2
		4/14 13:31~13:41	ND	LTD	1.1
		4/15 13:22~13:32	ND	ND	1.2
【2-9】(About 45km West/North/West)	Nihonmatsu City Kengiro	3/25 11:32~11:52	8.67	ND	-
		3/26 10:10~10:30	7.93	ND	-
		3/27 10:28~10:48	ND	ND	-
		3/28 10:12~10:32	0.78	ND	-
		3/29 11:56~12:06	2.53	0.59	-
		3/30 11:00~11:10	1.54	ND	-
		3/31 10:40~10:50	1.53	0.92	-
		4/1 10:52~11:12	ND	ND	-
		4/2 9:59~10:19	ND	ND	-
		4/3 10:00~10:20	ND	ND	-
		4/4 9:56~10:16	ND	ND	-
		4/5 10:39~10:49	0.62	LTD	1.92
		4/6 10:18~10:28	1.00	0.69	2.32
		4/7 10:18~10:28	LTD	ND	1.72
		4/8 10:16~10:26	0.643	ND	1.7
		4/9 10:11~10:21	ND	ND	1.4
		4/10 10:03~10:13	ND	ND	0.68
		4/11 10:00~10:10	ND	ND	1.69
		4/12 10:16~10:26	ND	ND	1.7
		4/13 10:07~10:17	ND	ND	1.1
		4/14 10:09~10:19	ND	ND	1.8
		4/15 10:20~10:30	ND	ND	2.5

Sampling Point	Sampling Time and Date	Respective Concentration (Bq/m3)		Reading (μ Sv/h)
		^{131}I	^{137}Cs	
[2-10] (About 50km North)	Soma county Shinchi Town	3/25 16:25~15:45	33.60	0.84
[4-1] (About 80km South-West)	Shirakawa City	4/7 14:53~15:13	ND	ND
		4/8 14:45~15:05	ND	ND
		4/9 13:38~13:56	ND	ND
		4/10 13:40~14:00	LTD	ND
		4/11 13:50~14:10	ND	ND
		4/12 13:55~14:10	ND	ND
		4/13 14:49~15:09	ND	LTD
		4/14 14:25~14:40	ND	ND
		4/15 14:25~14:40	ND	ND
		4/7 12:43~13:09	ND	ND
[4-2] (About 60km West)	Sukagawa City Hechimen Town	4/8 11:45~12:05	ND	ND
		4/9 11:35~11:54	ND	ND
		4/10 11:15~11:35	ND	ND
		4/11 11:32~11:52	ND	ND
		4/12 11:40~11:55	ND	0.710
		4/13 12:20~12:40	ND	1.11
		4/14 11:45~12:00	ND	ND
		4/15 12:00~12:15	ND	ND
		4/7 10:40~11:00	LTD	ND
		4/8 10:35~10:55	ND	ND
[4-3] (About 60km West)	Adachi county Ootama Village	4/9 10:20~10:40	ND	ND
		4/10 10:05~10:27	ND	ND
		4/11 10:15~10:35	ND	ND
		4/12 10:25~10:40	ND	ND
		4/13 10:46~11:06	0.927	1.53
		4/14 10:30~10:40	ND	ND
		4/15 10:35~10:50	ND	ND
		4/7 14:00~14:20	ND	ND
		4/8 13:35~13:55	ND	ND
		4/9 13:00~13:18	ND	ND
[4-4] (About 70km South-West)	Shirakawa county Izumizaki Village	4/10 12:55~13:15	LTD	ND
		4/11 13:00~13:20	ND	ND
		4/12 13:15~13:30	ND	ND
		4/13 14:00~14:20	ND	ND
		4/14 13:40~13:55	ND	ND
		4/15 13:40~13:55	ND	ND
		4/8 15:23~15:43	ND	ND
		4/9 14:10~14:28	ND	ND
		4/10 14:10~14:30	1.03	0.542
		4/11 14:30~14:45	ND	ND
[4-5] (About 20km South-West)	Nishishirakawa county Nishigou Village	4/12 14:30~14:45	ND	ND
		4/13 15:36~15:56	0.876	ND
		4/14 14:55~15:10	ND	ND
		4/15 15:00~15:15	ND	ND

LTD: Less than detectable ND: Not Detectable

The government requests Fukushima Prefecture to gain the readings above.
The readings since April 5 are the readings of Environmental Radiation Level in emergency monitoring by Fukushima Pref.

Readings of soil monitoring



The readings in this thick-frame box are new

Sampling Point		Sampling Time and Date	Radioisotope Concentration(Bq/m ³)		Reading (μSv/h)	Monitoring Point by monitoring car
			¹³¹ I	¹³⁷ Cs		
【1】(About60km North/West)	Fukushima City Sugitsuma Town	2011/4/14 18:08	6,100	9,300	0.8	【1】
		2011/4/15 15:53	11,000	19,000	1.3	
		2011/4/16 15:03	5,100	11,000	2.1	
【1-1】 (About45kmNorth/West)	Souma county Iitate Village Sasunameri	2011/3/31 11:19	29,000	9,400	4.8	【3】
		2011/4/1 10:15	11,000	2,900	3.3	
		2011/4/2 10:59	25,000	9,000	2.8	
【1-2】 (About40kmNorth/West)	Date county Kawamata town Yamakiya	2011/4/3 9:52	41,000	21,000	5.4	【36】
【13】(About40kmWest)	Tamura city Tokiwa town Nishimuki	2011/4/1 11:58	3,300	1,200	0.5	【13】
【2】 (About55kmNorth/West)	Fukushima city Onami	2011/3/31 10:20	48,000	15,000	4.1	【2】
		2011/3/31 14:35	16,000	6,300	2.1	
		2011/4/1 8:22	31,000	8,800	3.8	
		2011/4/1 9:42	13,000	5,700	3.8	
		2011/4/2 9:33	53,000	20,000	3.5	
【2-4】(About25kmNorth)	Minamisouma City Haramachi Ward Takami Town	2011/4/3 11:57	7,300	3,600	1.0	【80】
		2011/4/4 12:05	4,400	2,500	1.0	
		2011/4/15 12:48	2,000	2,400	0.2	
		2011/4/16 11:59	2,000	2,500	0.3	
【3-1】 (About30kmNorth/West)	Futaba county Iitate Village Nagadore	2011/3/23 11:10	200,000	45,000	103.0	【33】
		2011/3/25 14:45	251,000	60,100	27.0	
		2011/3/25 14:45	341,000**	68,500**	27.0	
		2011/3/28 10:55	15,000	3,000	26.0	
		2011/3/27 12:15	93,000	29,000	20.0	
		2011/3/28 11:18	110,000	36,000	43.0	
		2011/3/28 11:18	220,000	65,000	18.9	
		2011/3/30 11:30	190,000	70,000	17.3	
		2011/3/31 11:23	160,000	67,000	18.2	
		2011/4/1 11:36	130,000	40,000	18.2	
		2011/4/2 12:10	61,000	6,200	21.0	
		2011/4/3 11:11	69,000	18,000	21.3	
		2011/4/4 11:12	125,510	76,429	18.6	
		2011/4/5 11:15	98,243	55,001	16.3	
		2011/4/6 12:19	90,816	65,192	13.2	
		2011/4/7 11:03	74,481	58,104	19.5	
		2011/4/8 11:35	72,500	63,600	15.5	
		2011/4/10 11:18	56,007	75,832	18.7	
		2011/4/11 14:07	62,639	64,093	17.5	
		2011/4/12 18:42	41,103	52,164	15.6	
		2011/4/14 10:13	43,000	65,000	16.0	
		2011/4/15 10:04	30,000	53,000	14.5	
		2011/4/16 10:33	10,000	17,000	15.2	
【3-2】 (About30kmNorth/West)	Futaba county Namie Town Tsushima	2011/3/23 13:17	92,000	15,000	15.0	【34】
		2011/4/14 11:38	12,000	12,000	5.4	
		2011/4/15 11:20	15,000	21,000	4.7	
		2011/4/16 11:30	1,700	2,300	4.4	
【3-3】(About35kmWest)	Tamura City Tokiwa Town Yamane	2011/3/23 12:50	11,000	3,300	2.3	【15】
		2011/3/24 12:58	4,800	220	2.5	
		2011/4/14 11:42	1,600	2,800	0.5	
		2011/4/15 11:40	1,700	2,400	1.0	
【3-4】 (About40kmNorth/West)	Niho:matsu City Oota	2011/3/23 11:08	33,000	8,600	2.8	【11】
		2011/3/23 10:30	4,200	770	2.8	
【3-5】 (About50kmNorth/West)	Date county Kawamata town	2011/3/23 14:00	26,000	12,000	9.4	【21】
		2011/3/26 16:33	13,000	2,900	6.5	
		2011/3/28 11:03	14,000	4,600	5.3	
		2011/3/29 11:34	25,000	7,100	-	
		2011/4/8 13:20	11,000	7,800	3.7	
		2011/4/10 10:37	25,000	25,000	5.9	
		2011/4/11 12:58	14,000	12,000	4.2	
		2011/4/14 12:04	5,200	5,300	3.8	
		2011/4/15 12:04	6,300	4,800	3.1	
		2011/4/18 12:20	1,800	2,300	3.0	
【3-6】(About25kmSouth)	Futaba county Hirano Town Shimokitaba	2011/3/23 13:00	59,000	2,600	14.0	【71】
		2011/4/14 13:13	4,100	1,300	0.6	
		2011/4/15 14:25	13,000	1,400	1.2	
		2011/4/16 14:07	8,100	3,100	0.6	
【3-8】(About25kmSouth)	Futaba county Hirano Town Shimokitaba	2011/3/23 16:22	140,000	2,900	14.0	【71】
【3-9】(About45kmNorth)	Soma city Nakano	2011/3/25 11:24	6,900	1,600	2.7	【5】
		2011/3/26 10:48	6,900	1,800	1.0	
		2011/3/26 12:30	110,000	2,800	1.0	
		2011/3/28 13:00	17,000	4,100	0.6~1.2	
【3-10】(About35kmNorth)	Minamisouma City Kashima Ward	2011/3/25 12:18	11,000	3,300	3.7	【6】
		2011/3/26 11:12	14,000	3,800	1.5	
		2011/3/28 10:32	11,000	3,600	1.2	
		2011/3/23 15:20	8,400	3,200	1.3	
		2011/3/30 15:54	6,100	2,000	1.4	
		2011/3/31 12:18	9,600	4,700	1.3	
		2011/4/1 11:35	5,400	2,800	1.0	
		2011/4/2 12:49	7,800	4,400	1.0	
		2011/4/3 11:15	5,800	1,700	1.1	
		2011/4/4 11:18	5,500	4,300	1.2	
		2011/4/5 11:21	4,600	3,900	1.3	
		2011/4/6 11:56	5,100	3,800	1.0	
		2011/4/7 11:18	4,200	3,800	0.6	
		2011/4/8 11:29	3,600	3,800	0.6	
		2011/4/10 10:48	2,400	2,900	1.2	
		2011/4/11 10:45	4,800	5,000	1.8	
		2011/4/13 17:08	2,600	4,800	1.0	
		2011/4/15 11:35	2,000	3,400	0.6	
		2011/4/16 11:13	1,800	3,300	0.7	

Sampling Point		Sampling Time and Date	Radioactivity Concentration(Bq/m ³)		Reading (μSv/h)	Monitoring Point by monitoring car
			¹³⁷ I	¹³⁷ Cs		
【3-11】(About35kmNorth)	Miramiscousa City Kashima Ward	2011/3/25 12:33	8,000	1,300	3.2	【7】
		2011/3/26 11:23	13,000	4,300	1.5	
		2011/3/28 10:38	8,200	2,000	3.3	
		2011/4/15 11:53	1,700	2,900	0.4	
		2011/4/18 11:30	1,900	2,000	0.5	
【3-12】(About30kmWest/North/West)	Futaba county Namie Town Taishima	2011/3/25 14:13	29,000	627	30.5	【31】
		2011/3/28 10:15	22,000	1,600	17.8	
		2011/3/27 11:30	120,000	27,000	25.0	
		2011/3/28 10:29	120,000	28,000	23.0	
		2011/3/29 9:59	710,000	220,000	18.3	
		2011/3/30 10:50	710,000	290,000	16.3	
		2011/3/31 10:45	50,000	15,000	-	
		2011/4/1 10:39	79,000	29,000	15.4	
		2011/4/2 11:42	21,000	5,400	14.0	
		2011/4/3 10:36	60,000	27,000	12.5	
		2011/4/4 10:27	143,900	6,907	9.8	
		2011/4/5 10:42	102,970	68,209	10.6	
		2011/4/6 11:45	84,819	51,942	10.9	
		2011/4/7 10:30	78,581	51,167	11.4	
		2011/4/8 10:55	36,900	20,300	9.0	
		2011/4/10 10:17	55,758	74,220	12.8	
		2011/4/11 13:32	55,558	67,722	12.6	
		2011/4/12 16:08	54,507	45,235	12.3	
		2011/4/13 11:08	33,000	76,000	10.7	
		2011/4/15 10:45	18,000	22,000	10.5	
【3-13】(About30kmNorth/West)	Futaba county Namie Town akougi	2011/4/16 10:00	13,000	21,000	8.3	【32】
		2011/3/25 14:30	88,700	5,260	65.0	
		2011/3/26 10:40	290,000	33,000	46.0	
		2011/3/27 11:55	550,000	80,000	45.0	
		2011/3/28 10:51	210,000	9,200	50.0	
		2011/3/29 10:57	660,000	94,000	43.0	
		2011/3/30 11:08	260,000	52,000	41.6	
		2011/3/31 11:04	91,000	40,000	38.0	
		2011/4/1 11:01	250,000	130,000	36.2	
		2011/4/2 11:55	120,000	35,000	34.0	
		2011/4/3 10:56	280,000	110,000	32.7	
		2011/4/4 10:50	157,730	98,551	32.7	
		2011/4/5 10:59	201,800	103,390	26.0	
		2011/4/6 11:59	125,200	58,761	25.8	
		2011/4/7 10:47	139,810	73,554	27.8	
		2011/4/8 11:23	85,800	64,300	24.6	
		2011/4/10 10:54	43,605	42,820	25.2	
		2011/4/11 13:52	114,330	140,550	23.9	
		2011/4/12 16:25	102,450	86,040	25.4	
		2011/4/14 10:50	69,000	73,000	21.3	
【3-14】(About40kmNorth/West)	Date county Kawamata town Yamakiya	2011/4/15 10:24	24,000	29,000	22.5	【33】
		2011/4/18 10:16	58,000	87,000	25.3	
		2011/3/25 15:35	73,000	18,000	7.0	
		2011/3/26 19:30	49,000	9,300	7.8	
		2011/3/28 9:15	65,000	21,000	8.0	
		2011/3/29 9:41	63,000	21,000	6.0	
		2011/3/30 10:18	71,000	24,000	5.6	
		2011/3/31 10:21	69,000	28,000	5.3	
		2011/4/1 10:11	54,000	23,000	5.7	
		2011/4/2 11:20	54,000	26,000	5.1	
		2011/4/4 9:52	6,600	3,300	5.2	
		2011/4/5 9:26	31,000	20,000	4.6	
		2011/4/6 11:05	41,000	25,000	4.1	
		2011/4/7 10:02	39,000	29,000	4.1	
		2011/4/8 10:07	27,000	24,000	3.8	
		2011/4/10 9:41	14,000	12,000	4.6	
		2011/4/11 10:36	22,000	25,000	4.0	
		2011/4/13 12:07	15,000	20,000	4.5	
		2011/4/14 9:57	17,000	24,000	4.2	
		2011/4/15 9:39	5,600	7,800	3.3	
		2011/4/16 9:37	6,000	8,100	2.9	
【3-15】(About25kmSouth)	Futaba county Hirano Town Shimokitaba	2011/3/25 14:15	560	410	5.5	【71】
		2011/3/26 12:55	31,000	1,800	3.9	
		2011/3/28 9:54	42,000	1,500	3.0	
【3-16】(About45kmNorth/West)	Soma city Yamakami	2011/3/26 16:18	7,800	3,500	1.7	-
【37】(About50kmNorth/West)	Date city Ryozen town	2011/4/1 9:59	15,000	16,000	4.6	【37】
		2011/4/2 10:40	20,000	20,000	4.3	
【38】(About35kmSouth)	Iwaki City Yotsukura town	2011/4/14 12:05	8,700	2,100	0.8	【38】
		2011/4/15 12:41	4,900	1,400	0.9	
【39】(About45kmNorth)	Soma city Yamakami Kaminamiki	2011/4/16 15:50	4,600	1,200	0.9	【39】
		2011/4/18 10:46	1,900	4,500	0.5	
【72】(About30kmSouth)	Iwaki city Hisanohama town Hisanohama	2011/4/18 10:28	3,100	6,500	0.8	【72】
		2011/3/31 17:00	18,000	1,500	1.5	
【73】(About35kmSouth)	Iwaki city Ogawa town Takahagi	2011/4/1 12:46	24,000	2,400	1.6	【73】
		2011/4/3 13:33	22,000	2,200	1.2	
【74】(About35kmSouth)	Iwaki city Ogawa town Takahagi	2011/4/4 12:51	19,000	1,700	1.5	【74】
		2011/3/31 12:39	13,000	1,100	1.3	
【75】(About35kmSouth)	Iwaki city Yotsukura town	2011/4/1 12:07	14,000	1,100	1.4	【75】
		2011/4/3 12:57	9,900	1,400	1.2	
【76】(About35kmSouth)	Iwaki city Yotsukura town	2011/4/4 12:30	8,200	800	1.1	【76】
		2011/3/31 13:18	4,300	330	0.5	
【77】(About35kmSouth)	Iwaki city Ogawa town Takahagi	2011/4/1 11:13	5,900	710	0.3	【77】
		2011/4/3 11:51	3,700	410	0.4	
【78】(About35kmSouth)	Iwaki city Ogawa town Takahagi	2011/4/4 11:26	4,300	440	0.6	【78】
		2011/4/4 11:26	4,300	440	0.6	

Sampling Point		Sampling Time and Date	radioactive Concentration (Bq/m ³)		Reading (μSv/h)	Monitoring Point by monitoring car
			¹³⁷ I	¹³⁷ Cs		
【75】(About 45km South)	Iwaki city Uchigoumiyamaya town	2011/3/31 14:03	14,000	650	0.7	【75】
		2011/4/1 10:34	20,000	1,300	0.8	
		2011/4/3 11:19	14,000	1,200	0.4	
		2011/4/4 10:50	14,000	1,300	0.7	
【76】(About 20km South/West)	Futaba county Kawauchi village Kōmikauchi	2011/4/4 12:04	5,500	1,800	0.8	【76】
		2011/4/14 10:03	2,300	1,800	0.1	
		2011/4/15 10:51	1,600	1,100	0.1	
		2011/4/16 10:42	2,300	1,900	0.0	
【79】(About 30km North/West)	Futaba county Namie town Shimotsushima Kayabuka	2011/4/14 11:24	51,000	43,000	10.7	【79】
		2011/4/15 11:00	44,000	49,000	10.9	
		2011/4/16 11:01	9,900	16,000	10.0	
		2011/3/30 15:40	340,000	170,000	59.3	
【83】(About 20km North/West)	Futaba county Namie town Akougi Kūnugidaira	2011/4/8 12:10	210,000	270,000	53.5	【83】
		2011/4/10 14:51	130,000	150,000	52.0	
		2011/4/11 14:45	190,000	310,000	53.5	
		2011/4/14 10:22	1,700	810	0.2	
【84】(About 40km South/West)	Iwaki city Miawo town Saiso	2011/4/15 10:14	860	760	0.2	【84】
		2011/4/16 10:32	810	650	0.2	
		2011/4/8 8:40	2,600	2,430	1.3	
		2011/4/10 9:17	3,300	2,100	1.5	
【101】(About 55km North/West)	Date city Ryozen town	2011/4/11 9:19	4,000	2,500	2.2	【101】
		2011/4/13 10:56	3,500	5,400	0.9	
		2011/4/15 9:33	2,900	4,200	1.0	
		2011/4/16 9:25	3,300	5,800	1.2	
【102】(About 50km North/West)	Date City Tsukidate Aza Town	2011/4/8 15:00	7,000	6,400	1.2	【102】
		2011/4/10 13:48	5,800	5,300	1.2	
		2011/4/11 14:12	4,500	3,800	1.5	
		2011/4/14 17:07	2,700	3,000	0.8	
【103】(About 20km North)	Minami Soma city Haramachi ward	2011/4/15 15:03	4,200	6,600	1.3	【103】
		2011/4/16 14:12	3,100	5,200	1.7	
		2011/4/9 12:45	2,000	1,800	0.6	
		2011/4/10 12:16	1,300	700	0.5	
【104】(About 25km West/North/West)	Futaba county Katsurao village	2011/4/11 12:20	2,000	2,800	1.5	【104】
		2011/4/13 18:05	2,400	3,400	0.3	
		2011/4/15 12:13	910	990	0.6	
		2011/4/8 12:41	13,000	9,700	1.7	
【105】(About 20km West)	Tamura city Miyakoji town	2011/4/10 16:00	8,000	7,800	2.8	【105】
		2011/4/11 13:10	11,000	9,500	2.6	
		2011/4/12 13:14	11,000	12,000	2.4	
		2011/4/8 11:20	5,100	2,400	1.1	
【106】(About 30km South/West)	Iwaki city Kawamae town	2011/4/10 12:00	4,400	2,600	1.5	【106】
		2011/4/11 19:59	4,400	2,400	0.5	
		2011/4/13 13:16	2,300	1,600	0.3	
		2011/4/8 12:06	1,300	1,200	0.6	
【107】(About 25km North/North/West)	Minami Soma city Haramachi ward	2011/4/10 12:46	770	1,400	1.2	【107】
		2011/4/11 10:11	700	1,100	0.6	
		2011/4/13 12:20	610	970	0.5	
		2011/4/8 13:21	5,800	5,300	2.8	
【108】(About 30km North/North/West)	Minami Soma city Haramachi ward	2011/4/10 12:32	8,000	12,000	2.2	【108】
		2011/4/11 12:30	6,000	11,000	3.3	
		2011/4/13 18:45	13,000	21,000	3.1	
		2011/4/15 13:37	4,600	8,200	2.3	
		2011/4/8 13:52	3,500	11,000	3.5	
		2011/4/10 12:51	8,500	15,000	2.7	
		2011/4/11 12:55	5,500	14,000	3.7	
		2011/4/15 13:57	2,400	6,800	2.6	

*1 For reference, the sample is collected from about 5mm of soil. (Samples are usually collected from about 5cm of soil.)
Readings are already announced in "Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-

Readings of environmental monitoring samples

(the readings in the thick-frame box are new)

Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Reading (μSv/h)	Note
				131 _I	137 _{Cs}		
[2-1](About 40 km North/West)	Weed	Leaf Vegetable	2011/3/18 12:20	2,320,000	1,800,000	Over 30	
	Weed	Leaf Vegetable	2011/3/19 1:40	845,000	1,010,000	26.5	
	Weed	Leaf Vegetable	2011/3/20 12:40	2,340,000	2,650,000	25.8	
	Weed	Leaf Vegetable	2011/3/21 12:37	1,330,000	1,240,000	20.4	
	Weed	Leaf Vegetable	2011/3/22 2:00	1,110,000	1,600,000	15.3	
	Weed	Leaf Vegetable	2011/3/23 11:30	819,000	1,620,000	16.8	
	Weed	Leaf Vegetable	2011/3/24 12:05	805,000	1,050,000	15.2	
	Weed	Leaf Vegetable	2011/3/25 12:20	480,000	398,000	12.3	
	Weed	Leaf Vegetable	2011/3/26 12:00	1,030,000	2,810,000	10.2	
	Weed	Leaf Vegetable	2011/3/27 11:40	508,000	810,000	11.2	
	Weed	Leaf Vegetable	2011/3/28 11:50	381,000	480,000	9.6	
	Weed	Leaf Vegetable	2011/3/29 11:10	233,000	311,000	9.2	
	Weed	Leaf Vegetable	2011/3/30 12:25	576,000	1,890,000	8.5	
	Weed	Leaf Vegetable	2011/3/31 11:30	203,000	1,620,000	8.0	
	Weed	Leaf Vegetable	2011/4/1 11:30	219,000	725,000	7.7	
	Weed	Leaf Vegetable	2011/4/2 11:24	171,000	863,000	8.8	
	Weed	Leaf Vegetable	2011/4/3 10:53	301,000	1,420,000	7.7	
	Weed	Leaf Vegetable	2011/4/4 15:05	192,000	275,000	7.2	
	Weed	Leaf Vegetable	2011/4/5 11:31	297,000	1,440,000	10.6	
	Weed	Leaf Vegetable	2011/4/6 11:23	161,000	1,070,000	9.5	
	Weed	Leaf Vegetable	2011/4/7 11:07	197,000	627,000	9.08	
	Weed	Leaf Vegetable	2011/4/9 11:10	186,000	587,000	10.20	
	Weed	Leaf Vegetable	2011/4/9 11:15	55,700	313,000	7.84	
	Weed	Leaf Vegetable	2011/4/10 11:20	10,100	26,200	9.5	
	Weed	Leaf Vegetable	2011/4/11 15:25	30,800	329,000	3.85	
	Weed	Leaf Vegetable	2011/4/12 11:42	18,800	104,000	6.4	
	Weed	Leaf Vegetable	2011/4/13 11:24	109,000	841,000	7.23	
	Weed	Leaf Vegetable	2011/4/14 11:15	24,100	257,000	7.74	
	Weed	Leaf Vegetable	2011/4/15 11:30	30,800	329,000	9.42	
[2-2](About 45 km North/West)	Weed	Leaf Vegetable	2011/3/18 11:45	173,000	72,800	-	
	Weed	Leaf Vegetable	2011/3/19 11:00	184,000	62,100	-	
	Weed	Leaf Vegetable	2011/3/20 12:05	338,000	136,000	4.2	
	Weed	Leaf Vegetable	2011/3/21 12:03	315,000	120,000	3.5	
	Weed	Leaf Vegetable	2011/3/22 11:00	120,000	89,000	7.8	
	Weed	Leaf Vegetable	2011/3/23 11:30	170,000	73,700	5.5	
	Weed	Leaf Vegetable	2011/3/23 11:30	74,400	23,100	5.5	No Washed ^{*)}
	Weed	Leaf Vegetable	2011/3/23 11:30	46,200	16,000	5.5	Washed ^{*)}
	Weed	Leaf Vegetable	2011/3/24 11:20	141,000	43,200	5.0	
	Weed	Leaf Vegetable	2011/3/25 11:30	155,000	53,000	7.5	
	Weed	Leaf Vegetable	2011/3/26 11:20	19,500	54,700	4.3	
	Weed	Leaf Vegetable	2011/3/27 10:45	50,000	32,000	5.5	
	Weed	Leaf Vegetable	2011/3/28 11:05	46,000	33,600	5.5	
	Weed	Leaf Vegetable	2011/3/29 11:00	71,900	67,900	4.8	
	Weed	Leaf Vegetable	2011/3/30 11:35	33,500	27,500	4.6	
	Weed	Leaf Vegetable	2011/3/31 10:28	33,000	34,100	4.8	
	Weed	Leaf Vegetable	2011/4/1 10:35	27,600	45,300	3.3	
	Weed	Leaf Vegetable	2011/4/2 10:34	34,100	38,200	3.7	
	Weed	Leaf Vegetable	2011/4/3 10:10	18,500	18,700	3.7	
	Weed	Leaf Vegetable	2011/4/4 10:25	46,500	61,000	3.1	
	Weed	Leaf Vegetable	2011/4/5 10:29	31,200	60,900	1.44	
	Weed	Leaf Vegetable	2011/4/6 10:38	31,200	61,200	1.7	
	Weed	Leaf Vegetable	2011/4/7 10:24	6,470	11,950	1.40	
	Weed	Leaf Vegetable	2011/4/8 10:50	7,000	15,100	1.37	
	Weed	Leaf Vegetable	2011/4/9 10:34	9,800	25,500	1.21	
	Weed	Leaf Vegetable	2011/4/10 10:40	5,640	12,150	1.4	
	Weed	Leaf Vegetable	2011/4/11 11:10	7,770	22,500	1.24	
	Weed	Leaf Vegetable	2011/4/12 10:40	6,140	20,000	0.90	
	Weed	Leaf Vegetable	2011/4/13 10:25	24,900	73,400	1.07	
	Weed	Leaf Vegetable	2011/4/14 10:31	62,500	180,000	1.23	
	Weed	Leaf Vegetable	2011/4/15 10:50	7,770	72,500	1.32	
[2-3](About 40 km West)	Weed	Leaf Vegetable	2011/3/18 11:35	36,000	40,100	1.6	
	Weed	Leaf Vegetable	2011/3/19 11:35	80,000	38,500	0.8	
	Weed	Leaf Vegetable	2011/3/20 12:40	75,700	50,000	0.7	
	Weed	Leaf Vegetable	2011/3/21 12:30	30,800	25,000	0.7	
	Weed	Leaf Vegetable	2011/3/22 11:30	43,200	25,000	1.4	
	Weed	Leaf Vegetable	2011/3/23 11:50	24,100	17,000	1.0	
	Weed	Leaf Vegetable	2011/3/24 11:35	28,400	32,600	0.5	
	Weed	Leaf Vegetable	2011/3/25 13:28	23,400	13,700	0.8	
	Weed	Leaf Vegetable	2011/3/26 11:35	33,100	10,700	0.6	
	Weed	Leaf Vegetable	2011/3/27 11:45	33,300	19,800	0.4	
	Weed	Leaf Vegetable	2011/3/28 11:38	37,000	22,400	0.7	
	Weed	Leaf Vegetable	2011/3/29 13:35	24,800	34,500	0.7	
	Weed	Leaf Vegetable	2011/3/30 12:30	18,600	18,800	0.5	
	Weed	Leaf Vegetable	2011/3/31 12:10	15,500	11,500	0.5	
	Weed	Leaf Vegetable	2011/4/1 12:21	15,800	17,200	0.3	
	Weed	Leaf Vegetable	2011/4/2 11:29	15,500	14,500	0.3	
	Weed	Leaf Vegetable	2011/4/3 11:28	5,640	6,140	0.3	
	Weed	Leaf Vegetable	2011/4/4 11:25	6,760	6,810	0.3	
	Weed	Leaf Vegetable	2011/4/5 11:42	7,450	7,486	0.43	
	Weed	Leaf Vegetable	2011/4/6 11:24	6,380	8,020	0.39	
	Weed	Leaf Vegetable	2011/4/7 11:24	2,600	2,330	0.35	
	Weed	Leaf Vegetable	2011/4/8 11:29	9,820	3,630	0.38	
	Weed	Leaf Vegetable	2011/4/9 11:23	1,140	1,720	0.31	
	Weed	Leaf Vegetable	2011/4/10 11:00	1,520	1,750	0.39	
	Weed	Leaf Vegetable	2011/4/11 11:00	389	330	0.35	
	Weed	Leaf Vegetable	2011/4/12 11:17	373	1,230	0.42	
	Weed	Leaf Vegetable	2011/4/13 11:13	1,480	2,960	0.34	
	Weed	Leaf Vegetable	2011/4/14 11:28	1,260	6,250	0.29	
	Weed	Leaf Vegetable	2011/4/15 11:30	709	390	0.34	

Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Reading (1/50/h)	Note
				¹³¹ I	¹³⁷ Cs		
[2-4] (About 25km North)	Minami-Soma city Haramachi ward Takami town	Weed	Leaf Vegetable	2011/3/18 13:30	88,600	17,800	-
		Weed	Leaf Vegetable	2011/3/19 13:00	455,000	24,900	-
		Weed	Leaf Vegetable	2011/3/20 14:30	497,000	24,700	3.4
		Weed	Leaf Vegetable	2011/3/21 14:07	289,000	13,400	2.8
		Weed	Leaf Vegetable	2011/3/22 13:35	140,000	17,700	1.8
		Weed	Leaf Vegetable	2011/3/23 14:10	185,000	17,200	1.1
		Weed	Leaf Vegetable	2011/3/24 14:40	184,000	27,900	1.2
		Weed	Leaf Vegetable	2011/3/25 14:20	217,000	18,600	0.7
		Weed	Leaf Vegetable	2011/3/26 13:50	85,700	10,500	1.3
		Weed	Leaf Vegetable	2011/3/27 13:25	181,000	39,900	1.4
		Weed	Leaf Vegetable	2011/3/28 13:27	113,000	23,900	0.7
		Weed	Leaf Vegetable	2011/3/29 13:30	109,000	17,900	1.0
		Weed	Leaf Vegetable	2011/3/30 14:45	113,000	13,100	0.0~1.3
		Weed	Leaf Vegetable	2011/3/31 12:15	65,100	20,600	1.4
		Weed	Leaf Vegetable	2011/4/1 13:42	44,900	12,400	1.2
		Weed	Leaf Vegetable	2011/4/2 13:13	59,200	26,400	0.5
		Weed	Leaf Vegetable	2011/4/3 12:35	170,000	84,200	1.0
		Weed	Leaf Vegetable	2011/4/4 12:20	55,500	21,500	0.7
		Weed	Leaf Vegetable	2011/4/5 13:05	68,900	35,200	0.65
		Weed	Leaf Vegetable	2011/4/6 13:03	45,700	22,900	0.62
		Weed	Leaf Vegetable	2011/4/7 12:48	21,200	15,000	0.64
		Weed	Leaf Vegetable	2011/4/8 13:00	22,800	8,700	0.72
		Weed	Leaf Vegetable	2011/4/9 13:00	9,560	4,890	0.78
		Weed	Leaf Vegetable	2011/4/10 13:00	15,800	12,300	0.59
		Weed	Leaf Vegetable	2011/4/11 14:00	24,600	22,300	0.84
		Weed	Leaf Vegetable	2011/4/12 13:28	14,100	10,500	0.80
		Weed	Leaf Vegetable	2011/4/13 12:44	7,550	7,360	0.55
		Weed	Leaf Vegetable	2011/4/14 12:58	8,430	7,630	0.54
		Weed	Leaf Vegetable	2011/4/15 12:00	24,600	22,300	0.63
[2-5] (About 40 km South/West)	Tamura county Ono town Onorimachi	Weed	Leaf Vegetable	2011/3/18 12:35	181,000	28,300	0.9
		Weed	Leaf Vegetable	2011/3/19 13:15	201,000	73,600	0.7
		Weed	Leaf Vegetable	2011/3/20 13:50	38,900	11,700	0.6
		Weed	Leaf Vegetable	2011/3/21 13:40	20,300	11,200	0.4
		Weed	Leaf Vegetable	2011/3/22 12:40	32,000	8,120	0.5
		Weed	Leaf Vegetable	2011/3/23 12:50	22,300	10,300	0.5
		Weed	Leaf Vegetable	2011/3/24 13:16	29,700	4,900	0.4
		Weed	Leaf Vegetable	2011/3/25 11:30	21,600	8,040	0.4
		Weed	Leaf Vegetable	2011/3/26 11:50	25,600	5,150	0.6
		Weed	Leaf Vegetable	2011/3/27 11:10	18,600	4,970	0.5
		Weed	Leaf Vegetable	2011/3/28 11:25	16,700	4,550	-
		Weed	Leaf Vegetable	2011/3/29 11:30	16,700	3,770	0.3
		Weed	Leaf Vegetable	2011/3/30 11:08	10,300	6,280	0.3
		Weed	Leaf Vegetable	2011/3/31 11:11	9,960	6,600	0.3
		Weed	Leaf Vegetable	2011/4/1 10:57	9,590	5,470	0.3
		Weed	Leaf Vegetable	2011/4/2 10:46	6,590	3,830	0.3
		Weed	Leaf Vegetable	2011/4/3 10:38	5,400	3,160	0.3
		Weed	Leaf Vegetable	2011/4/4 10:17	4,380	4,090	0.3
		Weed	Leaf Vegetable	2011/4/5 10:52	5,170	3,670	0.25
		Weed	Leaf Vegetable	2011/4/6 10:38	4,230	2,780	0.25
		Weed	Leaf Vegetable	2011/4/7 10:54	2,690	2,300	0.22
		Weed	Leaf Vegetable	2011/4/8 10:44	933	962	0.17
		Weed	Leaf Vegetable	2011/4/9 10:53	601	499	0.25
		Weed	Leaf Vegetable	2011/4/10 10:40	637	420	0.23
		Weed	Leaf Vegetable	2011/4/11 10:44	357	323	0.24
		Weed	Leaf Vegetable	2011/4/12 10:51	693	448	0.22
		Weed	Leaf Vegetable	2011/4/13 10:30	620	520	0.21
		Weed	Leaf Vegetable	2011/4/14 10:56	336	363	0.22
		Weed	Leaf Vegetable	2011/4/15 10:57	357	323	0.20
[2-6] (About 45km South)	Iwaki City Taira Aza Umemoto	Weed	Leaf Vegetable	2011/3/18 13:15	690,000	17,400	-
		Weed	Leaf Vegetable	2011/3/19 13:40	468,000	10,100	-
		Weed	Leaf Vegetable	2011/3/20 13:25	548,000	17,500	0.6
		Weed	Leaf Vegetable	2011/3/21 13:10	715,000	2,380	1.5
		Weed	Leaf Vegetable	2011/3/22 13:50	448,000	18,600	0.6
		Weed	Leaf Vegetable	2011/3/23 14:20	451,000	30,300	1.0
		Weed	Leaf Vegetable	2011/3/24 15:00	454,000	8,210	1.4
		Weed	Leaf Vegetable	2011/3/25 13:45	170,000	6,560	1.1
		Weed	Leaf Vegetable	2011/3/26 13:50	281,000	12,500	1.0
		Weed	Leaf Vegetable	2011/3/27 12:30	126,000	7,470	0.6
		Weed	Leaf Vegetable	2011/3/28 12:50	71,800	4,370	0.3
		Weed	Leaf Vegetable	2011/3/29 13:05	132,000	9,310	0.7
		Weed	Leaf Vegetable	2011/3/30 12:30	121,000	10,100	0.5
		Weed	Leaf Vegetable	2011/3/31 12:51	81,600	4,950	0.7
		Weed	Leaf Vegetable	2011/4/1 12:19	168,000	7,180	0.6
		Weed	Leaf Vegetable	2011/4/2 12:03	99,200	2,980	1.4
		Weed	Leaf Vegetable	2011/4/3 11:45	35,600	3,320	0.4
		Weed	Leaf Vegetable	2011/4/4 11:48	110,000	13,300	0.7
		Weed	Leaf Vegetable	2011/4/5 12:10	46,800	4,190	0.42
		Weed	Leaf Vegetable	2011/4/6 12:04	37,500	5,150	0.37
		Weed	Leaf Vegetable	2011/4/7 12:27	15,000	1,890	0.35
		Weed	Leaf Vegetable	2011/4/8 12:07	11,600	2,620	0.32
		Weed	Leaf Vegetable	2011/4/9 12:18	10,380	2,340	0.33
		Weed	Leaf Vegetable	2011/4/10 12:09	18,600	4,150	0.35
		Weed	Leaf Vegetable	2011/4/11 12:16	12,300	2,170	0.30
		Weed	Leaf Vegetable	2011/4/12 12:14	10,400	3,310	0.28
		Weed	Leaf Vegetable	2011/4/13 12:00	9,950	1,970	0.28
		Weed	Leaf Vegetable	2011/4/14 12:28	7,080	1,780	0.28
		Weed	Leaf Vegetable	2011/4/15 12:35	12,300	2,170	0.28

Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Reading (μ Sv/h)	Note
				^{131}I	^{137}Cs		
{2-7}(About 35 kmNorth/West)	Date county Kawamata town Ynukya	Weed	Leaf Vegetable	2011/3/25 15:07	663,000	497,000	12.0
		Weed	Leaf Vegetable	2011/3/26 14:03	488,000	371,000	8.8
		Weed	Leaf Vegetable	2011/3/27 13:44	402,000	490,000	8.7
		Weed	Leaf Vegetable	2011/3/28 13:33	443,000	689,000	8.4
		Weed	Leaf Vegetable	2011/3/29 14:50	242,000	383,000	8.0
		Weed	Leaf Vegetable	2011/3/30 14:07	267,000	338,000	13.9~13.4
		Weed	Leaf Vegetable	2011/3/31 13:45	227,000	485,000	6.9
		Weed	Leaf Vegetable	2011/4/1 14:22	503,000	960,000	6.5
		Weed	Leaf Vegetable	2011/4/2 13:30	256,000	811,000	6.5
		Weed	Leaf Vegetable	2011/4/3 13:24	153,000	373,000	6.0
		Weed	Leaf Vegetable	2011/4/4 13:24	119,000	321,000	5.8
		Weed	Leaf Vegetable	2011/4/5 12:40	189,000	405,000	3.02
		Weed	Leaf Vegetable	2011/4/6 12:52	182,000	275,000	2.97
		Weed	Leaf Vegetable	2011/4/7 13:02	90,000	211,000	-
		Weed	Leaf Vegetable	2011/4/8 13:13	50,100	173,000	2.6
		Weed	Leaf Vegetable	2011/4/9 12:51	18,700	37,500	2.4
		Weed	Leaf Vegetable	2011/4/10 12:37	33,800	113,000	2.4
		Weed	Leaf Vegetable	2011/4/11 12:22	4,800	17,900	2.4
		Weed	Leaf Vegetable	2011/4/12 12:28	36,800	129,000	2.0
		Weed	Leaf Vegetable	2011/4/13 12:48	21,500	97,400	2.9
		Weed	Leaf Vegetable	2011/4/14 12:55	26,700	166,000	2.5
		Weed	Leaf Vegetable	2011/4/15 12:42	4,800	17,800	2.9
{2-8}(About 50 kmNorth/West)	Date city Tsukidate town	Weed	Leaf Vegetable	2011/3/25 18:18	77,100	40,700	-
		Weed	Leaf Vegetable	2011/3/28 15:13	36,400	24,000	-
		Weed	Leaf Vegetable	2011/3/27 15:50	43,900	44,600	-
		Weed	Leaf Vegetable	2011/3/28 14:37	43,300	52,000	-
		Weed	Leaf Vegetable	2011/3/29 15:50	37,100	82,100	1.6
		Weed	Leaf Vegetable	2011/3/30 15:05	33,800	44,300	-
		Weed	Leaf Vegetable	2011/3/31 15:25	22,500	24,500	-
		Weed	Leaf Vegetable	2011/4/1 15:4	17,000	81,600	-
		Weed	Leaf Vegetable	2011/4/2 14:29	60,300	73,400	-
		Weed	Leaf Vegetable	2011/4/3 14:13	42,700	56,000	-
		Weed	Leaf Vegetable	2011/4/4 14:16	22,700	58,700	-
		Weed	Leaf Vegetable	2011/4/5 14:25	24,800	45,800	1.29
		Weed	Leaf Vegetable	2011/4/6 13:40	11,700	22,500	1.27
		Weed	Leaf Vegetable	2011/4/7 13:48	9,570	19,800	1.39
		Weed	Leaf Vegetable	2011/4/8 13:54	5,700	11,700	1.4
		Weed	Leaf Vegetable	2011/4/9 13:39	2,050	2,420	0.9
		Weed	Leaf Vegetable	2011/4/10 13:21	4,120	8,970	1.3
		Weed	Leaf Vegetable	2011/4/11 13:04	4,200	11,400	1.3
		Weed	Leaf Vegetable	2011/4/12 13:11	2,890	8,460	1.3
		Weed	Leaf Vegetable	2011/4/13 13:38	3,340	8,570	1.2
		Weed	Leaf Vegetable	2011/4/14 13:42	5,470	19,300	1.1
		Weed	Leaf Vegetable	2011/4/15 13:25	4,200	11,400	1.2
{2-9}(About 45 kmWest/North/West)	Nhonmatsu City Kanam	Weed	Leaf Vegetable	2011/3/25 11:40	73,400	235,000	-
		Weed	Leaf Vegetable	2011/3/26 10:13	24,300	106,000	-
		Weed	Leaf Vegetable	2011/3/27 10:30	73,400	230,000	-
		Weed	Leaf Vegetable	2011/3/28 10:13	24,500	223,000	-
		Weed	Leaf Vegetable	2011/3/29 11:45	34,000	160,000	-
		Weed	Leaf Vegetable	2011/3/30 10:35	31,500	153,000	-
		Weed	Leaf Vegetable	2011/3/31 10:50	17,700	131,000	-
		Weed	Leaf Vegetable	2011/4/1 11:02	23,600	135,000	-
		Weed	Leaf Vegetable	2011/4/2 10:08	35,000	217,000	-
		Weed	Leaf Vegetable	2011/4/3 10:05	27,500	181,000	-
		Weed	Leaf Vegetable	2011/4/4 10:04	21,600	140,000	-
		Weed	Leaf Vegetable	2011/4/5 10:35	15,800	208,000	1.92
		Weed	Leaf Vegetable	2011/4/6 10:13	7,870	66,100	2.32
		Weed	Leaf Vegetable	2011/4/7 10:10	5,230	50,300	1.72
		Weed	Leaf Vegetable	2011/4/8 10:24	6,630	80,600	1.7
		Weed	Leaf Vegetable	2011/4/9 10:16	3,580	46,800	1.4
		Weed	Leaf Vegetable	2011/4/10 10:00	3,010	26,500	0.68
		Weed	Leaf Vegetable	2011/4/11 10:05	3,470	57,000	1.69
		Weed	Leaf Vegetable	2011/4/12 10:15	1,670	29,800	1.7
		Weed	Leaf Vegetable	2011/4/13 10:07	4,190	53,800	1.7
		Weed	Leaf Vegetable	2011/4/14 10:11	1,140	24,300	1.8
		Weed	Leaf Vegetable	2011/4/15 10:25	3,470	67,000	2.5
{2-10}(About 50kmNorth)	Soma county Shinchi Town	Weed	Leaf Vegetable	2011/3/25 18:20	29,300	12,500	-
		Weed	Leaf Vegetable	2011/4/7 15:00	4,070	27,100	0.83
{4-1}(About 60kmSouth/West)	Shirakawa City	Weed	Leaf Vegetable	2011/4/8 14:50	4,180	28,400	0.84
		Weed	Leaf Vegetable	2011/4/9 13:50	1,770	15,300	0.86
		Weed	Leaf Vegetable	2011/4/10 13:40	1,100	4,340	0.70
		Weed	Leaf Vegetable	2011/4/11 14:00	1,350	12,900	0.71
		Weed	Leaf Vegetable	2011/4/12 14:00	1,230	12,600	0.71
		Weed	Leaf Vegetable	2011/4/13 14:46	604	1,520	0.70
		Weed	Leaf Vegetable	2011/4/14 14:18	1,300	4,210	0.61
		Weed	Leaf Vegetable	2011/4/15 14:25	1,350	12,900	0.64
{4-2}(About 60kmWest)	Sukagawa City Hachiman Town	Weed	Leaf Vegetable	2011/4/7 13:10	7,020	17,000	0.38
		Weed	Leaf Vegetable	2011/4/8 11:50	5,520	16,100	0.39
		Weed	Leaf Vegetable	2011/4/9 11:40	2,750	7,930	0.40
		Weed	Leaf Vegetable	2011/4/10 11:20	3,180	13,000	0.37
		Weed	Leaf Vegetable	2011/4/11 11:40	2,930	13,600	0.34
		Weed	Leaf Vegetable	2011/4/12 11:50	3,100	16,900	0.35
		Weed	Leaf Vegetable	2011/4/13 12:12	1,440	4,560	0.40
		Weed	Leaf Vegetable	2011/4/14 11:49	1,800	5,340	0.31
{4-3}(About 60kmWest)	Adachi county Otsuna Village	Weed	Leaf Vegetable	2011/4/15 12:00	2,020	13,600	0.28
		Weed	Leaf Vegetable	2011/4/17 11:10	3,090	27,900	0.7
		Weed	Leaf Vegetable	2011/4/8 10:35	2,970	17,900	0.88
		Weed	Leaf Vegetable	2011/4/9 10:20	1,410	8,440	0.75
		Weed	Leaf Vegetable	2011/4/10 10:20	2,700	13,800	0.81
		Weed	Leaf Vegetable	2011/4/11 10:20	3,150	22,900	0.85
		Weed	Leaf Vegetable	2011/4/12 10:30	1,030	8,920	0.80
		Weed	Leaf Vegetable	2011/4/13 10:48	1,680	10,700	0.70
{4-4}(About 70kmSouth/West)	Shirakawa county Izumizaki Village	Weed	Leaf Vegetable	2011/4/14 10:22	682	2,150	0.48
		Weed	Leaf Vegetable	2011/4/15 10:40	3,150	27,800	0.70
		Weed	Leaf Vegetable	2011/4/7 14:10	3,710	8,700	0.7
		Weed	Leaf Vegetable	2011/4/8 13:40	2,540	14,000	0.69
		Weed	Leaf Vegetable	2011/4/9 13:10	1,370	9,690	0.68
		Weed	Leaf Vegetable	2011/4/10 13:00	2,430	15,800	0.68
		Weed	Leaf Vegetable	2011/4/11 13:10	1,200	7,950	0.63
		Weed	Leaf Vegetable	2011/4/12 13:20	1,830	16,900	0.60
{4-5}(About 80kmSouth/West)	Nishishirakawa county Nohogou Village	Weed	Leaf Vegetable	2011/4/13 13:52	2,190	7,880	0.55
		Weed	Leaf Vegetable	2011/4/14 13:36	1,210	4,490	0.53
		Weed	Leaf Vegetable	2011/4/15 13:40	1,200	7,950	0.54
		Weed	Leaf Vegetable	2011/4/8 15:30	1,830	14,300	0.81
		Weed	Leaf Vegetable	2011/4/9 14:00	422	5,210	0.60
		Weed	Leaf Vegetable	2011/4/10 14:10	1,160	11,300	0.77
		Weed	Leaf Vegetable	2011/4/11 14:40	454	4,550	0.87
		Weed	Leaf Vegetable	2011/4/12 14:40	257	7,700	0.89
		Weed	Leaf Vegetable	2011/4/13 15:36	1,210	7,160	0.65
		Weed	Leaf Vegetable	2011/4/14 14:54	989	7,950	0.60
		Weed	Leaf Vegetable	2011/4/15 15:00	454	4,320	0.72

The government requests Fukushima Prefecture to gain the readings above.

As a general rule, samples are measured in the state of NOT washed.

* 1: These are the readings of same sample in two different state, of washed and of not washed.

The readings since April 5 are the readings of Environmental Radiation Level in emergency monitoring by Fukushima Pref.

Readings of environmental monitoring samples(Island Water)

☐ : the readings in this thick-frame box are now.

Sampling Point		Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Note
					¹³¹ I	¹³⁷ Cs	
【2-1】 (About 40km North/West)	Soma county Iidate village Yagisawa	Island Water	Pond Water	3/18 12:20	2,090	511	
		Island Water	Pond Water	3/19 11:36	2,450	940	
		Island Water	Pond Water	3/20 12:40	2,010	437	
		Island Water	Pond Water	3/21 12:35	1,720	246	
		Island Water	Pond Water	3/22 12:00	1,330	172	
		Island Water	Pond Water	3/23 12:25	1,260	145	
		Island Water	Pond Water	3/24 13:05	1,330	268	
		Island Water	Pond Water	3/25 12:20	1,280	507	
		Island Water	Pond Water	3/26 12:00	835	162	
		Island Water	Pond Water	3/27 11:40	828	145	
		Island Water	Pond Water	3/28 11:50	884	183	
		Island Water	Pond Water	3/29 11:50	701	158	
		Island Water	Pond Water	3/30 12:25	629	113	
		Island Water	Pond Water	3/31 11:30	610	192	
		Island Water	Pond Water	4/1 11:30	612	192	
		Island Water	Pond Water	4/2 11:23	465	139	
		Island Water	Pond Water	4/3 10:55	393	106	
		Island Water	Pond Water	4/4 10:50	439	75	
		Island Water	Pond Water	4/5 11:31	357	86	
		Island Water	Pond Water	4/6 11:23	306	91	
		Island Water	Pond Water	4/7 11:07	303	268	
		Island Water	Pond Water	4/8 11:30	290	123	
		Island Water	Pond Water	4/9 11:15	334	118	
		Island Water	Pond Water	4/10 11:20	242	94.7	
		Island Water	Pond Water	4/11 12:05	202	71.9	
		Island Water	Pond Water	4/12 11:42	218	95.2	
		Island Water	Pond Water	4/13 11:04	189	84.5	
		Island Water	Pond Water	4/14 11:15	179	114	
		Island Water	Pond Water	4/15 11:30	151	65	
【2-5】 (About 40km South/West)	Tamura county Ono town Ononimachi	Island Water	Rain Water	3/22 12:40	7,440	107	
		Island Water	Rain Water	3/25 11:38	3,000	800	

The government requests Fukushima Prefecture to gain the readings above.

Readings of environmental monitoring samples (Island Soil)

☐ : the readings in this thick-frame box are new.

Sampling Point		Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Note
					¹³⁷ I	¹³⁷ Cs	
【2-1】 (About 40km North/West)	Soma county litate village Yagisawa	Island Soil	Soil	3/19 11:40	300,000	28,100	
		Island Soil	Soil	3/20 12:40	1,170,000	163,000	
		Island Soil	Soil	3/21 12:32	207,000	39,900	
		Island Soil	Soil	3/22 12:00	256,000	57,400	
		Island Soil	Soil	3/23 12:25	135,000	32,200	
		Island Soil	Soil	3/24 13:05	45,500	1,670	
		Island Soil	Soil	3/25 13:05	265,000	27,900	
		Island Soil	Soil	3/26 12:00	564,000	227,000	
		Island Soil	Soil	3/26 15:20	82,000	28,000	
		Island Soil	Soil	3/27 11:40	169,000	29,100	
		Island Soil	Soil	3/27 12:00	69,600	20,800	
		Island Soil	Soil	3/28 11:50	14,000	2,040	
		Island Soil	Soil	3/28 12:10	23,100	860	
		Island Soil	Soil	3/29 11:50	53,700	5,650	
		Island Soil	Soil	3/29 12:10	58,400	25,100	
		Island Soil	Soil	3/30 12:25	89,000	32,300	
		Island Soil	Soil	3/30 12:45	11,900	406	
		Island Soil	Soil	3/31 11:30	149,000	27,600	
		Island Soil	Soil	3/31 11:45	60,800	26,500	
		Island Soil	Soil	4/1 11:30	146,000	43,700	
		Island Soil	Soil	4/1 12:05	21,400	1,410	
		Island Soil	Soil	4/2 11:24	55,500	8,140	
		Island Soil	Soil	4/2 11:48	61,900	30,800	
		Island Soil	Soil	4/3 10:55	103,000	27,600	
		Island Soil	Soil	4/3 11:15	9,670	885	
		Island Soil	Soil	4/4 10:50	70,000	21,200	
		Island Soil	Soil	4/4 11:10	40,400	23,100	
		Island Soil	Soil	4/5 11:31	31,600	8,280	
		Island Soil	Soil	4/5 11:53	59,300	24,500	
		Island Soil	Soil	4/6 11:23	5,970	2,930	
		Island Soil	Soil	4/6 11:47	31,100	12,100	
		Island Soil	Soil	4/7 11:07	52,800	31,400	
		Island Soil	Soil	4/7 11:30	57,300	3,500	
		Island Soil	Soil	4/8 11:30	29,000	19,500	
		Island Soil	Soil	4/8 11:45	64,600	34,200	
		Island Soil	Soil	4/10 11:45	28,700	33,800	
		Island Soil	Soil	4/11 12:05	62,600	35,900	
		Island Soil	Soil	4/11 12:05	26,900	11,100	
		Island Soil	Soil	4/12 11:42	61,300	36,800	
		Island Soil	Soil	4/12 12:04	27,800	23,400	
		Island Soil	Soil	4/13 11:04	20,200	11,900	
		Island Soil	Soil	4/13 11:20	23,500	28,100	
		Island Soil	Soil	4/14 11:15	48,900	18,600	
		Island Soil	Soil	4/14 11:37	9,280	2,820	
		Island Soil	Soil	4/15 11:30	66,200	29,600	
		Island Soil	Soil	4/15 11:55	5,740	3,040	
【2-2】 (About 45km North/West)	Date county kawamata town	Island Soil	Soil	3/18 11:45	84,300	14,200	
		Island Soil	Soil	3/19 11:00	85,400	8,690	
		Island Soil	Soil	3/20 12:04	151,000	15,100	
		Island Soil	Soil	3/21 12:10	157,000	18,500	
		Island Soil	Soil	3/22 11:00	38,900	4,720	
		Island Soil	Soil	3/23 11:30	44,600	6,010	
		Island Soil	Soil	3/24 11:20	21,500	1,160	
		Island Soil	Soil	3/26 11:20	29,300	3,760	
		Island Soil	Soil	3/27 10:45	44,900	7,580	
		Island Soil	Soil	3/28 11:05	31,100	2,470	
		Island Soil	Soil	3/29 11:00	34,400	5,900	
		Island Soil	Soil	3/30 11:35	23,800	5,280	
		Island Soil	Soil	3/31 10:35	32,300	6,810	
		Island Soil	Soil	4/1 10:35	19,500	5,130	
		Island Soil	Soil	4/2 10:39	22,000	5,740	
		Island Soil	Soil	4/3 10:10	18,800	8,140	
		Island Soil	Soil	4/4 10:05	18,800	8,020	
		Island Soil	Soil	4/5 10:39	28,300	6,700	
		Island Soil	Soil	4/6 10:38	16,400	5,320	
		Island Soil	Soil	4/7 11:27	17,100	5,320	
		Island Soil	Soil	4/8 10:50	12,000	4,710	
		Island Soil	Soil	4/10 10:40	10,500	6,680	
		Island Soil	Soil	4/11 11:10	8,580	5,130	
		Island Soil	Soil	4/12 10:40	8,040	6,530	
		Island Soil	Soil	4/13 10:25	8,360	6,650	
		Island Soil	Soil	4/14 10:31	5,680	4,430	
		Island Soil	Soil	4/15 10:50	3,760	3,110	

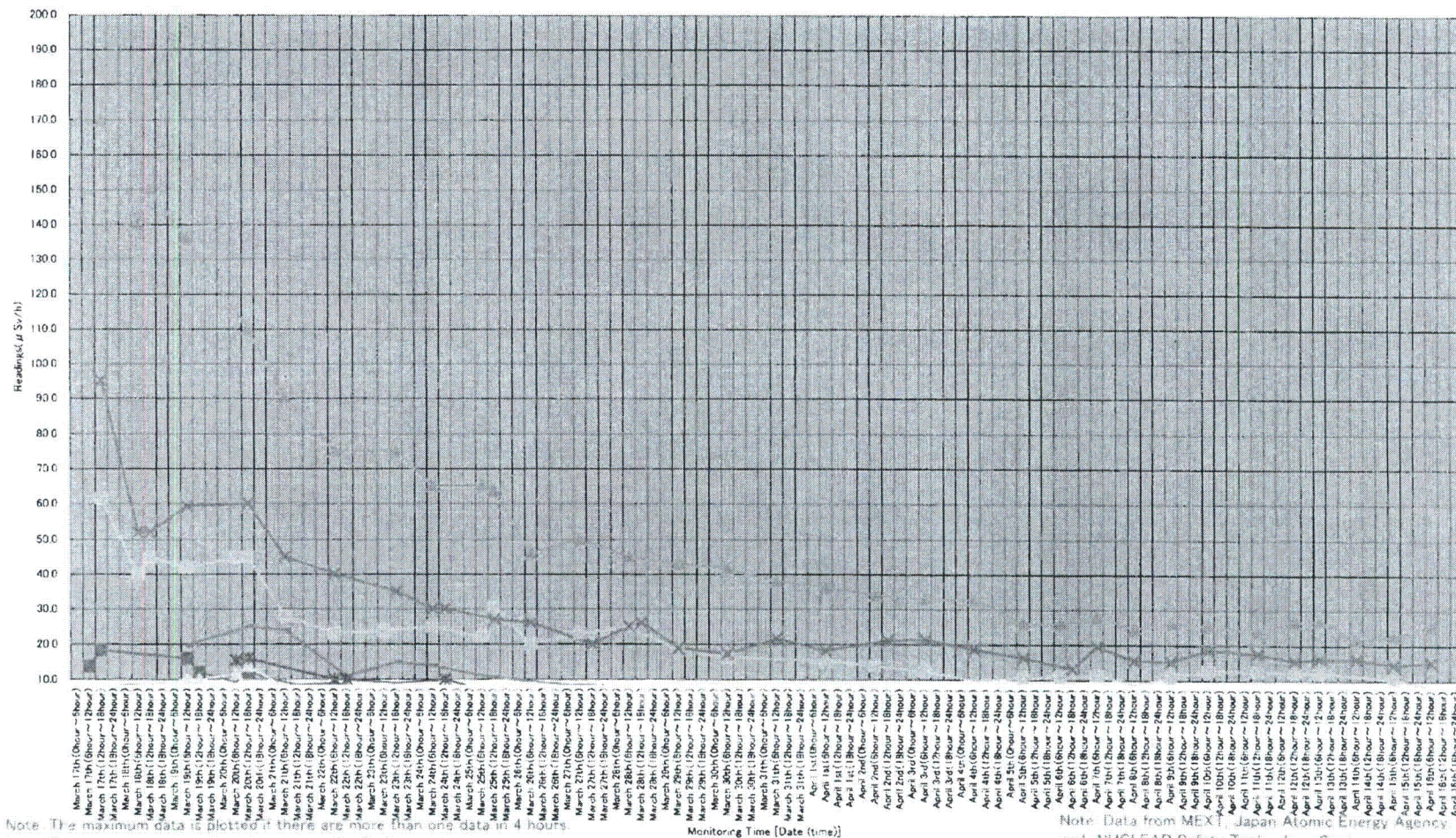
Sampling Point		Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Note
					¹³¹ I	¹³⁷ Cs	
[2-3] (About 40km West)	Tamura city Funehiki town Funehiki	Island Soil	Soil	3/18 11:50	19,300	3,510	
		Island Soil	Soil	3/19 11:35	6,970	1,260	
		Island Soil	Soil	3/20 12:40	5,390	1,250	
		Island Soil	Soil	3/21 12:30	3,000	390	
		Island Soil	Soil	3/22 11:30	7,290	1,290	
		Island Soil	Soil	3/24 11:35	6,600	1,310	
		Island Soil	Soil	3/25 13:35	5,480	778	
		Island Soil	Soil	3/26 11:51	5,250	1,010	
		Island Soil	Soil	3/27 11:45	3,700	796	
		Island Soil	Soil	3/28 11:37	4,360	1,110	
		Island Soil	Soil	3/29 13:35	5,080	1,610	
		Island Soil	Soil	3/30 12:30	5,040	834	
		Island Soil	Soil	3/31 12:10	3,530	1,180	
		Island Soil	Soil	4/1 12:19	3,160	934	
		Island Soil	Soil	4/2 11:27	2,200	803	
		Island Soil	Soil	4/3 11:25	3,130	1,530	
		Island Soil	Soil	4/4 11:23	3,070	1,570	
		Island Soil	Soil	4/5 11:42	2,860	1,410	
		Island Soil	Soil	4/6 11:28	772	127	
		Island Soil	Soil	4/7 11:24	1,230	464	
		Island Soil	Soil	4/8 11:31	334	145	
		Island Soil	Soil	4/10 11:06	903	393	
		Island Soil	Soil	4/11 11:00	593	323	
		Island Soil	Soil	4/12 11:17	960	386	
		Island Soil	Soil	4/13 11:13	588	296	
		Island Soil	Soil	4/14 11:27	782	642	
		Island Soil	Soil	4/15 11:30	691	702	
[2-4] (About 25km North)	Minami Soma city Haranachi ward Takami town	Island Soil	Soil	3/18 13:30	22,600	3,280	
		Island Soil	Soil	3/19 13:00	35,800	4,040	
		Island Soil	Soil	3/20 14:30	35,800	4,850	
		Island Soil	Soil	3/21 14:07	83,200	8,660	
		Island Soil	Soil	3/23 14:10	16,600	1,720	
		Island Soil	Soil	3/24 14:40	14,900	1,990	
		Island Soil	Soil	3/25 14:20	2,480	189	
		Island Soil	Soil	3/26 13:50	15,100	2,490	
		Island Soil	Soil	3/27 13:25	10,100	1,520	
		Island Soil	Soil	3/28 13:27	7,730	1,330	
		Island Soil	Soil	3/29 13:30	9,010	2,200	
		Island Soil	Soil	3/30 14:45	14,900	3,300	
		Island Soil	Soil	3/31 13:15	7,980	2,850	
		Island Soil	Soil	4/1 13:40	10,200	2,900	
		Island Soil	Soil	4/2 13:17	8,210	2,410	
		Island Soil	Soil	4/3 12:35	4,730	1,810	
		Island Soil	Soil	4/4 12:20	14,800	4,770	
		Island Soil	Soil	4/5 13:05	2,770	621	
		Island Soil	Soil	4/6 13:03	1,860	425	
		Island Soil	Soil	4/7 12:48	1,430	450	
		Island Soil	Soil	4/8 13:00	1,510	1,630	
		Island Soil	Soil	4/10 13:00	4,610	2,640	
		Island Soil	Soil	4/11 14:00	1,280	346	
		Island Soil	Soil	4/12 13:36	4,130	2,500	
		Island Soil	Soil	4/13 12:44	1,900	1,160	
		Island Soil	Soil	4/14 13:00	658	567	
		Island Soil	Soil	4/15 13:07	1,720	1,730	
[2-5] (About 40km South/West)	Tamura county Ono town Ononimachi	Island Soil	Soil	3/18 12:30	8,170	2,260	
		Island Soil	Soil	3/19 12:15	14,100	4,630	
		Island Soil	Soil	3/20 13:50	10,300	3,020	
		Island Soil	Soil	3/21 13:40	4,830	910	
		Island Soil	Soil	3/22 11:40	3,220	466	
		Island Soil	Soil	3/23 12:50	6,430	1,590	
		Island Soil	Soil	3/24 13:18	2,830	747	
		Island Soil	Soil	3/25 11:39	3,000	800	
		Island Soil	Soil	3/26 11:50	1,510	159	
		Island Soil	Soil	3/27 11:10	2,140	158	
		Island Soil	Soil	3/28 11:25	505	59	
		Island Soil	Soil	3/29 11:30	2,290	161	
		Island Soil	Soil	3/30 11:02	2,230	947	
		Island Soil	Soil	3/31 11:10	1,690	342	
		Island Soil	Soil	4/1 10:50	1,450	281	
		Island Soil	Soil	4/2 10:40	1,390	600	
		Island Soil	Soil	4/3 10:22	1,280	671	
		Island Soil	Soil	4/4 10:17	791	139	
		Island Soil	Soil	4/5 10:48	1,410	1,040	
		Island Soil	Soil	4/6 10:35	650	240	
		Island Soil	Soil	4/7 10:49	984	593	
		Island Soil	Soil	4/8 10:40	1,720	1,900	
		Island Soil	Soil	4/10 10:40	926	1,040	
		Island Soil	Soil	4/11 10:44	316	238	
		Island Soil	Soil	4/12 10:51	546	396	
		Island Soil	Soil	4/13 10:30	416	429	
		Island Soil	Soil	4/14 10:56	637	939	
		Island Soil	Soil	4/15 10:57	695	1,050	

Sampling Point		Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Note
					¹³¹ I	¹³⁷ Cs	
【2-6】(約45km南)	Iwaki City Taira Aza Umemoto	Island Soil	Soil	3/19 13:15	12,600	288	
		Island Soil	Soil	3/20 15:17	14,600	460	
		Island Soil	Soil	3/21 15:10	30,700	1,220	
		Island Soil	Soil	3/22 13:50	1,960	1,290	
		Island Soil	Soil	3/23 14:20	32,600	840	
		Island Soil	Soil	3/24 15:00	27,100	951	
		Island Soil	Soil	3/25 13:45	23,900	519	
		Island Soil	Soil	3/26 13:50	41,100	875	
		Island Soil	Soil	3/27 12:30	25,100	849	
		Island Soil	Soil	3/28 12:50	11,500	465	
		Island Soil	Soil	3/29 13:05	15,700	617	
		Island Soil	Soil	3/30 12:30	1,420	ND	
		Island Soil	Soil	3/31 12:51	8,370	150	
		Island Soil	Soil	4/1 12:17	1,540	50	
		Island Soil	Soil	4/2 12:04	12,600	540	
		Island Soil	Soil	4/3 11:45	1,400	56	
		Island Soil	Soil	4/4 11:46	2,070	24	
		Island Soil	Soil	4/5 12:10	1,260	21	
		Island Soil	Soil	4/6 12:04	993	37	
		Island Soil	Soil	4/7 12:11	4,210	329	
		Island Soil	Soil	4/8 12:03	14,700	1,700	
		Island Soil	Soil	4/10 12:09	8,240	1,230	
		Island Soil	Soil	4/11 12:18	1,670	174	
		Island Soil	Soil	4/12 12:14	5,950	945	
		Island Soil	Soil	4/13 12:00	5,430	699	
		Island Soil	Soil	4/14 12:28	6,130	684	
		Island Soil	Soil	4/15 12:35	614	114	
【2-7】 (About 35km North/West)	Date county Kawamata town Yamakiya	Island Soil	Soil	3/25 15:05	112,000	21,800	
		Island Soil	Soil	3/26 13:59	100,000	21,900	
		Island Soil	Soil	3/27 13:47	50,800	7,350	
		Island Soil	Soil	3/28 13:39	39,800	4,330	
		Island Soil	Soil	3/29 14:50	61,800	23,400	
		Island Soil	Soil	3/30 14:00	42,600	7,750	
		Island Soil	Soil	3/31 13:40	14,700	949	
		Island Soil	Soil	4/1 14:22	26,400	3,900	
		Island Soil	Soil	4/2 13:28	19,400	5,340	
		Island Soil	Soil	4/3 13:20	43,000	22,000	
		Island Soil	Soil	4/4 13:23	65,900	38,500	
		Island Soil	Soil	4/5 13:40	39,300	16,300	
		Island Soil	Soil	4/6 12:57	30,600	19,800	
		Island Soil	Soil	4/7 13:02	38,300	22,300	
		Island Soil	Soil	4/8 13:08	37,300	23,300	
		Island Soil	Soil	4/10 12:37	9,550	7,200	
		Island Soil	Soil	4/11 12:22	11,400	3,720	
		Island Soil	Soil	4/12 12:28	11,000	7,600	
		Island Soil	Soil	4/13 12:46	6,990	1,510	
		Island Soil	Soil	4/14 12:55	14,400	22,200	
【2-8】(About 50 km North/West)	Date city Tsukidate town	Island Soil	Soil	3/24 12:10	41,200	6,850	
		Island Soil	Soil	3/25 16:15	20,800	3,790	
		Island Soil	Soil	3/26 15:13	16,000	3,740	
		Island Soil	Soil	3/27 14:54	16,900	3,070	
		Island Soil	Soil	3/28 14:34	22,300	5,320	
		Island Soil	Soil	3/29 15:50	25,700	5,800	
		Island Soil	Soil	3/30 16:05	20,500	3,360	
		Island Soil	Soil	3/31 14:25	27,200	6,740	
		Island Soil	Soil	4/1 15:12	27,000	6,030	
		Island Soil	Soil	4/2 14:27	21,100	6,100	
		Island Soil	Soil	4/3 14:11	25,800	8,510	
		Island Soil	Soil	4/4 14:15	8,270	2,640	
		Island Soil	Soil	4/5 14:25	18,900	7,180	
		Island Soil	Soil	4/6 13:40	3,870	494	
		Island Soil	Soil	4/7 13:46	2,730	400	
		Island Soil	Soil	4/8 13:56	9,980	4,360	
		Island Soil	Soil	4/10 13:21	2,510	452	
		Island Soil	Soil	4/11 13:04	2,290	560	
		Island Soil	Soil	4/12 13:11	8,940	4,840	
		Island Soil	Soil	4/13 13:36	8,250	7,160	
		Island Soil	Soil	4/14 13:35	8,800	8,900	
		Island Soil	Soil	4/15 13:25	4,110	1,600	

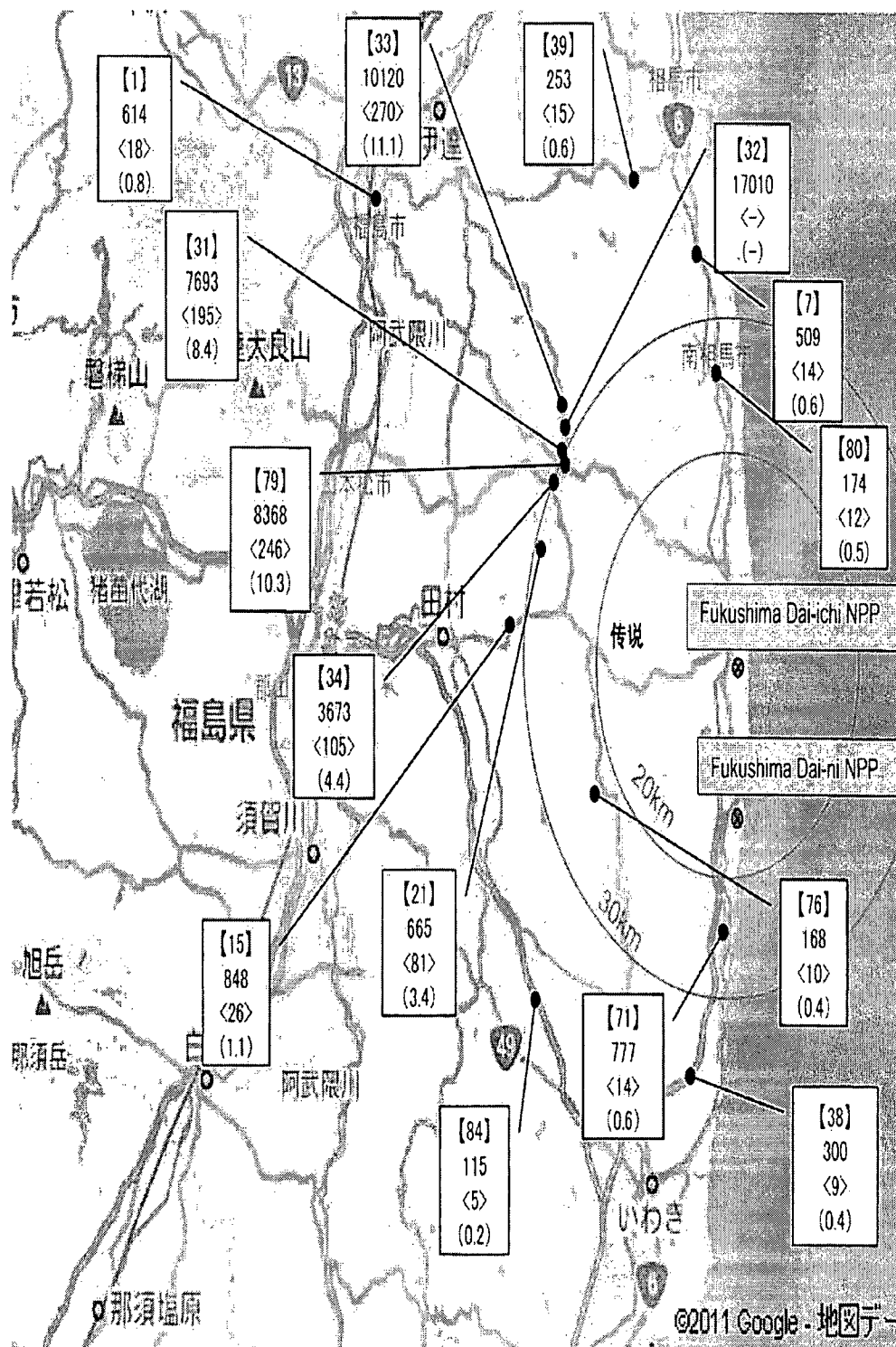
Sampling Point		Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)		Note
					^{131}I	^{137}Cs	
【2-9】 (About 45 km West/North-West)	Nihonmatsu City Kanairo	Island Soil	Soil	3/25 11:35	32,900	9,330	
		Island Soil	Soil	3/26 10:14	39,000	16,900	
		Island Soil	Soil	3/27 10:26	49,300	22,700	
		Island Soil	Soil	3/28 10:13	34,100	15,700	
		Island Soil	Soil	3/29 11:45	36,400	21,100	
		Island Soil	Soil	3/30 10:35	24,000	14,800	
		Island Soil	Soil	3/31 10:50	24,400	14,200	
		Island Soil	Soil	4/1 11:05	17,800	10,500	
		Island Soil	Soil	4/2 10:05	5,010	12,700	
		Island Soil	Soil	4/3 10:04	21,100	15,500	
		Island Soil	Soil	4/4 10:02	20,300	19,200	
		Island Soil	Soil	4/5 10:35	17,800	15,800	
		Island Soil	Soil	4/6 10:13	12,000	8,000	
		Island Soil	Soil	4/7 10:10	3,990	1,190	
		Island Soil	Soil	4/8 10:20	15,900	16,300	
		Island Soil	Soil	4/10 10:00	13,400	16,900	
		Island Soil	Soil	4/11 10:05	4,230	3,200	
		Island Soil	Soil	4/12 10:15	8,530	10,500	
		Island Soil	Soil	4/13 10:07	6,580	8,860	
		Island Soil	Soil	4/14 10:08	7,800	14,700	
		Island Soil	Soil	4/15 10:25	10,100	22,700	
【2-10】(About 50 km North)	Souma county Shinchi Town	Island Soil	Soil	3/25 16:20	44	3,740	
【4-1】 (About 80 km South-West)	Shirakawa City	Island Soil	Soil	4/7 15:00	1,850	1,660	
		Island Soil	Soil	4/8 14:50	1,630	1,520	
		Island Soil	Soil	4/10 13:40	2,050	2,630	
		Island Soil	Soil	4/11 14:00	1,220	1,320	
		Island Soil	Soil	4/12 14:00	1,670	2,420	
		Island Soil	Soil	4/13 14:46	2,650	5,580	
		Island Soil	Soil	4/14 14:18	647	1,090	
		Island Soil	Soil	4/15 14:25	636	820	
【4-2】 (About 60 km West)	Sukagawa City Hachiman Town	Island Soil	Soil	4/7 13:10	1,450	1,600	
		Island Soil	Soil	4/8 11:50	1,090	925	
		Island Soil	Soil	4/10 11:20	989	1,280	
		Island Soil	Soil	4/11 11:40	1,280	1,820	
		Island Soil	Soil	4/12 11:50	1,020	1,760	
		Island Soil	Soil	4/13 12:12	329	321	
		Island Soil	Soil	4/14 11:47	1,080	1,830	
		Island Soil	Soil	4/15 12:00	1,120	1,950	
【4-3】(About 60 km West)	Adachi county Ootama Village	Island Soil	Soil	4/7 11:10	3,770	3,310	
		Island Soil	Soil	4/8 10:35	4,460	5,070	
		Island Soil	Soil	4/10 10:20	5,100	6,220	
		Island Soil	Soil	4/11 10:20	3,250	4,700	
		Island Soil	Soil	4/12 10:30	2,220	3,430	
		Island Soil	Soil	4/13 10:46	2,020	3,210	
		Island Soil	Soil	4/14 10:22	6,050	5,640	
		Island Soil	Soil	4/15 10:40	545	466	
【4-4】 (About 70 km South-West)	Shirakawa county Izumizaki Village	Island Soil	Soil	4/7 14:15	3,670	2,990	
		Island Soil	Soil	4/7 14:10	1,830	1,390	
		Island Soil	Soil	4/8 13:40	2,790	2,410	
		Island Soil	Soil	4/10 13:00	1,280	1,890	
		Island Soil	Soil	4/11 13:10	1,630	1,810	
		Island Soil	Soil	4/12 13:20	534	702	
		Island Soil	Soil	4/13 13:53	2,020	2,520	
		Island Soil	Soil	4/14 13:36	1,440	1,760	
【4-5】 (About 80 km South-West)	Nishishirakawa county Nishigou Village	Island Soil	Soil	4/15 13:40	811	1,350	
		Island Soil	Soil	4/8 15:30	1,330	923	
		Island Soil	Soil	4/10 14:10	1,480	1,460	
		Island Soil	Soil	4/11 14:40	4,580	6,740	
		Island Soil	Soil	4/12 14:40	3,860	5,250	
		Island Soil	Soil	4/13 15:36	2,710	4,760	
(Reference)	【2-11】 (About 5 km South-West)	Futaba county Ootuma Town	Island Soil	Soil	3/31 13:00	423,000	98,100

The government requests Fukushima Prefecture to gain the readings above.

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP



Readings of Integrated Dose at Monitoring Post out of Fukushima Dai-ichi NPP



Monitoring Time

- March 23th~April 16th
(Monitoring Post: 31, 33, 34)
- March 23th~April 15th
(Monitoring Post: 32)
- March 23th~April 13th, April 15th ~16th
(Monitoring Post: 7)
- March 23th~April 11th, April 14th ~16th
(Monitoring Post: 79)
- March 23th~28th, April 3rd ~16th
(Monitoring Post: 71)
- March 24th~April 16th
(Monitoring Post: 1)
- March 24th~April 11th, April 13th ~16th
(Monitoring Post: 15)
- March 25th~April 1st, April 3rd ~16th
(Monitoring Post: 84)
- March 31th~ April 1st, April 3rd ~16th
(Monitoring Post: 38)
- April 1st~April 13th, April 16th
(Monitoring Post: 39)
- April 2nd~April 11th, April 13th ~16th
(Monitoring Post: 76)
- April 3rd~April 13th, April 15th ~16th
(Monitoring Post: 80)
- April 8th~April 12th, April 3rd ~16th
(Monitoring Post: 21)

● Monitoring Post

(explanatory note)

【 Monitoring Post number】

Readings of Integrated Dose ※
<increment from the last monitoring>
(average dose per hour)

※Readings of Integrated Dose
indicate that accumulation of dose
from each starting date till April 16th
h, for 9 days to 24 days.

Unit: μSv per hour

Readings of integrated Dose at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 10:00 April 17, 2011

Ministry of Education, Culture, Sports, Science and Technology (MEXT)

* 1 the readings are measured by pocket dosimeter

Monitoring Post (length from NPP)	Installation Date and Time	Date and Time (last monitoring) (x)	Readings (last monitoring) (a) (μ Sv)	Monitoring Date and Time (y)	Reading of Integrated Dose (b) (μ Sv)	Accumulated Time (z = y - x)	Reading of integrated Dose (c = b - a) (μ Sv)	Weather
Monitoring Area [31] Futaba county Namie town, Tsuchiwa Nakash (About 30km West/North-West)	2011/3/23 11:43	2011/4/15 10:44	7498 *1	2011/4/16 9:59	7893 *1	23hour15minutes	195 (8.4 μ Sv/h)	No Rain
Monitoring Area [32] Futaba county Namie town, Akagi Teshigahara (About 30km West)	2011/3/23 12:14	2011/4/15 10:24	17010 *1	—	—	—	—	—
Monitoring Area [33] Soma county Katsuragi village Nagaoka (About 30km North-West)	2011/3/23 12:32	2011/4/15 10:06	9850 *1	2011/4/16 10:31	10120 *1	24hour25minutes	270 (11.1 μ Sv/h)	No Rain
Monitoring Area [34] Futaba county Namie town, Tsurumura Teshigahara (About 30km North-West)	2011/3/23 13:08	2011/4/15 11:20	3568 *1	2011/4/16 11:28	3673 *1	24hour08minutes	105 (4.4 μ Sv/h)	No Rain
Monitoring Area [38] Iwaki City Tetsuura town Binnawa Nakata (About 35km South)	2011/3/31 16:23	2011/4/15 13:38	291 *1	2011/4/16 13:10	300 *1	23hour32minutes	9 (0.4 μ Sv/h)	Rain
Monitoring Area [71] Futaba county Hirase town Shimokita (About 25km South)	2011/3/23 13:00	2011/4/15 14:24	763 *1	2011/4/16 14:00	777 *1	23hour36minutes	14 (0.6 μ Sv/h)	No Rain
Monitoring Area [79] Futaba county Namie town Shimotsukishima Teshigahara (About 30km North-West)	2011/3/23 14:09	2011/4/15 11:00	8122 *1	2011/4/16 11:00	8368 *1	24hour00minutes	246 (10.3 μ Sv/h)	No Rain
Monitoring Area [7] Minami Soma city Nakama ward Tetsuzaki (About 30km North)	2011/3/23 12:06	2011/4/15 11:49	495 *1	2011/4/16 11:28	509 *1	23hour39minutes	14 (0.6 μ Sv/h)	No Rain
Monitoring Area [1] Fukushima city Sannohe town (About 60km North-West)	2011/3/24 15:20	2011/4/15 15:55	596 *1	2011/4/16 15:05	614 *1	23hour10minutes	18 (0.6 μ Sv/h)	No Rain
Monitoring Area [15] Tamakoshi city Fukuoka town Tamura Katsuta (About 30km North)	2011/3/24 10:58	2011/4/15 11:41	822 *1	2011/4/16 11:38	848 *1	23hour57minutes	26 (1.1 μ Sv/h)	No Rain
Monitoring Area [84] Inagawa city Minamimatsu Saito (About 40km South-West)	2011/3/25 10:40	2011/4/15 10:12	110 *1	2011/4/16 10:30	115 *1	24hour18minutes	5 (0.2 μ Sv/h)	No Rain
Monitoring Area [39] Soma city Yashima Kamigawa (About 45km North)	2011/4/1 10:45	2011/4/15 10:44	238 *1	2011/4/16 10:24	253 *1	23hour40minutes	15 (0.6 μ Sv/h)	No Rain
Monitoring Area [76] Futaba county Katsuragi village Katsuragi Hirayama (About 20km South-West)	2011/4/2 11:35	2011/4/15 10:51	158 *1	2011/4/16 10:41	168 *1	23hour50minutes	10 (0.4 μ Sv/h)	No Rain
Monitoring Area [80] Minami Soma city Hirai ward Katsuragi (About 25km North)	2011/4/3 11:56	2011/4/15 12:41	162 *1	2011/4/16 11:55	174 *1	23hour14minutes	12 (0.5 μ Sv/h)	No Rain
Monitoring Area [21] Tamakoshi city Aizawa town Katsuragi (About 30km West/North-West)	2011/4/8 13:18	2011/4/15 12:04	584 *1	2011/4/16 12:00	665 *1	23hour56minutes	81 (3.4 μ Sv/h)	No Rain

notes: The parenthesis figures in the column "Integrated Dose" indicates the values of readings of integrated dose divided by accumulated time (c/z).

•Reading by MEXT

•The figures of 0.0 in the column "Date and Time (last monitoring)" indicate that there was new instiation in the area.

About estimate of integrated Dose at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP from 6 o'clock March 12 to 24 o'clock April 5, please refer to No.1-2 of material of Nuclear Safety Commission the 22nd Special meeting held on April 10, 2011

•Reading of [32] on April 16th is to be measured on the day after 17th, since the battery run down.

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 10:00 April 17, 2011

Ministry of Education, Culture, Sports, Science and Technology (MEXT)

Monitoring Outputs by MEXT

*Boldface and underlined readings are new.

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	Weather	Reading by
Reading Point [1] <u>Fukushima city Sugitsuma town</u> (About60kmNorth/West)	2011/4/16 14:57	<u>2.1</u> *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [1] Fukushima city Sugitsuma town (About60kmNorth/West)	2011/4/16 8:39	1.3 *2	No Rain	MEXT
Reading Point [2] Fukushima city Onami Takinoiri (About55kmNorth/West)	2011/4/16 8:57	1.7 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [3] Date city Ryozen town Ishida Hikohei (About45kmNorth/West)	2011/4/16 9:58	2.6 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [4] Date county Kawamata town oaza Tsurusawa aza Kawabata (About50kmNorth/West)	2011/4/16 9:11	1.0 *2	No Rain	MEXT
Reading Point [5] Soma city Nakanoteramae (About45kmNorth)	2011/4/16 10:48	0.4 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [6] Minami Soma city Kashima ward Nishimachi (About35kmNorth)	2011/4/16 11:11	0.7 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [7] Minami Soma city Kashima ward Terauchi Motoyashiki (About35kmNorth)	2011/4/16 11:23	0.6 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [10] Nihonmatsu city Harimichi Nakajima (About40kmNorth/West)	2011/4/16 13:40	1.0 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [10] Nihonmatsu city Harimichi Nakajima (About40kmNorth/West)	2011/4/16 13:28	1.0 *2	No Rain	MEXT
Reading Point [11] Nihonmatsu city Ota aza Shimoda (About40kmNorth/West)	2011/4/16 13:29	1.2 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [11] Nihonmatsu city Ota aza Shimoda (About40kmNorth/West)	2011/4/16 12:43	1.0 *2	No Rain	MEXT
Reading Point [12] Tamura city Funehiki town Funehiki aza Ozawakawashiro (About40kmWest)	2011/4/16 12:50	0.3 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [13] Tamura city Tokiwa town Nishimuki Yaketa (About40kmWest)	2011/4/16 12:38	0.8 *2	Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [14] Tamura city Tokiwa town Tokiwa Uchimachi (About35kmWest)	2011/4/16 12:00	0.4 *2	Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [15] Tamura city Tokiwa town Yamane Kashima (About35kmWest)	2011/4/16 11:37	0.5 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [20] Tamura city Funehiki town Niitate shimo (About45kmNorth/West)	2011/4/16 12:23	0.3 *2	No Rain	MEXT
Reading Point [21] Tamura city Funehiki town Kamiutsushi (About30kmWest/North/West)	2011/4/16 11:58	3.0 *2	No Rain	MEXT
Reading Point [22] Tamura city Funehiki town Kamiutsushi Ushirota (About35kmWest/North/West)	2011/4/16 12:09	0.0 *2	Rain	MEXT
Reading Point [23] Tamura City Funehiki town Minamiutsushi Suicyuuchi (About35kmWest/North/West)	2011/4/16 12:15	0.5 *2	No Rain	MEXT
Reading Point [31] Futaba county Namie town Tsushima Nakaoki (About30kmWest/North/West)	2011/4/16 9:57	8.3 *2	No Rain	MEXT
Reading Point [32] Futaba county Namie town Akougi Teshichiro (About30kmNorth/West)	2011/4/16 10:13	25.3 *2	No Rain	MEXT
Reading Point [33] Soma county Iitate village Nagaduro (About50kmNorth/West)	2011/4/16 10:30	15.2 *2	No Rain	MEXT
Reading Point [34] Futaba county Namie town Tsushima Taikougi (About30kmNorth/West)	2011/4/16 11:27	4.4 *2	No Rain	MEXT
Reading Point [36] Date county Kawamata town Yamakiya Oonukari (About40kmNorth/West)	2011/4/16 9:35	2.9 *2	No Rain	MEXT
Reading Point [37] Date city Ryozen town Ishida Hojizawa (About50kmNorth/West)	2011/4/16 9:48	3.2 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [38] Iwaki City Yotsukura town Shirawa Hokita (About35kmSouth)	2011/4/16 13:09	0.9 *2	Rain	MEXT

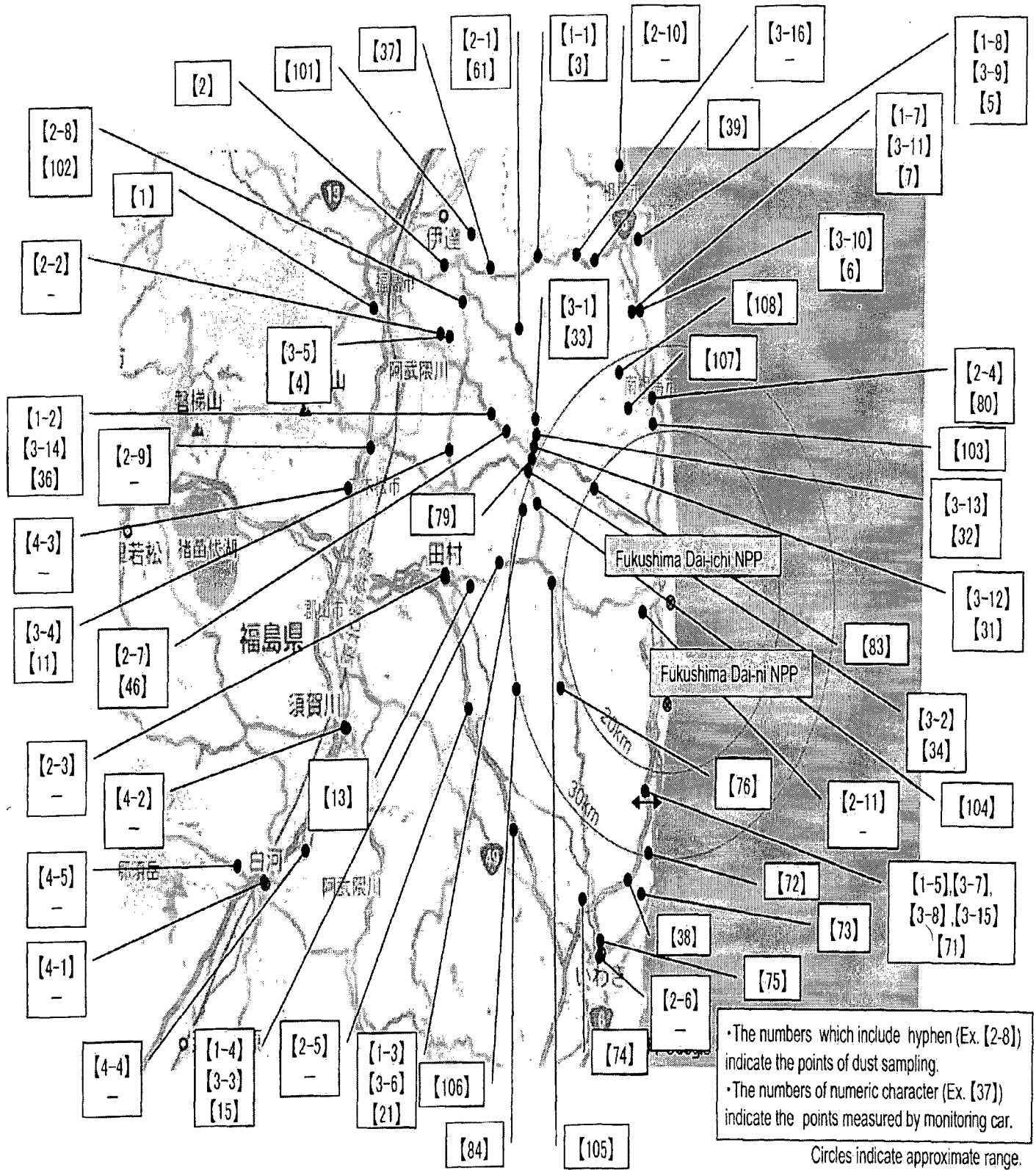
- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	Weather	Reading by
Reading Point [39] Soma city Yamakami Kaminamiki (About45kmNorth)	2011/4/16 10:22	0.8 * ²	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [41] Tamura City Miyakoji town Hurumichi (About20kmWest)	2011/4/16 13:10	0.7 * ²	No Rain	Electric power company
Reading Point [41] Tamura City Miyakoji town Hurumichi (About20kmWest)	2011/4/16 9:45	0.7 * ²	No Rain	Electric power company
Reading Point [42] Tamura city Tokiwa town Yamane Tomoka (About30kmWest)	2011/4/16 13:20	0.8 * ²	No Rain	Electric power company
Reading Point [42] Tamura city Tokiwa town Yamane Tomoka (About30kmWest)	2011/4/16 10:20	0.8 * ²	No Rain	Electric power company
Reading Point [43] Futaba county Kawauchi village Shimokawauchi Miyawata (About20kmSouth/West)	2011/4/16 15:00	0.4 * ²	No Rain	Electric power company
Reading Point [43] Futaba county Kawauchi village Shimokawauchi Miyawata (About20kmSouth/West)	2011/4/16 11:00	0.4 * ²	No Rain	Electric power company
Reading Point [44] Iwaki city Ohisa town Ohisa Yanomezawa (About30kmSouth)	2011/4/16 13:00	0.6 * ²	Rain	Electric power company
Reading Point [44] Iwaki city Ohisa town Ohisa Yanomezawa (About30kmSouth)	2011/4/16 10:00	0.6 * ²	No Rain	Electric power company
Reading Point [45] Futaba county Naraha town Yamadaoka Utsukushimori (About20kmSouth)	2011/4/16 13:31	1.0 * ²	No Rain	Electric power company
Reading Point [45] Futaba county Naraha town Yamadaoka Utsukushimori (About20kmSouth)	2011/4/16 10:00	1.0 * ²	No Rain	Electric power company
Reading Point [46] Date county Kawamata town Yamakiva Mukaidayama (About30kmNorth/West)	2011/4/16 13:05	4.4 * ²	No Rain	Electric power company
Reading Point [46] Date county Kawamata town Yamakiva Mukaidayama (About30kmNorth/West)	2011/4/16 10:10	4.5 * ²	No Rain	Electric power company
Reading Point [71] Futaba county Hirono town Shimokitaba Nawashirogae (About25kmSouth)	2011/4/16 14:45	0.9 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [71] Futaba county Hirono town Shimokitaba Nawashirogae (About25kmSouth)	2011/4/16 14:01	0.6 * ²	No Rain	MEXT
Reading Point [71] Futaba county Hirono town Shimokitaba Nawashirogae (About25kmSouth)	2011/4/16 8:22	0.5 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [72] Iwaki city Hisanohama town Hisanohama aza Kitaaramaki (About30kmSouth)	2011/4/16 15:35	0.9 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [72] Iwaki city Hisanohama town Hisanohama aza Kitaaramaki (About30kmSouth)	2011/4/16 13:43	0.6 * ²	No Rain	MEXT
Reading Point [72] Iwaki city Hisanohama town Hisanohama aza Kitaaramaki (About30kmSouth)	2011/4/16 9:02	0.8 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [73] Iwaki city Yotsukura town (About35kmSouth)	2011/4/16 15:32	0.6 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [73] Iwaki city Yotsukura town (About35kmSouth)	2011/4/16 13:30	0.8 * ²	No Rain	MEXT
Reading Point [73] Iwaki city Yotsukura town (About35kmSouth)	2011/4/16 9:23	0.6 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [74] Iwaki city Ogawa town Takahagi (About35kmSouth)	2011/4/16 12:48	0.2 * ²	Rain	MEXT
Reading Point [74] Iwaki city Ogawa town Takahagi (About35kmSouth)	2011/4/16 9:50	0.3 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [75] Iwaki city Uchigoumiyamaya town (About45kmSouth)	2011/4/16 17:00	0.1 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [75] Iwaki city Uchigoumiyamaya town (About45kmSouth)	2011/4/16 11:36	0.4 * ²	No Rain	MEXT
Reading Point [75] Iwaki city Uchigoumiyamaya town (About45kmSouth)	2011/4/16 7:00	0.1 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [76] Futaba county Kawauchi village Kamikawauchi Hayawata (About20kmSouth/West)	2011/4/16 11:08	0.2 * ²	No Rain	Police (counter NBC operations unit)
Reading Point [76] Futaba county Kawauchi village Kamikawauchi Hayawata (About20kmSouth/West)	2011/4/16 10:40	0.0 * ²	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [77] Iwaki city Ogawa town Kamiogawa (About25kmSouth/West)	2011/4/16 10:46	1.2 * ²	No Rain	Police (counter NBC operations unit)

- * 1 measured by Geiger-Müller counter
- * 2 measured by ionization chamber type survey meter
- * 3 measured by NaI scintillator detector
- * 4 variation range of the measuring data in measuring time

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv/h}$)	Weather	Reading by
Reading Point [79] Futaba county Namie town shimotsushima kayabuka (About30kmNorth/West)	2011/4/16 10:59	10.0 ^{*2}	No Rain	MEXT
Reading Point [80] Minami Soma city Haramachi ward Takami town (About25kmNorth)	2011/4/16 11:52	0.3 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [80] Minami Soma city Haramachi ward Takami town (About25kmNorth)	2011/4/16 8:00	0.4 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [83] Futaba county Namie town Akougi Kurugidaira (About20kmNorth/West)	2011/4/16 11:15	43.8 ^{*2}	No Rain	MEXT
Reading Point [84] Iwaki city Miawa-town Saiso (About40kmSouth/West)	2011/4/16 10:29	0.2 ^{*2}	No Rain	MEXT
Reading Point [85] Fukushima Arai Harajiku (About60kmNorth/West)	2011/4/16 14:00	0.5 ^{*2}	No Rain	Ministry of Defense
Reading Point [85] Fukushima Arai Harajiku (About60kmNorth/West)	2011/4/16 6:00	0.6 ^{*2}	No Rain	Ministry of Defense
Reading Point [86] Koriyama Ootsuki town Choemonbayashi (About55kmWest)	2011/4/16 14:00	0.8 ^{*2}	No Rain	Ministry of Defense
Reading Point [86] Koriyama Ootsuki town Choemonbayashi (About55kmWest)	2011/4/16 6:00	0.9 ^{*2}	No Rain	Ministry of Defense
Reading Point [87] Futaba county Kawauchi village Kamikawauchi Hananouchi (About30kmWest/South/West)	2011/4/16 14:00	0.9 ^{*2}	No Rain	Ministry of Defense
Reading Point [87] Futaba county Kawauchi village Kamikawauchi Hananouchi (About30kmWest/South/West)	2011/4/16 6:00	1.0 ^{*2}	No Rain	Ministry of Defense
Reading Point [88] Fukushima city Hikaizaka (About55kmWest/North/West)	2011/4/15 17:00	1.2 ^{*2}	No Rain	Ministry of Defense
Reading Point [89] Koriyama city Toyota town (About60kmWest)	2011/4/15 17:00	2.2 ^{*2}	No Rain	Ministry of Defense
Reading Point [101] Date city Ryozen town Oishi aza Minowa (About55kmNorth/West)	2011/4/16 9:19	1.2 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [102] Date city Tsukidate town Tsukidate aza Machi (About50kmNorth/West)	2011/4/16 14:09	1.7 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [103] Minami Soma city Haramachi ward taka aza Mamegarauchi (About20kmNorth)	2011/4/16 12:32	0.4 ^{*2}	Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [104] Futaba county Katsurao village Oaza Ochiai aza Ochiai (About25kmWest/North/West)	2011/4/16 11:42	1.5 ^{*2}	No Rain	MEXT
Reading Point [105] Tamura city Miyakoji town Furumichi aza Teranomae (About20kmWest)	2011/4/16 11:11	0.0 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [106] Iwaki city Kawamae town Ojiroi aza Syokangoya (About30kmSouth/West)	2011/4/16 10:08	0.0 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [107] Minami Soma city Haramachi ward Baba aza Nakouchi (About25kmNorth/North/West)	2011/4/16 12:56	1.8 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [108] Minami Soma city Haramachi ward Ohara Daihata (About30kmNorth/North/West)	2011/4/16 13:10	2.6 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)

Sampling points out of Fukushima Dai-ichi NPP



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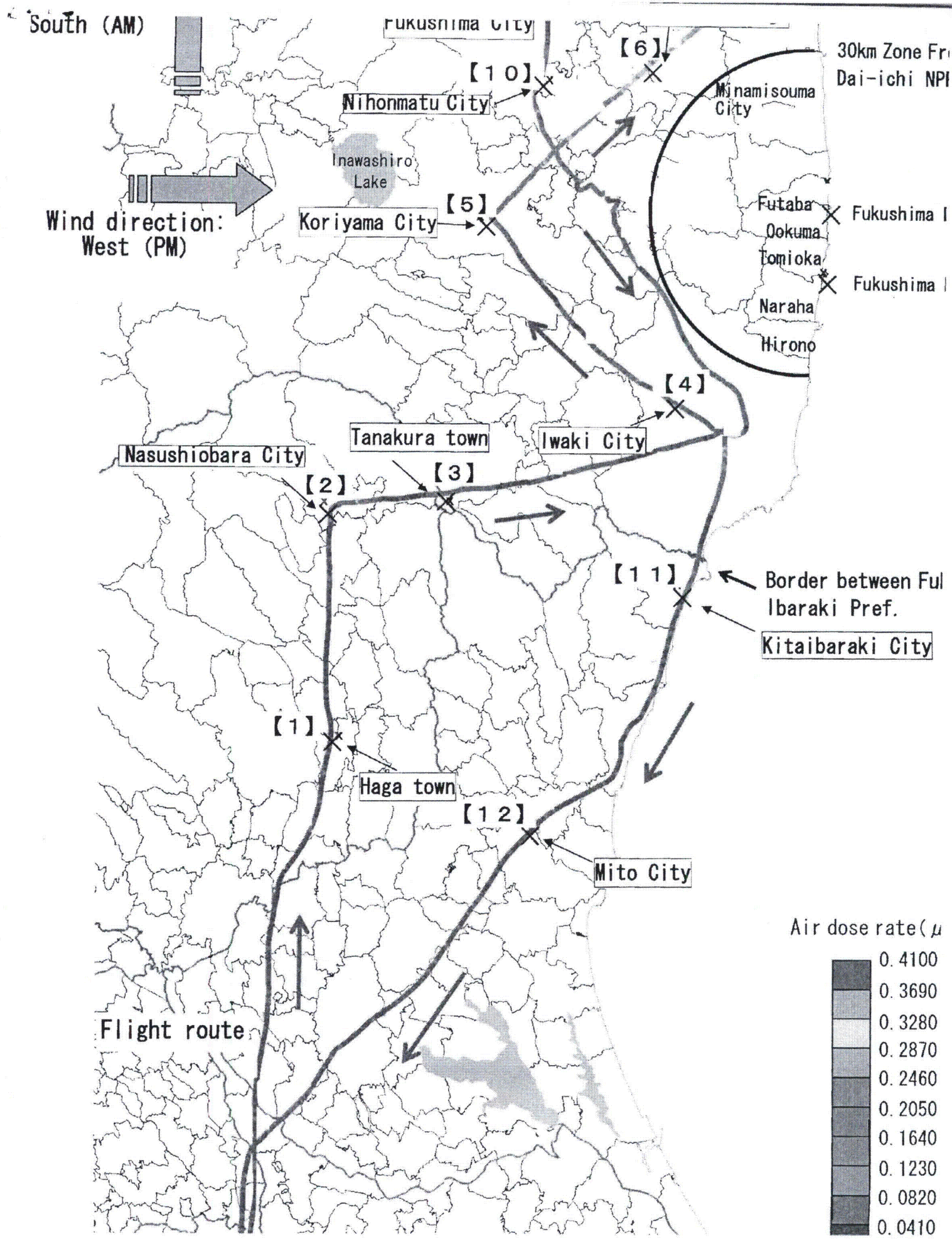
.....

.....

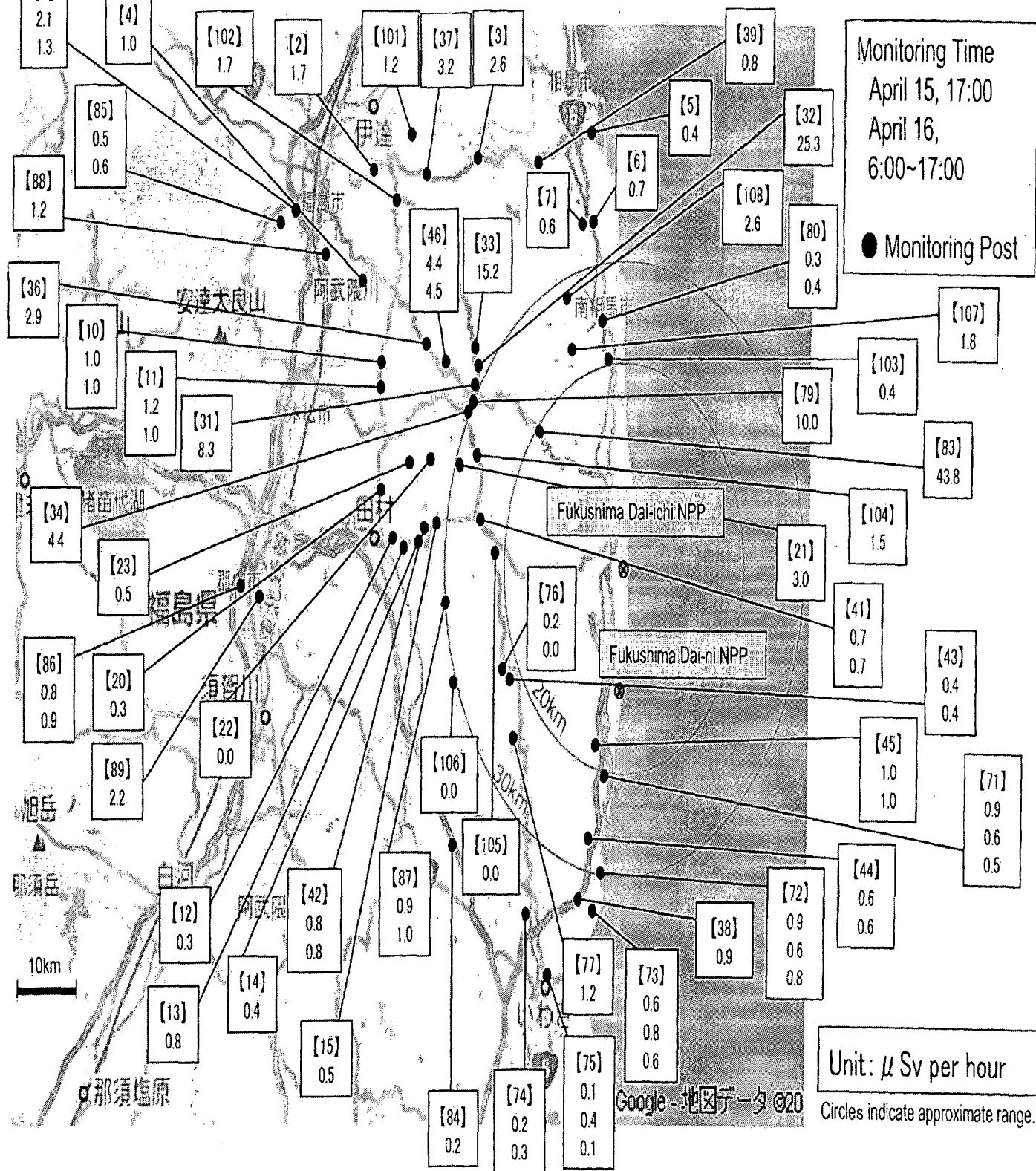
.....

.....

[illegible]



Readings at Monitoring Post out of Fukushima Dai-ichi NPP



From: Schwartzman, Jennifer
Sent: Thursday, March 24, 2011 12:55 PM
To: LIA03 Hoc
Subject: RE: ENAC login

Thanks!

From: LIA03 Hoc
Sent: Thursday, March 24, 2011 12:55 PM
To: Schwartzman, Jennifer
Subject: FW: ENAC login

Warren's E-mail address as requested...

Lance

From: Stern, Warren [mailto:Warren.Stern@dhs.gov]
Sent: Wednesday, March 23, 2011 2:40 PM
To: LIA03 Hoc
Subject: RE: ENAC login

Dear Karen;

Thank you very much.

When this is over, lets have a drink. ...the stories.

Take care

Warren

From: prvs=05696c268=LIA03.Hoc@nrc.gov [mailto:prvs=05696c268=LIA03.Hoc@nrc.gov] **On Behalf Of** LIA03 Hoc
Sent: Wednesday, March 23, 2011 7:54 AM
To: Stern, Warren
Subject: FW: ENAC login

From: LIA02 Hoc
Sent: Wednesday, March 16, 2011 9:28 AM
To: 'Warren.Stern@dhs.gov'
Cc: Schwartzman, Jennifer
Subject: ENAC login

Warren,

You can use the NRC login to ENAC:

Login: (b)(6)

III I/97

PW: (b)(6)

Please do not further disseminate this password.

Can you please let Lloyd Bolling know we have provided this to you – he just called on your behalf.

Thanks.

Cheers,

Karen Henderson

From: Emche, Danielle
Sent: Friday, March 25, 2011 9:44 PM
To: LIA03 Hoc
Subject: Re: Mailbox size

It's ok about the notes, honestly, I'm not surprised. Maybe we'll still get an affirmative on Monday or something, but I'm not holding my breath.

About AIT/TECRO, I can provide the contact number, it is (b)(6) our contact is Mr. June-Yuan Huang (he goes by "JY"). He is the regulator's rep at TECRO. His colleague, the political/economic rep., Mr. Sun, has also been requested by DOS to be on the call. JY will coordinate getting him on the call.

They have said they would also like to exchange the assumptions of AEC. Depending on whether PMT is interested in Taiwan's assumptions, Taiwan could share their assumptions in written form before or after the call with PMT. (TECRO is still waiting to receive the assumptions from Taiwan, so we could also hold off on the call until TECRO can do an equal exchange.)

I could be available sometime Monday for a call, perhaps around 8 AM. I think the best thing would be to just have the call and let Taiwan send their assumptions as a follow-up to the call. DOS is breathing down my neck about it and since we finally have the NRC AIT/TECRO arrangement, we have more legitimacy. DOS actually threw the Arrangement sort of 'in my face' because we didn't jump to immediately share the information. Goodness.

Danielle
Sent from an NRC BlackBerry.

----- Original Message -----

From: LIA03 Hoc
To: Emche, Danielle
Sent: Fri Mar 25 20:35:54 2011
Subject: RE: Mailbox size

Danielle,
It was Brooke's idea.

I was just reading through our log and it looked like OIP was recommending a separate PMT/AIT/TECRO call. What do you need from us on this end to get a call set up? Would it be best to provide the Taiwanese contact information to the PMT for them to establish contact? What path forward do you recommend?

I haven't heard from Josh on being able to provide you the translated notes from the NISA/Chairman meeting. Sorry!

Thanks,
-Jenny

-----Original Message-----

From: Emche, Danielle
Sent: Friday, March 25, 2011 7:55 PM
To: LIA03 Hoc; LIA02 Hoc

Subject: Re: Mailbox size

That was such a good idea, who thought of that?

Danielle

Sent from an NRC BlackBerry.

----- Original Message -----

From: Hart, Robin

To: LIA03 Hoc; CSC; LIA02 Hoc

Cc: Smirolodo, Elizabeth; Smith, Brooke; Foggie, Kirk; Emche, Danielle; Stahl, Eric; Vaughan, Joel; Bissett, Ryan; Reffkin, Brian

Sent: Fri Mar 25 19:48:56 2011

Subject: RE: Mailbox size

Ms. Smirolodo,

The mailbox increase has been applied to the users listed below.

Please let me know if there is anything else we can do for you.

Thank you,

Robin hart

-----Original Message-----

From: LIA03 Hoc

Sent: Friday, March 25, 2011 4:17 AM

To: CSC; LIA02 Hoc

Cc: Smirolodo, Elizabeth; Smith, Brooke; Foggie, Kirk; Emche, Danielle; Stahl, Eric

Subject: FW: Mailbox size

To whom this may concern,

Regarding the Japan team, the new travelers will need to have their Outlook mailbox sizes increased as soon as possible.

New team members include:

Danielle Emche

Eric Stahl

Dan Dorman

Mike Scott

Jack Giessner

Rob Taylor

Todd Jackson

Alan Blamey

Marie Miller

Syed Ali

Abdul Sheikh

Ralph Way

Please let me know how this can be accomplished.

Best regards,

Elizabeth Smirolodo

International Liaison Team
301-415-3821

-----Original Message-----

From: Smith, Brooke

Sent: Friday, March 25, 2011 2:02 AM

To: LIA02 Hoc; LIA03 Hoc

Subject: Mailbox size

The original NRC team in Japan had their outlook mailbox size increased. As we have new members join the team they will also need increases. Dan Dorman is approaching his limit. Please work with CSC to have this done for all team members.

Sent from an NRC Blackberry.

Brooke G. Smith

(b)(6)

From: LIA02 Hoc
Sent: Friday, March 25, 2011 8:39 AM
To: LIA03 Hoc
Subject: FW: eCC - [INFO ONLY, NO ACTION] - Itinerary #627380/Stahl REQUEST GRANTED, ARRIVAL: 3/28/2011
Attachments: image001.png

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Friday, March 25, 2011 8:39 AM
To: Stahl, Eric
Cc: LIA01 Hoc; LIA02 Hoc
Subject: FW: eCC - [INFO ONLY, NO ACTION] - Itinerary #627380/Stahl REQUEST GRANTED, ARRIVAL: 3/28/2011

FYI (travel information below- bottom). Also, see e-mail below regarding hotel logistics.

From: Johnson, Natalya
Sent: Tuesday, March 22, 2011 7:44 PM
To: RMTPACTSU_ELNRC
Cc: RMTPACTSU_AC
Subject: Hotel (b)(6)

Greetings,

DART team is staying at (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the other hotels (e.g. Intercon) and then catch a taxi to (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

Bus ticket costs about 3,000 yen (exchange rate is about 79/80 to 1 USD); people at the bus desk office will provide your travellers with the best options on how to get to the hotel.

Upon arrival at the hotel please advise your travellers to mention that rooms have been reserved by the US Embassy. They will be required to present their credit cards for any incidental charges.

Please have them contact me with any questions at (b)(6). I am in room (b)(6), if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

*Admin Coordinator
Pacific Tsunami and Japan Earthquake DART*

IIII/99

Office: (81) (3) 3224 5016

EP (b)(6)

From: RMTPACTSU_AC

Sent: Friday, March 25, 2011 8:29 AM

To: RMTPACTSU_ELNRC

Subject: FW: eCC - [INFO ONLY, NO ACTION] - Itinerary #627380/Stahl REQUEST GRANTED, ARRIVAL: 3/28/2011

Please forward this to traveler. Thanks.

From: ecc@state.gov [mailto:ecc@state.gov]

Sent: Thursday, March 24, 2011 9:35 PM

To: RMTPACTSU_AC

Subject: eCC - [INFO ONLY, NO ACTION] - Itinerary #627380/Stahl REQUEST GRANTED, ARRIVAL: 3/28/2011

Request Summary

Itinerary #:627380

Date Requested:3/24/2011

Request Summary

Travel Itinerary				
Destination Country	Destination Cities	Start Date	End Date	Status
JAPAN	Tokyo	3/28/2011	4/11/2011	APPROVED

Travelers

Name: Eric J Stahl

Contact Info: (b)(6) eric.stahl@nrc.gov

Country of Birth: USA

Emergency Contact: (b)(6)

(b)(6)

Clearance: (b)(6)

Clearance Verification: (b)(6)

Additional Info:

Other Group Members:

None

Agency: Nuclear Regulatory Commission

Employment Type: (b)(6)

Passport Type: Official

Passport #: (b)(6)

Passport Country: (b)(6)

Carrier Information

Carrier and #	Mode	Departure Point	Departure Date/Time	Arrival Point	Arrival Date/Time
United Airline 0897	AIR	Washington Dulles, DC	3/28/2011 1:22:00 PM	Tokyo, Japan	3/29/2011 4:35:00 PM

Request Details

JAPAN

Clearance From	Agency/Section/Other	Arrival Date	Departure Date	Status
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JAPAN/TOKYO	USAID	3/28/2011	4/11/2011	APPROVED
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Other Posts & Sections to be Informed		Access to Building Required? Yes
Post	Section	POC at post John Beed, Natalya Johnson
Destination Cities	Tokyo	Access to PCC Required? No
VIP Visit?	No	Fiscal Data: <i>None</i>
Purpose of Visit	Serve as NRC Specialist for the Disaster Assistance Response Team from USAID's Office of Foreign Disaster Assistance	Other Comments/Remarks: <i>None</i>
		Hotel Reservations? Yes; USAID/DART to make hotel arrangement
		Airport Assistance/Transportation? No
		Accompanying Pouch? No
		Appointment Request? No
		Other Needed Assistance? No

Hotel Accommodations					
Hotel Name	Street Address	City	Rate	Local Telephone #	Confirmation #
(b)(6)					

Control Officer: John A. Beed
Post: TOKYO
Email: BeedJA@state.gov
Phone: 81-3-3224-5015

Airport Assistance
/ Transportation:
Appointment
Request:
Expediter:
Other Provided
Assistance:
Comments:

List of recipients:

[ACTION]-REQUEST APPROVER:

yamakirx@state.gov
beedja@state.gov

[INFO]-COUNTRY DESK:

williamsge@state.gov
kellyk@state.gov

[INFO]-GROUP CC:

katagirinx@state.gov
horowitzpd@state.gov
miyajimacx@state.gov
bergermc@state.gov

vizcarrajk@state.gov
[INFO]-REQUESTOR CC:
travel@ofda.gov
rmtpactsu_crc@ofda.gov
njohnson@ofda.gov
rmtpactsu_ac@ofda.gov
jbeed@usaid.gov

From: LIA02 Hoc
Sent: Friday, March 25, 2011 4:14 PM
To: LIA03 Hoc
Subject: FW: Travel Reservation March 29 for ELMO ELBERT COLLINS JR
Attachments: image001.png

From: RMTPACTSU_ELNRC [mailto:RMTPACTSU_ELNRC@ofda.gov]
Sent: Friday, March 25, 2011 4:12 PM
To: Collins, Elmo; Owen, Lucy
Cc: LIA01 Hoc; LIA02 Hoc; LIA11 Hoc
Subject: FW: Travel Reservation March 29 for ELMO ELBERT COLLINS JR

See below.

Joe Anderson
NRC Liaison to USAID
(202) 712-4383/4384

From: rmtpactsu_ac@ofda.gov [mailto:rmtpactsu_ac@ofda.gov]
Sent: Friday, March 25, 2011 4:04 PM
To: RMTPACTSU_ELNRC; RMTPACTSU_CRC; Johnson, Natalya
Subject: Travel Reservation March 29 for ELMO ELBERT COLLINS JR

ELMO ELBERT COLLINS JR has asked us to deliver their itinerary information to you. You can [click here to view their travel information](#) using Sabre[®] Virtually There[®]

Subject: FW: Directions for Deployment Team to get to Hotel

From: Johnson, Natalya
Sent: Tuesday, March 22, 2011 7:44 PM
To: RMTPACTSU_ELNRC
Cc: RMTPACTSU_AC
Subject: Hotel (b)(6)

Greetings,

DART team is staying at Hotel (b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please refer your travellers to go directly to the desk with the sign "limousine hotel bus" in the arrival hall. There are regular buses that run directly to (b)(6) every hour or so. Depending on the arrival time the traveller may have to take a bus to one of the other hotels (e.g. Intercon) and then catch a taxi to Hotel (b)(6). All these expenses are reimbursable, so please advise your travellers to save receipts and submit them later with the travel voucher.

Bus ticket costs about 3,000 yen (exchange rate is about 79/80 to 1 USD); people at the bus desk office will provide your travellers with the best options on how to get to the hotel.

Upon arrival at the hotel please advise your travellers to mention that rooms have been reserved by the US Embassy. They will be required to present their credit cards for any incidental charges.

Please have them contact me with any questions at (b)(6) I am in room (b)(6) if I need to be reached after hours.

Let me know if there are any questions or concerns.

Natalya

Admin Coordinator

Pacific Tsunami and Japan Earthquake DART

Office: (81) (3) 3224 5036

BB:

(b)(6)

From: Dozier, Jerry
Sent: Friday, March 25, 2011 2:02 PM
To: RST13 Hoc; RST01 Hoc; Alter, Peter; Hasselberg, Rick; Thomas, Eric
Cc: Cheok, Michael; Richards, Stuart; Lee, Samson; Harrison, Donnie
Subject: Jerry Dozier will make watchbill for Accident Analyst Position from 4/2-4/8

Jerry Dozier will make a new watchbill for Accident Analyst Position from 4/1-4/8 with the new RES, NRR volunteers and existing Accident Analyst responders. We have filled the accident Analyst responder position through April 1 as provided on the official schedule.

From: RST13 Hoc
Sent: Friday, March 25, 2011 12:48 PM
To: Dozier, Jerry
Subject: FW: Volunteers needed - Ops Center RST Schedule 3/26-4/2 (input needed by noon today)

From: RST01 Hoc
Sent: Friday, March 25, 2011 12:27 PM
To: RST13 Hoc
Subject: FW: Volunteers needed - Ops Center RST Schedule 3/26-4/2 (input needed by noon today)

From: Richards, Stuart
Sent: Friday, March 25, 2011 12:18 PM
To: RST01 Hoc
Cc: Coyne, Kevin; West, Stephanie; Case, Michael; Thomas, Eric; Rini, Brett; Cheok, Michael; Hardin, Leroy; Herrity, Thomas; Iyengar, Raj; Rathbun, Howard; Koshy, Thomas; Murdock, Darrell; Dion, Jeanne; Boyce, Tom (RES); Gavrilas, Mirela; Ramadan, Liliana; Uhle, Jennifer
Subject: FW: Volunteers needed - Ops Center RST Schedule 3/26-4/2 (input needed by noon today)

This e-mail is from the Division of Engineering in RES in response to the RST request for volunteers for the period of March 26 – April 2.

We have filled in some of the yellow open slots in the watchbill below with individual staff who are volunteering for those specific dates and times.

Additionally, below is a list of staff who volunteered, but were not specific about area, date or time:

Leroy Hardin
Thom Herrity
Raj Iyengar
Howard Rathbun
Tom Koshy
Darrell Murdock

Please contact the individuals listed above and the individuals listed on the watchbill (filled in yellow slots) to arrange/confirm support for specific days and times.

Thanks
Stu Richards

(b)(6)

From: OST02 HOC

Sent: Wednesday, March 23, 2011 8:44 AM

To: RST01 Hoc

Subject: RST Schedule 3/26-4/2

Reactor Safety Team			
RST Director			
Sat	26-Mar	7am - 3pm	Pat Hiland
Sat	26-Mar	3pm-11pm	Bill Ruland
Sat-Sun	3/26-3/27	11pm - 7am	Mike Case
Sun	27-Mar	7am - 3pm	Pat Hiland
Sun	27-Mar	3pm-11pm	Fred Brown
Sun-Mon	3/27-3/28	11pm - 7am	Mike Case
Mon	28-Mar	7am - 3pm	Pat Hiland
Mon	28-Mar	3pm-11pm	Fred Brown
Mon-Tue	3/28-3/29	11pm - 7am	Mike Case
Tue	29-Mar	7am - 3pm	Jennifer Uhle
Tue	29-Mar	3pm-11pm	Fred Brown
Tue-Wed	3/29-3/30	11pm - 7am	Mike Case
Wed	30-Mar	7am - 3pm	Jennifer Uhle
Wed	30-Mar	3pm-11pm	Fred Brown
Wed-Thur	3/30-3/31	11pm - 7am	Dave Skeen
Thur	31-Mar	7am - 3pm	Jennifer Uhle
Thur	31-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/31-4/1	11pm - 7am	Dave Skeen
Fri	1-Apr	7am - 3pm	Jennifer Uhle
Fri	1-Apr	3pm-11pm	Bill Ruland
Fri-Sat	4/1-4/2	11pm-7am	Dave Skeen
RST Coordinator			
Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
Sat	26-Mar	7am - 3pm	Eric Thomas
Sat	26-Mar	3pm-11pm	Jeanne Dion
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Peter Alter
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	Frank Collins
Mon	28-Mar	7am - 3pm	Rick Hasselberg
Mon	28-Mar	3pm-11pm	Tom Boyce/Jeanne Dion
Mon-Tue	3/28-3/29	11pm - 7am	Mike Morlang
Tue	29-Mar	7am - 3pm	Peter Alter
Tue	29-Mar	3pm-11pm	Greg Schoenebeck
Tue-Wed	3/29-3/30	11pm - 7am	Mike Morlang

Wed	30-Mar	7am - 3pm	Rick Hasselberg
Wed	30-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/30-3/31	11pm - 7am	Frank Collins
Thur	31-Mar	7am - 3pm	Peter Alter
Thur	31-Mar	3pm-11pm	Greg Schoenebeck
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Rick Hasselberg
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	Frank Collins
Severe Accident/PRA			
Sat	26-Mar	7am - 3pm	Steven Arndt
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Mirela Gavrilas
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	Jeff Circle
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	Hossein Esmaili
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	Jim Gilmer?
Wed	30-Mar	3pm-11pm	Hossein Esmaili
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	Mirela Gavrilas
Thur	31-Mar	3pm-11pm	Hossein Esmaili
Thur-Fri	3/31-4/1	11pm - 7am	Ray Skarda
Fri	1-Apr	7am - 3pm	Mirela Gavrilas
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	Ray Skarda
BWR Expertise			
Sat	26-Mar	7am - 3pm	Mike Brown
Sat	26-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Mike Brown
Sun	27-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	Mike Brown
Mon	28-Mar	3pm-11pm	Chuck Norton
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	Mike Brown

Tue	29-Mar	3pm-11pm	Chuck Norton
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	Mike Brown
Wed	30-Mar	3pm-11pm	Chuck Norton
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	Mike Brown
Thur	31-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Mike Brown
Fri	1-Apr	3pm-11pm	Chuck Norton
Fri-Sat	4/1-4/2	11pm-7am	
RST Comm/ERDS Operator			
Sat	26-Mar	7am - 3pm	Donna Williams
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Mark Padovan
Sun	27-Mar	3pm-11pm	Bill Roggenbrodt
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	Mark Padovan
Mon	28-Mar	3pm-11pm	Bill Roggenbrodt
Mon-Tue	3/28-3/29	11pm - 7am	Andy Kugler
Tue	29-Mar	7am - 3pm	Mark Padovan
Tue	29-Mar	3pm-11pm	Bill Roggenbrodt
Tue-Wed	3/29-3/30	11pm - 7am	Andy Kugler
Wed	30-Mar	7am - 3pm	Mark Padovan
Wed	30-Mar	3pm-11pm	Bill Roggenbrodt
Wed-Thur	3/30-3/31	11pm - 7am	Liliana Ramadan
Thur	31-Mar	7am - 3pm	Andy Kugler
Thur	31-Mar	3pm-11pm	Bill Roggenbrodt
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Mark Padovan
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	Liliana Ramadan
RST Support (Seismology Q&A)			
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	

Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
RST Support (Structural)			
Sat	26-Mar	7am - 3pm	Off (On Call)
Sat	26-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/26-3/27	11pm - 7am	Off (On Call)
Sun	27-Mar	7am - 3pm	Off (On Call)
Sun	27-Mar	3pm-11pm	Off (On Call)
Sun-Mon	3/27-3/28	11pm - 7am	Off (On Call)
Mon	28-Mar	7am - 3pm	Off (On Call)
Mon	28-Mar	3pm-11pm	Off (On Call)
Mon-Tues	3/28-3/29	11pm - 7am	Off (On Call)
Tues	29-Mar	7am - 3pm	Off (On Call)
Tues	29-Mar	3pm-11pm	Off (On Call)
Tues-Wed	3/29-3/30	11pm - 7am	Off (On Call)
Wed	30-Mar	7am - 3pm	Off (On Call)
Wed	30-Mar	3pm-11pm	Off (On Call)
Wed-Thur	3/30-3/31	11pm - 7am	Off (On Call)
Thur	31-Mar	7am - 3pm	Off (On Call)
Thur	31-Mar	3pm-11pm	Off (On Call)
Thur-Fri	3/31-4/1	11pm - 7am	Off (On Call)
Fri	1-Apr	7am - 3pm	Off (On Call)
Fri	1-Apr	3pm-11pm	Off (On Call)
Fri-Sat	4/1-4/2	11pm-7am	Off (On Call)

From: RST01 Hoc
Sent: Friday, March 25, 2011 12:29 PM
To: RST13 Hoc
Subject: FW: Volunteers needed - Ops Center RST Schedule 3/26-4/2 (input needed by noon today)

Importance: High

From: Rathbun, Howard
Sent: Friday, March 25, 2011 10:34 AM
To: RST01 Hoc
Cc: Thomas, Eric
Subject: FW: Volunteers needed - Ops Center RST Schedule 3/26-4/2 (input needed by noon today)
Importance: High

Hello,

If possible, I'd like to volunteer for the Reactor Safety Team. I'm a Mechanical Engineer in RES, with experience in valves, reactor vessel integrity, piping integrity, and reactor systems (primarily PWR, but some BWR knowledge).

I can be reached on my NRC Blackberry at (b)(6)

Regards,
Howard J. Rathbun, Ph.D., P.E.

From: Richards, Stuart
Sent: Friday, March 25, 2011 9:39 AM
To: RES_DE
Cc: Coe, Doug; Coyne, Kevin; Gibson, Kathy; Case, Michael; West, Stephanie
Subject: Volunteers needed - Ops Center RST Schedule 3/26-4/2 (input needed by noon today)

The Ops Center is seeking volunteers for the Reactor Safety Team.

The watchbill is in this e-mail below, with the slots needing to be filled indicated.

If you want to volunteer, please check with your BC and let Stephanie West know by noon today.

Thanks
Stu

From: RST01 Hoc
Sent: Wednesday, March 23, 2011 12:05 PM
To: Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Arndt, Steven; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Shea, James; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken;

Bloom, Steven; Jervy, Richard
Subject: FW: RST Schedule 3/26-4/2

All,

Please look at current watchbills from the OST. Ed Fuller has signed up for swing shifts for Accident Analyst on 3/29 and 4/5. Other than that, please reply to RST01 so we can start filling in the holes on the watchbill.

Thanks for all of your support.

Eric Thomas
RST Coordinator

From: OST02 HOC
Sent: Wednesday, March 23, 2011 8:44 AM
To: RST01 Hoc
Subject: RST Schedule 3/26-4/2

Reactor Safety Team				
RST Director				
	Sat	26-Mar	7am - 3pm	Pat Hiland
	Sat	26-Mar	3pm-11pm	Bill Ruland
	Sat-Sun	3/26-3/27	11pm - 7am	Mike Case
	Sun	27-Mar	7am - 3pm	Pat Hiland
	Sun	27-Mar	3pm-11pm	Fred Brown
	Sun-Mon	3/27-3/28	11pm - 7am	Mike Case
	Mon	28-Mar	7am - 3pm	Pat Hiland
	Mon	28-Mar	3pm-11pm	Fred Brown
	Mon-Tue	3/28-3/29	11pm - 7am	Mike Case
	Tue	29-Mar	7am - 3pm	Jennifer Uhle
	Tue	29-Mar	3pm-11pm	Fred Brown
	Tue-Wed	3/29-3/30	11pm - 7am	Mike Case
	Wed	30-Mar	7am - 3pm	Jennifer Uhle
	Wed	30-Mar	3pm-11pm	Fred Brown
	Wed-Thur	3/30-3/31	11pm - 7am	Dave Skeen
	Thur	31-Mar	7am - 3pm	Jennifer Uhle
	Thur	31-Mar	3pm-11pm	Bill Ruland
	Thur-Fri	3/31-4/1	11pm - 7am	Dave Skeen
	Fri	1-Apr	7am - 3pm	Jennifer Uhle
	Fri	1-Apr	3pm-11pm	Bill Ruland
	Fri-Sat	4/1-4/2	11pm-7am	Dave Skeen
RST Coordinator				
	Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
	Sat	26-Mar	7am - 3pm	Eric Thomas
	Sat	26-Mar	3pm-11pm	

Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Peter Alter
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	Frank Collins
Mon	28-Mar	7am - 3pm	Rick Hasselberg
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	Mike Morlang
Tue	29-Mar	7am - 3pm	Peter Alter
Tue	29-Mar	3pm-11pm	Greg Schoenebeck
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Wed	30-Mar	7am - 3pm	Jim Gilmer?
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BWR Expertise			

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RST Comm/ERDS Operator			
Sat	26-Mar	7am - 3pm	Donna Williams
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Sat	26-Mar	7am - 3pm	
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Fri-Sat	4/1-4/2	11pm-7am	
RST Support (Structural)			
Sat	26-Mar	7am - 3pm	Off (On Call)
Sat	26-Mar	3pm-11pm	Off (On Call)
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Tues-Wed	3/29-3/30	11pm - 7am	Off (On Call)
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Fri	1-Apr	7am - 3pm	Off (On Call)

Fri	1-Apr	3pm-11pm	Off (On Call)
Fri-Sat	4/1-4/2	11pm-7am	Off (On Call)

From: McGovern, Denise
Sent: Friday, March 25, 2011 6:46 AM
To: Roggenbrodt, William
Cc: RST01 Hoc
Subject: RE: ACTION: RST Schedule 3/26-4/2

Follow Up Flag: Follow up
Flag Status: Flagged

Bill,

Thank you for trying to look out for me. However, I am home and on duty for Saturday night. If you are still around there can you let them know? I am not sure of the best way to contact them.

RST,
I am planning on being on shift Saturday night.

Thanks,
Denise

(b)(6) (cell)

Denise L. McGovern

Project Manager
Office of New Reactors
U.S. Nuclear Regulatory Commission
301.415.0681

From: Roggenbrodt, William
Sent: Friday, March 25, 2011 12:56 AM
To: McGovern, Denise
Subject: ACTION: RST Schedule 3/26-4/2
Importance: High

Denise,

Per the latest (3/25/2011 12:19AM) watchbill, they had you serving on midshift Sat-Sun 3/26-3/27 from 11p-7a. I informed the EST Coordinator, Steve Campbell, that based upon our conversations, this entry was in error and I showed them the e-mail below as proof.

I believe I erred on the side of caution by asking them to remove you from the watchbill this weekend as I thought you had plans.

If I am in error and you intended to serve this weekend, please let the RST Coordinator and the EST Coordinator know. My apologies for any overstepping of bounds on my end if that's the case.

Have a great day,

Bill

From: Shea, James
Sent: Wednesday, March 23, 2011 4:25 PM
To: Arndt, Steven; RST01 Hoc; Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric;

III/103

Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard

Subject: RE: RST Schedule 3/26-4/2

You could put me in for BWR analyst on Midnights starting on Monday March 28th 00.00am thru that week.

Jim

From: Arndt, Steven

Sent: Wednesday, March 23, 2011 12:15 PM

To: RST01 Hoc; Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Shea, James; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard

Subject: RE: RST Schedule 3/26-4/2

I can do the Accident Analysis Mid's starting Mon-Tue 3/28-3/29 for three or four days.

Steven Arndt

From: RST01 Hoc

Sent: Wednesday, March 23, 2011 12:05 PM

To: Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Arndt, Steven; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Shea, James; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard

Subject: FW: RST Schedule 3/26-4/2

All,

Please look at current watchbills from the OST. Ed Fuller has signed up for swing shifts for Accident Analyst on 3/29 and 4/5. Other than that, please reply to RST01 so we can start filling in the holes on the watchbill.

Thanks for all of your support.

Eric Thomas
RST Coordinator

From: OST02 HOC

Sent: Wednesday, March 23, 2011 8:44 AM

To: RST01 Hoc

Subject: RST Schedule 3/26-4/2

Reactor Safety Team			
RST Director			
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From: LIA06 Hoc
To: Correia, Richard
Subject: RE: email connection
Date: Friday, March 25, 2011 12:22:58 PM

Rich...Rani is wondering what this is all about...

Mike
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

-----Original Message-----

From: Correia, Richard
Sent: Friday, March 25, 2011 10:48 AM
To: LIA08 Hoc; LIA06 Hoc
Subject: Fw: email connection

Rich Correia, Director
Division of Security Policy
NSIR

----- Original Message -----

From: Zimmerman, Roy
To: Evans, Michele; Leeds, Eric
Cc: Virgilio, Martin; Weber, Michael; Carpenter, Cynthia; Glitter, Joseph; Correia, Richard; Ruland, William
Sent: Thu Mar 24 22:40:30 2011
Subject: FW: email connection

-----Original Message-----

From: Piccuta, Daniel W SES PACOM J005 [mailto: (b)(6)]
Sent: Thursday, March 24, 2011 9:21 PM
To: Zimmerman, Roy
Cc: Piccuta, Daniel W SES PACOM J005
Subject: email connection

Roy,
Good talking with you.
Thanks for taking the call and considering the request.
Hope to hear positive response at your earliest convenience.

Dan Piccuta
Foreign Policy Advisor (FPA-POLAD) and
Launch Director of the Pacific Outreach
Directorate (J9),
U.S. Pacific Command

Unclassified: (b)(6)
Classified: (b)(6)
Office Tel: (b)(6)
Cell (b)(6)

IIII/104

From: ET02 Hoc
Sent: Saturday, March 26, 2011 8:08 PM
To: Brusoe, Eric
Cc: Curtis, David; Rich, Thomas; Turner, Joseph; Paradiso, Karen; Padilla, William; Ashby, Nadine; Bell, Marvin; LIA07 Hoc; LIA02 Hoc; LIA03 Hoc
Subject: FW: UPDATE: RE: Requested by Allen Sullivan

Eric,
Thank you for going above and beyond to deliver these devices on extremely short notice.
Cris Brown

From: Brusoe, Eric
To: Bell, Marvin
Cc: Curtis, David; Rich, Thomas; Turner, Joseph; Paradiso, Karen; Padilla, William; Ashby, Nadine; Brown, Cris
Sent: Sat Mar 26 19:56:29 2011
Subject: Re: UPDATE: RE: Requested by Allen Sullivan

Second bb is good to go. Team ICOD made it happen!

Eric Brusoe
Sent from my NRC Blackberry
(b)(6)

From: Brusoe, Eric
To: Bell, Marvin
Cc: Curtis, David; Rich, Thomas; Turner, Joseph; Paradiso, Karen; Padilla, William; Ashby, Nadine; Brown, Cris
Sent: Sat Mar 26 19:44:24 2011
Subject: Re: UPDATE: RE: Requested by Allen Sullivan

The Chairmen is good to go. Waiting on the second bb with Sara.

Eric Brusoe
Sent from my NRC Blackberry
(b)(6)

From: Bell, Marvin
To: Brusoe, Eric
Cc: Curtis, David; Rich, Thomas; Turner, Joseph; Paradiso, Karen; Padilla, William; Ashby, Nadine
Sent: Sat Mar 26 19:10:01 2011
Subject: RE: UPDATE: RE: Requested by Allen Sullivan

Just got off the telephone with Tom and Joe. Can the BB be provision while the Chairman is travelling. i.e. at the airport?

From: Brusoe, Eric
Sent: Saturday, March 26, 2011 7:01 PM

To: Bell, Marvin
Cc: Curtis, David; Rich, Thomas; Turner, Joseph; Paradiso, Karen
Subject: Fw: UPDATE: RE: Requested by Allen Sullivan

FYI- this did not go to the right people.

Eric Brusoe
Sent from my NRC Blackberry
(b)(6)

From: Bissett, Ryan
To: Lim, Ted; L3_JAPAN; Brusoe, Eric; Sullivan, Allen
Cc: Kim, Jay; CSC
Sent: Sat Mar 26 18:58:00 2011
Subject: RE: UPDATE: RE: Requested by Allen Sullivan

Eric is coordinating with the customer to retrieve the BlackBerry devices. He will deliver them to the NOC. Once delivered the NOC will coordinate with Walter to provision the devices and return them to Eric. The Chairman's limo leaves HQ at 7:10.

From: Lim, Ted
Sent: Saturday, March 26, 2011 6:37 PM
To: L3_JAPAN
Cc: Kim, Jay; Bissett, Ryan; CSC
Subject: RE: UPDATE: RE: Requested by Allen Sullivan

Their current numbers are NOT to be ported over.

From: Lim, Ted
Sent: Saturday, March 26, 2011 6:36 PM
To: L3_JAPAN
Cc: Kim, Jay; Bissett, Ryan; CSC
Subject: UPDATE: RE: Requested by Allen Sullivan

Just spoke with Allen Sullivan. He is asking us to deliver the 2 International Blackberry's by 7pm tonight 3/26/11 at the Chairman's office.
The Chairman and Angela Coggins are due to fly out tonight at 10pm to Japan.

From: Lim, Ted
Sent: Saturday, March 26, 2011 6:22 PM
To: L3_JAPAN
Cc: Kim, Jay; Bissett, Ryan; CSC
Subject: Requested by Allen Sullivan
Importance: High

CSC just informed us that a request by Allen Sullivan was placed for the Chairman Gregory Jaczko and another NRC employee (Allen will give us the name and exact time asap) for 2 International Blackberry's by tomorrow (3/27/11).

Please advise so we can proceed accordingly.

Thank you,
Ted Lim

From: Hasselberg, Rick
Sent: Monday, March 28, 2011 9:26 AM
To: 'Golub, Sal'; RST01 Hoc; RST01A Hoc; RST06 Hoc; RST03 Hoc; RST02 Hoc; RST15 Hoc; RST14 Hoc; RST01B Hoc
Subject: RE: INPO / Industry Consortium calls

Sal,

I'm not on watch at the moment. I'm passing your request to the HQ Reactor Safety Team.

RST, please make sure Sal get the necessary info to participate on this call. Thanks!

Rick

From: Golub, Sal [mailto:sal.golub@nuclear.energy.gov]
Sent: Monday, March 28, 2011 9:21 AM
To: Hasselberg, Rick
Cc: Stark, Richard; Versluis, Rob
Subject: INPO / Industry Consortium calls
Importance: High

Rick

I need to participate in the INPO "policy level" calls that were at 10am daily last week and the RST / Industry calls that were previously at 11:00 am. Can you make sure that I am added to the distribution list(s)?

Sal

Sal Golub, PMP
Associate Deputy Assistant Secretary
for Nuclear Reactor Technologies (NE-7)
U.S. Dept of Energy
(tel.) 301.903.1636
(mob.) (b)(6)
sal.golub@hq.doe.gov

From: OIP_Notifications Resource
Sent: Monday, March 28, 2011 12:13 PM
To: LIA02 Hoc; LIA03 Hoc
Subject: FW: GE Hitachi (GEH) Contact information for Japan Earthquake Nuclear Response Effort

Hey guys,
This was sent to the OIP_Notifications mailbox. It might be useful to you at the Op. Center?

Thanks!
-Jenny

-----Original Message-----

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Monday, March 28, 2011 10:12 AM
To: Baker, Stephen; HOO Hoc; Horn, Brian; Owens, Janice; OIP_Notifications Resource
Subject: FW: GE Hitachi (GEH) Contact information for Japan Earthquake Nuclear Response Effort

From: Nichols, Paul A (GE Power & Water)[SMTP:PAUL.NICHOLS@GE.COM]
Sent: Monday, March 28, 2011 10:12:25 AM
To: HOO Hoc
Cc: GE Hitachi Nuclear Response Team (GE Power & Water)
Subject: GE Hitachi (GEH) Contact information for Japan Earthquake Nuclear Response Effort
Auto forwarded by a Rule

Per your request this morning,

GEH Incident Command Center at GEH Headquarters in Wilmington, NC
currently manned 24/7

Main Command Room
E-Mail: ge.hitachinuclearresponseteam@ge.com (can be either upper or lower case letters)
Phone: 910-819-1002
Conference Phone: 910-819-1129
Fax: 910-341-2522

GEH Engineering Support
Phone: 910-819-1007
Conference Phone: 910-819-1125

Paul A. Nichols
Manager - Systems Engineering
GE Hitachi Nuclear Energy

T: +1 910 819 5604

F: +1 910 362 5604

M: (b)(6)

D: *819-5604

paul.nichols@ge.com

www.ge-energy.com/nuclear

3901 Castle Hayne Road
PO Box 780 M/C L30
Wilmington, NC 28402 USA

From: Wittick, Brian
Sent: Monday, March 28, 2011 7:41 AM
To: LIA02 Hoc; LIA03 Hoc
Subject: FW: Request Dr. Ivan Catton of UCLA be added to the list of registered users for IAEA's data base at <http://www.iaea.org/programmes/a2/>
Attachments: PPC-INF.doc

FYI – an easy check mark on that one.

Brian Wittick
Executive Technical Assistant for Reactors
Office of the Executive Director for Operations
U.S. Nuclear Regulatory Commission
301-415-2496 (w); (b)(6)

From: Williams, Shawn
Sent: Monday, March 28, 2011 7:00 AM
To: 'catton@ucla.edu'
Cc: Snodderly, Michael; 'shafferMR@state.gov'; Wittick, Brian; Schwartzman, Jennifer
Subject: FW: Request Dr. Ivan Catton of UCLA be added to the list of registered users for IAEA's data base at <http://www.iaea.org/programmes/a2/>

Dear Dr. Catton,
Please fill out the attached form, scan, and e-mail it to shafferMR@state.gov and shawn.williams@nrc.gov. Shortly after, you will be e-mailed a user name and password to access PRIS.

Kind Regards,
Shawn Williams

From: Shaffer, Mark R [<mailto:ShafferMr@state.gov>]
Sent: Monday, March 28, 2011 1:46 AM
To: Williams, Shawn
Cc: Schwartzman, Jennifer
Subject: RE: Request Dr. Ivan Catton of UCLA be added to the list of registered users for IAEA's data base at <http://www.iaea.org/programmes/a2/>

Shawn:

Dr. Catton will need to complete a License Agreement Contract and Registration Form (documents attached) for access to PRIS. After receipt of the documents, the U.S. Mission to International Organizations in Vienna can forward the documents on to IAEA for approval, and assignment of a user specific name and password for access to the system.

-Mark

This email is UNCLASSIFIED.

From: Williams, Shawn [mailto:Shawn.Williams@nrc.gov]
Sent: Monday, March 28, 2011 3:16 AM
To: Shaffer, Mark R
Cc: Schwartzman, Jennifer; Wittick, Brian; Snodderly, Michael; Andersen, James; catton@ucla.edu
Subject: Request Dr. Ivan Catton of UCLA be added to the list of registered users for IAEA's data base at <http://www.iaea.org/programmes/a2/>

Hi Mark,

Commissioner Apostolakis request that Dr. Ivan Catton of UCLA be added to the list of registered users for IAEA's data base at <http://www.iaea.org/programmes/a2/>. (see below for background)

Can you help?

Thanks,
Shawn

From: Snodderly, Michael
Sent: Sunday, March 27, 2011 8:50 AM
To: Wittick, Brian; Williams, Shawn
Cc: Andersen, James; 'catton@ucla.edu'; Apostolakis, George
Subject: Re: Help

I heard back from the ops center. Commissioner Apostolakis would like to request that Dr. Ivan Catton of UCLA be added to the list of registered users.

Thanks,

Mike

Sent from my NRC Blackberry

at (b)(6)

From: Wittick, Brian
To: Williams, Shawn
Cc: Andersen, James; Snodderly, Michael
Sent: Sun Mar 27 08:44:27 2011
Subject: Fw: Help

Shawn

Please see below request for support to get IAEA database access.

Thanks

Sent from NRC BlackBerry
Brian Wittick

(b)(6)

From: Snodderly, Michael
To: Wittick, Brian
Sent: Sat Mar 26 19:27:14 2011
Subject: FW: Help

Brian can you or some one at the EDO's office help the Commissioner with accessing the IAEA database mentioned below?

From: Apostolakis, George
Sent: Saturday, March 26, 2011 11:56 AM
To: Baggett, Steven; Davis, Roger; Snodderly, Michael; Sosa, Belkys
Subject: FW: Help

Can we be of any help here? Catton is a former ACRS member.

Commissioner George Apostolakis
US Nuclear Regulatory Commission
One White Flint North, MS O16 G4
11555 Rockville Pike
Rockville, MD 20852

(301) 415-1810

From: Ivan Catton [mailto:catton@ucla.edu]
Sent: Saturday, March 26, 2011 1:24 AM
To: George Apostolakis
Subject: Help

We (Bob Taylor and I) would like to explore the failure modes of emergency power systems in fission reactors and provide a dynamic strategy for limited power sharing based on our observations of the Fukushima event. To do this we need access to IAEA data base at <http://www.iaea.org/programmes/a2/> and to get it we need your help.

The major problems with an orderly cool down of the Fukushima plants are related to flood damage of the emergency power system. It is assumed that a certain level of redundancy was installed but it is clear that these installations shared a common vulnerability. We need detailed installed capability from the IAEA PRIS data base and from the Japanese for analysis.

In addition, it is not yet clear what the exact emergency power system hierarchy was when the batteries were engaged. Clearly the most important is to keep the system information flowing. The cooling of the core could be delayed for many hours but it is important to have battery power for instrumentation for days to know what is going on until mobile power can be obtained.

We would like to compare installed emergency capacities for some US reactors to those found at Fukushima. This includes software capabilities and manual overrides. Most of the needed information is probably available within the IAEA's PRIS data base.

We would use the available information to develop emergency procedures that are related to the selective failure of the emergency power system. The center of these

procedures need to be based on the availability of real time data from the instrumentation. The emergency power system needs to be configured dynamically based on the best survival strategy in addition to the job of cooling the core and adding new emergency power capability with 24 hours.

Road and helicopter access needs to be identified for each reactor in question.

Some of the questions specific to Fukushima we are trying to answer are:

- 1) Where were the emergency diesels located and what was implemented and how the tsunami hit the system?
- 2) What did the operators do after the diesels stopped to optimize saving battery power?
- 3) How many independent battery systems do they have installed and what condition were they in?
- 4) How soon after the tsunami was the area ready for a helicopter to land with equipment and fuel?
- 5) Did Tokyo Electric have access to large helicopters?
- 6) How long was communication between the plant and Tokyo interrupted?
- 7) What was the rank of personnel at the plant at the time of the tsunami?
- 8) Was the recent event where contract employees were contaminated typical of TEPCO or the result of too many days of stress?
- 9) Is the essence of Reg Guide 1.97 in its latest manifestation met by the Japanese (or the US for that matter) and is it adequate in light of the event (I don't think so)?

We are a couple of old retired (or near retired in my case) guys who have nothing better to do and are very concerned that the US will bite itself in the foot by totally abandoning nuclear power.

Ivan

Ivan Catton
Professor of Engineering
Department of Mechanical and Aerospace Engineering
University of California, Los Angeles
48-121 Engineering IV
Los Angeles, CA 90095-1597

Work: Tel: 310 825 5320
Fax: 310 206 4830

Home: Tel: (b)(6)
Fax: 310 475 5965

catton@ucla.edu



**International Atomic Energy Agency
IAEA Power Reactor Information System**

License Agreement to direct access use of PRIS

The undersigned (hereinafter referred to as "Subscriber") hereby applies for a subscription to direct access use of the Power Reactor Information System (PRIS) data base made available on computer by the International Atomic Energy Agency (hereinafter referred to as the "Agency") subject to the terms and conditions stated below.

1. Nature of Subscription

1.1 The subscription shall apply to access to the PRIS data base maintained by the Agency and made available for external access.

1.2 Access shall be accomplished through the use of passwords issued by the Agency to accepted Subscribers.

1.3 The Subscriber may, with the same or different userids and passwords, have more than one access line to the data base for the benefit of other Users. In doing so, however, the Subscriber shall not be relieved of its responsibilities undertaken in this document.

1.4 Those parties who actually access the data base using the issued passwords, whether they be Subscribers or parties assigned passwords by Subscribers, shall be referred to as "Users".

2. Conditions of Access

2.1 The User shall, at its own expense, make the necessary arrangements for the establishment and maintenance of its access origination point (terminal) or points and of the telecommunications connection to the point of access availability at the Agency.

3. Access Services and Fees

3.1 The access through established networks or public telephone system will be free of charge until further notice.

3.2 Off-line printing of on-line searches is optionally available with no charges to be paid until further notice.

4. Duration of Subscription

This subscription shall be for a period commencing on the date of the issuance of the password.

5. Changes

The Agency may amend, alter, or otherwise modify the data base being made available for access.

6. Responsibilities

6.1 The subscriber shall hold the Agency harmless from any damage direct or indirect of any kind that could be suffered by the Subscriber, if its equipment, or its agents or for any claim arising from misuse of the passwords issued to the Subscriber.

6.2 The Subscriber shall hold the Agency free from and against all claims, proceedings, damages, costs and expenses arising from the infringement of copyrights or patent rights of third parties with respect of the services or materials provided under this contract.

6.3 The Subscriber shall ensure that unauthorized persons shall not employ the Subscriber's passwords nor otherwise enjoy access to the data base and optional services. Failure to fulfil this responsibility shall entitle the Agency to terminate the subscription without notice.

Place

Date

Subscriber's Signature

Subscriber's Printed Name

Note: Please also complete the Subscriber Registration Form on the next page and provide as many completed User Registration Forms as applicable.

From: LIA02 Hoc
Sent: Tuesday, March 29, 2011 3:23 PM
To: OIP Distribution; Liaison Japan
Cc: LIA03 Hoc; LIA02 Hoc; 'ShafferMR@state.gov'; Bloom, Steven; Rosales-Cooper, Cindy; LIA08 Hoc; LIA06 Hoc; LIA07 Hoc
Subject: OOU- TRANSITION REPORT FOR MARCH 29, 0700 - 1500

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TRANSITION REPORT FOR MARCH 29, 0700 - 1500

Jill and Karen to Nancy and Gerri

UPDATES DURING SHIFT

- **IAEA All Member States Meeting:** Received request from the ET director, Mike Webber to coordinate with Mark Shaffer in Vienna to determine the topic and/or agenda for this meeting, which was called by the DG. The ET would like to know what will be communicated by the DG to member states and what might be asked of member states at this meeting. Email communicating this request was sent to Jen Schwartzman with cc to Mark Shaffer by 0700-1500 shift on 3/29. Communicate any information received to the LT director to be communicated to the ET director on duty. Action follow up pending response by Jen or Mark.
- **Re-Entry guidance:** Forwarded final re-entry guidance to NRC team in Japan and requested they forward to the Ambassador per our instructions from NSC. Action is closed.
- **3rd Team of NRC Travelers:** Per Michele Evans a third team of NRC travelers is being considered however, no names or dates have been decided as yet. Action: Pending notification from Michele Evans. Remember to inform Jason Kozal (NRC embedded at USAID) once a decision has been reached.
- **DHS Request:** Received request from DHS/Stern (to Cyndi Jones) on 3/28 at 1912. Stern wants to know "does NRC have access to IAEA Measured Data on ENAC (not the Japanese data)". PMT was unable to provide a response as to whether or not they use the IAEA data and ENAC search showed only Japanese data. Responded back to Cyndi Jones at 2141 with that information and inquired if anyone else would have access to IAEA information within the PMT. At 2:11am, Mark Shaffer asked that Jennifer Schwartzman brief LIA02 (and Cyndi Jones) regarding the ongoing discussion between Warren Stern and Ambassador Davies on the topic noted in the recent transition log. Action follow-up pending Cyndi's response.
- **IAEA Coordination.** 3/28 at 1850, DEDO/Virgilio requested information on IAEA's role as the clearinghouse for assistance. He indicated that Margie said IAEA accepted the role. He would like to know the next steps for implementation and how it will be accomplished. Sent Margie and Mark Schaffer an email requesting information. Jen Schwartzman responded that DOD has the lead for US-Interagency logistics (Margie is aware of this) and that IAEA has not agreed to be a clearinghouse, however, they have agreed to play a significant role (Jen's email response with more information is in the Inbox from 3/28 at 1937. Follow up with Margie on 3/29 and advise the ET and DEDO/Virgilio of the next steps.
- **Request from RST and PMT** to keep them updated on who is currently in Japan on NRC team. 3/28, 1300: Updated list provided, minus PII, to RST and PMT.
- **Sent** a request to returned travelers/travelers about to return to confirm their status, and to provide them with updated returned traveler checklist at 1300. Received responses from R.DeVercelly. Action: Update list as travelers respond. Update: Received response from D.Emche that Chuck Casto will return 4/12 and John Monniger 4/5 at 2107.

IIII/109

- **Return Checklist.** Michele Evans had one suggested amendment. The change was made and the document was sent to Michele Evans for concurrence and for distribution to the travelers coming back. Email document to travelers coming back to U.S as requested by Michele Evans (on LIA02 Desktop). Update 3/28 1300: After confirming changes with Michele Evans, sent checklist to travelers already returned and those returning this week.
- **NRC Health Unit request:** Dr. Cadoux (and Jeanne Dempsey) has contacted LIA02/LIA03 via Jen Schwartzman to discuss the situation with KI. 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 still exists a possibility that KI could be required at some point. Jen has responded to Jeanne that 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.

FUTURE ACTIONS/OPEN ITEMS

- **Coordination of IAEA and U.S. Efforts.** It appears that DoD (Navy) is taking a logistical leadership role in coordinating efforts for the U.S. government. This information will need to be coordinated with both the IAEA international coordinating team as well as the INPO representative. NRC is interested in knowing what other countries are providing in support to Japan. Email was sent to NRC IAEA Attache' and NRC IAEA desk officer to pursue a path forward. **Action:** Attache' and desk officer will report if they need anything further from the LT; ET may inquire about path forward.
- **Emche Blackberry Voicemail Problems.** Forwarded directions from TSC to Danielle on how to access her voicemail. She tried them but it still did not work properly. She will call the CSC Monday morning. Her BB number is confirmed. Emailed Eric to confirm his BB number. **Action:** A heads up regarding the continuing voice mail problems was sent to CSC. Danielle will call CSC Monday. The Monday teams should stay tuned in case Danielle needs further assistance. Update 3/29, 4:08 AM: We still have IT issues, (for D. Emche, no voice mail, although she's ready to give up and stop reporting this). Update 3/29: Based upon emails between Danielle and CSC they are working to find a time for a call with AT&T to troubleshoot the issues since the instructions provided are still not working. Problem not solved.
- **Laptop IT/Citrix issues:** Update 3/29, 4:08 AM: We still have IT issues, (for D. Emche, no voice mail, although she's ready to give up and stop reporting this). A bigger issue is with citrix for a few laptops here. Robert Heard and Karen Jackson have been contacted. Update 3/29 10AM: Met with OIS to discuss the laptop issues. They stated that several of the laptops that went out from headquarters were configured generically so that anyone could use them. OIS said they would provide a list to LIA02 and LIA03 showing which laptops were generically configured. OIS said they could reconfigure the ones that are currently tied to a user from headquarters. Any laptops that went from the regions to Japan are outside the scope of what they can reconfigure. Along with the list OIS is to provide any instructions for users in Japan needed to assist them with reconfiguration efforts. They requested one point of contact on the ground in Japan. I informed them that LIA02 or 03 would pass all information along to Danielle Emche and instruct Danielle to contact the CSC before 10am Japan time with any questions or issues following the reconfiguration instructions. **UPDATE:** 3/29 2:35pm – List plus instructions from OIS have been received and forwarded to Danielle Emche with instructions to call CSC with questions before 10am Japan time (9pm EDT). **Action:** None (be prepared to provide assistance pending further complications from the team in Japan).
- **Request for meteorological data.** PMT notified LIA02/03 of their need for meteorological data. **Action:** If you receive meteorological communications which do not already have PMT on distribution, please ensure PMT is cc'ed on the email (send to PMT02 and PMT12) and walk a hard copy back to the meteorologists.
- **Japan Relief Team.**
 - **Dosimetry:** LIA03 sent an email to LiasonJapan (original team) asking for them to email back their dosimetry numbers. The initial team sent over was in such a rush that the Headquarters Radiation Safety Officer, John O'Donnell, never recorded which dosimeter was assigned to which staff member. If dosimeter numbers (on the back) are received directly to the

- international liaison desks they should be forwarded to John O'Donnell and entered into a word document on LIA03.
- o Cris Brown has advised that, rather than asking the relief team to carry additional satellite phones to Japan, the current team should turn ownership of the two satellite phones already over there to a new member of the relief team. The travelers have been advised to work with the current team to determine who should take ownership, then provide that name to Cris Brown and LIA02/LIA03. **Action:** When name is provided, ensure that Cris Brown has it.
 - **Request from U.S. Forces Japan.** LT Director received a request for specific reactor information from USFJ in preparation for a bilateral. International liaisons gave NRC team in Japan a heads up that the request had come in. LT Director replied to the request indicating that we have a team in Japan and that, rather than duplicate the requests the USG is making of the Japanese, it would be more efficient for USFJ to coordinate with us. LIA02 and 03 were provided as email addresses for USFJ to communicate with.
 - **IAEA Coordination.** The ET had tasked us with understanding the role of the IAEA's Incident and Emergency Centre (IEC) and what the extent of their role is if Japan does not make a formal request to them under the Assistance Convention. We suggested that the IEC serve as a clearinghouse, keeping track of all requests for assistance from Japan, all offers to assist from other countries, who has provided what, and whether it satisfies the requests. We have told the LT Director that OIP will keep the ET informed of developments on this issue. **Action:** We need to talk to Margie about how she'd like us to proceed with responding to IAEA's request. Continue to follow this and expect questions from ET and LT Director. **Update 3/28: M. Shaffer has confirmed that Japan has not requested assistance under the Convention.**
 - **Translators.** 24/7 translation coverage has been suspended due to both projected decreasing demand and funding issues. **Action:** PMT has asked that we identify any Japanese speakers at NRC (e.g. foreign assignees) who can assist if an urgent translation is needed. PMT is comfortable understanding the monitoring data as the fields in the tables are repetitive. Email request sent to Steve D./Charlotte/Mary C.
 - **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. Call will not occur over the weekend. **The new number to call into for the RST call is (b)(6) and the pin is (b)(6)**
 - **Daily NRC Japan Team – RST/PMT Call.** Next call scheduled for 0300. RST and PMT have been notified of the call and international liaison should plan on participating (Brooke and Kirk don't necessarily participate). All parties should call into **301-816-5120** and use pass-code **(b)(6)**
 - **21:30 Interagency Call.** Call (202) 647-1512 and ask for the Interagency call bridge.
 - **Deputies Committee Decisions and Action Items:** **Action:** Annette will be sending us the meeting summaries when she gets them. They need to be placed in the White House file and then search for NRC actions and update the running list. Forward to the LT Director and Coordinator.
 - **RST Recommendations:** In reference to the white paper that the RST is writing containing technical recommendations for the Japanese (which will need interagency and consortium stakeholder concurrence), Chuck Casto relayed that Ambassador Roos wants to attach the final recommendations to a document from DOS and submit it to the Japanese side. The ET said that this was not a good idea. Following the call, Chuck Casto did touch base with the Ambassador, who still wants to proceed. The Chairman will probably talk to the Ambassador about this issue in due course. **No action required, just be aware in case the issue comes up.**
 - **Tech Issues for New Team Members in Tokyo:** The newly arrived team members have questions about how to access citrix and re-assign laptops. In addition, due to sign on problems, some may be locked out or need to have something re-set. A call was placed to NRC's 24 IT group for resolution of the issues. Follow service tag 91JMN1 for resolution of their issues.

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).

- 11 PM – 7 AM shift is responsible for the summary call with Kirk and Brooke, scheduled daily at 0500 EST unless rescheduled, and subsequent write-up of one-pager for Margie. 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."
- The 11pm-7am shift is responsible for sending all emails from the previous day to the FOIA email address. Open new email, copy previous day's emails as an attachment and send to [FOIA Response.hoc@nrc.gov](mailto:FOIA.Response.hoc@nrc.gov).
- Kirk, Brooke, Danielle and Eric requested that the international team to 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.
- 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.
- **Sanitary wipes now available. Action:** Please wipe the keyboards, mice and phones before you leave.

~~—OFFICIAL USE ONLY—~~

From: Kenagy, W David <KenagyWD@state.gov>
Sent: Wednesday, March 30, 2011 12:59 PM
To: Kenagy, W David; vince.mcclelland@nnsa.doe.gov; Rodriguez, Veronica;
ann.heinrich@nnsa.doe.gov; HOO Hoc; HOO2 Hoc; Huffman, William;
decair.sara@epamail.epa.gov; timothy.greten@dhs.gov; maria.marinissen@hhs.gov;
(b)(6) doehqeoc@oem.doe.gov; hhs.soc@hhs.gov;
james.kish@dhs.gov; HOO Hoc; Smith, Brooke; Zubarev, Jill E; Shaffer, Mark R;
nitops@nnsa.doe.gov; Skypek, Thomas M; (b)(6)
clark.ray@epamail.epa.gov; Stern, Warren; Mentz, John W; DeLaBarre, Robin; Burkart,
Alex R; Metz, Patricia J; Fladeboe, Jan P; Withers, Anne M; Lowe, Thomas J; Lewis, Brian
M; SES-O_OS; EAP-J-Office-DL; O'Brien, Thomas P; Lane, Charles D; Conlon, John N;
Foughty, Michael A; Mahaffey, Charles T
Subject: RE: IAEA distributed documents
Attachments: Letter_-_Summary_of_reactor_unit_status_at_30-March_0500_UTC.pdf;
design_capacity_condenser_suppression_pool.pdf; TEPCO_press_release_1030_30
_Mar.pdf; TEPCO_press_release_0530_30Mar.pdf; Monitoring_data_at_0912_JST.pdf;
Plant_Parameter_at_0600.pdf; NISA-METI_Press_Release_62_(Japanese).pdf; No61
_Plant_Conditions.pdf; No61_Plant_Parameters.pdf; No61_info1500_March29.pdf;
MEXT_Radiation_0326_1304317_0326.pdf; MEXT_Nuclide_0329_1304363_0329.pdf

The State Department Taskforce for Japan has suspended operations. Therefore, I have readjusted the distribution list for the IAEA Japan documents. If you no longer wish to receive the documents or if you know others in the Federal Family who wish to receive them, please let me know.

David Kenagy
US Department of State
202 647 6768

This email is UNCLASSIFIED.

平成23年3月30日

原子力安全・保安院

地震被害情報（第62報）
（3月30日8時00分現在）

原子力安全・保安院が現時点で把握している東京電力(株)福島第一原子力発電所、福島第二原子力発電所、東北電力(株)女川原子力発電所、日本原子力発電(株)東海第二、電気、ガス、熱供給、コンビナート被害の状況は、以下のとおりです。

前回からの変更点は以下のとおり。

1. 原子力発電所関係

○福島第一原子力発電所

- ・2号機において、消防ポンプによる海水の使用済燃料プールへの注入を仮設電動ポンプによる淡水に切り替え注入（29日16:30～18:25）

2. 産業保安関係

別紙参照

(別紙)

1 発電所の運転状況【自動停止号機数：10基】

○東京電力(株)福島第一原子力発電所（福島県双葉郡大熊町及び双葉町）

(1) 運転状況

1号機（46万kW）（自動停止）

2号機（78万4千kW）（自動停止）

3号機（78万4千kW）（自動停止）

4号機（78万4千kW）（定検により停止中）

5号機（78万4千kW）（定検により停止中、20日14:30冷温停止）

6号機（110万kW）（定検により停止中、20日19:27冷温停止）

(2) モニタリングの状況

別添参照

(3) 主なプラントパラメーター（30日6:00現在）

	1号機	2号機	3号機	4号機	5号機	6号機
原子炉圧力*1 [MPa]	0.454(A) 0.589(B)	0.076(A) 0.076(B)	0.124(A) 0.009(C)	—	0.108	0.106
原子炉格納容器圧力 (D/W) [kPa]	235	100	107.1	—	—	—
原子炉水位*2 [mm]	-1600(A) -1600(B)	-1500(A) 不明(B)	-1850(A) -2250(B)	—	2250	1761
原子炉格納容器内 S/C水温 [°C]	—	—	—	—	—	—
原子炉格納容器内 S/C圧力 [kPa]	235	D/S (調査中)	178.0	—	—	—
使用済燃料プール 水温度 [°C]	計器不良	46	計器不良	計器不良	34.2	28.0
備 考	3/30 04:00 現在の値	3/30 4:00 現在の値	3/30 3:50 現在の値	3/30 現在	3/30 6:00 現在の値	3/30 6:00 現在の値

* 1：絶対圧に換算

* 2：燃料頂部からの数値

(4) 各プラントの状況

< 1号機関係 >

- ・原子力災害対策特別措置法第15条（非常用炉心冷却装置注水不能）通報（11日16:36）
- ・ベント操作（12日10:17）
- ・1号機の原子炉圧力容器内に消火系ラインを用いて海水注入開始（12日20:20）→14日01:10一時中断
- ・1号機で爆発音。（12日15:36）
- ・消火系に加え、給水系を使うことにより炉心への注水量を増量（ $2\text{m}^3/\text{h}$ → $18\text{m}^3/\text{h}$ ）（23日02:33）。その後、給水系のみに切替（約 $11\text{m}^3/\text{h}$ ）（23日9:00）
- ・中央制御室の照明が復帰（24日11:30）
- ・タービン建屋地下の溜まり水を測定した結果、主な核種として ^{131}I （ヨウ素）が $2.1 \times 10^5 \text{Bq/cm}^3$ 、 ^{137}Cs （セシウム）が $1.8 \times 10^6 \text{Bq/cm}^3$ 、検出された。溜まり水は、復水器へ移送中（3/24 17時頃～）
- ・消防ポンプによる淡水の原子炉圧力容器への注入を仮設電動ポンプに切り替え（29日8:32）
- ・引き続き白煙の吐出確認（30日6:30現在）
- ・原子炉圧力容器へ淡水注入中。（30日8:00現在）

< 2号機関係 >

- ・原子力災害対策特別措置法第15条（非常用炉心冷却装置注水不能）通報（11日16:36）
- ・ベント操作（13日11:00）
- ・3号機の建屋の爆発に伴い、原子炉建屋ブローアウトパネル開放（14日11時過ぎ）
- ・原子炉圧力容器の水位が低下傾向（14日13:18）。原子力災害対策特別措置法第15条事象（原子炉冷却機能喪失）である旨、受信（14日13:49）
- ・原子炉圧力容器内に消火系ラインを用いて海水注入作業開始（14日16:34）
- ・原子炉圧力容器の水位が低下傾向（14日22:50）
- ・ベント操作（15日0:02）
- ・2号機で爆発音するとともに、サブプレッションプール（圧力抑制室）の圧力低下（15日6:10）。同室に異常が発生したおそれ（15日6:20頃）
- ・外部送電線から予備電源変電設備までの受電を完了し、そこから負荷側へのケーブル敷設を実施（19日13:30現在）
- ・使用済燃料プールに海水を40t注入（冷却系配管に消防車のポンプを接続）（20日15:05～17:20）

- ・ 2号機のパワーセンター受電 (20 日 15:46)
- ・ 白煙が発生 (21 日 18:22)
- ・ 白煙はほとんど見えない程度に減少 (22 日 7:11 現在)
- ・ 使用済燃料プールに海水を 18 t 注入 (22 日 16:07~17:01)
- ・ 使用済燃料プールに、使用済燃料プール冷却系を用いて海水を注入 (25 日 10:30~12:19)
- ・ 中央制御室の照明が復帰 (26 日 16:46)
- ・ 消防ポンプによる淡水の原子炉圧力容器への注入を仮設電動ポンプに切り替え (27 日 18:31)
- ・ 2号機について、3月27日に東京電力(株)が発表した福島第一原子力発電所2号機タービン建屋地下階溜まり水の測定結果について、ヨウ素134の測定値に誤りがあるとの判断を踏まえた再度の採取及び分析・評価の結果、ヨウ素134を含むガンマ核種の濃度については、検出限界値未満であることの報告 (28 日 0:07)
- ・ 消防ポンプによる海水の使用済燃料プールへの注入を仮設電動ポンプによる淡水に切り替え注入 (29 日 16:30~18:25)
- ・ 引き続き白煙の吐出確認 (30 日 6:30 現在)
- ・ 原子炉圧力容器へ淡水注入中 (30 日 8:00 現在)

< 3号機関係 >

- ・ 原子力災害対策特別措置法第15条（非常用炉心冷却装置注水不能）通報 (13 日 05:10)
- ・ ベント操作 (13 日 8:41)
- ・ 3号機の原子炉圧力容器内に消火系ラインから真水注入開始 (13 日 11:55)
- ・ 3号機の原子炉圧力容器内に消火系ラインから海水注入開始 (13 日 13:12)
- ・ 3号機及び1号機の注入をくみ上げ箇所の海水が少なくなったため停止 (14 日 1:10)
- ・ 3号機の海水注入を再開 (14 日 3:20)
- ・ ベント操作 (14 日 5:20)
- ・ 3号機の格納容器圧力が異常上昇 (14 日 7:44)。原子力災害対策特別措置法第15条事象である旨、受信 (14 日 7:52)
- ・ 3号機で1号機と同様に原子炉建屋付近で爆発 (14 日 11:01)
- ・ 3号機から白い湯気のような煙が発生 (16 日 8:30 頃)
- ・ 3号機の格納容器が破損しているおそれがあるため、中央制御室（共用）から作業員退避 (16 日 10:45)。その後、作業員は中央制御室に復帰し、注水作業再開 (16 日 11:30)
- ・ 自衛隊ヘリにより3号機への海水の投下を4回実施 (17 日 9:48、9:52、

9:58、10:01)

- ・警察庁機動隊が放水のため現場到着（17日 16:10）
- ・自衛隊消防車により放水（17日 19:35）。
- ・警察庁機動隊による放水（17日 19:05～19:13）
- ・自衛隊消防車5台が放水（17日 19:35、19:45、19:53、20:00、20:07）
- ・自衛隊消防車6台（6 t放水／台）が放水（18日 14時前～14:38）
- ・米軍消防車1台が放水（18日 14:45 終了）
- ・東京消防庁ハイパーレスキュー隊が放水（20日 3:40 終了）
- ・3号機の格納容器内圧力が上昇（20日 11:00 現在 320kPa）。圧力下げるための準備を進めていたが、直ちに放出を必要とする状況ではないと判断し、圧力監視を継続（21日 12:15 120 kPa）
- ・ケーブル引き込みの現地調査（20日 11:00～16:00）
- ・東京消防庁ハイパーレスキュー隊が3号機の使用済燃料プールに放水（20日 21:30～21日 03:58）
- ・灰色がかった煙が発生（21日 15:55 頃）
- ・煙が収まっていることを確認（21日 17:55）
- ・灰色がかった煙は白みがかった煙に変化し終息に向かっていると思われる（22日 7:11 現在）
- ・東京消防庁及び大阪市消防局が放水（約 180t）（22日 15:10～16:00）
- ・中央制御室の照明が復帰（22日 22:43）
- ・使用済燃料プールに使用済燃料プール冷却系から海水 35t 注入（23日 11:03～13:20）
- ・原子炉建屋からやや黒色がかった煙が発生（23日 16:20 頃）。23日 23:30 頃及び 24日 4:50 頃に確認したところ止んでいる模様。
- ・使用済燃料プールに使用済燃料プール冷却系を用いて海水約 120 t を注入（24日 5:35 頃～16:05 頃）
- ・3号機タービン建屋1階及び地下1階において、ケーブル敷設作業を行っていた作業員が踏み入れた水について調査した結果、水表面の線量率は約 400mSv/h、採取水のガンマ線核種分析の結果、試料の濃度は各核種合計で約 $3.9 \times 10^6 \text{Bq/cm}^3$ であった。
- ・東京消防庁の支援を受けた川崎市消防局が放水（25日 13:28～16:00）
- ・コンクリートポンプ車（50 t／h）が約 100 t 放水（27日 12:34～14:36）
- ・消防ポンプによる淡水の原子炉圧力容器への注入を仮設電動ポンプに切り替え（28日 20:30）
- ・コンクリートポンプ車（50 t／h）が約 100 t 放水（淡水）（29日 14:17～18:18）
- ・引き続き白煙の吐出確認（30日 6:30 現在）

- ・原子炉圧力容器へ淡水注入中。(30日 8:00 現在)

< 4号機関係 >

- ・原子炉圧力容器のシュラウド工事のため、原子炉圧力容器内に燃料はなし。
- ・使用済燃料プール水温度が上昇(3月14日 4:08 時点 84℃)
- ・4号機のオペレーションエリアの壁が一部破損していることを確認(15日 6:14)。
- ・4号機で火災発生。(15日 9:38) 事業者によると、自然に火が消えていることを確認(15日 11:00 頃)
- ・4号機で火災が発生(16日 5:45 頃)。事業者は現場での火災は確認できず(16日 6:15 頃)。
- ・自衛隊が使用済燃料プールへ放水(20日 9:43)
- ・ケーブル引き込みの現地調査(20日 11:00～16:00)
- ・自衛隊が使用済燃料プールへ放水(20日 18:30 頃～19:46)
- ・自衛隊消防車13台が使用済燃料プールに放水(21日 06:37～08:41)
- ・パワーセンターまでのケーブル敷設工事完了(21日 15:00 頃)
- ・パワーセンター受電(22日 10:35)
- ・コンクリートポンプ車(50 t / h) が約 150 t 放水(22日 17:17～20:32)
- ・コンクリートポンプ車(50 t / h) が約 130 t 放水(23日 10:00～13:02)
- ・コンクリートポンプ車(50 t / h) が約 150 t 放水(24日 14:36～17:30)。
- ・コンクリートポンプ車(50 t / h) が約 150 t 放水(25日 19:05～22:07)
- ・使用済燃料プールに、使用済燃料プール冷却系を用いて海水を注入(25日 06:05～10:20)
- ・コンクリートポンプ車(50 t / h) が約 125 t 放水(27日 16:55～19:25)
- ・中央制御室の照明復帰(29日 11:50)
- ・引き続き白煙の吐出確認(30日 6:30 現在)

< 5号機、6号機関係 >

- ・6号機の非常用ディーゼル発電機(D/G) 1台目(B)は運転により電力供給。復水補給水系(MUWC)を用いて原子炉圧力容器及び使用済燃料プールへ注水。
- ・6号機の非常用ディーゼル発電機(D/G) 2台目(A)起動。(19日 4:22)
- ・5号機の残留熱除去系(RHR)ポンプ(C)(19日 5:00)及び6号機の残留熱除去系(RHR)ポンプ(B)(19日 22:14)が起動し、除熱機能回復。使用済燃料プールを優先的に冷却(電源: 6号の非常用ディーゼル発電機)(19日 5:00)
- ・5号機、冷温停止(20日 14:30)

- ・ 6号機、冷温停止（20日 19:27）
- ・ 5号機及び6号機、起動用変圧器まで受電（20日 19:52）
- ・ 5号機、電源を非常用ディーゼル発電機から外部電源に切り替え（21日 11:36）
- ・ 6号機、電源を非常用ディーゼル発電機から外部電源に切り替え（22日 19:17）
- ・ 5号機の仮設の残留熱除去海水系（RHRS）ポンプが、仮設から本設の電源への切り替えの際、自動停止（23日 17:24）。
- ・ 5号機の仮設のRHRSポンプの修理が完了（24日 16:14）し、冷却を再開（24日 16:35）。
- ・ 6号機の仮設の残留熱除去海水系（RHRS）ポンプが、仮設から本設の電源へ切り替え（25日 15:38、15:42）

<使用済燃料共用プール>

- ・ 18日6:00過ぎ、プールはほぼ満水であることを確認
- ・ 共用プールに注水（21日 10:37～15:30）
- ・ 電源供給を開始（24日 15:37）し、冷却を開始（24日 18:05）。
- ・ 29日 8:30時点でのプール水温度は32℃程度

<その他>

- ・ 南放水口付近の海水核種分析の結果、 ^{131}I （ヨウ素）が $7.4 \times 10^1 \text{Bq/cm}^3$ 、（周辺監視区域外の水中濃度限度の1850.5倍）検出された。（26日 14:30）（3月27日に計測した結果、水中濃度限度の250倍となった。（27日 13:50）一方、1F放水口北側の海水核種分析の結果、 ^{131}I （ヨウ素）が $4.6 \times 10^1 \text{Bq/cm}^3$ （同1,150倍）検出された。（27日 14:05）
- ・ 1～3号機タービン建屋外のトレンチ（配管を布設しているトンネル状の地下構造物）の立坑に水が溜まっていることを確認。水表面の線量は、1号機が0.4mSv/h、2号機が1,000 mSv/h以上、3号機はがれきがあり測定できず（27日 15:30頃）。
- ・ 福島第一原子力発電所の敷地内（5地点）の土壌から、平成23年3月21日及び22日に採取した試料の中に、プルトニウム238、プルトニウム239、プルトニウム240を検出（28日 23時45分 東京電力発表）。検出されたプルトニウムの濃度は、過去の大気圏内核実験において国内で観測されたフォールアウト（放射性降下物）と同様、通常的环境レベルで人体に問題となるものではない。
- ・ 3号機建屋外において、残留熱除去海水系配管のフランジを取り外した際、協力企業作業員3名が、配管に溜まった水を被ったが、水を拭き取った結果、身体への放射性物質の付着はなかった。（29日 12:03）

○東京電力(株)福島第二原子力発電所（福島県双葉郡楢葉町及び富岡町）

（１）運転状況

- １号機（110 万 kW）（自動停止、14 日 17:00 冷温停止）
- ２号機（110 万 kW）（自動停止）14 日 18:00 冷温停止）
- ３号機（110 万 kW）（自動停止、12 日 12:15 冷温停止）
- ４号機（110 万 kW）（自動停止、15 日 7:15 冷温停止）

（２）モニタリングポスト等の指示値

別添参照

（３）主なプラントパラメーター（30 日 6:00 現在）

	単位	1 号機	2 号機	3 号機	4 号機
原子炉圧力* 1	MPa	0.15	0.13	0.10	0.14
原子炉水温	℃	27.0	27.6	35.0	27.5
原子炉水位* 2	mm	9296	10296	7828	7921
原子炉格納容器内 サブコールドプール水温	℃	24	25	27	27
原子炉格納容器内 サブコールドプール圧力	kPa (abs)	106	106	103	102
備 考		冷温停止中	冷温停止中	冷温停止中	冷温停止中

* 1：絶対圧に換算

* 2：燃料頂部からの数値

（４）その他異常等に関する報告

- ・ 1 号機にて原子力災害対策特別措置法第 10 条通報（11 日 18:08）
- ・ 1、2、4 号機にて同法第 10 条通報（11 日 18:33）
- ・ 1 号機にて原子力災害対策特別措置法第 15 条事象（圧力抑制機能喪失）発生（12 日 5:22）
- ・ 2 号機にて原子力災害対策特別措置法第 15 条事象（圧力抑制機能喪失）発生（12 日 5:32）
- ・ 4 号機にて原子力災害対策特別措置法第 15 条事象（圧力抑制機能喪失）発生（12 日 6:07）

○東北電力(株)女川原子力発電所（宮城県牡鹿郡女川町、石巻市）

（１）運転状況

- 1 号機（52 万 4 千 kW）（自動停止、12 日 0:58 冷温停止）
- 2 号機（82 万 5 千 kW）（自動停止、地震時点で冷温停止）
- 3 号機（82 万 5 千 kW）（自動停止、12 日 1:17 冷温停止）

(2) モニタリングポスト等の指示値

MP2 付近 (敷地最北敷地境界):

約 0.68 μ Sv/h (28 日 16:00) → 約 0.62 μ Sv/h (29 日 16:00)

(3) その他異常に関する報告

- ・タービン建屋地下 1 階の発煙は消火確認 (11 日 22:55)
- ・原子力災害対策特別措置法第 10 条通報 (13 日 13:09)

2 産業保安

○電気 (3 月 29 日 19:30 現在)

・東北電力 (3 月 29 日 18:00 現在)

停電戸数: 約 19 万戸 (延べ停電戸数 約 486 万戸)

停電地域: 青森県 三八の一部地域 (約 3 百戸)

岩手県 一部地域 (約 3 万 3 千戸)

宮城県 一部地域 (約 11 万 3 千戸)

福島県 一部地域 (約 3 万 8 千戸)

・東京電力

停電は 3 月 19 日 01:00 までに復旧済 (延べ停電戸数 約 405 万戸)

・北海道電力

停電は 3 月 12 日 14:00 までに復旧済 (延べ停電戸数 約 3 千戸)

・中部電力

停電は 3 月 12 日 17:11 に復旧済 (延べ停電戸数 約 4 百戸)

[参考情報] 現在停止中の発電所 (原子力発電所を除く)

・東京電力 (29 日 09:00 現在) ※地震により停止中の発電所

広野火力発電所 2, 4 号機

常陸那珂火力発電所 1 号機

鹿島火力発電所 2, 3, 5, 6 号機

・東北電力 (29 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

○都市ガス (3 月 29 日 20:00 現在)

- ・供給停止戸数※約 38 万戸 (延べ供給停止戸数 約 50 万戸)

※供給停止戸数には、家屋倒壊等が確認された戸数を含む。

○一般ガス（3月29日20:00現在）

死亡事故：地震との関係も含め原因詳細調査中。

- ・盛岡ガス（盛岡市）死者1名、負傷者10名
14日08:00 デパートの地下での爆発
- ・東部ガス（いわき市）死者1名
12日11:30 一般住宅での漏えいガスに着火

北海道、山形県、秋田県においては、供給停止の報告はない。

各社の供給停止状況は以下の通り。（家屋倒壊等が確認された戸数は含まない。）

- ・仙台市営ガス 283,022 戸供給停止
- ・塩釜ガス（塩釜市）9,291 戸供給停止
- ・釜石ガス（釜石市）6,058 戸供給停止
- ・常磐共同ガス（いわき市）8,035 戸供給停止
- ・京葉ガス（浦安市）105 戸供給停止
- ・東北ガス（白河市）12 戸供給停止
- ・常磐都市ガス（いわき市）294 戸供給停止
- ・気仙沼市営ガス（気仙沼市）990 戸供給停止
- ・石巻ガス（石巻市）8,542 戸供給停止

○簡易ガス（3月29日20:00現在）

各社の供給停止状況は以下の通り。（家屋倒壊等が確認された戸数は含まない。）

- ・宮城ガス（仙台市）970 戸供給停止
- ・釜石瓦斯（釜石市）580 戸供給停止
- ・仙台プロパン（亶理郡山元町）161 戸供給停止
- ・仙南ガス（柴田郡柴田町）1,216 戸供給停止
- ・カメイ（東松島市矢本町）66 戸供給停止
- ・いわきガス（いわき市）155 戸供給停止
- ・相馬ガス（相馬市）85 戸供給停止
- ・三重商会（大船渡市）12 戸供給停止
- ・八木又商店（大船渡市）100 戸供給停止
- ・名取岩沼農業協同組合（岩沼市）163 戸供給停止
（名取市）65 戸供給停止
- ・ガス＆ライフ（東松島市）341 戸供給停止
- ・鳴瀬ガス（東松島市）217 戸供給停止
- ・富久屋商会（双葉郡大熊町）5 戸供給停止

○熱供給（3月28日20:30現在）

- ・小名浜配湯（いわき市小名浜）供給停止

○LPGガス（3月27日15:30現在）

死亡事故：地震との関係も含め原因詳細調査中

- ・福島県いわき市 死者1名
13日午前中 共同住宅でガス爆発

○コンビナート（3月27日15:30現在）

- ・コスモ石油千葉製油所（千葉縣市原市）
LPG貯槽の支柱が折れ、破損。ガス漏れ火災。
重傷者1名、軽傷5名。3月21日午前鎮火。
- ・JX日鉱日石エネルギー(株)仙台製油所（宮城県仙台市）
出荷設備エリアで爆発、火災が発生。3月15日午後鎮火。

3 原子力安全・保安院等の対応

【3月11日】

- 14:46 地震発生と同時に原子力安全・保安院に災害対策本部設置
- 15:42 福島第一原子力発電所にて原子力災害対策特別措置法第10条通報
- 16:36 福島第一原子力発電所1、2号機にて事業者が同法第15条事象（非常用炉心冷却装置注水不能）発生判断（16:45通報）
- 18:08 福島第二原子力発電所1号機にて原子力災害対策特別措置法第10条通報
- 18:33 福島第二原子力発電所1、2、4号機にて原子力災害対策特別措置法第10条通報
- 19:03 緊急事態宣言（政府原子力災害対策本部及び同現地対策本部設置）
- 20:50 福島県対策本部は、福島第一原子力発電所1号機の半径2kmの住人に避難指示を出した。（2km以内の住人は1,864人）
- 21:23 内閣総理大臣より、福島県知事、大熊町長及び双葉町長に対し、東京電力(株)福島第一原子力発電所で発生した事故に関し、原子力災害対策特別措置法第15条第3項の規定に基づく指示を出した。
 - ・福島第一原子力発電所から半径3km圏内の住民に対する避難指示。
 - ・福島第一原子力発電所から半径10km圏内の住民に対する屋内退避指示。
- 24:00 池田経済産業副大臣現地対策本部到着

【3月12日】

- 5 : 2 2 福島第二原子力発電所1号機にて事業者が原子力災害対策特別措置法第15条事象（圧力抑制機能喪失）発生判断（6:27 通報）
- 5 : 3 2 福島第二原子力発電所2号機にて事業者が原子力災害対策特別措置法第15条事象（圧力抑制機能喪失）発生判断（6:27 通報）
- 5 : 4 4 総理指示により福島第一原子力発電所の10km圏内に避難指示
- 6 : 0 7 福島第二原子力発電所4号機にて原子力災害対策特別措置法第15条事象（圧力抑制機能喪失）発生
- 6 : 5 0 原子炉等規制法第64条第3項の規定に基づき、福島第一原子力発電所第1号機及び第2号機に設置された原子炉格納容器内の圧力を抑制することを命じた。
- 7 : 4 5 内閣総理大臣より、福島県知事、広野町長、楢葉町長、富岡町長及び大熊町長に対し、東京電力(株)福島第二原子力発電所で発生した事故に関し、原子力災害対策特別措置法第15条第3項の規定に基づく指示を出した。
- ・福島第二原子力発電所から半径3km圏内の住民に対する避難指示。
 - ・福島第二原子力発電所から半径10km圏内の住民に対する屋内退避指示。
- 17 : 0 0 福島第一原子力発電所にて原子力災害対策特別措置法第15条事象（敷地境界放射線量異常上昇）である旨、受信
- 17 : 3 9 内閣総理大臣が福島第二原子力発電所の避難区域
- ・福島第二原子力発電所から半径10km圏内の住民に対する避難を指示。
- 18 : 2 5 内閣総理大臣が福島第一原子力発電所の避難区域
- ・福島第一原子力発電所から半径20km圏内の住民に対する避難を指示。
- 19 : 5 5 福島第一原子力発電所1号機の海水注入について総理指示
- 20 : 0 5 総理指示を踏まえ、原子炉等規制法第64条第3項の規定に基づき、福島第一原子力発電所第1号機の海水注入等を命じた。
- 20 : 2 0 福島第一原子力発電所1号機の海水注入を開始

【3月13日】

- 5 : 3 8 福島第一原子力発電所3号機にて原子力災害対策特別措置法第15条事象（全注水機能喪失）である旨、受信。
- 当該サイトについて、東京電力において現在、電源及び注水機能の回復と、ベントのための作業を実施中。
- 9 : 0 1 福島第一原子力発電所にて原子力災害対策特別措置法第15条事

象（敷地境界放射線量異常上昇）である旨、受信

9：08 福島第一原子力発電所3号機の圧力抑制及び真水注入を開始

9：20 福島第一原子力発電所3号機の耐圧ベント弁開放

9：30 福島県知事、大熊町長、双葉町長、富岡町長、浪江町長に対し、
原子力災害対策特別措置法に基づき、放射能除染スクリーニング
の内容について指示

13：09 女川原子力発電所にて原子力災害対策特別措置法第10条通報

13：12 福島第一原子力発電所3号機の注入を真水から海水に切り替え

14：36 福島第一原子力発電所にて原子力災害対策特別措置法第15条事
象（敷地境界放射線量異常上昇）である旨、受信

【3月14日】

1：10 福島第一原子力発電所1号機及び3号機の注入をくみ上げ箇所の
海水が少なくなったため停止。

3：20 福島第一原子力発電所3号機の海水注入を再開

4：40 福島第一原子力発電所にて原子力災害対策特別措置法第15条事
象（敷地境界放射線量異常上昇）である旨、受信

5：38 福島第一原子力発電所にて原子力災害対策特別措置法第15条事
象（敷地境界放射線量異常上昇）である旨、受信

7：52 福島第一原子力発電所3号機にて原子力災害対策特別措置法第1
5条事象（格納容器圧力異常上昇）である旨、受信。

13：25 福島第一原子力発電所2号機にて原子力災害対策特別措置法第1
5条事象（原子炉冷却機能喪失）である旨、受信。

22：13 福島第二原子力発電所にて原子力災害対策特別措置法第10条通
報

22：35 福島第一原子力発電所にて原子力災害対策特別措置法第15条事
象（敷地境界放射線量異常上昇）である旨、受信

【3月15日】

0：00 国際原子力機関（IAEA）専門家派遣の受け入れを決定

IAEA天野事務局長による原子力発電所の被害に関する専門
家派遣の意向を受け、原子力安全・保安院はIAEAによる知見あ
る専門家の派遣を受け入れることとした。なお、実際の受け入れ日
程等については、今後調整を行う。

0：00 米国原子力規制委員会（NRC）専門家派遣の受け入れを決定

7：21 福島第一原子力発電所にて原子力災害対策特別措置法第15条事
象（敷地境界放射線量異常上昇）である旨、受信

7：24 （独）日本原子力研究開発機構東海研究開発センター核燃料サイ

クル工学研究所にて原子力災害対策特別措置法第10条通報

- 7 : 4 4 (独) 日本原子力研究開発機構原子力科学研究所にて原子力災害対策特別措置法第10条通報
- 8 : 5 4 福島第一原子力発電所にて原子力災害対策特別措置法第15条事象(敷地境界放射線量異常上昇)である旨、受信
- 10 : 3 0 経済産業大臣が原子炉等規制法に基づき、4号機の消火及び再臨界の防止、2号機の原子炉内への早期注水及びドライウエルのベントの実施について指示
- 10 : 5 9 今後の事態の長期化を考慮し、現地対策本部の機能を福島県庁内へ移転することを決定。
- 11 : 0 0 内閣総理大臣が福島第一原子力発電所の避難区域・炉内の状況を考慮して、新たに福島第一原子力発電所から半径20km圏～30km圏内の住民に対する屋内退避を指示
- 16 : 3 0 福島第一原子力発電所にて原子力災害対策特別措置法第15条事象(敷地境界放射線量異常上昇)である旨、受信
- 22 : 0 0 経済産業大臣が原子炉等規制法に基づき、4号機の使用済燃料プールへの注水の実施を指示
- 23 : 4 6 福島第一原子力発電所にて原子力災害対策特別措置法第15条事象(敷地境界放射線量異常上昇)である旨、受信

【3月18日】

- 13 : 0 0 文部科学省にて、福島第一、第二原子力発電所の緊急時における全国的モニタリング調査の強化を決定
- 15 : 5 5 原子炉等規制法第62条の3に基づき、東京電力(株)福島第一原子力発電所第1・2・3・4号機における事故故障等(原子炉建屋内の放射性物質の非管理区域への漏えい)の報告を受理
- 16 : 4 8 原子炉等規制法第62条の3に基づき、日本原子力発電(株)東海第二発電所における事故故障等(非常用ディーゼル発電機2C海水ポンプ用電動機の故障)の報告を受理

【3月19日】

- 7 : 4 4 6号機の非常用ディーゼル発電機2台目(A)起動
5号機の残留熱除去系(RHR)ポンプ(C)が起動し、使用済燃料プールの冷却を開始(電源:6号機の非常用ディーゼル発電機)の旨を受信
- 8 : 5 8 福島第一原子力発電所にて原子力災害対策特別措置法第15条事象(敷地境界放射線量異常上昇)である旨、受信

【3月20日】

- 23 : 3 0 原子力災害対策現地本部から、放射能除染スクリーニングレベル

の基準を以下のとおり変更する旨、県知事及び関係市町村長（富岡町、双葉町、大熊町、浪江町、川内村、楢葉町、南相馬市、田村市、葛尾村、広野町、いわき市、飯館村）宛に指示

【3月21日】

7:45 原子力災害対策現地本部から「安定ヨウ素剤の服用について」として、安定ヨウ素剤の服用は、本部の指示を受け、医療関係者の立ち会いのもとで服用するものであり、個人の判断で服用しない旨の指示を、県知事及び関係市町村長（富岡町、双葉町、大熊町、浪江町、川内村、楢葉町、南相馬市、田村市、葛尾村、広野町、いわき市、飯館村）宛に発出

16:45 原子力災害対策現地本部長から「屋内退避圏内での暖房器具の使用に係る換気について」として、一酸化炭素中毒等の防止の観点及び被ばく低減の観点から、屋内において換気が必要とする暖房器具を使用する場合の対応について屋内退避圏内の住民に周知する旨の指示を福島県知事及び市町村長（いわき市、田村市、南相馬市、広野町、川内村、浪江町、葛尾村、飯館村）宛に発出。

17:50 原子力災害対策本部長から、ハウレンソウ及びカキナ、原乳について当分の間、出荷を控えるよう、関係事業者等に要請することの指示を福島県、茨城県、栃木県及び群馬県の各知事宛に発出。

【3月22日】

16:00 原子力安全委員会緊急技術助言組織から、3月22日付け東京電力の「海水分析結果について」に関する原子力安全・保安院からの助言依頼について、回答（助言）を受理。

【3月25日】

原子力安全・保安院は、東京電力株式会社に対し、3月24日に発生した福島第一原子力発電所3号機タービン建屋における作業員の被ばくに関し、再発防止の観点から、直ちに放射線管理を見直し、改善するよう、口頭で指示。

【3月28日】

原子力安全・保安院は、東京電力株式会社に対し、3月27日に東京電力(株)が発表した福島第一原子力発電所2号機タービン建屋地下階溜まり水の測定に係る評価の誤りについて、再発防止を図るよう、口頭で指示。

13:50 原子力安全・保安院は、原子力安全委員会臨時会議助言（福島第一発電所2号機タービン建屋地下1階の滞留水について）を受け、東京電力株式会社に対し、海水モニタリングポイントの追加や地下水モニタリングの実施について、口頭で指示。

原子力安全・保安院は、東京電力(株)に対し、タービン建屋の屋外で確認された水に係る報告が遅れたことに対し、重要な情報については、社内の情報伝達をスムーズにするとともに、適時適切に報告が行われるように指導。

【3月29日】

11:16 原子炉等規制法第62条の3及び電気関係報告規則第3条に基づき、東北電力(株)女川原子力発電所における事故故障等（津波による2号機原子炉補機冷却水ポンプ(B)等の故障及び1号機補助ボイラー重油タンクの倒壊）についての報告を受理。

<被ばくの可能性（3月30日8:00現在）>

1. 住民の被ばく

- (1) 二本松市福島県男女共生センターにおいて、双葉厚生病院からの避難者約60名を含む133名の測定を行い、13,000cpm以上の23名に除染を実施した。
- (2) この他、福島県が用意した民間バスで、双葉厚生病院から川俣町済生会川俣病院へ移動した35名については、県対策本部は被ばくしていないと判断。
- (3) バスにより避難した双葉町の住民約100名について、100名のうち、9名について測定した結果、以下の通りだった。県外(宮城県)に分かれて避難したが、その後合流して二本松市福島男女共生センターへ移動。

カウント数	人数
18,000cpm	1名
30,000～36,000cpm	1名
40,000cpm	1名
40,000cpm 弱※	1名
ごく小さい値	5名

※（1回目の測定では100,000cpmを超え、その後靴を脱いで測定した結果計測されたもの）

- (4) 3月12日から3月15日にかけて、大熊町のオフサイトセンターにおいて、スクリーニングを開始。現在までに162名が検査済み。初め除染の基準値を6,000cpmとし、110名が6,000cpm未満、41名が6,000cpm異常の値を示した。後に基準値を13,000cpmと引き上げた際には、8名が13,000cpm未満、3名が13,000cpm以上の値を示した。

検査を受けた162名のうち、5名が除染処置を施した後、病院へ搬送

された。

- (5) 福島県において、避難した10km圏内の入院患者と病院関係者の避難を実施。関係者のスクリーニングを行った結果、3名について除染後も高い数値が検出されたため、第2次被ばく医療機関へ搬送。この搬送に関係した消防職員60名のスクリーニングで3名について、バックグラウンドの2倍以上程度の放射線が検出されたため、60名に対し除染を行った。
- (6) 福島県は3月13日からスクリーニングを開始。避難所を巡回、保健所等13ヶ所（常設）で実施中。3月27日までに98,944人に対し実施。そのうち、100,000cpm以上の値を示した者は99人であったが、100,000cpm以上の数値を示した者についても脱衣等をし、再計測したところ、100,000cpm以下に減少し、健康に影響を及ぼす事例はみられなかった。

2. 従業員等の被ばく

福島第一原子力発電所で作業していた従業員で100mSvを超過した作業員は、計19名。

なお、当該作業員3名のうち、2名については、両足の皮膚に放射性物質の付着を確認し、ベータ線熱傷の可能性があると判断されたことから、24日に福島県立医科大学附属病院へ搬送し、その後、25日に作業員3名とも千葉県にある放射線医学総合研究所に到着。検査の結果、2人の足の被ばく量は2～3Svと推定され、足及び内部被ばく共に治療が必要となるレベルではなかったが、3名とも、入院して経過を見ることとなった。28日正午頃3名の方がすべて退院した。

3. その他

- (1) 福島第一原発で作業していた自衛隊員4名が爆発により負傷。うち、1名は放医研に搬送され、検査の結果、外傷のみで、被ばくによる健康被害はないと判断され、3月17日に退院。防衛省において、その他自衛官の被ばくは確認されず。
- (2) 警察官について、警察庁において2名の除染の実施を確認。異常の報告はなし。
- (3) 3月24日、川俣町保健センター等において、1～15歳までの66名の小児に対する甲状腺の検査を実施。問題となるレベルではなかった。
- (4) 3月26日～27日、いわき市保健所において、1～15歳までの137名の小児に対する甲状腺の検査を実施。問題となるレベルではなかった。

<放射能除染スクリーニングレベルに関する指示>

- (1) 3月20日、原子力災害対策現地本部から、放射能除染スクリーニングレベルの基準を以下のとおり変更する旨、県知事及び関係市町村長（富岡町、双葉町、大熊町、浪江町、川内村、楢葉町、南相馬市、田村市、葛尾村、広野町、いわき市、飯舘村）宛に指示。

旧：γ線サーベイメーターにより 40 ベクレル/c m²または 6,000cpm

新：1 マイクロシーベルト/時（10cm 離れた場所での線量率）またはこれに相当する 100,000cpm

<避難時における安定ヨウ素剤投与の指示>

- (1) 3月16日、原子力災害対策現地本部から、「避難区域（半径20km）からの避難時における安定ヨウ素剤投与の指示」を県知事及び市町村（富岡町、双葉町、大熊町、浪江町、川内村、楢葉町、南相馬市、田村市、葛尾村、広野町、いわき市、飯舘村）宛に発出。

- (2) 3月21日、原子力災害対策現地本部から「安定ヨウ素剤の服用について」として、安定ヨウ素剤の服用は、本部の指示を受け、医療関係者の立ち会いのもとで服用するものであり、個人の判断で服用しない旨の指示を、県知事及び関係市町村長（富岡町、双葉町、大熊町、浪江町、川内村、楢葉町、南相馬市、田村市、葛尾村、広野町、いわき市、飯舘村）宛に発出。

<負傷者の状況（3月30日8:00現在）>

1. 3月11日の地震による負傷者
 - ・社員2名（軽傷、既に仕事復帰）
 - ・協力会社2名（うち1名両足骨折で入院中）
 - ・行方不明2名（社員。4号タービン建屋内）
2. 3月12日の福島第一原子力発電所1号機の爆発による負傷者
 - ・1号機付近で爆発と発煙が発生した際に4名（社員2名、協力会社2名）が1号タービン建屋付近（管理区域外）で負傷。川内診療所で診療。社員2名は既に仕事復帰。協力会社の2名は自宅療養中。
3. 3月14日の福島第一原子力発電所3号機の爆発による負傷者
 - ・社員4名（既に仕事復帰）
 - ・協力会社3名（既に仕事復帰）
 - ・自衛隊4名（うち1名は内部被ばくの可能性を考慮し、「(独)放射線医学総合研究所」へ搬送。診察の結果内部被ばくはなし。3月17日退院）

4. その他の被害

- ・ 3月22日、23日に共用プールで仮設電源盤の作業中に協力会社の2名が負傷し、産業医のいる福島第二原子力発電所へ搬送。(1名は既に仕事復帰、残り1名は自宅療養中)
- ・ 3月12日に急病人1名発生(脳梗塞、救急車搬送、入院中)
- ・ 3月12日に管理区域外にて社員1名が左胸の痛みを訴えて救急車を要請(意識あり、現在、自宅療養中。)
- ・ 3月13日に社員2名が中央制御室での全面マスク着用中に不調を訴え、福島第二の産業医の受診を受けるべく搬送(1名は既に仕事復帰、残り1名は自宅療養中)

<住民避難の状況(3月30日8:00現在)>

3月15日11:00、内閣総理大臣の指示により、福島第一原子力発電所半径20kmから30km圏内の住民に対して、屋内退避を指示。その旨を福島県及び関係自治体へ連絡。

福島第一原子力発電所20km圏外及び福島第二原子力発電所10km圏外への避難は、措置済。

- ・ 福島第一原子力発電所20kmから30km圏内の屋内退避について、徹底中。
- ・ 福島県と連携して、屋内退避圏内の住民の生活支援等を実施。
- ・ 3月28日、官房長官から福島第一原子力発電所から半径20km圏内の立ち入り規制の継続について発言。同日、原子力災害現地対策本部から関係市町村に対して、20km圏内の避難地域への立入禁止について通知。

<飲食物への指示>

原子力災害対策本部長より、福島県、茨城県、栃木県、群馬県の知事に対して、以下の品目について、当分の間、出荷等を控えるよう指示。

(1) 出荷制限・摂取制限品目(3月29日現在)

都道府県	出荷制限品目	摂取制限品目
福島県	非結球性葉菜類、結球性葉菜類、アブラナ科の花蕾類(ハウレンソウ、キャベツ、ブロッコリー、カリフラワー、小松菜、茎立菜、信夫冬菜、アブラナ、ちぢれ菜、山東菜、紅菜苔、カキナなど)、カブ、原乳	非結球性葉菜類、結球性葉菜類及びアブラナ科の花蕾類(ハウレンソウ、キャベツ、ブロッコリー、カリフラワー、小松菜、茎立菜、信夫冬菜、アブラナ、アブラナ、ちぢれ菜、山東菜、紅菜苔、カキナなど)

茨城県	ハウレンソウ、カキナ、パセリ、 原乳	
栃木県	ハウレンソウ、カキナ	
群馬県	ハウレンソウ、カキナ	

(2) 水道水の飲用制限の要請 (3月29日 15:00 現在)

制限範囲	水道事業 (対象自治体)
利用するすべての住民	飯舘村飯舘簡易水道事業 (福島県飯舘村)
乳児 ・ 対応を継続している水道事業	南相馬市原町水道事業 (福島県南相馬市) いわき市上水道事業 (福島県いわき市) 伊達市月舘簡易水道事業 (福島県伊達市)
・ 対応を継続している水道用水供給事業	なし

<屋内退避圏内での暖房器具の使用に係る換気についての指示>

3月21日、原子力災害対策現地本部長から「屋内退避圏内での暖房器具の使用に係る換気について」として、一酸化炭素中毒等の防止の観点及び被ばく低減の観点から、屋内において換気を必要とする暖房器具を使用する場合の対応について屋内退避圏内の住民に周知する旨の指示を福島県知事及び市町村長 (いわき市、田村市、南相馬市、広野町、川内村、浪江町、葛尾村、飯舘村) 宛に発出。

<消防機関の活動状況>

- ・ 3月22日、11:00～14:00 頃：新潟市消防局及び浜松市消防局が大型除染システムの東京電力による設営を指導。
- ・ 3月23日、8:30～9:30、13:30～14:30：新潟市消防局及び浜松市消防局が大型除染システムの東京電力による運用を指導。

(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：渡辺、金城

電話：03-3501-1505

03-3501-5890

(参考)

【東北地方太平洋沖地震】

1. 災害概要

(1) 発生日時：平成 23 年 3 月 11 日（金） 14：46 発生

(2) 発生場所：震源三陸沖（北緯 38 度、東経 142.9 度）

深さ 10km、マグニチュード 9.0

(3) 各地の震度

○震度 4 以上の地域

震度 7 宮城県北部

震度 6 強 茨城県北部、茨城県南部

震度 5 強 青森県三八上北

震度 5 弱 新潟県中越

震度 4

○震度 4 以上の市町村

震度 6 強 福島県楢葉町、富岡町、大熊町、双葉町

震度 6 弱 宮城県石巻市、女川町（発電所の震度計による）、東海村

震度 5 弱 新潟県刈羽村

震度 4 青森県六ヶ所村、東通村、新潟県柏崎市、神奈川県横須賀市

震度 1 北海道泊村

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復水器、復水貯蔵タンク及びサプレッションプール水サージタンクの設計容量

	復水器	復水貯蔵タンク	サプレッションプール水 サージタンク（共用）
1号機	約1,600 m ³	約1,900 m ³	約3,400 m ³ × 2基 (1～4号機側)
2号機	約3,000 m ³	約2,500 m ³	
3号機	約3,000 m ³	約2,500 m ³	

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3月30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)	112.5	112.4	112.1	111.8	111.8	111.9	111.8	111.7	111.6	111.4	111.2	111.2	111.1	111.1	110.9	110.8	110.8	110.7	110.7	111.3	111.3	111.1	111.1	111.0
	中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
可搬	⑥本館南(μSv/h)	1,090	—	—	1,100	—	—	1,100	—	—	1,090	—	—	1,090	—	—	1,080	—	—	1,080	—	—	1,080	—	—
	⑦正門(μSv/h)	168	—	—	167	—	—	168	—	—	165	—	—	167	—	—	167	—	—	166	—	—	169	—	—
	③西門(μSv/h)	80.1	—	—	82.2	—	—	82.3	—	—	81.2	—	—	81.1	—	—	80.3	—	—	79.6	—	—	80	—	—
風向		北東	北東	東	北東	東	北西	北北西	北西	北西	北西	南西	南	南	南南東	南南東	西南西	北北西	西	北西	西	北	北西	西	北西
風速(m/s)		0.3	0.5	0.4	0.4	0.4	0.8	0.8	1.1	1.0	0.9	0.8	0.9	0.9	0.5	0.5	0.4	0.5	0.2	0.3	0.3	0.4	0.3	0.3	0.7

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)	110.9	110.8	110.8	110.8	110.6	110.6	110.6	110.6	110.4	110.3	110.2	110.1	110.2	110.3	110.1	109.9	109.8	110.0	110.0	109.8	109.9	109.9	109.7	109.8			
	中性子	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D			
可搬	⑥本館南(μSv/h)	1,080	—	—	1,080	—	—	1,080	—	—	1,080	—	—	1,080	—	—	1,070	—	—	1,070	—	—	1,070	—	—			
	⑦正門(μSv/h)	165	—	—	167	—	—	166	—	—	167	—	—	163	—	—	166	—	—	165	—	—	167	—	—			
	③西門(μSv/h)	82.4	—	—	80.7	—	—	80.1	—	—	80.7	—	—	80.1	—	—	78.3	—	—	78.3	—	—	78.6	—	—			
風 向		西	西	西南西	南西	南西	西南西	北北西	西	西南西	西	北北東	西北西	東北東	西	西南西	西南西	西北西	北西	西北西	西南西	西	西北西	北西	北北西			
風速(m/s)		0.6	0.6	0.6	0.7	0.7	0.7	0.5	0.5	0.8	0.6	0.4	0.4	0.4	0.3	0.3	0.5	0.6	0.5	0.5	0.8	0.6	0.5	0.6	0.6			

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($\mu\text{Sv/h}$)	109.8	109.7	109.6	109.4																				
	中性子	N.D	N.D	N.D	N.D																				
可搬	⑥本館南($\mu\text{Sv/h}$)	1,060	—	—	1,060																				
	⑦正門($\mu\text{Sv/h}$)	166	—	—	165																				
	③西門($\mu\text{Sv/h}$)	79.1	—	—	79.1																				
風向		西北西	北東	北	東北東																				
風速(m/s)		0.6	0.6	0.8	1.4																				

3月29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)	122.5	121.8	121.4	120.8	120.5	120.4	120.2	118.5	119.4	118.0	117.7	117.5	117.2	116.7	116.9	116.5	116.4	116.1	116.0	115.8	117.6	137.8	119.5	117.5	
	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)	1.170	—	—	1.150	—	—	1.130	—	—	1.120	—	—	1.130	—	—	1.130	—	—	1.220	—	—	1.210	—	—	
	⑦正門(μSv/h)	177	—	—	178	—	—	177	—	—	178	—	—	177	—	—	175	—	—	175	—	—	175	—	—	
	③西門(μSv/h)	86	—	—	85.6	—	—	84	—	—	84.8	—	—	82.6	—	—	81	—	—	82.8	—	—	98.8	—	—	
風 向		西南西	南西	西	西	西	西	北西	西	西	西	南南西	北北西	東	東	東南東	東南東	東	東南東	南南東	東	東	東	東南東	南東	
風速(m/s)		2.8	2.6	2.8	2.7	2.5	3.3	3.4	2.8	2.4	2.2	2.0	1.6	2.6	2.0	2.3	1.5	1.5	1.7	1.5	1.9	2.5	2.7	2.8	2.5	

測定場所																											
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($\mu\text{Sv/h}$)	117.5	126.2	121.4	127.9	123.1	119.9	121.5	119.9	118.1	117.7	117.7	117.5	117.1	120.1	118.1	120.2	117.4	116.4	116.0	115.9	115.7	115.4	115.3	115.1		
	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($\mu\text{Sv/h}$)	1.180	—	—	1.130	—	—	1.160	—	—	1.170	—	—	1.160	—	—	1.110	—	—	1.110	—	—	1.110	—	—		
	⑦正門($\mu\text{Sv/h}$)	174	—	—	194	—	—	175	—	—	176	—	—	173	—	—	177	—	—	172	—	—	171	—	—		
	③西門($\mu\text{Sv/h}$)	82.4	—	—	90.3	—	—	83.9	—	—	83	—	—	84	—	—	85	—	—	82.2	—	—	81	—	—		
風向		南東	東北東	東	東	東南東	東	東	東南東	東	東南東	東	東	東	北	北西	北西	北西	西北西	西	西	北西	北西	西	西	北西	
風速(m/s)		2.7	2.1	2.0	1.7	1.5	1.8	1.4	1.3	0.9	1.7	1.5	1.4	1.0	0.7	0.4	0.7	0.6	0.8	1.0	0.8	0.9	0.9	1.0	1.1		

測定場所																											
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($\mu\text{Sv/h}$)	115.0	115.0	114.5	114.4	114.3	114.2	114.0	113.9	113.7	113.2	113.2	113.1	113.1	113.0	112.9	112.7	112.6	112.5	112.4	112.6	112.4	112.2	112.5	113.2		
	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($\mu\text{Sv/h}$)	1.100	—	—	1.110	—	—	1.100	—	—	1.100	—	—	1.100	—	—	1.100	—	—	1.100	—	—	1.110	—	—		
	⑦正門($\mu\text{Sv/h}$)	171	—	—	169	—	—	169	—	—	169	—	—	170	—	—	168	—	—	169	—	—	168	—	—		
	③西門($\mu\text{Sv/h}$)	81.5	—	—	82	—	—	82.6	—	—	81.3	—	—	81	—	—	82	—	—	82	—	—	82	—	—		
風向		北西	西	西	西南西	北西	西	北西	北西	北西	南西	南南西	西南西	西	西	北東	北	西	西北西	南西	南西	南東	南東	東	東		
風速(m/s)		0.9	0.8	0.9	0.7	0.5	0.7	0.9	0.6	0.6	0.2	0.3	0.4	0.4	0.5	0.4	0.3	0.4	0.4	0.5	0.5	0.6	0.6	0.4	0.5		

3月29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)	117.8	117.7	117.7	117.5	117.5	117.5	117.5	117.4	117.4	117.3	117.2	117.1	117.2	117.1	116.9	116.7	116.8	116.6	116.5	116.4	116.4	116.3	116.3	
	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	
可搬	⑥本館南(μSv/h)	1.150	—	—	1.140	—	—	1.150	—	—	1.150	—	—	1.150	—	—	1.140	—	—	1.130	—	—	1.130	—	—
	⑦正門(μSv/h)	181	—	—	182	—	—	180	—	—	182	—	—	180	—	—	182	—	—	182	—	—	180	—	—
	③西門(μSv/h)	85.4	—	—	85.5	—	—	85.4	—	—	85.0	—	—	83.7	—	—	85.4	—	—	85.0	—	—	85.3	—	—
風向		北西	北西	西北西	西北西	北西	北北西	北西	南西	南南東	南東	北西	北北西	北西	西	西北西	西北西	西	西	西	西	西	西南西	北西	西
風速(m/s)		0.6	0.7	0.6	0.5	0.3	0.3	0.4	0.4	0.4	0.3	0.4	0.6	0.5	1.0	1.2	1.2	1.1	1.0	0.9	1.0	1.2	1.0	0.8	0.5

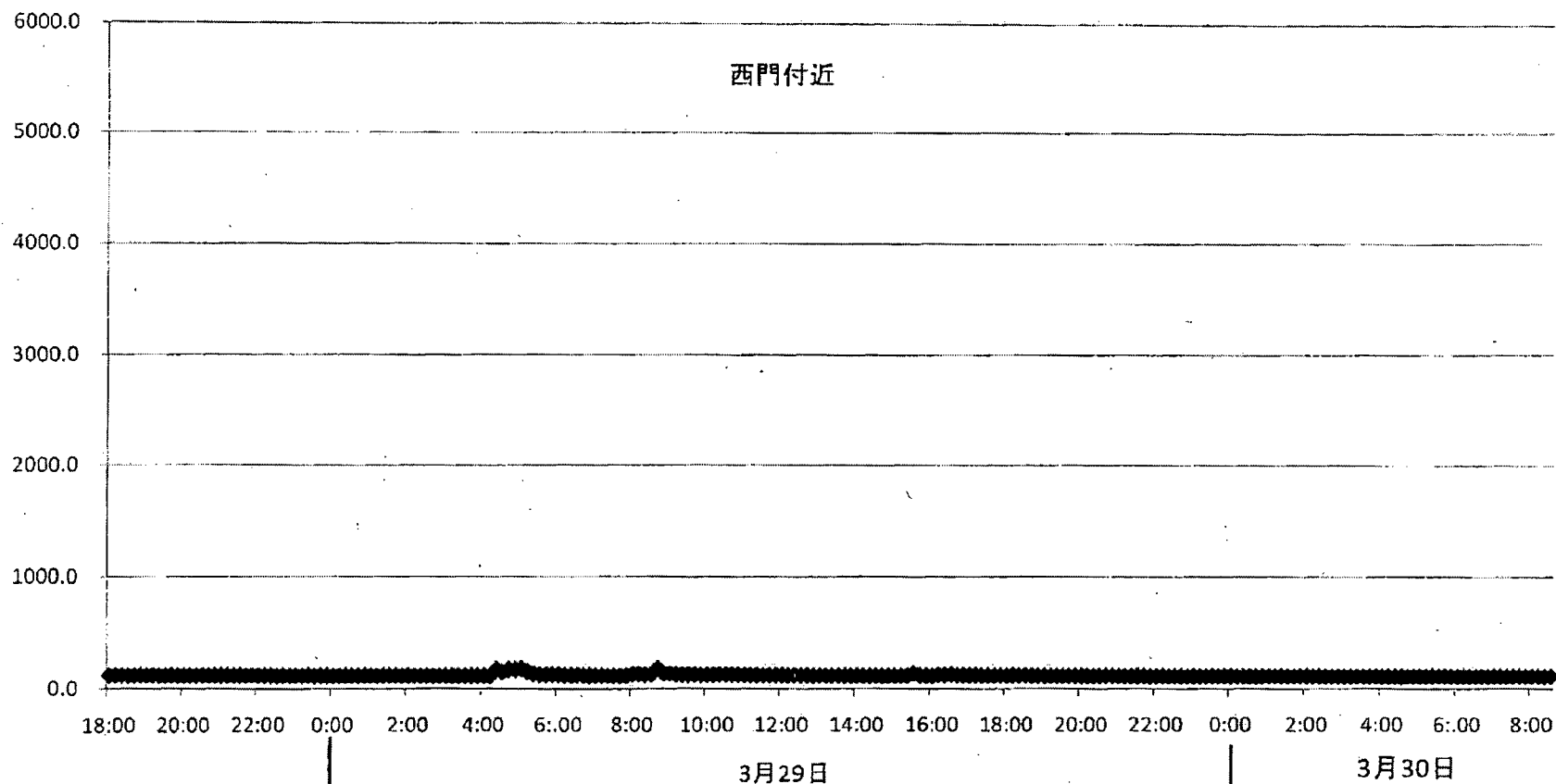
測定場所		③																							
時 間		4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50
MC	測定値($\mu\text{Sv/h}$)	116.2	116.2	175.1	150.0	175.5	173.0	182.0	155.0	134.3	127.0	126.6	128.5	127.6	122.3	120.1	120.0	118.2	117.8	117.6	117.4	117.3	117.4	116.7	116.6
	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($\mu\text{Sv/h}$)	1.140	—	—	1.200	—	—	1.200	—	—	1.190	—	—	1.160	—	—	1.130	—	—	1.190	—	—	1.300	—	—
	⑦正門($\mu\text{Sv/h}$)	181	—	—	201	—	—	236	—	—	191	—	—	186	—	—	183	—	—	183	—	—	181	—	—
	③西門($\mu\text{Sv/h}$)	85.2	—	—	119	—	—	152	—	—	96.8	—	—	96.1	—	—	88.1	—	—	85.5	—	—	86.7	—	—
	風向	西	北東	北	西	西	西	西南西	西	西	西	西南西	西	西	西南西	西	西	西	西南西	西南西	西南西	西北西	北北東	南東	南
	風速(m/s)	0.6	0.4	0.3	0.3	0.4	0.6	0.8	0.8	0.8	0.7	0.8	0.9	0.8	1.0	0.7	0.8	0.8	0.5	0.5	0.4	0.2	0.4	0.6	1.0

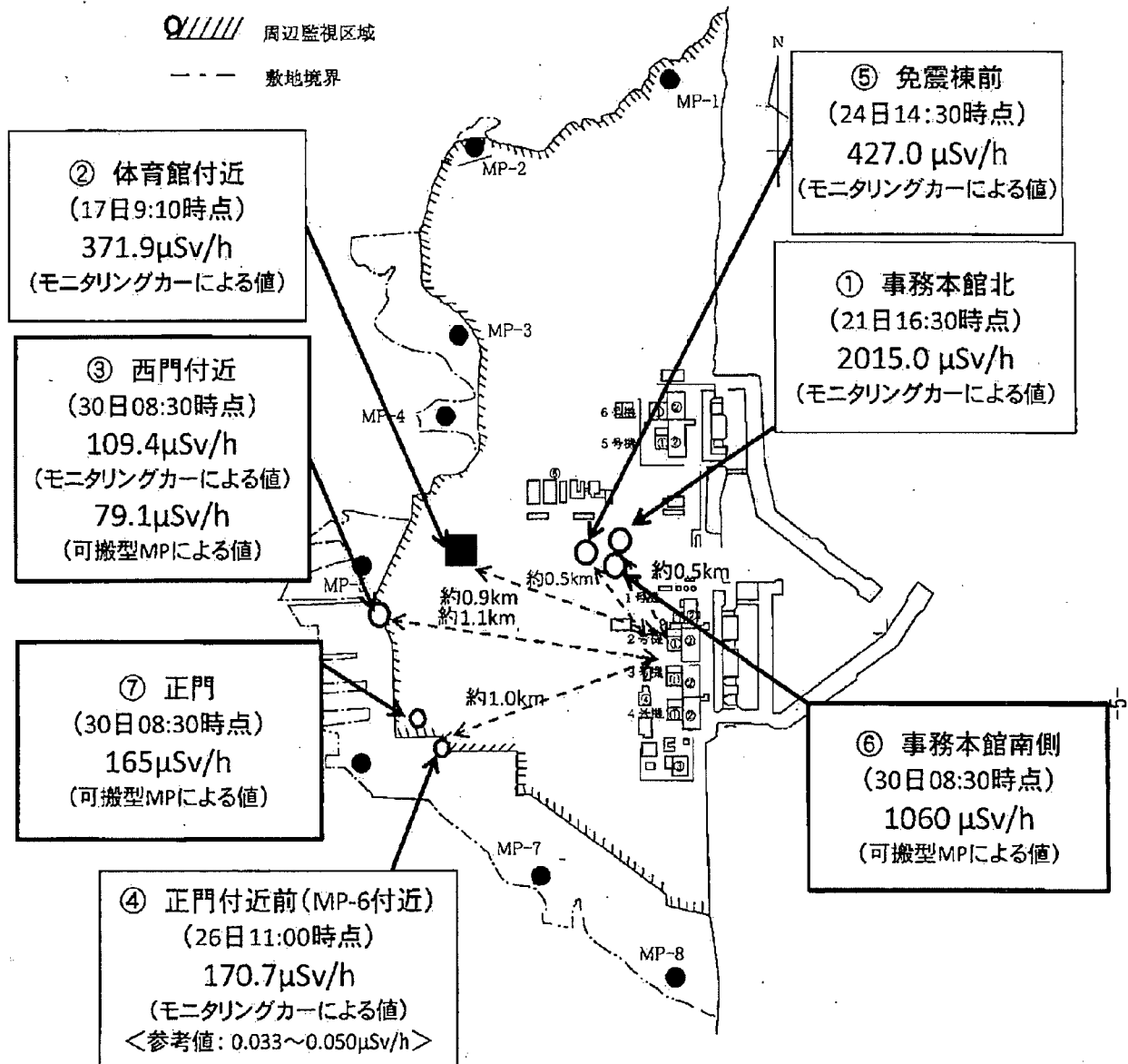
測定場所		③																							
時 間		8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50
MC	測定値(μSv/h)	132.7	134.7	128.2	130.3	183.8	140.2	137.8	131.9	130.3	129.6	127.8	127.0	126.6	126.1	128.7	130.5	128.1	127.9	125.4	124.9	124.0	123.3	123.2	122.7
	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)	1.250	—	—	1.160	—	—	1.190	—	—	1.230	—	—	1.260	—	—	1.200	—	—	1.190	—	—	1.270	—	—
	⑦正門(μSv/h)	181	—	—	180	—	—	180	—	—	180	—	—	182	—	—	180	—	—	179	—	—	180	—	—
	③西門(μSv/h)	101	—	—	99.5	—	—	101	—	—	95	—	—	92.9	—	—	95	—	—	90.5	—	—	89.3	—	—
風向		東南東	東	東	東南東	東	南東	東	東	東	南東	東南東	南東	南東	東	東	東	東	南東	東	東	東	南東	西南西	南西
風速(m/s)		0.8	1.3	1.9	1.8	2.3	2.1	1.8	2.0	3.1	2.5	2.7	2.4	2.1	1.7	3.2	3.8	3.0	3.1	3.0	1.9	2.5	2.0	1.5	2.5

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)

$\mu\text{Sv/h}$





福島第二(2F) (事業者のモニタリングポスト)

3月30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(μ Sv/h)	8.197	8.190	8.177	8.410	8.273	8.270	8.910	8.427	8.307	8.353	8.320	8.290	8.307	8.330	8.403	8.280	8.290	8.317	8.280	8.303	8.347	8.357	8.487	8.35
MP2(μ Sv/h)	4.407	4.390	4.387	4.480	4.407	4.457	4.920	4.650	4.550	4.513	4.463	4.477	4.463	4.497	4.557	4.443	4.413	4.427	4.440	4.443	4.457	4.533	4.613	4.63
MP3(μ Sv/h)	7.767	7.760	7.737	7.760	7.783	7.787	8.133	7.937	7.883	7.880	7.803	7.810	7.823	7.840	7.823	7.770	7.730	7.757	7.770	7.737	7.740	7.740	7.813	7.84
MP4(μ Sv/h)	5.957	5.963	5.970	5.987	5.963	5.967	6.130	6.347	6.197	6.097	6.087	6.080	6.117	6.140	6.100	5.997	5.993	5.980	5.953	6.007	5.977	6.003	6.083	6.14
MP5(μ Sv/h)	5.407	5.407	5.400	5.353	5.400	5.400	5.420	5.887	5.493	5.500	5.493	5.500	5.593	5.687	5.500	5.400	5.400	5.400	5.400	5.400	5.480	5.493	5.493	5.59
MP6(μ Sv/h)	6.560	6.567	6.567	6.573	6.647	6.623	6.723	6.923	6.790	6.743	6.743	6.737	6.787	6.740	6.667	6.583	6.587	6.573	6.587	6.593	6.597	6.620	6.630	6.68
MP7(μ Sv/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	西北西	西北西	西北西	北西	北	北北西	北北西	北北東	北東	北北東	北北東	北北東	北北東	北北西	南西	西南西	南西	西南西	南西	南南西	南	南南西	南	南南東
風速(m/s)	6.0	7.2	7.6	2.9	4.5	3.0	1.8	3.2	2.5	2.1	2.6	1.6	0.1	0.8	1.4	2.7	3.0	3.0	1.8	1.3	1.4	1.5	3.2	2

3月30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(μ Sv/h)	8.343	8.437	8.333	8.247	8.163	8.160	8.180	8.157	8.160	8.157	8.147	8.160	8.137	8.157	8.160	8.147	8.133	8.097	8.147	8.147	8.140	8.150	8.207	8.11
MP2(μ Sv/h)	4.550	4.653	4.503	4.377	4.353	4.343	4.363	4.343	4.357	4.357	4.343	4.343	4.343	4.333	4.343	4.363	4.350	4.343	4.370	4.370	4.363	4.390	4.430	4.40
MP3(μ Sv/h)	7.797	7.813	7.747	7.663	7.683	7.643	7.647	7.653	7.680	7.673	7.663	7.640	7.667	7.633	7.647	7.640	7.647	7.633	7.663	7.657	7.647	7.683	7.723	7.69
MP4(μ Sv/h)	6.147	6.020	5.950	5.920	5.917	5.920	5.930	5.930	5.897	5.903	5.910	5.930	5.927	5.870	5.890	5.903	5.923	5.880	5.930	5.883	5.893	5.927	5.927	5.94
MP5(μ Sv/h)	5.493	5.400	5.347	5.307	5.387	5.393	5.333	5.347	5.307	5.300	5.300	5.313	5.333	5.300	5.307	5.300	5.307	5.307	5.307	5.300	5.300	5.307	5.307	5.31
MP6(μ Sv/h)	6.637	6.567	6.543	6.530	6.503	6.510	6.510	6.520	6.513	6.490	6.477	6.487	6.487	6.480	6.490	6.467	6.500	6.470	6.480	6.483	6.480	6.510	6.520	6.49
MP7(μ Sv/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	東南東	南東	南東	南	南	南	南南西	南東	東南東	東南東	東	東	東北東	東北東	北東	北北東	北西	北	北北東	西南西	南西	北東	北東	北東
風速(m/s)	1.5	1.0	0.8	3.0	2.2	1.6	2.3	1.7	1.6	1.3	1.4	1.4	1.1	0.8	0.8	0.6	0.5	0.4	0.3	0.3	0.4	0.5	1.0	0

3月30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(μ Sv/h)	8.160																							
MP2(μ Sv/h)	4.377																							
MP3(μ Sv/h)	7.687																							
MP4(μ Sv/h)	5.943																							
MP5(μ Sv/h)	5.320																							
MP6(μ Sv/h)	6.523																							
MP7(μ Sv/h)	欠測																							
風向	東北東																							
風速(m/s)	1.4																							

2011/3/30

島第二(2F) (事業者のモニタリングポスト)

3月29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(μ Sv/h)	8.590	8.560	8.537	8.590	8.563	8.563	8.517	8.543	8.537	8.497	8.500	8.517	8.517	8.510	8.497	8.463	8.467	8.453	8.470	8.460	8.427	8.467	8.447	8.447
MP2(μ Sv/h)	4.593	4.587	4.597	4.607	4.570	4.580	4.570	4.567	4.570	4.553	4.573	4.577	4.580	4.560	4.547	4.550	4.550	4.543	4.553	4.537	4.543	4.523	4.523	4.517
MP3(μ Sv/h)	8.110	8.110	8.090	8.087	8.067	8.090	8.067	8.070	8.067	8.020	8.050	8.033	8.067	8.050	8.020	8.007	7.967	8.023	7.970	7.987	7.987	7.993	7.973	7.977
MP4(μ Sv/h)	6.203	6.220	6.193	6.223	6.213	6.213	6.200	6.190	6.190	6.177	6.160	6.140	6.123	6.173	6.160	6.173	6.150	6.157	6.153	6.163	6.130	6.117	6.117	6.117
MP5(μ Sv/h)	5.593	5.593	5.593	5.593	5.593	5.593	5.593	5.593	5.593	5.540	5.593	5.593	5.567	5.493	5.573	5.493	5.547	5.547	5.547	5.500	5.520	5.500	5.500	5.500
MP6(μ Sv/h)	6.843	6.797	6.807	6.833	6.830	6.820	6.780	6.777	6.817	6.777	6.773	6.787	6.780	6.783	6.753	6.767	6.763	6.753	6.760	6.767	6.767	6.723	6.727	6.737
MP7(μ Sv/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	南南東	南南東	南東	南南東	南東	南	南南東	南南東	東南東	南東	南南東	南南東	南	南	南南東	南南西	南	南南東	南南東	南南東	南南東	南南東	南	南
風速(m/s)	7.8	6.5	4.1	5.0	3.1	5.6	4.2	2.6	0.7	2.5	3.2	4.6	4.1	2.6	1.1	2.0	3.9	1.4	2.6	2.1	2.1	1.4	4.0	5.1

3月29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(μ Sv/h)	8.440	8.463	8.420	8.463	8.387	8.413	8.377	8.383	8.370	8.387	8.380	8.363	8.363	8.373	8.367	8.380	8.370	8.370	8.353	8.333	8.333	8.320	8.330	8.347
MP2(μ Sv/h)	4.527	4.540	4.503	4.533	4.490	4.493	4.500	4.507	4.503	4.480	4.487	4.487	4.470	4.487	4.483	4.503	4.450	4.467	4.477	4.457	4.467	4.463	4.467	4.457
MP3(μ Sv/h)	7.937	7.960	7.973	7.937	7.943	7.960	7.930	7.920	7.940	7.900	7.927	7.923	7.940	7.917	7.950	7.900	7.903	7.867	7.900	7.847	7.890	7.853	7.863	7.877
MP4(μ Sv/h)	6.117	6.123	6.097	6.120	6.090	6.113	6.100	6.090	6.093	6.073	6.090	6.080	6.093	6.073	6.100	6.083	6.077	6.053	6.070	6.047	6.047	6.057	6.043	6.047
MP5(μ Sv/h)	5.500	5.493	5.493	5.493	5.493	5.493	5.500	5.500	5.493	5.500	5.500	5.493	5.500	5.493	5.493	5.493	5.500	5.453	5.453	5.493	5.493	5.447	5.500	5.447
MP6(μ Sv/h)	6.733	6.720	6.717	6.733	6.737	6.703	6.720	6.740	6.693	6.720	6.687	6.697	6.683	6.690	6.677	6.687	6.683	6.660	6.660	6.670	6.677	6.657	6.660	6.657
MP7(μ Sv/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	南	南	南	南	南	南南西	南	南	南	南南西	南南西	南西	西	西南西	南南西	南南西	南南西	南西	南西	西南西	西南西	西	西	西
風速(m/s)	5.0	2.1	4.2	5.9	5.7	0.5	3.4	5.9	6.4	6.3	4.8	2.8	1.5	0.8	4.4	5.4	4.7	1.8	3.2	4.4	3.2	5.1	7.1	5.1

3月29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)	8.323	8.337	8.290	8.277	8.280	8.290	8.293	8.297	8.290	8.280	8.270	8.270	8.257	8.257	8.280	8.263	8.260	8.243	8.247	8.243	8.247	8.190	8.217	8.237
MP2(μSv/h)	4.467	4.460	4.467	4.430	4.447	4.437	4.437	4.447	4.430	4.440	4.437	4.427	4.423	4.427	4.427	4.420	4.417	4.413	4.407	4.397	4.407	4.413	4.383	4.397
MP3(μSv/h)	7.853	7.860	7.863	7.843	7.857	7.843	7.847	7.830	7.810	7.830	7.830	7.790	7.823	7.823	7.757	7.790	7.813	7.787	7.783	7.823	7.793	7.760	7.773	7.767
MP4(μSv/h)	6.027	6.047	6.020	6.013	6.033	6.037	6.063	6.000	6.047	5.997	6.007	6.023	6.000	6.010	5.997	5.997	5.953	5.953	5.987	5.973	6.010	5.957	5.983	5.977
MP5(μSv/h)	5.400	5.400	5.453	5.400	5.500	5.400	5.433	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.400	5.407	5.400	5.400	5.400	5.400	5.400	5.400	5.400
MP6(μSv/h)	6.633	6.630	6.637	6.650	6.637	6.637	6.630	6.640	6.593	6.617	6.617	6.630	6.600	6.587	6.597	6.620	6.567	6.610	6.600	6.593	6.613	6.563	6.580	6.587
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	西	西南西	南西	西南西	南西	南南東	南西	南東	北北西	北北西	北北西	北北西	北北西	北西	西	西北西	北西	西北西	西北西	北西	北西	北北西	西北西	西北西
風速(m/s)	5.7	2.8	0.8	0.8	2.3	0.0	0.0	0.1	1.9	2.2	1.9	3.7	3.1	4.0	3.9	2.2	1.7	2.2	3.3	3.6	2.7	3.1	3.0	5.1

福島第二(2F) (事業者のモニタリングポスト)

3月29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(μ Sv/h)	8.707	8.693	8.710	8.697	8.697	8.673	8.683	8.693	8.633	8.693	8.967	10.027	9.610	9.483	9.467	9.933	9.433	9.150	8.970	8.873	8.873	8.780	8.800	8.83
MP2(μ Sv/h)	4.667	4.647	4.670	4.657	4.633	4.657	4.637	4.640	4.613	4.657	4.730	5.677	5.633	5.390	5.420	5.833	5.437	5.047	4.920	4.867	4.817	4.823	4.797	4.81
MP3(μ Sv/h)	8.220	8.227	8.217	8.180	8.253	8.210	8.177	8.180	8.237	8.217	8.207	8.560	8.977	8.620	8.763	8.777	8.717	8.463	8.403	8.353	8.353	8.303	8.317	8.33
MP4(μ Sv/h)	6.227	6.237	6.197	6.227	6.210	6.233	6.203	6.173	6.200	6.190	6.220	6.497	7.193	6.643	6.893	6.713	6.817	6.710	6.650	6.543	6.443	6.353	6.393	6.39
MP5(μ Sv/h)	5.693	5.693	5.693	5.693	5.693	5.693	5.667	5.693	5.673	5.593	5.667	5.693	6.547	6.180	6.167	6.187	6.373	6.327	6.367	6.180	6.087	5.987	5.993	6.08
MP6(μ Sv/h)	6.817	6.850	6.843	6.843	6.810	6.837	6.823	6.837	6.833	6.807	6.827	6.997	7.197	7.057	6.947	6.910	7.080	7.177	7.177	7.093	7.043	7.010	7.050	7.05
MP7(μ Sv/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	西北西	西	西	西	西南西	南西	東南東	東南東	南西	南西	南南東	東	東南東	東南東	東南東	南	南	北北西	北東	東北東	北北東	東	北東	東北東
風速(m/s)	5.8	6.8	5.9	5.1	0.8	0.5	0.8	1.9	2.3	1.1	0.7	0.7	1.7	1.7	0.3	0.1	0.6	0.6	0.9	0.8	0.9	0.7	1.6	1.1

3月29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(μ Sv/h)	8.837	9.013	9.220	9.023	8.973	9.090	9.060	9.203	9.017	8.923	8.743	8.823	8.827	8.813	8.837	8.783	8.803	8.763	8.717	8.717	8.693	8.683	8.677	8.63
MP2(μ Sv/h)	4.813	4.987	5.323	5.030	4.970	5.053	5.113	5.110	5.000	4.893	4.810	4.780	4.837	4.843	4.873	4.820	4.833	4.813	4.740	4.710	4.690	4.687	4.690	4.67
MP3(μ Sv/h)	8.377	8.503	8.763	8.623	8.460	8.517	8.483	8.557	8.467	8.450	8.320	8.287	8.330	8.377	8.363	8.360	8.343	8.350	8.293	8.210	8.203	8.163	8.210	8.20
MP4(μ Sv/h)	6.470	6.623	6.927	6.793	6.623	6.627	6.643	6.770	6.623	6.503	6.480	6.410	6.403	6.493	6.437	6.403	6.450	6.410	6.297	6.293	6.257	6.233	6.267	6.23
MP5(μ Sv/h)	6.060	6.187	6.567	6.373	6.273	6.373	6.273	6.413	6.247	6.133	6.060	6.087	6.087	6.087	6.087	5.993	5.993	5.993	5.787	5.787	5.767	5.747	5.787	5.79
MP6(μ Sv/h)	6.993	7.160	7.413	7.253	7.207	7.293	7.320	7.160	7.143	7.107	7.053	7.057	7.043	7.073	7.060	7.023	6.980	6.930	6.847	6.877	6.833	6.797	6.823	6.82
MP7(μ Sv/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	東北東	東	東南東	東	西南西	南南西	東南東	東南東	東南東	東南東	南南東	南南東	南西	南西	南西	西南西	南西	南西	南南西	南西	南南東	東南東	南南東	南南東
風速(m/s)	1.4	1.6	1.9	0.6	0.5	0.9	1.1	1.5	1.5	1.1	1.0	0.9	0.9	0.8	2.2	3.4	3.8	2.8	1.2	1.8	1.5	2.3	3.1	2.1

3月29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(μ Sv/h)	8.650	8.663	8.697	8.797	8.763	8.727	8.720	8.753	8.800	8.723	8.757	8.717	8.680	8.710	8.693	8.680	8.710	8.710	8.723	8.617	8.660	8.610	8.630	8.550
MP2(μ Sv/h)	4.653	4.673	4.720	4.800	4.780	4.733	4.743	4.757	4.833	4.787	4.757	4.763	4.753	4.730	4.747	4.730	4.727	4.710	4.720	4.640	4.653	4.627	4.607	4.590
MP3(μ Sv/h)	8.193	8.163	8.227	8.270	8.233	8.210	8.210	8.240	8.273	8.310	8.243	8.273	8.280	8.217	8.243	8.247	8.223	8.203	8.223	8.160	8.170	8.153	8.130	8.120
MP4(μ Sv/h)	6.230	6.230	6.297	6.327	6.307	6.297	6.307	6.313	6.320	6.357	6.363	6.367	6.360	6.357	6.327	6.357	6.340	6.327	6.307	6.273	6.273	6.233	6.210	6.190
MP5(μ Sv/h)	5.793	5.793	5.787	5.787	5.793	5.793	5.793	5.793	5.793	5.893	5.793	5.793	5.793	5.787	5.793	5.787	5.740	5.693	5.693	5.640	5.647	5.647	5.600	
MP6(μ Sv/h)	6.823	6.840	6.860	6.843	6.890	6.903	6.897	6.897	6.890	6.930	6.950	6.943	6.933	6.947	6.943	6.960	6.953	6.940	6.910	6.870	6.853	6.870	6.863	6.850
MP7(μ Sv/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	東	南南東	南南東	東南東	南東	南南東	南東	南東	東	東	東	東南東	東南東	東南東	南東	南東	南東	南東	南東	南南東	南東	南南東	南南東	南南東
風速(m/s)	2.2	3.2	3.0	2.5	3.4	3.8	2.7	2.1	2.4	3.0	2.6	3.0	3.8	3.6	3.4	3.3	3.2	3.4	3.9	3.3	4.8	5.7	6.4	6.1

福島第二原子力発電所

2011/3/30
10:00現在

MP1:8.160 $\mu\text{Sv/h}$ (30日 08:00時点)

(参考值:0.035~0.054 $\mu\text{Sv/h}$)

モニタリングポスト配置図 2F

MP2:4.377Sv/h(30日 08:00時点)

(参考值:0.042~0.062 $\mu\text{Sv/h}$)

MP3:7.687 μ Sv/h(30日 08:00時点)

(参考值:0.036~0.052 $\mu\text{Sv/h}$)

MP4:5.943 μ Sv/h(30日 08:00時点)

(参考值:0.036~0.052 $\mu\text{Sv/h}$)

MP5:5.320 μ Sv/h(30日 08:00時点)

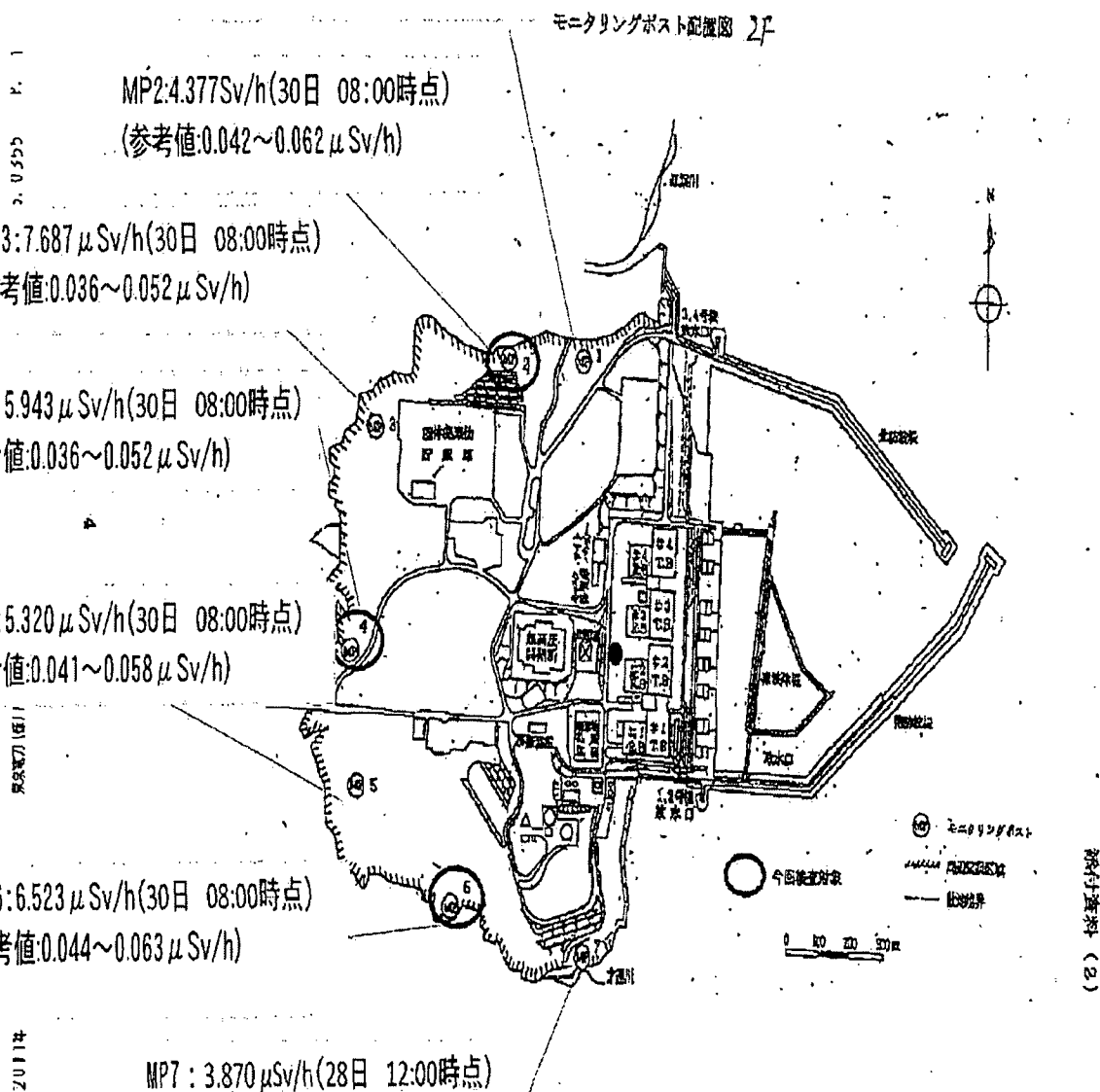
(参考值:0.041~0.058 $\mu\text{Sv/h}$)

MP6:6.523 μ Sv/h(30日 08:00時点)

(参考值:0.044~0.063 $\mu\text{Sv/h}$)

MP7 : 3.870 μ Sv/h(28日 12:00時点)

(参考值:0.043~0.062 $\mu\text{Sv/h}$)



各発電所等の環境モニタリング結果

単位: $\mu\text{Sv/h}$

通常の平常値の範囲	会社名	発電所名	3月29日												単位: $\mu\text{Sv/h}$
			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	0.024	0.023	0.024	0.024	0.024	0.024	0.024	0.023	0.024	0.023	0.024	0.024	
0.024~0.060	東北電力㈱	女川原子力発電所	0.67	0.67	0.67	0.66	0.68	0.66	0.65	0.65	0.65	0.64	0.64	0.64	
0.012~0.060		東通原子力発電所	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	
0.033~0.050	東京電力㈱	福島第一原子力発電所*	117.8	117.5	117.2	116.6	116.2	182.0	127.6	117.6	132.7	137.8	126.6	125.4	
0.036~0.052		福島第二原子力発電所	8.220	8.177	8.977	8.403	8.377	8.483	8.330	8.293	8.193	8.210	8.280	8.223	
0.011~0.159		柏崎刈羽原子力発電所	0.064	0.065	0.065	0.065	0.065	0.065	0.065	0.065	0.066	0.066	0.066	0.065	
0.036~0.053	日本原子力発電㈱	東海第一発電所	0.691	0.691	0.689	0.685	0.681	0.685	0.691	0.677	0.686	0.679	0.681	0.683	
0.039~0.110		敦賀発電所	0.074	0.073	0.074	0.073	0.073	0.073	0.072	0.073	0.074	0.074	0.074	0.073	
0.064~0.108	中部電力㈱	浜岡原子力発電所	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.076	0.077	0.076	0.076	0.076	
0.0207~0.132	北陸電力㈱	志賀原子力発電所	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.034	0.034	0.033	
0.023~0.130	中国電力㈱	島根原子力発電所	0.030	0.030	0.032	0.032	0.031	0.035	0.030	0.030	0.030	0.029	0.030	0.030	
0.070~0.077	関西電力㈱	美浜発電所	0.072	0.073	0.072	0.072	0.072	0.074	0.073	0.072	0.073	0.073	0.074	0.072	
0.045~0.047		高浜発電所	0.042	0.042	0.043	0.044	0.042	0.043	0.043	0.043	0.044	0.044	0.044	0.043	
0.036~0.040	四国電力㈱	大飯発電所	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.036	0.036	0.036	0.036	0.035	
0.011~0.080		伊方発電所	0.014	0.013	0.014	0.014	0.014	0.014	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	0.026	0.026	0.026	0.026	0.026	0.027	0.026	0.027	0.027	0.027	0.026	0.027	
0.034~0.120		川内原子力発電所	0.035	0.039	0.037	0.037	0.040	0.037	0.039	0.041	0.038	0.037	0.037	0.035	
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.015	
0.009~0.071		六ヶ所 埋設事業所	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.021	

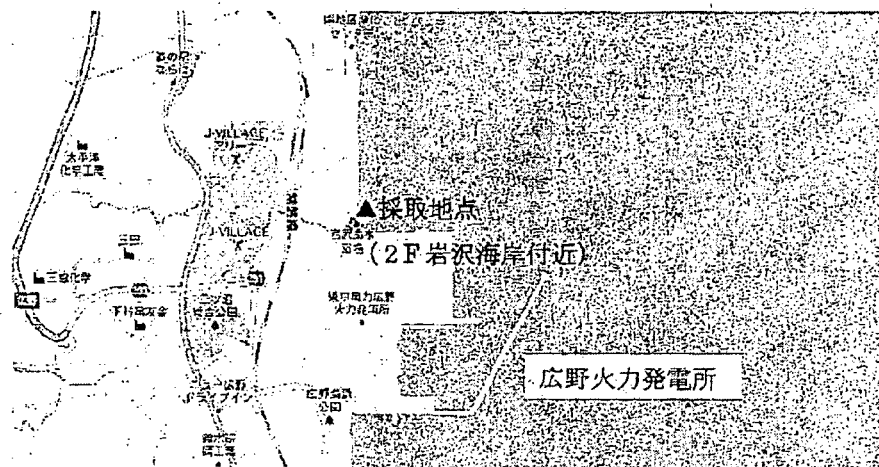
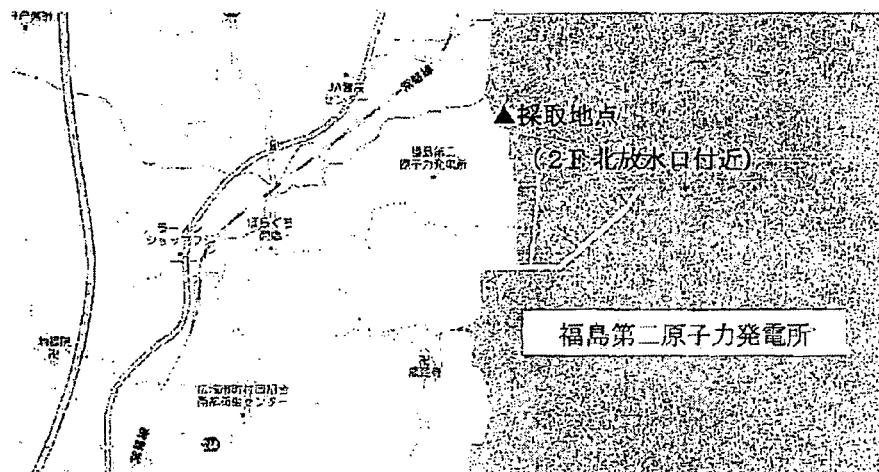
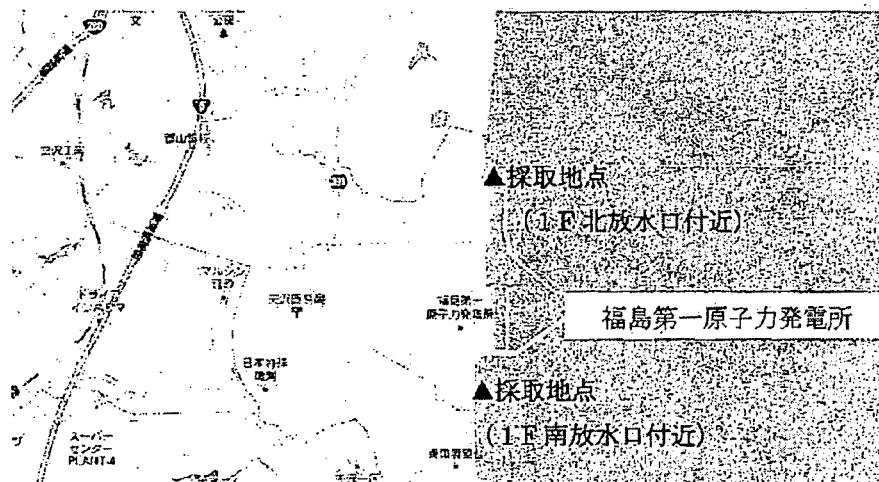
*福島第一原子力発電所については、作業状況により若干測定時間のずれ及び測定位置の変更が生じることもございます。

通常の平常値の範囲	会社名	発電所名	3月29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	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.025		
0.024~0.060	東北電力㈱	女川原子力発電所	0.63	0.63	0.63	0.63	0.62	0.62	0.62	0.62	0.63	0.63		
0.012~0.060		東通原子力発電所	0.016	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017		
0.033~0.050	東京電力㈱	福島第一原子力発電所*	122.5	120.2	117.2	116.0	117.5	121.5	117.1	116.0	115.0	114.0		
0.036~0.052		福島第二原子力発電所	8.110	8.067	8.067	7.970	7.937	7.930	7.940	7.900	7.853	7.947		
0.011~0.159		柏崎刈羽原子力発電所	0.066	0.066	0.065	0.065	0.065	0.066	0.066	0.065	0.065	0.067		
0.036~0.053	日本原子力発電㈱	東海第二発電所	0.679	0.674	0.671	0.666	0.667	0.664	0.665	0.660	0.657	0.655		
0.039~0.110		敦賀発電所	0.072	0.074	0.073	0.072	0.074	0.073	0.073	0.074	0.074	0.073		
0.064~0.108	中部電力㈱	浜岡原子力発電所	0.076	0.075	0.076	0.076	0.075	0.075	0.076	0.075	0.075	0.076		
0.0207~0.132	北陸電力㈱	志賀原子力発電所	0.033	0.033	0.033	0.032	0.032	0.033	0.033	0.033	0.033	0.033		
0.023~0.130	中国電力㈱	島根原子力発電所	0.030	0.029	0.030	0.030	0.030	0.031	0.029	0.030	0.029	0.029		
0.070~0.077	関西電力㈱	美浜発電所	0.073	0.070	0.074	0.073	0.072	0.072	0.072	0.073	0.073	0.073		
0.045~0.047		高浜発電所	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043		
0.036~0.040	四国電力㈱	大飯発電所	0.035	0.035	0.034	0.035	0.034	0.035	0.035	0.035	0.034	0.036		
0.011~0.080		伊方発電所	0.014	0.013	0.014	0.014	0.014	0.014	0.014	0.019	0.018	0.015		
0.023~0.087	九州電力㈱	玄海原子力発電所	0.027	0.026	0.036	0.035	0.032	0.027	0.027	0.034	0.032	0.028		
0.034~0.120		川内原子力発電所	0.040	0.038	0.037	0.040	0.038	0.040	0.035	0.037	0.035	0.038		
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.015	0.016	0.016	0.016	0.016	0.017	0.017	0.016	0.015	0.016		
0.009~0.071		六ヶ所 埋設事業所	0.021	0.021	0.022	0.021	0.021	0.023	0.023	0.022	0.022	0.022		

*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。

3/29(土) 21:00時点

海水サンプリングポイント図



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21日 14:30			3月22日 6:30			3月23日 8:50			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)	
Co-58	5.955E-02	3.349E-02	0.1	N.D.	2.138E-02	-	5.0E-02	2.6E-02	0.1	1E+00
I-131	5.066E+00	4.245E-02	126.7	1.190E+00	2.293E-02	29.8	5.9E+00	3.6E-02	146.9	4E-02
I-132	2.136E+00	1.925E-01	0.7	1.382E+00	7.721E-02	0.5	5.4E+00	1.4E-01	1.8	3E+00
Cs-134	1.486E+00	4.030E-02	24.8	1.504E-01	1.769E-02	23	2.5E-01	2.7E-02	4.2	6E-02
Cs-136	2.132E-01	2.358E-02	0.7	2.350E-02	1.056E-02	0.1	2.5E-02	2.4E-02	0.1	3E-01
Cs-137	1.484E+00	4.204E-02	16.5	1.535E-01	1.626E-02	1.7	2.5E-01	2.7E-02	2.8	9E-02
Zr-95							2.3E-01	7.8E-02	0.3	9E-01
Ru-105							8.7E-01	6.2E-01	0.3	3E+00
Ru-106							3.7E-01	2.0E-01	3.7	1E-01
Te-129							4.0E+00	3.9E+00	0.4	1E+01
Te-132							4.0E-01	3.6E-02	2.0	2E-01
La-140							1.3E-02	1.0E-02	0.0	4E-01

核種	3月24日 10:25			3月25日 8:30			3月26日 8:20			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)	
Co-60				5.9E-02	2.0E-02	0.3				2.0E-01
Mo-99				2.1E-01	1.7E-01	0.2				1.0E+00
I-131	4.2E+00	2.3E-02	103.9	5.0E+01	6.2E-02	1250.8	3.0E+01	4.0E-02	750.0	4.0E-02
I-132	1.7E+00	4.3E-01	0.6	3.3E+00	7.7E-02	1.1	2.0E+00	6.3E-02	0.7	3.0E+00
Cs-134	4.5E-01	1.7E-02	7.4	7.0E+00	3.9E-02	117.3	4.7E+00	3.1E-02	78.3	6.0E-02
Cs-136	6.1E-02	1.7E-02	0.2	8.0E-01	3.9E-02	2.7	5.2E-01	3.1E-02	1.7	3.0E-01
Cs-137	4.4E-01	1.5E-02	4.9	7.2E+00	3.5E-02	79.6	4.8E+00	2.7E-02	53.3	9.0E-02
Tc-99m							6.8E-02	4.4E-02	0.0	4.0E+01
Te-132	8.0E-02	2.1E-02	0.4	2.2E-01	4.0E-02	1.1				2.0E-01
Ba-140				1.2E+00	1.5E-01	3.9	7.7E-01	1.2E-01	2.6	3.0E-01
La-140	2.1E-02	1.2E-02	0.1	5.8E-01	1.3E-02	1.4	3.5E-01	1.0E-02	0.9	4.0E-01

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26日 14:30			3月27日 8:30			3月27日 13:50			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)	
Co-58	7.3E-02	4.7E-02	0.1							1.0E+00
Co-60										2.0E-01
Mo-99										1.0E+00
I-131	7.4E+01	6.5E-02	1850.5	1.1E+01	2.4E-02	275.0	1.0E+01	3.8E-02	250.0	4.0E-02
I-132	3.8E+00	7.4E-02	1.3	3.4E-01	3.4E-02	0.1	3.5E-01	6.3E-02	0.1	3.0E+00
Cs-134	1.2E+01	4.9E-02	196.7	1.9E+00	2.0E-02	31.7	1.9E+00	2.8E-02	31.7	6.0E-02
Cs-136	1.3E+00	5.2E-02	4.2	2.1E-01	2.0E-02	0.7	1.9E-01	3.0E-02	0.6	3.0E-01
Cs-137	1.2E+01	4.9E-02	133.4	1.9E+00	1.8E-02	21.1	1.8E+00	2.7E-02	20.0	9.0E-02
Tc-99m	1.2E-01	6.0E-02	0.0							4.0E+01
Te-129	3.0E+00	2.5E+00	0.3							1.0E+01
Te-129m	1.3E+00	1.0E+00	4.3							3.0E-01
Te-132	1.0E+00	5.2E-02	5.2							2.0E-01
Ba-140	1.8E+00	2.0E-01	6.0	3.0E-01	7.2E-02	1.0	2.6E-01	8.7E-02	0.9	3.0E-01
La-140	8.7E-01	1.6E-01	2.2	2.1E-01	6.5E-03	0.5	1.4E-01	5.5E-02	0.4	4.0E-01

核種	3月28日 8:20			3月28日 14:20						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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)				
Co-58										1E+00
I-131	1.4E+00	1.8E-02	33.9	1.1E+00	1.7E-02	27.9				4E-02
I-132	5.6E-02	5.4E-02	0.0							3E+00
Cs-134	2.8E-01	1.2E-02	4.6	2.4E-01	1.1E-02	4.1				6E-02
Cs-136	2.6E-02	9.5E-03	0.1	2.4E-02	1.1E-02	0.1				3E-01
Cs-137	2.9E-01	1.1E-02	3.3	2.4E-01	1.0E-02	2.7				9E-02
Tc-99m										4E+01
Te-129										1E+01
Te-129m										3E-01
Te-132										2E-01
Ba-140										3E-01
La-140	2.7E-02	5.6E-03	0.1	1.7E-02	3.7E-03	0.0				4E-01

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23日 9:10			3月24日 10:40			3月25日 8:50			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)	
Co-58	5.7E-02	3.1E-02	0.1							1E+00
I-131	2.7E+00	2.5E-02	66.6	9.5E-01	1.3E-02	23.7	1.1E+01	2.3E-02	283.8	4E-02
I-132	2.9E+00	7.7E-02	1.0	4.5E-01	2.1E-01	0.2	1.9E-01	4.1E-02	0.1	3E+00
Cs-134	1.8E+00	2.4E-02	29.9	1.1E-01	9.2E-03	1.8	1.7E+00	1.9E-02	28.0	6E-02
Cs-136	2.3E-01	2.5E-02	0.8	1.1E-02	6.5E-03	0.0	2.0E-01	1.7E-02	0.7	3E-01
Cs-137	1.9E+00	2.4E-02	21.4	1.1E-01	8.7E-03	1.2	1.7E+00	1.8E-02	18.5	9E-02
Tc-99m	8.3E-02	2.5E-02	0.0				3.4E-02	2.5E-02	0.0	4E+01
Te-129	7.3E+00	3.8E+00	0.7							1E+01
Te-129m	1.3E+00	6.1E-01	4.2							3E-01
Te-132	1.6E+00	2.1E-02	7.8	1.4E-01	1.0E-02	0.7	1.3E-01	2.1E-02	0.6	2E-01
Ba-140	1.3E-01	9.4E-02	0.4				2.8E-01	7.2E-02	0.9	3E-01
La-140	5.5E-02	1.2E-02	0.1				1.3E-01	6.8E-03	0.3	4E-01

核種	3月26日 8:40			3月26日 14:50			3月27日 8:50			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)	
Co-58										1.0E+00
I-131	2.9E+01	3.8E-02	725.0	1.3E+01	3.7E-02	314.3	8.1E+00	3.2E-02	202.5	4.0E-02
I-132	1.1E-01	5.7E-02	0.0	3.2E-01	5.9E-02	0.1				3.0E+00
I-135	1.0E+00	2.6E-01	1.3							8.0E-01
Cs-134	5.0E+00	3.1E-02	83.3	2.2E+00	3.0E-02	36.3	1.6E+00	2.6E-02	27.2	6.0E-02
Cs-136	5.4E-01	2.9E-02	1.8	2.5E-01	3.0E-02	0.8	1.8E-01	2.0E-02	0.6	3.0E-01
Cs-137	5.1E+00	2.6E-02	56.7	2.2E+00	2.9E-02	24.2	1.7E+00	2.6E-02	18.9	9.0E-02
Tc-99m										4.0E+01
Te-129										1.0E+01
Te-129m										3.0E-01
Te-132				6.7E-02	3.6E-02	0.3				2.0E-01
Ba-140	8.6E-01	1.2E-01	2.9	3.4E-01	1.0E-01	1.1	2.7E-01	8.8E-02	0.9	3.0E-01
La-140	3.2E-01	8.3E-03	0.8	1.5E-01	7.8E-03	0.4	1.1E-01	5.3E-03	0.3	4.0E-01

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27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月28日 8:40 1F 5~6放水口北側(5~6u放水口から北側約30m地点)			3月28日 14:40 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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限 度に対する 割合 (①/③)	
Co-58										1E+00
I-131	4.6E+01	5.2E-02	1150.0	3.3E+01	5.7E-02	816.0	2.7E+01	4.2E-02	665.8	4E-02
I-132										3E+00
Cs-134	9.8E+00	4.1E-02	163.3	6.6E+00	4.5E-02	110.3	5.6E+00	3.2E-02	93.8	6E-02
Cs-136	9.8E-01	3.8E-02	3.3	6.8E-01	4.3E-02	2.3	5.6E-01	3.0E-02	1.9	3E-01
Cs-137	9.8E+00	3.4E-02	108.9	6.6E+00	4.1E-02	73.9	5.7E+00	2.8E-02	63.5	9E-02
Tc-99m										4E+01
Te-129										1E+01
Te-129m										3E-01
Te-132										2E-01
Ba-140	1.6E+00	1.6E-01	5.3	1.1E+00	1.6E-01	3.6	8.8E-01	1.2E-01	2.9	3E-01
La-140	5.5E-01	1.1E-02	1.4	5.2E-01	1.2E-02	1.3	3.7E-01	8.5E-03	0.9	4E-01

核種										③周辺監視区 域外の水中の 濃度限度
Co-58										1E+00
I-131										4E-02
I-132										3E+00
Cs-134										6E-02
Cs-136										3E-01
Cs-137										9E-02
Tc-99m										4E+01
Te-129										1E+01
Te-129m										3E-01
Te-132										2E-01
Ba-140										3E-01
La-140										4E-01

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

核種	3月21日 23:15			3月22日 14:28			3月23日 13:51			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58	5.704E-03	7.570E-03	0.0	N.D	1.526E-02	—				1.0E+00
Ru-105							3.4E-02	2.5E-02	0.01	3E+00
Ru-106										1E-01
I-131	1.085E+00	1.284E-02	27.1	1.138E+00	1.993E-02	28.5	7.4E-01	2.7E-02	18.6	4.0E-02
I-132	1.597E-01	4.392E-02	0.1	N.D	8.791E-02	—	2.0E-01	5.8E-02	0.1	3.0E+00
Cs-134	4.815E-02	9.213E-03	0.8	4.631E-02	1.350E-02	0.8	5.1E-02	2.0E-02	0.8	6.0E-02
Cs-136	6.682E-03	4.722E-03	0.0	N.D	7.849E-03	—				3.0E-01
Cs-137	5.283E-02	8.822E-03	0.6	3.982E-02	1.406E-02	0.4	5.5E-02	2.0E-02	0.6	9.0E-02

核種	3月24日 9:30			3月25日 10:00			3月26日 15:15			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132				1.3E-02	7.4E-03	0.004				3.0E+00
Co-58										1E+00
Ru-105	5.6E-02	4.4E-02	0.02							3E+00
Ru-106										1E-01
I-131	1.1E+00	5.2E-02	28.4	4.3E-01	1.0E-02	10.7	4.1E-01	2.1E-02	10.3	4E-02
I-132	1.2E-01	8.8E-02	0.04	5.8E-02	2.2E-02	0.02				3E+00
Cs-134	9.9E-02	3.8E-02	1.6	2.6E-02	7.4E-03	0.4	2.6E-02	1.8E-02	0.4	6E-02
Cs-136	6.8E-02	4.9E-02	0.2	4.4E-03	3.2E-03	0.01	2.7E-02	1.9E-02	0.3	3E-01
Cs-137	9.4E-02	4.1E-02	1.0	3.4E-02	5.9E-03	0.4				9E-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)	3月27日 14:30			3月28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)						
	①放射能濃度 (Bq/cm ³)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)				
Te-132										3.0E+00
Co-58										1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131	3.8E+00	1.5E-02	95.0	3.8E+00	3.0E-02	95.5				4.0E-02
I-132	1.5E-02	1.3E-02	0.005							3.0E+00
Cs-134	5.4E-01	1.2E-02	9.0	6.1E-01	2.3E-02	10.1				6.0E-02
Cs-136	5.5E-02	1.0E-03	0.2	6.3E-02	1.7E-02	0.2				3.0E-01
Cs-137	5.7E-01	1.0E-02	6.3	6.2E-01	2.2E-02	6.9				9.0E-02
Ba-140				9.5E-02	5.7E-02	0.3				3.0E-01
La-140				4.5E-02	6.2E-03	0.1				4.0E-01

核種										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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58										1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131										4.0E-02
I-132										3.0E+00
Cs-134										6.0E-02
Cs-136										3.0E-01
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: 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21日 23:45 2F岩沢海岸付近(1,2号放水口から南側に約7,000m地点)			3月22日 15:06 2F岩沢海岸付近(1,2号放水口から南側に約7,000m地点)			3月23日 14:25 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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58	N.D	6.845E-03	-	N.D	1.301E-02					1.E+00
Ru-105							3.3E-02	2.8E-02	0.01	3.0E+00
Ru-106							1.2E-01	1.2E-01	1.25	1E-01
I-131	6.558E-01	1.228E-02	16.4	6.664E-01	1.862E-02	16.7	7.6E-01	2.7E-02	19.1	4.0E-02
I-132	1.205E-01	4.146E-02	0.0	N.D	7.915E-02		3.3E-01	5.3E-02	0.1	3.0E+00
Cs-134	3.110E-02	8.657E-03	0.5	3.925E-02	1.135E-02	0.7	3.3E-02	2.1E-02	0.5	6.0E-02
Cs-136	5.474E-03	4.840E-03	0.0	N.D	6.784E-03					3.0E-01
Cs-137	3.292E-02	8.303E-03	0.4	4.361E-02	1.129E-02	0.5	4.3E-02	2.1E-02	0.5	9.0E-02

核種	3月24日 8:45 2F岩沢海岸付近(1,2号放水口から南側に約7,000m地点)(1Fから約16km)			3月25日 9:10 2F岩沢海岸付近(1,2号放水口から南側に約7,000m地点)(1Fから約16km)			3月26日 15:50 2F岩沢海岸付近(1,2号放水口から南側に約7,000m地点)(1Fから約16km)			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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58										1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131	5.0E-01	1.0E-02	12.6	3.7E-01	1.0E-02	9.2	3.0E-01	9.6E-03	7.6	4.0E-02
I-132	N.D	1.9E-02	-	1.2E-01	2.6E-02	0.04				3.0E+00
Cs-134	3.5E-02	7.0E-03	0.6	2.0E-02	6.7E-03	0.3	1.3E-02	7.1E-03	0.2	6.0E-02
Cs-136	5.3E-03	5.1E-03	0.02	4.2E-03	3.3E-03	0.01				3.0E-01
Cs-137	3.8E-02	7.0E-03	0.4	2.2E-02	6.0E-03	0.2	1.4E-02	6.8E-03	0.2	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)	3月27日 08:45			3月28日 8:45						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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)				
Te-132										3.0E+00
Co-58										1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131	2.9E-01	1.0E-02	7.4	2.4E+00	2.7E-02	58.8				4.0E-02
I-132										3.0E+00
Cs-134	2.0E-02	6.0E-03	0.3	3.3E-01	2.1E-02	5.5				6.0E-02
Cs-136	2.3E-03	2.1E-03	0.01	2.5E-02	1.7E-02	0.08				3.0E-01
Cs-137	2.4E-02	5.7E-03	0.3	3.8E-01	2.1E-02	4.2				9.0E-02
La-140				2.8E-02	5.3E-03	0.1				4.0E-01

核種										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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58										1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131										4.0E-02
I-132										3.0E+00
Cs-134										6.0E-02
Cs-136										3.0E-01
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: 2F 富岡川河口付近 (3.4u放水口から北側約2,000m地点) (IFから約8km)

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22日 0:38									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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58	1.028E-02	1.253E-02	0.0							1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131	3.211E+00	1.694E-02	90.3							4.0E-02
I-132	8.761E-01	4.236E-02	0.3							3.0E+00
Cs-134	7.535E-02	1.102E-02	1.3							6.0E-02
Cs-136	1.159E-02	7.718E-03	0.0							3.0E-01
Cs-137	7.760E-02	1.186E-02	0.9							9.0E-02

核種										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)	②検出限界濃度 (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)	②検出限界濃度 (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)	②検出限界濃度 (Bq/cm ³)	水中濃度限度 に対する割合 (①/③)	
Te-132										3.0E+00
Co-58										1.E+00
Ru-105										3.0E+00
Ru-106										1E-01
I-131										4.0E-02
I-132										3.0E+00
Cs-134										6.0E-02
Cs-136										3.0E-01
Cs-137										9.0E-02

※: 0.0E-0とは、 0.0×10^{-0} 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气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 事務本館北側		
	日時	3月19日	3月20日	3月21日
		11:53~12:13(放水前)	1:41~2:01	10:19~10:39
	採取方法	モニタリングカーにてダスト採取		
試料測定	風向・風速	W 4.7m/s (11:50現在)	SW 2.1m/s (1:40現在)	NW 2.5m (10:10現在)
	日時	3/19 14:12~	3/21 13:28~	3/21 13:48~
	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	500s		

2. 結果

	核種	3月19日 採取分			3月20日 採取分			3月21日 採取分			③放射線業務従事者の呼吸する空气中の濃度限度(Bq/cm³)※
		①放射能濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	
揮発性	I-131	5.9E-03	3.4E-05	5.94	2.3E-03	1.3E-05	2.30	1.5E-03	1.1E-05	1.52	1.0E-03
	I-132	2.2E-03	8.8E-05	0.03	ND	—	—	2.5E-04	2.7E-05	0.004	7.0E-02
	I-133	3.8E-05	2.9E-05	0.01	ND	—	—	ND	—	—	5.0E-03
	Cs-134	ND	—	—	4.0E-05	8.3E-06	0.02	3.1E-05	8.6E-06	0.016	2.0E-03
	Cs-137	ND	—	—	3.9E-05	8.4E-06	0.01	3.6E-05	7.9E-06	0.01	3.0E-03
粒子状	Co-58	ND	—	—	ND	—	—	ND	—	—	1.0E-02
	I-131	1.1E-03	1.6E-05	1.07	1.3E-03	6.8E-06	1.29	9.2E-06	5.0E-06	0.01	1.0E-03
	I-132	3.8E-04	5.0E-05	0.01	ND	—	—	1.1E-04	1.2E-05	0.00	7.0E-02
	Cs-134	2.2E-05	1.7E-05	0.01	2.8E-05	4.8E-06	0.01	3.4E-05	5.4E-06	0.02	2.0E-03
	Cs-136	ND	—	—	5.6E-06	5.4E-06	0.001	4.5E-06	3.3E-06	0.0005	1.0E-02
	Cs-137	2.4E-05	1.8E-05	0.01	2.9E-05	5.0E-06	0.01	3.8E-05	4.7E-06	0.01	3.0E-03
その他の検出核種	Ru-106	2.1E-04	2.1E-04	0.36	3.8E-05	3.4E-05	0.06	ND	—	—	6.0E-04
	Te-129	ND	—	—	ND	—	—	1.3E-03	3.8E-04	0.00	4.0E-01
	Te-129m	ND	—	—	1.4E-04	1.2E-04	0.03	ND	—	—	4.0E-03
	Te-132	6.7E-05	1.8E-05	0.01	5.1E-04	6.0E-06	0.07	3.9E-04	4.3E-06	0.06	7.0E-03
	Ce-144	ND	—	—	5.0E-03	4.6E-04	7.08	ND	—	—	7.0E-04

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E-0とは、0.0×10⁻⁰と同じ意味である。

福島第一 発電所敷地内における空气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 正門		
	日時	3/22 1:10~1:30	3/23 2:1~2:21	3/24 5:27~5:47
	採取方法	モニタリングカーにてダスト採取		
	風向・風速	W 0.5m/s (1:10現在)	N 3.2m/s (2:00現在)	ESE 0.8m/s (5:30現在)
試料測定	日時	3/22 14:50~	3/23 14:54~	3/24 22:03~
	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	500s		

2. 結果

	核種	3/22採取分			3/23採取分			3/24採取分			②放射線業務従事者の呼吸する空气中の濃度限度 (Bq/cm ³)※
		①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	空气中濃度限度に対する割合 (①/②)	①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	空气中濃度限度に対する割合 (①/②)	①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	空气中濃度限度に対する割合 (①/②)	
揮発性	Co-58	ND	—	—	ND	—	—	ND	—	—	1.0E-02
	I-131	2.2E-03	1.6E-05	2.24	6.7E-04	9.6E-06	0.67	1.5E-03	1.0E-05	1.49	1.0E-03
	I-132	ND	—	—	ND	—	—	ND	—	—	7.0E-02
	I-133	ND	—	—	ND	—	—	ND	—	—	5.0E-03
	Cs-134	1.1E-05	1.1E-05	0.01	2.2E-05	7.6E-06	0.01	3.2E-05	7.9E-06	0.02	2.0E-03
	Cs-137	1.3E-05	1.0E-05	0.00	2.3E-05	7.6E-06	0.01	3.1E-05	7.3E-06	0.01	3.0E-03
粒子状	Co-58	ND	—	—	5.1E-06	5.1E-06	0.00	ND	—	—	1.0E-02
	I-131	4.7E-04	7.4E-06	0.47	4.3E-04	5.0E-06	0.43	5.0E-04	4.6E-06	0.50	1.0E-03
	I-132	ND	—	—	ND	—	—	ND	—	—	7.0E-02
	Cs-134	1.6E-05	5.9E-06	0.01	1.7E-05	4.2E-06	0.01	1.1E-05	4.6E-06	0.01	2.0E-03
	Cs-136	ND	—	—	3.0E-06	2.7E-06	0.00	ND	—	—	1.0E-02
	Cs-137	1.9E-05	5.3E-06	0.01	1.3E-05	4.2E-06	0.00	1.2E-05	3.8E-06	0.00	3.0E-03
その他の検出核種	Zr-95	ND	—	—	ND	—	—	2.5E-05	6.0E-06	0.00	8.0E-02
	Te-129	ND	—	—	2.3E-01	1.2E-01	0.58	4.6E+00	9.5E-01	11.39	4.0E-01
	Te-129m	ND	—	—	ND	—	—	3.4E-04	9.9E-05	0.08	4.0E-03
	Te-132	6.7E-05	1.1E-05	0.01	4.3E-04	4.5E-06	0.06	3.6E-04	4.4E-04	0.05	7.0E-03
	Ce-144	ND	—	—	1.3E-03	3.7E-04	1.89	ND	—	—	7.0E-04

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E-0とは、 0.0×10^{-0} 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气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 正門		
	日時	3/25 2:01~2:21	3/26 2:00~2:20	3/27 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	ESE 0.8m/s (5:30現在)	NNW 2.9m/s (2:20現在)	S 0.5m/s (2:00現在)
試料測定	日時	3/25 13:38~	3/26 12:24~	3/27 11:38~
	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	600s		

2. 結果

	核種	3/25採取分			3/26採取分			3/27採取分			③放射線業務従事者の呼吸する空气中の濃度限度(Bq/cm ³)※
		①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	空气中濃度限度に対する割合(①/②)	①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	空气中濃度限度に対する割合(①/②)	①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	空气中濃度限度に対する割合(①/②)	
揮発性	Co-58	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	I-131	8.8E-04	2.1E-05	0.88	3.0E-04	7.9E-06	0.30	4.5E-04	8.2E-06	0.45	1.0E-03
	I-132	ND	-	-	ND	-	-	1.8E-04	1.3E-04	0.03	7.0E-02
	I-133	ND	-	-	ND	-	-	ND	-	-	5.0E-03
	Cs-134	3.2E-05	1.7E-05	0.02	1.2E-05	7.2E-06	0.01	1.2E-05	6.4E-06	0.01	2.0E-03
	Cs-136	ND	-	-	6.2E-06	3.7E-06	0.00	ND	-	-	1.0E-02
	Cs-137	2.4E-05	1.8E-05	0.01	8.8E-06	6.9E-06	0.03	1.4E-05	6.2E-06	0.00	3.0E-03
粒子状	Co-58	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	I-131	3.2E-04	1.1E-05	0.32	2.6E-04	1.1E-05	0.26	2.1E-04	9.5E-06	0.21	1.0E-03
	I-132	ND	-	-	ND	-	-	ND	-	-	7.0E-02
	Cs-134	1.6E-05	9.5E-06	0.01	1.8E-05	9.8E-06	0.01	1.8E-05	8.8E-06	0.01	2.0E-03
	Cs-136	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	Cs-137	1.6E-05	9.2E-06	0.01	1.6E-05	1.0E-05	0.01	1.4E-05	9.5E-06	0.00	3.0E-03
その他の核出核種	Zr-95	ND	-	-	ND	-	-	ND	-	-	8.0E-02
	Ru-105	3.1E-04	4.4E-05	0.00	6.0E-05	3.9E-05	0.00	ND	-	-	8.0E-02
	Te-129	ND	-	-	5.2E-02	3.4E-02	0.13	2.6E-02	2.2E-02	0.07	4.0E-01
	Te-129m	ND	-	-	ND	-	-	1.9E-04	1.5E-04	0.05	4.0E-03
	Te-132	8.2E-05	1.0E-05	0.01	1.6E-04	6.0E-06	0.02	1.2E-04	5.7E-06	0.02	7.0E-03

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E-0とは、0.0×10⁻⁰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气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	3/28 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	N 0.5m/s (2.00現在)		
試料測定	日時	3/28 11:41~		
	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	1000s		

2. 結果

	核種	3/28採取分								③放射線業務従事者の呼吸する空气中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/②)						
揮発性	Co-58	-	-	-						1.0E-02
	I-131	3.6E-04	8.9E-06	0.36						1.0E-03
	I-132	2.5E-04	1.8E-04	0.00						7.0E-02
	I-133	-	-	-						5.0E-03
	Cs-134	8.9E-06	5.3E-06	0.00						2.0E-03
	Cs-136	-	-	-						1.0E-02
	Cs-137	8.1E-06	5.0E-06	0.00						3.0E-03
粒子状	Co-58	-	-	-						1.0E-02
	I-131	2.1E-04	8.9E-06	0.21						1.0E-03
	I-132	-	-	-						7.0E-02
	Cs-134	-	-	-						2.0E-03
	Cs-136	-	-	-						1.0E-02
	Cs-137	7.5E-06	7.3E-06	0.00						3.0E-03
その他の検出核種	Zr-95	-	-	-						8.0E-02
	Ru-106	-	-	-						8.0E-02
	Te-129	-	-	-						4.0E-01
	Te-129m	-	-	-						4.0E-03
	Te-132	9.7E-06	7.4E-06	0.00						7.0E-03

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E-0とは、 0.0×10^{-0} 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	3/28 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	N 0.5m/s (2.00現在)		
試料測定	日時	3/28 11:41~		
	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	1000s		

2. 結果

	核種	3/28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/cm ³) ※
		①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	④空気中濃度限度に対する割合 (①/②)	
揮発性	Co-58	-	-	-	1.0E-02
	I-131	3.6E-04	8.9E-06	0.36	1.0E-03
	I-132	2.5E-04	1.8E-04	0.00	7.0E-02
	I-133	-	-	-	5.0E-03
	Cs-134	8.9E-06	5.3E-06	0.00	2.0E-03
	Cs-136	-	-	-	1.0E-02
	Cs-137	8.1E-06	5.0E-06	0.00	3.0E-03
粒子状	Co-58	-	-	-	1.0E-02
	I-131	2.1E-04	8.9E-06	0.21	1.0E-03
	I-132	-	-	-	7.0E-02
	Cs-134	-	-	-	2.0E-03
	Cs-136	-	-	-	1.0E-02
	Cs-137	7.5E-06	7.3E-06	0.00	3.0E-03
その他の検出核種	Zr-95	-	-	-	8.0E-02
	Ru-105	-	-	-	8.0E-02
	Te-129	-	-	-	4.0E-01
	Te-129m	-	-	-	4.0E-03
	Te-132	9.7E-06	7.4E-06	0.00	7.0E-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。

※ 0.0E-0とは、 0.0×10^{-0} 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气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 情報棟東側	福島第二 免震建屋1階入口
	日時	3月16日 7:56~8:06	3月16日 10:00~10:10
	採取方法	モニタリングカーにてダスト採取	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	3/16 8:47~	3/16 11:59~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	500s	500s

2. 結果

	核種	3月16日 採取分①			3月16日 採取分②			③放射線業務従事者の呼吸する空气中の濃度限度(Bq/cm ³)※
		①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	空气中濃度限度に対する割合(①/③)	
揮発性	I-131	3.432E-04	2.559E-05	0.34	6.889E-04	1.268E-05	0.69	1.0E-03
	I-132	1.149E-03	2.812E-05	0.02	7.528E-04	1.986E-05	0.01	7.0E-02
	I-133	3.448E-05	2.687E-05	0.01	4.395E-05	1.497E-05	0.01	5.0E-03
粒子状	Co-58	ND	—	—	4.943E-05	2.685E-05	0.00	1.0E-02
	Cs-134	1.237E-04	1.449E-05	0.06	4.163E-04	2.459E-05	0.21	2.0E-03
	Cs-136	2.699E-05	9.412E-06	0.003	7.504E-05	1.495E-05	0.01	1.0E-02
	Cs-137	1.227E-04	1.311E-05	0.04	3.861E-04	2.057E-05	0.13	3.0E-03
その他の検出核種	Ge-75m	2.762E-04	4.217E-04		ND	—	—	
	Br-83	8.078E-03	2.756E-03		4.594E-03	1.565E-03		
	Ru-105	ND	—	—	4.057E-05	2.883E-05		
	Ru-106	4.081E-04	1.920E-04		ND	—	—	6.0E-04
	Te-129	ND	—	—	ND	—	—	4.0E-01
	Te-129m	ND	—	—	ND	—	—	4.0E-03
	Te-132	1.855E-03	1.757E-05		2.947E-04	9.710E-06		7.0E-03

※ 人が呼吸する空气中の放射性核種の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气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	福島第二 MP-1	福島第二 MP-1
	日時	3月17日 13:50~14:00	3月18日 8:22~8:32	3月18日 15:09~15:19
	採取方法	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	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	3/17 22:01~	3/18 9:49~	3/18 17:12~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	1000s	1000s	1000s

2. 結果

	核種	3月17日 採取分①			3月18日 採取分①			3月18日 採取分②			③放射線業務従事者の呼吸する空气中の濃度換算度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度換算度に対する割合(①/②)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度換算度に対する割合(①/②)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度換算度に対する割合(①/②)	
揮発性	I-131	9.432E-05	3.351E-06	0.03	8.630E-04	3.145E-05	0.05	4.298E-03	4.983E-05	4.30	1.0E-03
	I-132	ND	—	—	1.720E-03	3.821E-05	0.02	2.625E-03	9.359E-05	0.04	7.0E-02
	I-133	3.304E-06	4.478E-06	0.00	ND	—	—	5.246E-05	4.213E-05	0.01	5.0E-03
粒子状	Co-58	2.494E-05	2.061E-05	0.00	3.080E-05	2.048E-05	0.00	1.578E-04	1.435E-05	0.02	1.0E-02
	Cs-134	3.314E-04	1.680E-05	0.17	3.345E-04	1.666E-05	0.17	4.863E-04	1.538E-05	0.24	2.0E-03
	Cs-136	6.107E-05	1.296E-05	0.01	5.882E-05	1.012E-05	0.01	8.416E-05	1.436E-05	0.01	1.0E-02
	Cs-137	3.232E-04	1.702E-05	0.11	3.147E-04	1.683E-05	0.10	4.306E-04	1.715E-05	0.14	3.0E-03
その他の検出核種	Cl-38m	ND	—	—	ND	—	—	3.180E+00	3.292E-02		
	Ga-72	ND	—	—	ND	—	—	2.101E-03	1.180E-04		
	Ge-75m	1.135E-04	1.143E-04		ND	—	—	ND	—	—	
	Ru-105	ND	—	—	6.401E-05	5.018E-05		ND	—	—	
	Ru-106	2.523E-04	2.828E-05		2.797E-04	2.630E-04		ND	—	—	6.0E-04
	Te-129	4.603E-02	3.876E-02		1.234E-03	1.052E-03		3.606E-03	7.033E-04		4.0E-01
	Te-129m	ND	—	—	8.680E-04	7.250E-04		1.355E-03	3.745E-04		4.0E-03
	Te-132	2.824E-04	2.743E-06		2.329E-03	2.546E-05		6.470E-03	1.399E-05		7.0E-03
	Pr-144	5.780E+04			9.299E-02			ND	—	—	
	La-140	ND	—	—		—	—	4.537E-05	8.315E-05		7.0E-03
	Eu-152	1.589E-04	1.003E-04		ND	—	—	ND	—	—	
	Bi-212	1.031E-04	8.879E-05		ND	—	—	ND	—	—	
	Ac-228	ND	—	—	7.764E-05	6.890E-05		ND	—	—	

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E+0とは、 0.0×10^{-6} 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气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	福島第二 MP-1	福島第二 MP-1	福島第二 MP-1
	日時	3月19日 9:15~9:25	3月19日 18:18~18:28	3月20日 11:27~11:37	3月20日 17:10~17:20
	採取方法	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	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	3/19 10:39~	3/19 19:08~	3/20 16:17~	3/20 21:11~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	1000s	1000s	500s	500s

2. 結果

	核種	3月19日 採取分①			3月19日 採取分②			3月20日 採取分①			3月20日 採取分②			③放射線業務従事者の呼吸する空气中の濃度限度(Bq/cm ³)※
		①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	③空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	③空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	③空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm ³)	②検出限界濃度(Bq/cm ³)	③空气中濃度限度に対する割合(①/③)	
揮発性	I-131	2.7E-04	5.6E-05	0.27	2.5E-04	5.7E-05	0.25	5.3E-05	1.2E-05	0.05	2.2E-04	4.3E-05	0.22	1.0E-03
	I-132	2.4E-04	1.7E-04	0.00	1.2E-04	1.2E-04	0.00	ND	-	-	2.6E-04	2.5E-04	0.00	7.0E-02
	I-133	ND	-	-	ND	-	-	ND	-	-	ND	-	-	5.0E-03
	Cs-134	6.3E-05	5.9E-05	1.06	ND	-	-	ND	-	-	ND	-	-	2.0E-03
	Cs-136	ND	-	-	1.7E-04	1.6E-04	0.02	ND	-	-	ND	-	-	1.0E-02
粒子状	Co-58	ND	-	-	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	I-131	1.4E-04	3.1E-05	0.14	1.3E-04	3.1E-05	0.13	2.6E-05	6.0E-06	0.03	ND	-	-	1.0E-03
	I-132	1.2E-04	9.0E-05	0.00	ND	-	-	ND	-	-	1.8E-03	8.9E-04	0.03	7.0E-02
	I-133	ND	-	-	2.4E-04	2.2E-04	0.05	ND	-	-	ND	-	-	5.0E-03
	Cs-134	ND	-	-	ND	-	-	ND	-	-	ND	-	-	2.0E-03
	Cs-136	ND	-	-	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	Cs-137	ND	-	-	ND	-	-	ND	-	-	ND	-	-	3.0E-03
その他核種	Ru-105	ND	-	-	2.1E-04	2.0E-04	0.00	ND	-	-	ND	-	-	8.0E-02
	Te-132	ND	-	-	ND	-	-	4.2E-06	3.4E-06	0.00	ND	-	-	7.0E-03

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E-0とは、0.0×10⁻⁰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	福島第二 MP-1	福島第二 MP-1	福島第二 MP-1
	日時	3月21日	3月21日	3月22日	3月22日
		10:40~10:50	18:11~18:19	10:02~10:10	18:43~18:51
	採取方法	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	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	3/21 12:15~	3/21 19:00~	3/22 11:53~	3/22 17:32~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	500s	500s	500s	500s

2. 結果

	核種	3月21日 採取分①			3月21日 採取分②			3/22採取分①			3/22採取分②			①放射線業務従事者の呼吸する空気中の濃度限度(Bq/cm³)※
		①放射線濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射線濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射線濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射線濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	
揮発性	Co-58	ND	-	-	2.9E-05	2.1E-05	0.00	ND	-	-	ND	-	-	4.0E-01
	I-131	2.3E-04	1.7E-05	0.23	1.6E-04	1.9E-05	0.16	1.415E-04	2.272E-05	0.14	1.349E-04	2.216E-05	0.13	1.0E-03
	I-132	2.4E-04	2.4E-05	0.003	8.1E-04	1.9E-05	0.01	ND	-	-	ND	-	-	7.0E-02
	I-133	ND	-	-	ND	-	-	ND	-	-	ND	-	-	5.0E-03
	Cs-134	ND	-	-	1.7E-05	1.7E-05	0.01	2.646E-05	1.636E-05	0.01	1.865E-05	1.747E-05	0.01	2.0E-03
	Cs-137	1.8E-05	1.3E-05	0.01	ND	-	-	2.316E-05	1.739E-05	0.01	2.146E-05	1.731E-05	0.01	3.0E-03
粒子状	Co-58	ND	-	-	1.3E-05	9.9E-06	0.00	ND	-	-	ND	-	-	1.0E-02
	I-131	1.5E-04	9.6E-06	0.151	1.2E-04	1.0E-05	0.12	6.936E-05	1.155E-05	0.07	7.919E-05	1.190E-05	0.08	1.0E-03
	I-132	2.5E-04	1.3E-05	0.004	3.9E-04	1.6E-05	0.01	ND	-	-	4.153E-05	3.357E-05	0.00	7.0E-02
	Cs-134	4.4E-05	9.3E-06	0.02	3.0E-05	1.0E-05	0.02	1.293E-05	9.476E-06	0.01	1.353E-05	9.812E-06	0.01	2.0E-03
	Cs-136	ND	-	-	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	Cs-137	4.7E-05	8.0E-06	0.02	3.3E-05	9.7E-06	0.01	1.024E-05	8.838E-06	0.00	1.369E-05	8.361E-06	0.00	3.0E-03
その他核種	Ru-105	ND	-	-	1.2E-04	8.6E-05	0.00	ND	-	-	ND	-	-	8.0E-02
	Ru-106	ND	-	-	1.4E-04	7.6E-05	0.24	ND	-	-	ND	-	-	6.0E-04
	Te-129	4.5E-04	2.9E-04	0.00	9.3E-04	2.2E-04	0.00	2.316E-03	1.784E-03	0.01	ND	-	-	4.0E-01
	Te-129m	6.4E-04	2.0E-04	0.16	ND	-	-	ND	-	-	ND	-	-	4.0E-03
	Te-132	7.6E-04	6.6E-04	0.11	1.4E-03	6.8E-06	0.21	2.191E-05	1.649E-05	0.00	ND	-	-	7.0E-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。

※ 0.0E-0とは、 0.0×10^{-0} 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气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	福島第二 MP-1	福島第二 MP-1	福島第二 MP-1
	日時	3/23 9:40~9:48	3/23 16:06~16:14	3/24 9:47~9:55	3/24 17:46~17:54
	採取方法	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	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	3/23 15:00~	3/23 17:38~	3/24 10:39~	3/25 0:40~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	500s	500s	500s	500s

2. 結果

	核種	3/23採取分①			3/23採取分②			3/24採取分①			3/24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)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	
揮発性	Co-58	ND	—	—	1.460E-05	1.353E-05	0.00	ND	—	—	ND	—	—	1.0E-02
	I-131	2.7E-04	3.9E-05	0.27	2.1E-04	1.4E-05	0.21	1.9E-04	1.5E-05	0.19	1.7E-04	1.4E-05	0.17	1.0E-03
	I-132	2.8E-04	2.2E-04	0.00	2.8E-04	2.8E-05	0.00	3.0E-04	2.5E-05	0.00	ND	—	—	7.0E-02
	I-133	ND	—	—	ND	—	—	ND	—	—	ND	—	—	5.0E-03
	Cs-134	4.3E-05	3.0E-05	0.02	2.3E-05	1.2E-05	0.01	2.8E-05	1.3E-05	0.01	1.6E-05	1.2E-05	0.01	2.0E-03
	Cs-137	ND	—	—	2.0E-05	1.3E-05	0.01	3.0E-05	1.2E-05	0.01	2.9E-05	1.1E-05	0.01	3.0E-03
粒子状	Co-58	ND	—	—	ND	—	—	ND	—	—	ND	—	—	1.0E-02
	I-131	1.5E-04	2.1E-05	0.15	8.2E-05	7.9E-06	0.08	1.1E-04	7.3E-06	0.11	6.4E-05	2.1E-05	0.06	1.0E-03
	I-132	ND	—	—	2.6E-04	1.5E-05	0.00	1.7E-04	1.0E-05	0.00	ND	—	—	7.0E-02
	Cs-134	ND	—	—	1.7E-05	8.5E-06	0.01	2.1E-05	6.7E-06	0.01	ND	—	—	2.0E-03
	Cs-136	ND	—	—	ND	—	—	ND	—	—	ND	—	—	1.0E-02
	Cs-137	ND	—	—	1.7E-05	6.9E-06	0.01	2.0E-05	6.6E-06	0.01	2.1E-05	1.7E-05	0.01	3.0E-03
その他の検出核種	Ru-106	ND	—	—	8.210E-05	5.694E-05	0.14	ND	—	—	ND	—	—	6.0E-04
	Te-129	ND	—	—	9.278E-04	2.649E-04	2.320E-03	7.6E-04	1.3E-04	1.894E-03	1.4E-02	9.5E-03	0.04	4.0E-01
	Te-129m	ND	—	—	ND	—	—	5.7E-04	1.7E-04	0.14	4.6E-04	2.8E-04	0.11	4.0E-03
	Te-132	1.6E-04	2.2E-05	0.02	7.064E-04	6.527E-06	1.009E-01	5.6E-04	5.7E-06	0.08	3.5E-04	1.1E-05	0.05	7.0E-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。

※ 0.0E-0とは、0.0×10⁻⁰と同じ意味である。

福島第二原発の発電所敷地内における空气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	福島第二 MP-1	福島第二 MP-1	福島第二 MP-1
	日時	3/25 9:41~9:48	3/25 17:32~17:40	3/26 10:52~10:59	3/26 16:22~16:29
	採取方法	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	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	2011/3/25 12:20~	2011/3/25 12:33~	2011/3/26 12:35~	2011/3/26 19:19~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	500s	500s	500s	500s

2. 結果

	核種	3/25採取分①			3/25採取分②			3/26採取分①			3/26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)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm³)	②検出限界濃度(Bq/cm³)	空气中濃度限度に対する割合(①/③)	
揮発性	Co-58	ND	-	-	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	I-131	2.1E-04	3.2E-05	0.21	1.7E-04	1.3E-05	0.17	1.0E-04	1.3E-05	0.10	1.6E-04	3.4E-05	0.16	1.0E-03
	I-132	1.6E-04	1.0E-04	0.00	2.2E-04	2.0E-05	0.00	1.6E-04	2.4E-05	0.00	ND	-	-	7.0E-02
	I-133	ND	-	-	ND	-	-	ND	-	-	ND	-	-	5.0E-03
	Cs-134	6.9E-05	3.2E-05	0.03	2.6E-05	1.2E-05	0.01	1.3E-05	1.3E-05	0.01	ND	-	-	2.0E-03
	Cs-137	ND	-	-	3.5E-05	1.1E-05	0.01	1.6E-05	1.0E-05	0.01	ND	-	-	3.0E-03
粒子状	Co-58	ND	-	-	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	I-131	1.0E-04	1.6E-05	0.10	6.8E-05	7.0E-06	0.07	8.4E-05	1.7E-05	0.08	8.8E-04	1.7E-04	0.88	1.0E-03
	I-132	6.0E-05	5.0E-05	0.00	1.1E-04	1.2E-05	0.00	ND	-	-	ND	-	-	7.0E-02
	Cs-134	ND	-	-	1.0E-05	6.1E-06	0.01	1.8E-05	1.6E-05	0.01	1.8E-04	1.6E-04	0.09	2.0E-03
	Cs-136	ND	-	-	ND	-	-	ND	-	-	ND	-	-	1.0E-02
	Cs-137	ND	-	-	1.1E-05	5.8E-06	0.00	1.7E-05	1.5E-05	0.01	2.1E-04	1.6E-04	0.07	3.0E-03
その他の検出核種	Ru-105	ND	-	-	7.3E-05	5.3E-05	0.00	ND	-	-	ND	-	-	8.0E-02
	Ru-106	ND	-	-	ND	-	-	ND	-	-	ND	-	-	6.0E-04
	Te-129	ND	-	-	5.7E-04	1.5E-04	0.00	5.9E-04	3.4E-04	1.475E-03	ND	-	-	4.0E-01
	Te-129m	ND	-	-	4.4E-04	1.3E-04	0.11	4.1E-04	2.4E-04	1.025E-01	ND	-	-	4.0E-03
	Te-132	1.1E-04	1.6E-05	0.02	3.9E-04	4.8E-06	0.06	2.3E-04	8.4E-06	0.03	3.5E-04	3.0E-05	0.05	7.0E-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。

※ 0.0E-0とは、 0.0×10^{-0} と同じ意味である。

福島第二原発敷地内における空气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	福島第二 MP-1	福島第二 MP-1	福島第二 MP-1
	日時	3/27 10:52~11:00	3/27 17:02~17:10	3/28 10:45~10:54	3/28 17:04~17:12
	採取方法	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	モニタリングカーにてダスト採取	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	2011/3/27 11:56~	2011/3/27 18:03~	2011/3/28 13:10~	2011/3/28 17:49~
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析
	測定時間	500s	500s	1000s	1000s

2. 結果

	核種	3/27採取分①			3/27採取分②			3/28採取分①			3/28採取分②			③放射線業務従事者の呼吸する空气中の濃度限度(Bq/cm3)※
		①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	①放射能濃度(Bq/cm3)	②検出限界濃度(Bq/cm3)	空气中濃度限度に対する割合(①/③)	
揮発性	Co-58	ND	-	-	ND	-	-	-	-	-	-	-	-	1.0E-02
	I-131	1.3E-04	1.3E-05	0.13	4.3E-05	1.9E-05	0.04	3.1E-05	1.4E-05	0.03	4.6E-05	1.4E-05	0.05	1.0E-03
	I-132	1.4E-04	1.6E-05	0.00	ND	-	-	-	-	-	2.8E-05	2.2E-05	0.00	7.0E-02
	I-133	ND	-	-	ND	-	-	-	-	-	-	-	-	5.0E-03
	Cs-134	1.9E-05	1.0E-05	0.01	ND	-	-	-	-	-	-	-	-	2.0E-03
	Cs-137	1.9E-05	9.5E-06	0.01	ND	-	-	-	-	-	-	-	-	3.0E-03
粒子状	Co-58	ND	-	-	ND	-	-	-	-	-	-	-	-	1.0E-02
	I-131	7.3E-05	1.6E-05	0.07	7.6E-05	6.4E-06	0.08	-	-	-	-	-	-	1.0E-03
	I-132	3.2E-05	2.7E-05	-	6.3E-05	8.8E-06	0.00	-	-	-	-	-	-	7.0E-02
	Cs-134	2.3E-05	1.5E-05	0.01	9.9E-06	5.7E-06	0.00	-	-	-	-	-	-	2.0E-03
	Cs-136	ND	-	-	ND	-	-	-	-	-	-	-	-	1.0E-02
	Cs-137	1.6E-05	1.8E-05	0.01	ND	-	-	-	-	-	-	-	-	3.0E-03
その他の検出核種	Ru-105	ND	-	-	ND	-	-	-	-	-	-	-	-	8.0E-02
	Ru-106	ND	-	-	ND	-	-	-	-	-	-	-	-	6.0E-04
	Te-129	2.6E-04	2.2E-04	0.00	2.1E-04	1.1E-04	0.00	-	-	-	-	-	-	4.0E-01
	Te-129m	3.3E-04	2.2E-04	0.08	1.2E-04	1.1E-04	0.03	-	-	-	-	-	-	4.0E-03
	Te-132	1.9E-04	7.8E-06	0.03	7.5E-05	3.7E-06	0.01	-	-	-	1.4E-05	1.1E-05	0.00	7.0E-03

※ 人が呼吸する空气中の放射性核種の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。

※ 0.0E-0とは、 0.0×10^{-0} と同じ意味である。

福島第一原子力発電所 プラント関連パラメータ

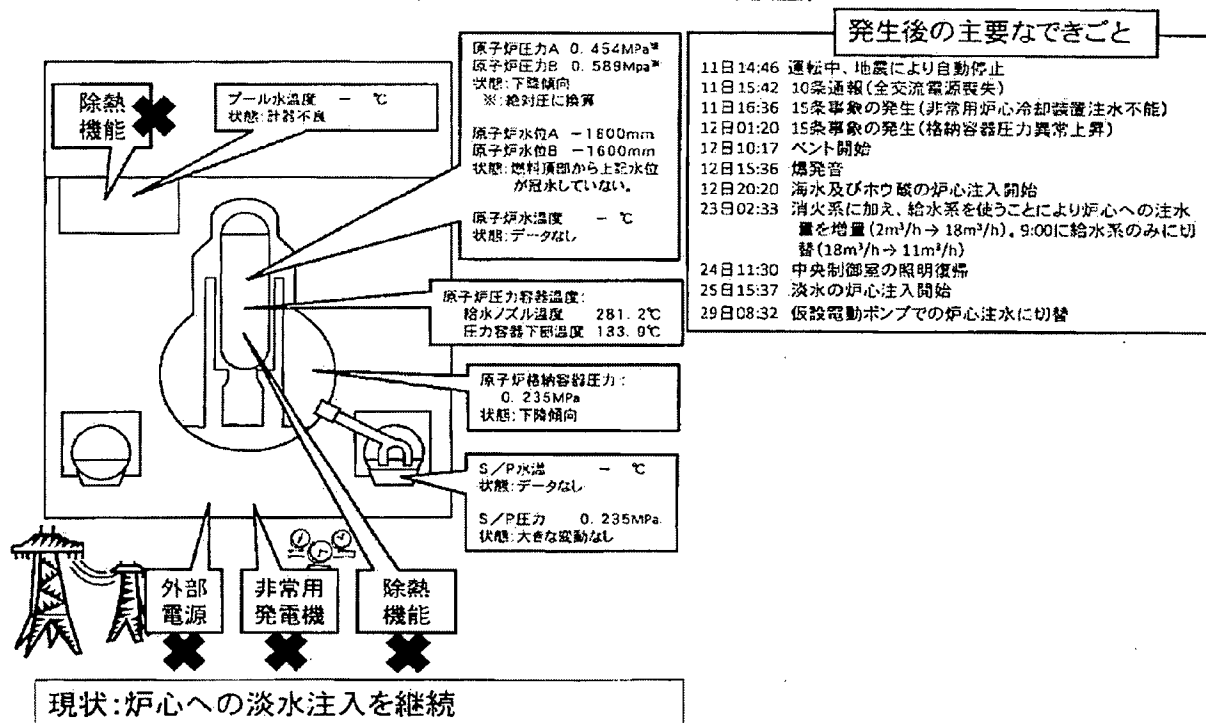
3月30日 06:00 現在

※1: 計器不良
※2: データ採取対象外

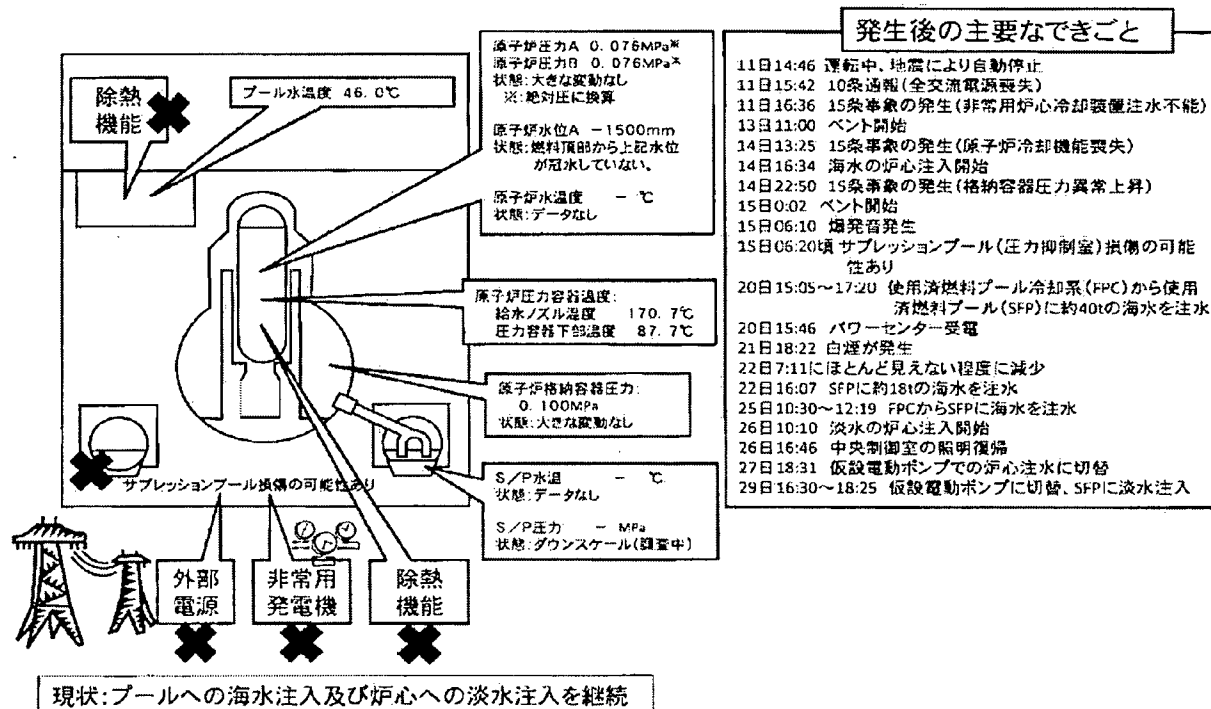
号機	1u	2u	3u	4u	5u	6u
注水状況	給水ポンプを用いた淡水注入中。 流量 133l/min (3/29 8:32) 仮設計器	消火系ポンプを用いた淡水注入中。 流量 117l/min (3/28 0:12) 仮設計器	消火系ポンプを用いた淡水注入中。 流量 116l/min (3/29 14:39) 仮設計器	停止中	停止中	停止中
原子炉水位	燃料域A: -1600mm 燃料域B: -1600mm (3/30 04:00 現在)	燃料域A: -1500mm (3/30 04:00 現在)	燃料域A: -1850mm 燃料域B: -2250mm (3/30 03:50 現在)	※2	停止域 2250mm (3/30 06:00 現在)	停止域 1761mm (3/30 06:00 現在)
原子炉圧力	0.353MPa g (A) 0.488MPa g (B) (3/30 04:00 現在)	-0.025MPa g (A) -0.025MPa g (B) (3/30 04:00 現在)	0.023MPa g (A) -0.092MPa g (C) (3/30 03:50 現在)	※2	0.007MPa g (3/30 06:00 現在)	0.005MPa g (3/30 06:00 現在)
原子炉水温度	(系統流量がないため採取不可)			※2	34.7℃ (3/30 06:00 現在)	21.6℃ (3/30 06:00 現在)
原子炉圧力容器 温度	給水ノズル温度: 281.2℃ 圧力容器下部温度: 133.9℃ (3/30 04:00 現在)	給水ノズル温度: 170.7℃ 圧力容器下部温度: 87.7℃ (3/30 04:00 現在)	給水ノズル温度: 75.3℃(調査中) 圧力容器下部温度: 116.0℃ (3/30 03:50 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 0.235MPa abs S/C 0.235MPa abs (3/30 04:00 現在)	D/W 0.100MPa abs S/C ダウンスケール(調査中) (3/30 04:00 現在)	D/W 0.1071MPa abs S/C 0.1780MPa abs (3/30 03:50 現在)	※2		
CAMS	D/W 3.32×10 ⁵ Sv/h S/C 1.91×10 ⁵ Sv/h (3/30 04:00 現在)	D/W 4.00×10 ⁵ Sv/h S/C 1.28×10 ⁵ Sv/h (3/30 04:00 現在)	D/W 2.76×10 ⁵ Sv/h S/C 1.11×10 ⁵ Sv/h (3/30 03:50 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)			
使用消費燃料プール	※1	46.0℃ (3/30 04:00 現在)	※1	※1	34.2℃ (3/30 06:00 現在)	28.0℃ (3/30 06:00 現在)
FPC入れ-リザクタ レベル	4500mm (3/30 04:00 現在)	5700mm (3/30 04:00 現在)	※1	5250mm (3/30 03:50 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	・3号機 原子炉圧力容器温度について、データ採取を行い、状況推移を継続調査中。 ・2号機 S/C圧力について、状況推移を継続調査中。			共用プール: 32℃程度 (3/29 08:30)	5u: SHCモード (3/29 22:01~)	6u: SHCモード (3/29 10:16~)

$$\begin{aligned} \text{圧力換算 } \text{ゲージ圧(MPa g)} &= \text{絶対圧(MPa abs)} - \text{大気圧(標準大気圧 0.1013 MPa)} \\ \text{絶対圧(MPa abs)} &= \text{ゲージ圧(MPa g)} + \text{大気圧(標準大気圧 0.1013 MPa)} \end{aligned}$$

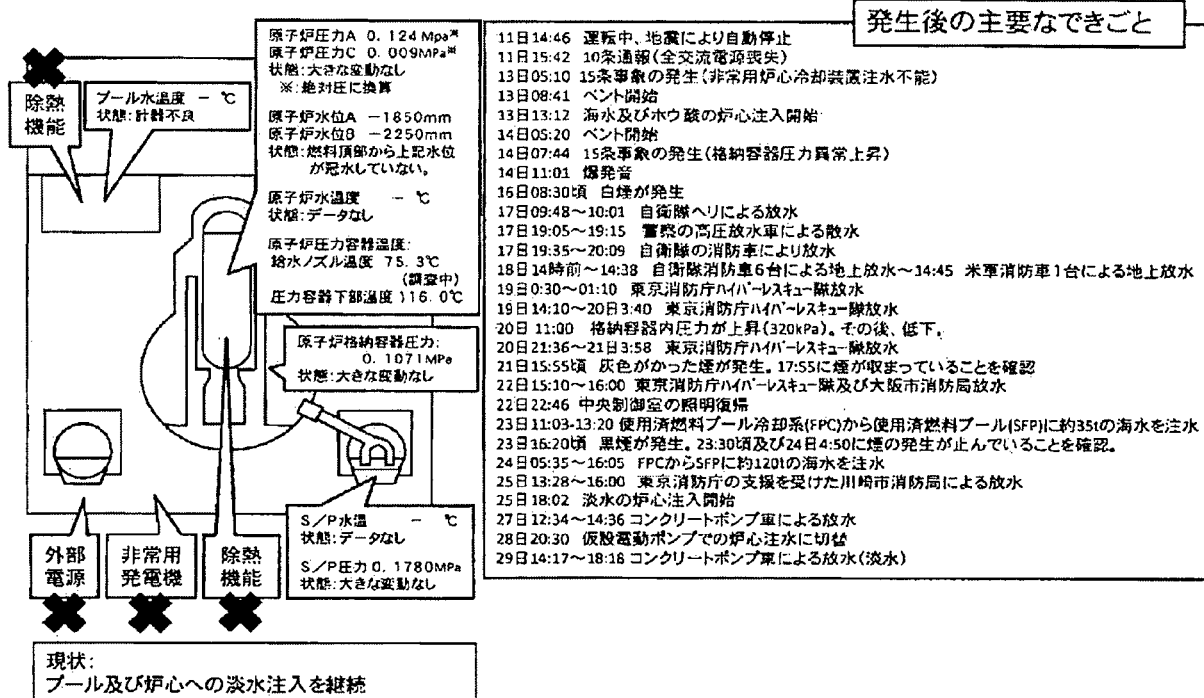
福島第一原子力発電所1号機の状況 (3月30日 6:00現在)



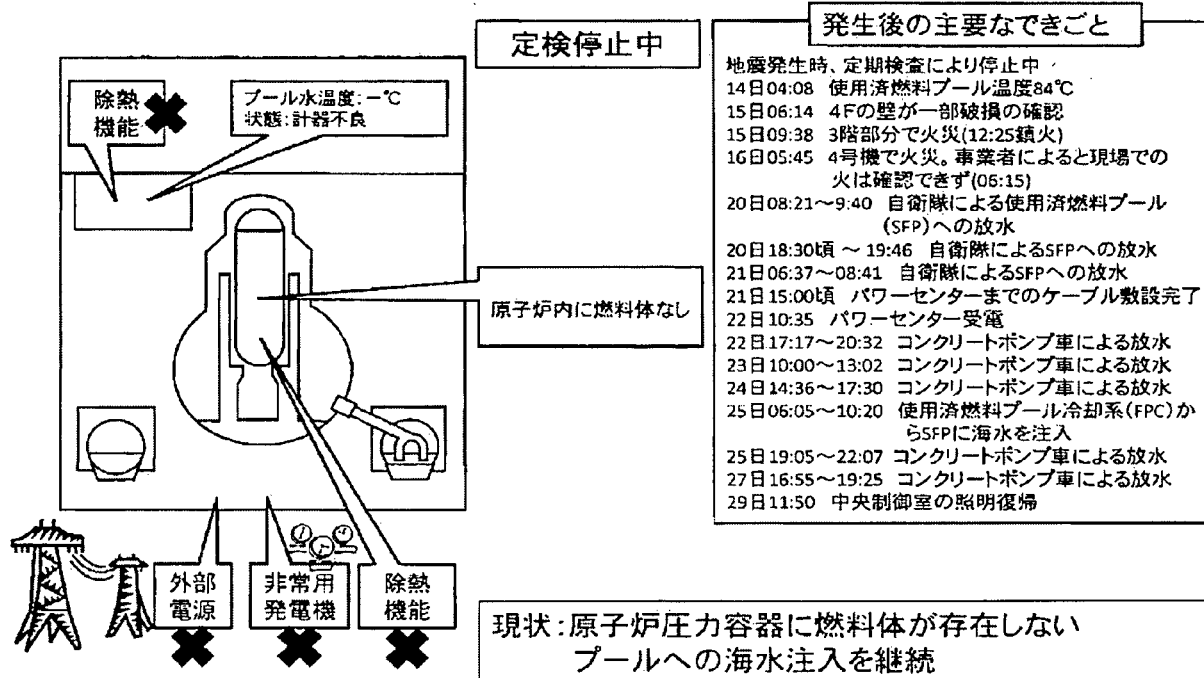
福島第一原子力発電所2号機の状況 (3月30日 6:00現在)



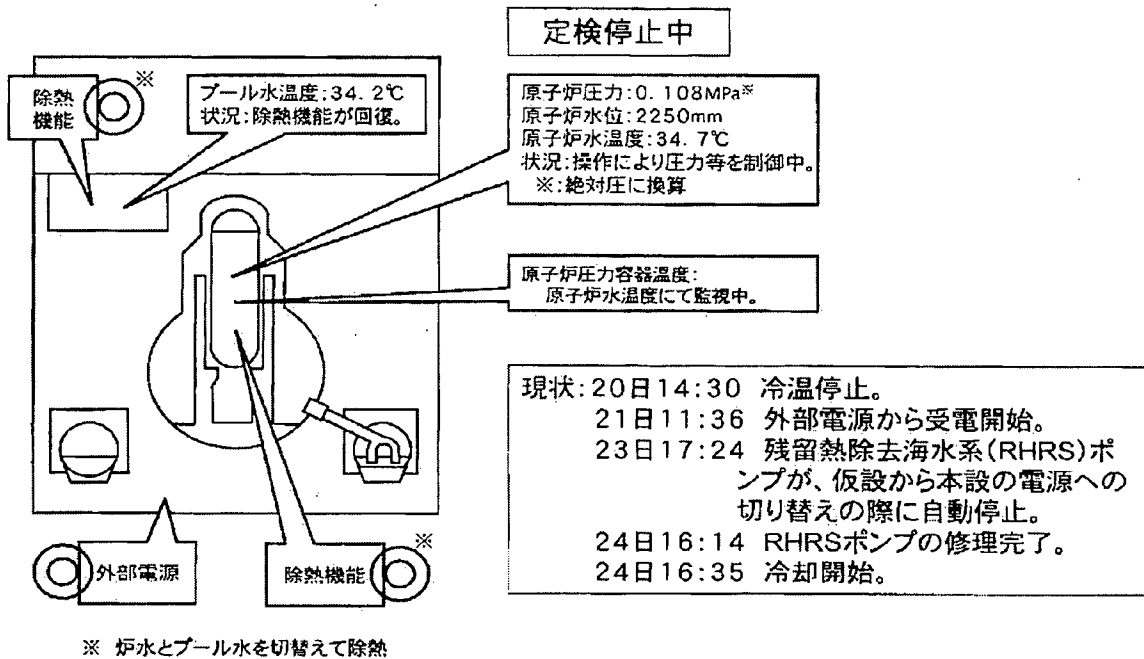
福島第一原子力発電所3号機の状況 (3月30日 6:00現在)



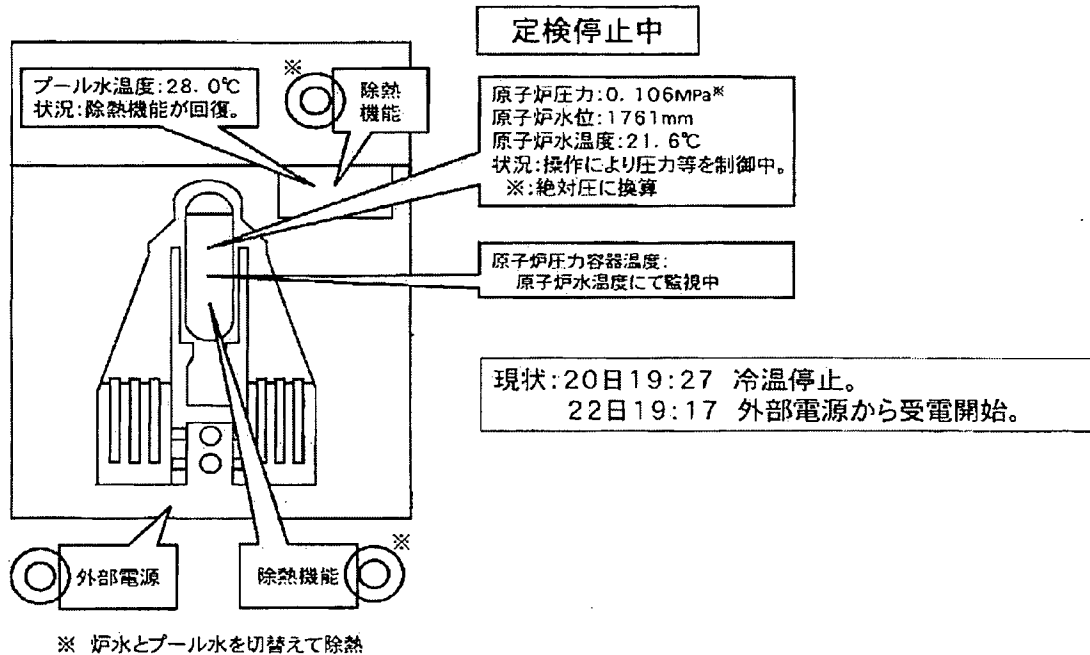
福島第一原子力発電所4号機の状況 (3月30日 6:00現在)



福島第一原子力発電所5号機の状況 (3月30日 6:00現在)



福島第一原子力発電所6号機の状況 (3月30日 6:00現在)



Fukushima Di-ichi Nuclear Power Station Major Parameters of the Plant (As of 14:00, March 29th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting freshwater via the Water Supply Line. Flow rate of injected water : 133 ℓ/min (As of 8:32, March 29th) temporary measuring instrument	Injecting freshwater via the Fire Extinguish Line. Flow rate of injected water : 117 ℓ/min (As of 0:12, March 28th) temporary measuring instrument	Injecting freshwater via the Fire Extinguish Line. Flow rate of injected water: 200 ℓ/min (As of 20:32, March 28th) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,600mm (As of 13:00, March 29th)	Fuel range A : -1,500mm (As of 13:00, March 29th)	Fuel range A : -1,850mm Fuel range B : -2,250mm (As of 12:00, March 29th)	#2	Shutdown range measurement 2,346mm (As of 14:00, March 29th)	Shutdown range measurement 1,858mm (As of 14:00, March 29th)
Reactor pressure	0.371MPa g(A) 0.491MPa g(B) (As of 13:00, March 29th)	-0.025MPa g(A) -0.025MPa g(B) (As of 13:00, March 29th)	0.029MPa g(A) -0.095MPa g(C) (As of 12:00, March 29th)	#2	0.009MPa g (As of 14:00, March 29th)	0.005MPa g (As of 14:00, March 29th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	40.5℃ (As of 14:00, March 29th)	30.3℃ (As of 14:00, March 29th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 299.4℃ Temperature at the bottom head of RPV: 135.8℃ (As of 13:00, March 29th)	Feedwater nozzle temperature: 160.5℃ Temperature at the bottom head of RPV: 143.6℃ (As of 13:00, March 29th)	Feedwater nozzle temperature: 62.2℃ (under survey) Temperature at the bottom head of RPV: 121.1℃ (As of 12:00, March 29th)	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: 0.265MPa abs S/C: 0.265MPa abs (As of 13:00, March 29th)	D/W: 0.100MPa abs S/C: Down scale (under survey) (As of 13:00, March 29th)	D/W: 0.1075MPa abs S/C: 0.1796MPa abs (As of 12:00, March 29th)	#2		
CAMS*3	D/W: 3.38×10^1 Sv/h S/C: 1.97×10^1 Sv/h (As of 13:00, March 29th)	D/W: 4.05×10^1 Sv/h S/C: 1.33×10^0 Sv/h (As of 13:00, March 29th)	D/W: 2.86×10^1 Sv/h S/C: 1.16×10^0 Sv/h (As of 12:00, March 29th)	#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	46℃ (As of 13:00, March 29th)	#1	#1	38.6℃ (As of 14:00, March 29th)	21.5℃ (As of 14:00, March 29th)
FPC skimmer level	4,500mm (As of 13:00, March 29th)	5,700mm (As of 13:00, March 29th)	#1	5,250mm (As of 12:00, March 29th)	#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 35 °C (As of 16:10, March 28th)	Unit5:SHC mode (From 11:47 March 28th)	Unit6: Supplemental Fuel Pool Cooling mode (From 18:06 March 28th)
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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

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

東京電力(株)公表資料

3月30日(水) 05時30分時点

海水核種分析結果

試料採取日時刻	平成23年3月29日 8時20分			
採取場所	1F 南放水口付近 (1～4u放水口から南側に約330m地点)			
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)	①試料濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③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)	倍率 (①/③)
Tc-99m (約6時間)	1.2E-01	7.8E-02	4.0E+01	0.0
I-131 (約8日)	1.0E+02	7.7E-02	4.0E-02	2572.5
Cs-134 (約2年)	2.4E+01	6.6E-02	6.0E-02	395.5
Cs-136 (約13日)	2.2E+00	6.2E-02	3.0E-01	7.3
Cs-137 (約30年)	2.4E+01	5.5E-02	9.0E-02	268.0
Ba-140 (約13日)	3.7E+00	2.3E-01	3.0E-01	12.4
La-140 (約2日)	2.0E+00	1.9E-02	4.0E-01	5.0

※ 〇.〇E-〇とは、〇.〇×10-〇と同じ意味である。

海水核種分析結果

試料採取日時刻	平成23年3月29日 13時55分			
採取場所	1F 南放水口付近 (1~4u放水口から南側に約330m地点)			
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)	①試料濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③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)	倍率 (①/③)
Tc-99m (約6時間)	1.6E-01	8.4E-02	4.0E+01	0.0
I-131 (約8日)	1.3E+02	8.7E-02	4.0E-02	3355.0
Cs-134 (約2年)	3.1E+01	7.4E-02	6.0E-02	520.2
Cs-136 (約13日)	2.8E+00	7.3E-02	3.0E-01	9.5
Cs-137 (約30年)	3.2E+01	6.3E-02	9.0E-02	352.4
Ba-140 (約13日)	5.0E+00	2.9E-01	3.0E-01	16.7
La-140 (約2日)	2.5E+00	2.3E-02	4.0E-01	6.3

※ 〇.〇E-〇とは、〇.〇×10-〇と同じ意味である。

海水核種分析結果

試料採取日時刻	平成23年3月29日 8時40分			
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)			
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)	①試料濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③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)	倍率 (①/③)
Tc-99m (約6時間)	6.6E-02	5.4E-02	4.0E+01	0.0
I-131 (約8日)	4.9E+01	5.2E-02	4.0E-02	1234.5
Cs-134 (約2年)	1.2E+01	4.5E-02	6.0E-02	191.8
Cs-136 (約13日)	1.1E+00	4.3E-02	3.0E-01	3.6
Cs-137 (約30年)	1.2E+01	3.8E-02	9.0E-02	129.8
Ba-140 (約13日)	1.9E+00	1.8E-01	3.0E-01	6.2
La-140 (約2日)	6.6E-01	1.2E-02	4.0E-01	1.7

※ 0.0E-0とは、0.0×10-0と同じ意味である。

海水核種分析結果

試料採取日時刻	平成23年3月29日 14時10分			
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)			
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)	①試料濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③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)	倍率 (①/③)
Tc-99m (約6時間)	6.4E-02	4.9E-02	4.0E+01	0.0
I-131 (約8日)	5.1E+01	5.2E-02	4.0E-02	1262.5
Cs-134 (約2年)	1.2E+01	4.6E-02	6.0E-02	202.2
Cs-136 (約13日)	1.1E+00	4.3E-02	3.0E-01	3.6
Cs-137 (約30年)	1.2E+01	3.9E-02	9.0E-02	137.0
Ba-140 (約13日)	2.0E+00	1.8E-01	3.0E-01	6.7
La-140 (約2日)	6.9E-01	1.3E-02	4.0E-01	1.7

※ 〇.〇E-〇とは、〇.〇×10-〇と同じ意味である。

海水核種分析結果

試料採取日時刻	平成23年3月29日 09時20分			
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) (1Fから約1.6km)			
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)	①試料濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③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)	倍率 (①/③)
I-131 (約8日)	1.3E+00	1.7E-02	4.0E-02	31.9
Cs-134 (約2年)	2.3E-01	1.2E-02	6.0E-02	3.9
Cs-136 (約13日)	1.7E-02	9.3E-03	3.0E-01	0.06
Cs-137 (約30年)	2.3E-01	1.2E-02	9.0E-02	2.6
Ba-140 (約13日)	3.6E-02	3.0E-02	3.0E-01	0.1
La-140 (約2日)	1.6E-02	4.4E-03	4.0E-01	0.0

※ 0.0E-0とは、0.0×10-0と同じ意味である。

海水核種分析結果

試料採取日時刻	平成23年3月29日 10時15分			
採取場所	2F 北放水口付近 (3,4号放水口付近) (1Fから約10km)			
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)	①試料濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③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)	倍率 (①/③)
I-131 (約8日)	1.6E+00	1.7E-02	4.0E-02	40.9
Cs-134 (約2年)	3.2E-01	1.3E-02	6.0E-02	5.4
Cs-136 (約13日)	2.5E-02	9.4E-03	3.0E-01	0.1
Cs-137 (約30年)	3.2E-01	1.2E-02	9.0E-02	3.6
Ba-140 (約13日)	5.3E-02	3.1E-02	3.0E-01	0.2
La-140 (約2日)	2.4E-02	3.6E-03	4.0E-01	0.1

※ 〇.〇E-〇とは、〇.〇×10-〇と同じ意味である。

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	3/29 222~242			
	採取方法	モニタリングカーにてダスト採取			
	風向・風速	WNW 1.2m/s (230現在)			
試料測定	日時	3/29 12:17~			
	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	①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	③空气中濃度限度に 対する割合 (①/③)							④放射線業務従 事者の呼吸する 空气中の濃度限 度 (Bq/cm ³)※
揮発性	Co-58	ND	-	-							1.E-02
	I-131	2.4E-04	1.6E-05	0.24							1.E-03
	I-132	ND	-	-							7.E-02
	I-133	ND	-	-							5.E-03
	Cs-134	2.3E-05	1.3E-05	0.01							2.E-03
	Cs-136	ND	-	-							1.E-02
	Cs-137	2.3E-05	1.4E-05	0.01							3.E-03
粒子状	Co-58	ND	-	-							1.E-02
	I-131	1.2E-04	8.7E-06	0.12							1.E-03
	I-132	ND	-	-							7.E-02
	Cs-134	1.1E-05	7.5E-06	0.01							2.E-03
	Cs-136	ND	-	-							1.E-02
	Cs-137	1.4E-05	7.7E-06	0.00							3.E-03
その他の 検出核種	Te-129	ND	-	-							4.E-01
	Te-129m	ND	-	-							4.E-03
	Te-132	ND	-	-							7.E-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。

※ 0.0E-0とは、 0.0×10^{-0} と同じ意味である。

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	福島第二 MP-1		
	日時	3/29 9:51~9:59	3/29 15:56~16:04		
	採取方法	モニタリングカーにてダスト採取	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	2011/3/29 13:24~	2011/3/29 18:18~		
	測定方法	Ge半導体型核種分析装置にて分析	Ge半導体型核種分析装置にて分析		
	測定時間	500s	500s		

2. 結果

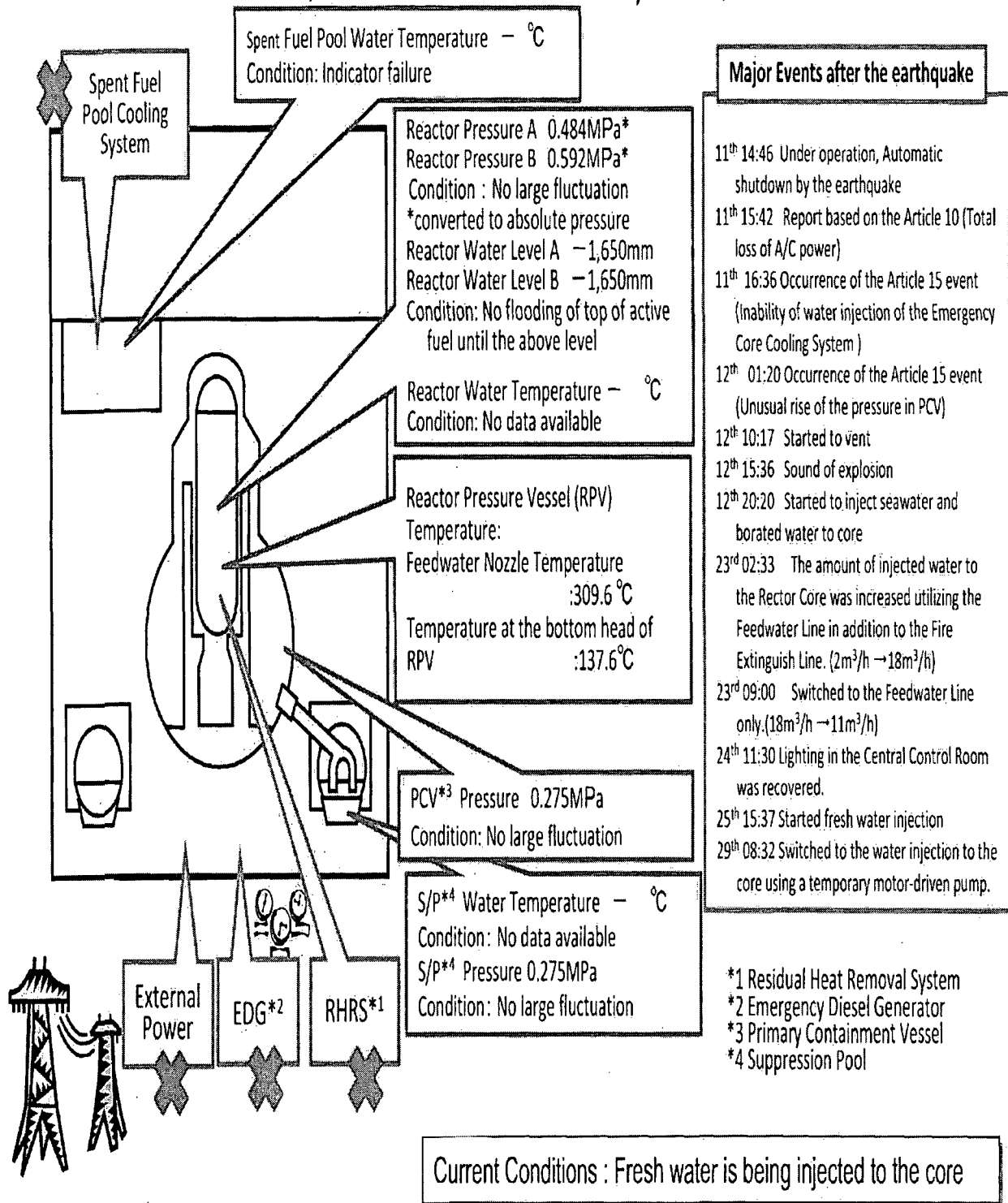
	核種	①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	空气中濃度限度 に対する割合 (①/③)	①放射能濃度 (Bq/cm ³)	②検出限界濃度 (Bq/cm ³)	空气中濃度限度 に対する割合 (①/③)							③放射線業務従 事者の呼吸する 空気中の濃度限 度(Bq/cm ³)※
揮発性	Co-58	ND	-	-	ND	-	-							1.0E-02
	I-131	2.0E-04	1.9E-05	0.20	1.4E-04	1.2E-05	0.14							1.0E-03
	I-132	ND	-	-	8.3E-05	2.1E-05	0.00							7.0E-02
	I-133	ND	-	-	ND	-	-							5.0E-03
	Cs-134	3.3E-05	1.5E-05	0.02	6.0E-05	9.2E-06	0.03							2.0E-03
	Cs-137	4.3E-05	1.4E-05	0.01	6.3E-05	9.5E-06	0.02							3.0E-03
粒子状	Co-58	ND	-	-	ND	-	-							1.0E-02
	I-131	1.3E-04	1.9E-05	0.13	7.9E-05	6.3E-06	0.08							1.0E-03
	I-132	ND	-	-	3.9E-05	1.1E-05	0.00							7.0E-02
	Cs-134	1.6E-04	1.8E-05	0.08	4.3E-05	5.9E-06	0.02							2.0E-03
	Cs-136	1.6E-05	7.1E-06	0.00	4.2E-06	3.8E-06	0.00							1.0E-02
	Cs-137	1.8E-04	1.7E-05	0.06	3.9E-05	5.2E-06	0.01							3.0E-03
その他の 検出核種	Te-129	ND	-	-	1.5E-03	2.1E-04	0.00							4.0E-01
	Te-129m	ND	-	-	1.3E-04	9.2E-05	0.03							4.0E-03
	Te-132	ND	-	-	1.5E-04	3.6E-06	0.02							7.0E-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。

※ 0.0E-0とは、 0.0×10^{-0} と同じ意味である。

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1

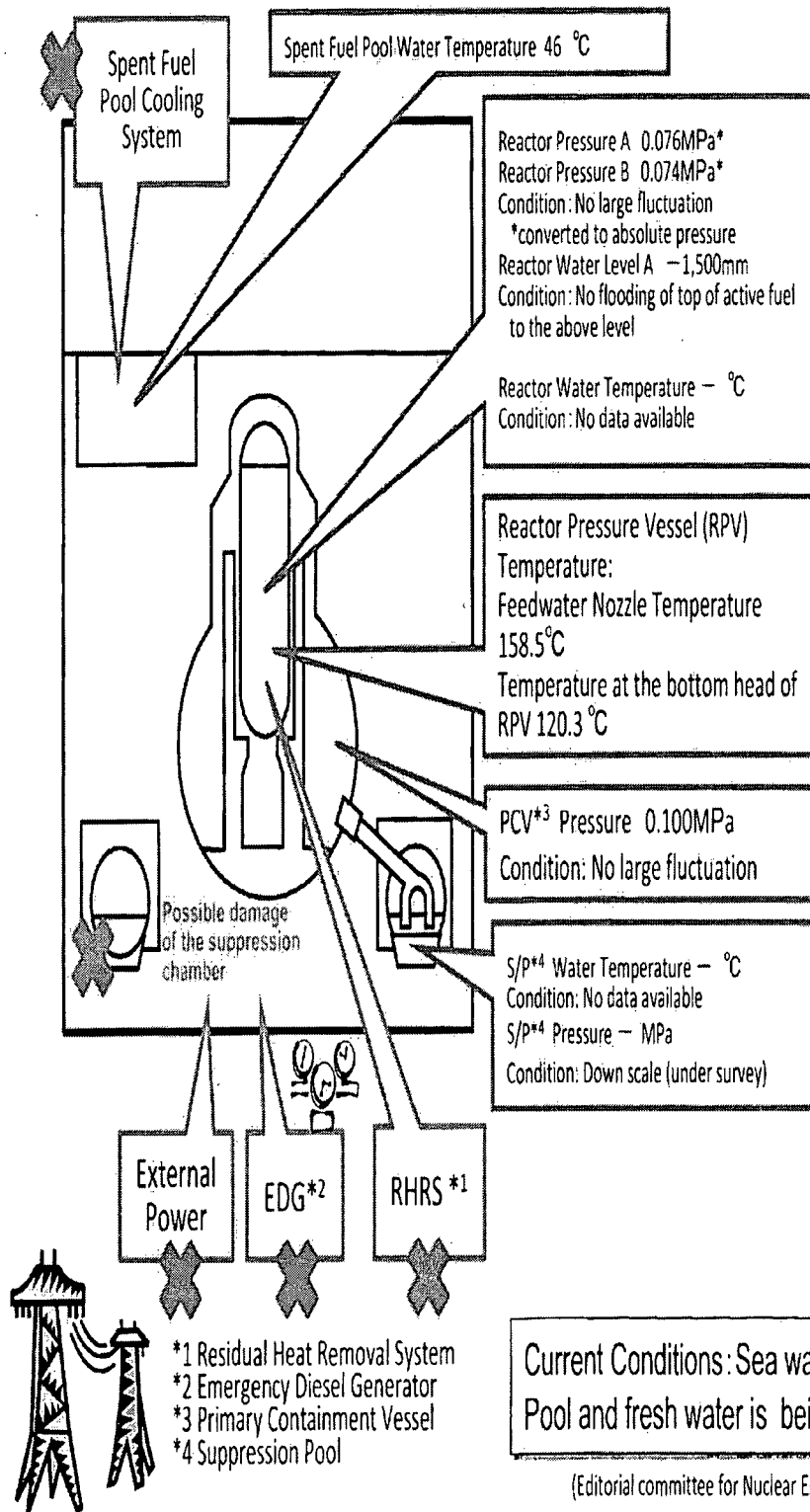
(As of 12:00 March 29th, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

(As of 12:00 March 29th, 2011)

Major Events after the earthquake



- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 13th 11:00 Started to vent
- 14th 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- 14th 16:34 Started to inject water to the Reactor Core
- 14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- 15th 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 a temporary motor-driven pump.

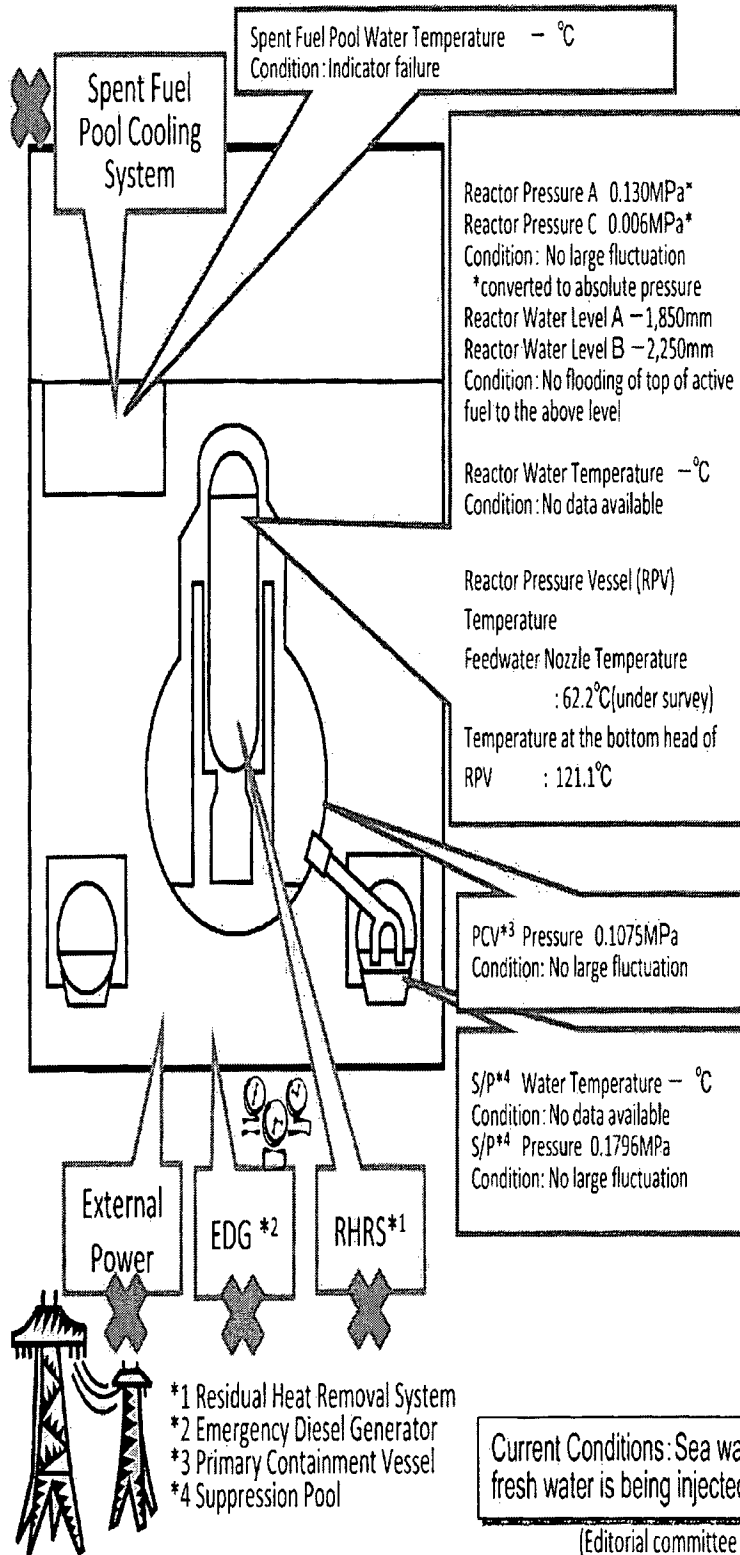
Current Conditions: Sea water is being injected to the Spent Fuel Pool and fresh water is being injected to the core

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

(As of 12:00 March 29th, 2011)

Major Events after the earthquake

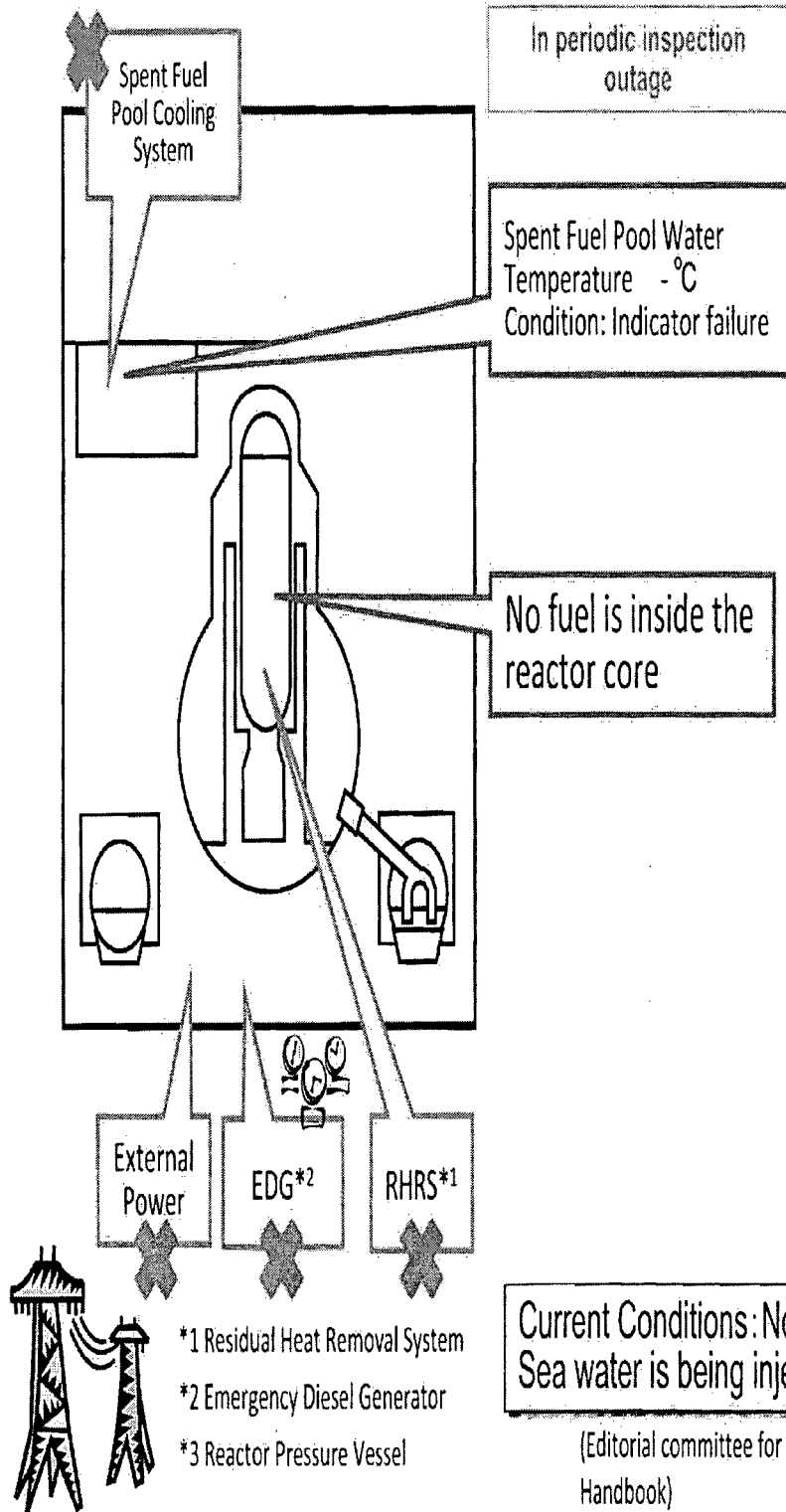


- 11th 14:46 Under operation, Automatic shutdown by the earthquake
- 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- 13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- 13th 08:41 Started to vent
- 13th 13:12 Started 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 about 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 be 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 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
- 29th 14:17 Started to spray freshwater by Concrete Pump Truck

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

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4 (As of 12:00 March 29th, 2011)



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°C

15th 06:14 Partial damage of wall in the 4th floor confirmed

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 about 15:00 Work for laying cable to Power Center was completed.

22nd 10:35 Power Center received electricity

22nd 17:17~20:32 Water spray by Concrete Pump Truck

23rd 10:00~13:02 Water spray by Concrete Pump Truck

24th 14:36~17:30 Water spray by Concrete Pump Truck

25th 06:05~10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)

25th 19:05~22:07 Water spray by Concrete Pump Truck

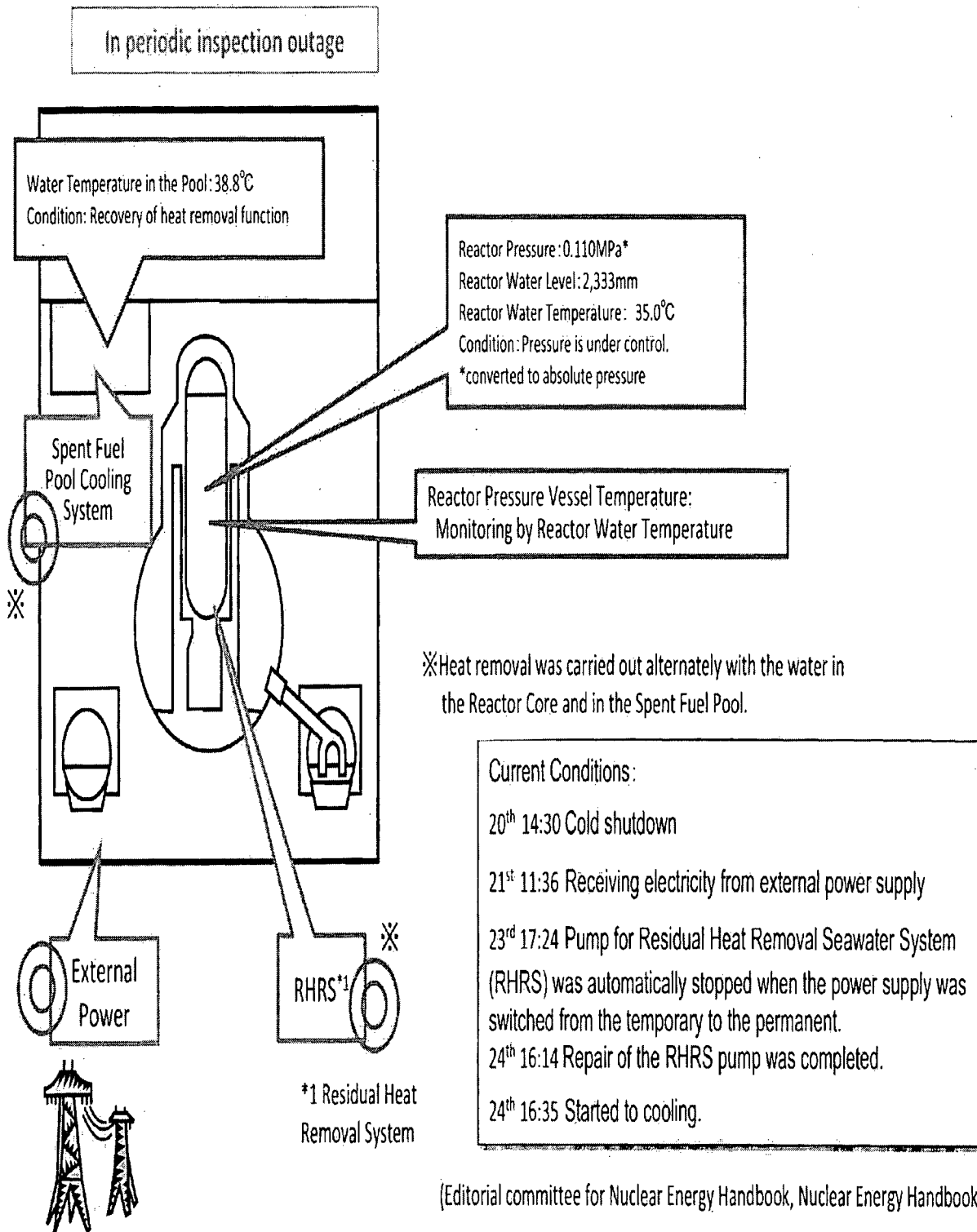
27th 16:55~19:25 Water spray by Concrete Pump Truck

29th 11:50 Lighting in the Central Control Room was recovered.

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

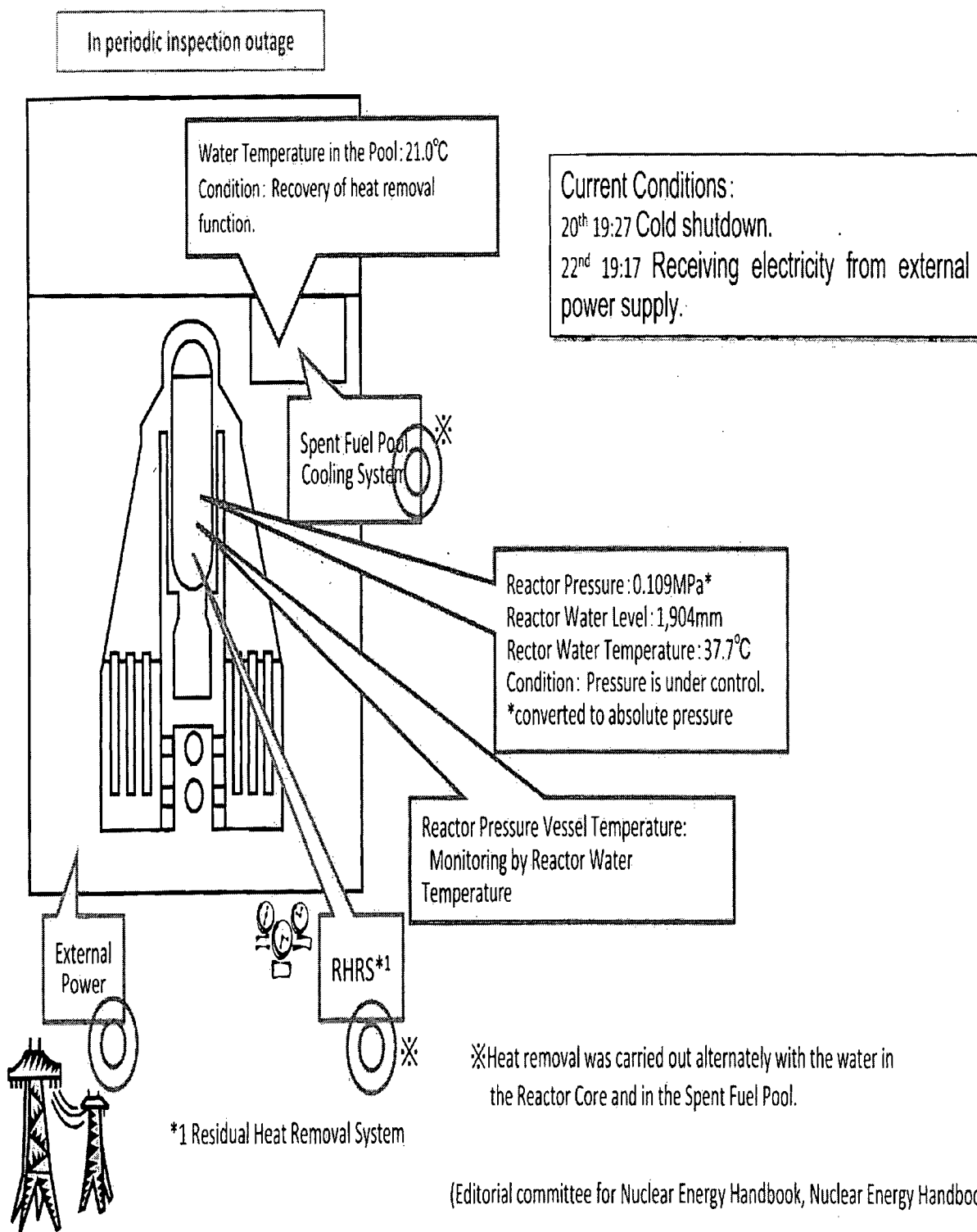
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 12:00 March 29th, 2011)



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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 12:00 March 29th, 2011)



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

March 29, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 61st Release)
(As of 15:00 March 29th, 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

- 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)
- Water spray (fresh water) for Unit 3 using Concrete Pump Truck (50t/h) was started. (14:17 March 29th)
- Lighting of Central Operation Room of Unit 4 was recovered (11:50 March 29th)
- 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.

2. Action taken by NISA

- 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 Emergency Response Headquarters notified the related municipalities of forbidding entry to the evacuation area within the 20 km zone.
- 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 Report Related to Electricity. (11:16 March 29th)

(Attached sheet)

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

● Fukushima Dai-ichi NPS, TEPCO

(Okuma Town and Futaba Town, 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 12:00 March 29th)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.484(A) 0.592(B)	0.076(A) 0.074(B)	0.130(A) 0.006(C)	—	0.111	0.109
CV Pressure (D/W) [kPa]	275	100	107.5	—	—	—
Reactor Water Level*2 [mm]	-1,650(A) -1,650(B)	-1,500(A) Not available(B)	-1,850(A) -2,250(B)	—	2,333	1,904
Suppression Pool Water Temperature (S/C) [°C]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	275	down scale (under survey)	179.6	—	—	—
Spent Fuel Pool Water Temperature [°C]	Indicator Failure	46	Indicator Failure	Indicator Failure	38.8	21.0
Time of Measurement	09:40 March 29th	10:00 March 29th	12:00 March 29h	March 29th	12:00 March 29th	12:00 March 29th

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Situation of Each Unit

<Unit 1>

- TEPCO reported to NISA the event (Inability of water injection of the Emergency Core Cooling System) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (16:36 March 11th)
- Operation of Vent (10:17 March 12th)
- Seawater injection to the Reactor Pressure Vessel (RPV) via the Fire Extinguish Line started. (20:20 March 12th)
→Temporary interruption of the injection (01:10 March 14th)
- The sound of explosion in Unit 1 occurred. (15:36 March 12th)
- The amount of injected water to the Reactor Core was increased by utilizing the Feedwater Line in addition to the Fire Extinguish Line. (2m³/h→18m³/h).(02:33 March 23rd) Later, it was switched to the Feedwater Line only (around 11m³/h). (09:00 March 23rd)
- Lighting in the Central Operation Room was recovered. (11:30 March 24th)
- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, $2.1 \times 10^5 \text{Bq/cm}^3$ of ¹³¹I (Iodine) and $1.8 \times 10^6 \text{Bq/cm}^3$ of ¹³⁷Cs (Caesium) were detected as major radioactive nuclides. The stagnant water has been transferring to the Condenser. (since around 17:00 March 24)
- White smoke was confirmed to generate continuously. (As of 06:30 March 29th)
- 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.)
- Fresh water injection to RPV is being carried out. (As of 15:00 March 29th)

<Unit 2>

- TEPCO reported to NISA the event (Inability of water injection of the Emergency Core Cooling System) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.

(16:36 March 11th)

- Operation of Vent (11:00 March 13th)
- The Blow-out Panel of reactor building was opened due to the explosion in the reactor building of Unit 3. (After 11:00 March 14th)
- Reactor water level tended to decrease. (13:18 March 14th) TEPCO reported to NISA the event (Loss of reactor cooling functions) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (13:49 March 14th)
- Seawater injection to RPV via the Fire Extinguish line was ready. (19:20 March 14th)
- Water level in RPV tended to decrease. (22:50 March 14th)
- Operation of Vent (0:02 March 15th)
- A sound of explosion was made in Unit 2. As the pressure in Suppression 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. (As of 13:30 March 19th)
- Injection of 40t of Seawater 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)
- Injection of 18t of Seawater to the Spent Fuel Pool was carried out. (From 16:07 till 17:01 March 22nd)
- White smoke was confirmed to generate continuously. (Around 06:20 March 25th)
- Injection of seawater to the Spent Fuel Pool via the Fuel Pool Cooling Line was carried out. (From 10:30 till 12:19 March 25th)
- White smoke was confirmed to generate continuously (As of 08:00 March 26th)
- Lighting of Central Operation Room was recovered (16:46 March 26th)
- 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 Iodine-134 was wrong, the concentrations of gamma nuclides including Iodine-134 were less than the detection limit.(00:07 March 28)
- White smoke was confirmed to generate continuously. (As of 06:30 March 29th)
- Fresh water injection to RPV is being carried out. (As of 15:00 March 29th)

<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 (20:41 March 12th)
- 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)
- The pressure in Primary Containment Vessel (PCV) of Unit 3 rose unusually. (07:44 March 14th) TEPCO reported to NISA on the event falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness. (7:52 March 14th)
- In Unit 3, the explosion like Unit 1 occurred around the reactor building (11:01 March 14th)
- The white smoke like steam generated from Unit 3. (08:30 March 16th)

- Because of the possibility that PCV of Unit 3 was damaged, the workers evacuated from the main control room of Units 3 and 4 (common control room). (10:45 March 16th) Thereafter the operators returned to the room and restarted the operation of water injection. (11:30 March 16th)
- Seawater was discharged 4 times to Unit 3 by the helicopters of the Self-Defence Force. (9:48, 9:52, 9:58 and 10:01 March 17th)
- The riot police arrived at the site for the water spray from the ground. (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 as of 11:00 March 20th). Preparation to lower the pressure was carried. Judging from the situation, immediate pressure relief was not required. Monitoring the pressure continues (120 kPa at 12:15 March 21st).
- On-site survey for leading electric cable (From 11:00 till 16:00 March 20th)
- Water spray over the Spent Fuel Pool of Unit 3 by Hyper Rescue Unit of Tokyo Fire Department was carried out (From 21:30 March 20th till 03:58 March 21st).
- Works for the recovery of external power supply is being carried out.
- Grayish smoke generated from Unit 3. (At around 15:55 March 21st)
- The smoke was confirmed to be died down. (17:55 March 21st)
- Grayish smoke changed to be whitish and seems to be ceasing. (As of 07:11 March 22nd)

- Water spray (Around 180t) by Hyper Rescue Unit of Tokyo Fire Department was carried out. (from 15:10 till 15:59 March 22nd)
- Lighting was recovered in the Central Operation Room. (22:43 March 22nd)
- Injection of 35t of seawater to the Spent Fuel Pool via the Fuel Pool Cooling Line was carried out. (From 11:03 till 13:20 March 23rd)
- Slightly blackish smoke generated from the reactor building. (Around 16:20 March 23rd) At around 23:30 March 23rd and around 4:50 March 24th, it was reported that the smoke seemed to cease.
- Around 120t of seawater was injected to the Spent Fuel Pool via the Fuel Pool Cooling Line. (From around 5:35 till around 16:05 March 24th)
- 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/cm³.
- Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department was carried out. (From 13:28 till 16:00 March 25th)
- Water spray of approximately 100t using Concrete Pump Truck (50t/h) was carried out. (From 12:34 till 14:36 March 27th)
- 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)
- White smoke was confirmed to generate continuously (As of 06:30 March 29th)
- Water spray (fresh water) for Unit 3 using Concrete Pump Truck (50t/h) was started. (14:17 March 29th)
- Injection of fresh water to RPV is being carried out. (As of 15:00 March 29th)

<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 °C)

- at 04:08 March 14th)
- It was confirmed that a part of wall in the operation area of Unit 4 was damaged. (06:14 March 15th)
 - The fire at Unit 4 occurred. (09:38 March 15th) TEPCO reported that the fire was extinguished spontaneously. (11:00 March 15th)
 - The fire occurred at Unit 4. (5:45 March 16th) TEPCO reported that no fire could be confirmed on the ground. (At around 06:15 March 16th)
 - The Self-Defence Force started water spray over the Spent Fuel Pool of Unit 4 (09:43 March 20th).
 - On-site survey for leading electric cable (From 11:00 till 16:00 March 20th)
 - Water spray over the Spent Fuel Pool of Unit 4 by Self-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 electricity cable to the Power Center was completed. (At around 15:00 March 21st)
 - Power Center received electricity. (10:35 March 22nd)
 - Spray of around 150t of water using Concrete Pump Truck (50t/h) was carried out. (from 17:17 till 20:32 March 22nd)
 - Spray of around 130t of water using Concrete Pump Truck (50t/h) was carried out. (From 10:00 till 13:02 March 23rd)
 - Spray of around 150t of water using Concrete Pump Truck (50t/h) was carried out. (From 14:36 till 17:30 March 24th)
 - Spray of around 150t of water using Concrete Pump Truck (50t/h) was carried out. (From 19:05 till 22:07 March 25th)
 - Injection of seawater to the Spent Fuel Pool via the Fuel Pool Cooling Line was carried out. (From 06:05 till 10:20 March 25th)
 - Water spray of approximately 125t using Concrete Pump Truck (50t/h) was carried out. (From 16:55 till 19:25 March 28th)
 - White smoke was confirmed to generate continuously. (As of 06:00 March 29th)
 - Lighting of Central Operation Room was recovered. (11:50 March 29th)

<Units 5 and 6>

- The first unit of Emergency Diesel Generator (B) for Unit 6 is operating

and supplying electricity. Water injection to RPV and the Spent Fuel Pool through the system of Make up Water Condensate (MUWC) is being carried out.

- The second unit of Emergency Diesel Generator (A) for Unit 6 started up. (04:22 March 19th)
- The pumps for Residual Heat Removal (RHR) (C) for Unit 5 (05:00 March 19th) and RHR (B) for Unit 6 (22:14 March 19th) started up and recovered heat removal function. It cools Spent Fuel Pool with priority. (Power supply : Emergency Diesel Generator for Unit 6) (05:00 March 19th)
- Unit 5 under cold shut down (14:30 March 20th)
- Unit 6 under cold shut down (19:27 March 20th)
- Receiving electricity reached to the transformer of starter. (19:52 March 20th)
- Power supply to Unit 5 was switched from the Emergency Diesel Generator to external power supply. (11:36 March 21st)
- Power supply to Unit 6 was switched from the Emergency Diesel Generator to external power supply. (19:17 March 22nd)
- The 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)

<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 16:10 March 28th, water temperature of the pool was around 35°C.

<Other>

- As the result of nuclide analysis at around the southern Water Discharge Canal, $7.4 \times 10^1 \text{Bq/cm}^3$ 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 27 March, it was detected as 250 times higher than the limit in water. On the other hand, as the result of the analysis at the north side of the Water Discharge Canal of the NPS, $4.6 \times 10^1 \text{Bq/cm}^3$ of ^{131}I (Iodine) (1,150 times higher than the limit) was detected. (14:05 March 27th)

- 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)
- In the samples of soil collected on 21 and 22 March 2011 on the site (at 5 points) of Fukushima Dai-ichi NPS, 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.
- 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)

● Fukushima Dai-ni NPS (TEPCO)

(Naraha Town / Tomioka Town, Futaba County, Fukushima Prefecture.)

(1) The state of operation

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

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

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

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

(2) Major plant parameters (As of 12:00 March 29th)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure ^{*1}	MPa	0.15	0.13	0.10	0.11
Reactor water temperature	℃	27.2	27.7	39.2	34.0
Reactor water level ^{*2}	mm	9,296	10,296	7,823	8,036
Suppression pool water temperature	℃	24	25	26	26
Suppression pool pressure	kPa (abs)	107	106	103	102
Remarks		cold shutdown	cold shutdown	cold shutdown	cold shutdown

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

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

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

(1) The state of operation

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

(2) Readings of monitoring post, etc.

MP2 (Monitoring at the North End of Site Boundary)
approx. 0.77μ SV/h (16:00 March 27th) → approx. 0.68μ SV/h (16:00 March 28th)

(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.

- (March 12th)

- 14

- 05:32 Regarding Unit 2 of Fukushima Dai-ni NPS, TEPCO recognized the event (Loss of pressure suppression function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 05:44 Residents within 10km radius from Unit 1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Directive.
- 06:07 Regarding of Unit 4 of Fukushima Dai-ni NPS, TEPCO recognized the event (Loss of pressure suppression function) to fall under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 06:50 In accordance with the Paragraph 3, the Article 64 of the Nuclear Regulation Act, the order was issued to control the internal pressure of PCV of Units 1 and 2 of Fukushima Dai-ichi NPS.
- 07:45 Directives from Prime Minister to the Governor of Fukushima Prefecture, the Mayors of Hirono Town, Naraha Town , Tomioka Town and Okuma Town were issued regarding the event occurred at Fukushima Dai-ni NPS, TEPCO, pursuant to the Paragraph 3, the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
- Direction for the residents within 3km radius from Fukushima Dai-ni NPS to evacuate
 - Direction for the residents within 10km radius from Fukushima Dai-ni NPS to stay in-house
- 17:00 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 17:39 Prime Minister directed evacuation of the residents within the 10 km radius from Fukushima Dai-ni NPS.
- 18:25 Prime Minister directed evacuation of the residents within the 20km radius from Fukushima Dai-ichi NPS.
- 19:55 Directives from Prime Minister was issued regarding seawater injection to Unit 1 of Fukushima Dai-ichi NPS.
- 20:05 Considering the Directives from Prime Minister and pursuant to the Paragraph 3, the Article 64 of the Nuclear Regulation Act, the order was issued to inject seawater to Unit 1 of Fukushima Dai-ichi NPS

and so on.

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

(March 13th)

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

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

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

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

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

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

(March 15th)

- 00:00: The acceptance of experts from IAEA was decided. NISA agreed to accept the offer of dispatching of the expert on NPS damage from IAEA considering the intention by Mr. Amano, Director General of IAEA. Therefore, the schedule of expert acceptance will be planned from now on according to the situation.
- 00:00: NISA also decided the acceptance of experts dispatched from NRC.
- 07:21 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness

- regarding Fukushima Dai-ichi NPS.
- 07:24 Incorporated Administration Agency, Japan Atomic Energy Agency (JAEA) reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Nuclear Fuel Cycle Engineering Laboratories, Tokai Research and Development Centre.
- 07:44 JAEA reported to NISA in accordance with the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Nuclear Science Research Institute.
- 08:54 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 10:30 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the directions as follows.
- For Unit 4: To extinguish fire and to prevent the occurrence of re-criticality
- For Unit 2: To inject water to reactor vessel promptly and to vent Drywell.
- 10:59 Considering the possibility of lingering situation, it was decided that the function of the Local Emergency Response Headquarters was moved to the Fukushima Prefectural Office.
- 11:00 Prime Minister directed the in-house stay area.
- In-house stay was additionally directed to the residents in the area from 20 km to 30 km radius from Fukushima Dai-ichi NPS considering in-reactor situation.
- 16:30 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.
- 22:00 According to the Nuclear Regulation Act, Minister of Economy, Trade and Industry issued the following direction.
- For Unit 4: To implement the injection of water to the Spent Fuel Pool.
- 23:46 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on

Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 18th)

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

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

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

(March 19th)

07:44 The second unit of Emergency Diesel Generator (A) for Unit 6 started up.

TEPCO reported to NISA that the pump for RHR (C) for Unit 5 started up and started to cooling Spent Fuel Storage Pool. (Power supply: Emergency Diesel Generator for Unit 6)

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

(March 20th)

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

(March 21st)

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

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

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

(March 22nd)

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

(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 (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.

< Possibility on radiation exposure (As of 15:00 March 29th) >

1. Exposure of residents

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

- (2) The 35 residents transferred from Futaba Public Welfare Hospital to Kawamata Town Saiseikai Kawamata Hospital by private bus arranged by Fukushima Prefecture were judged to be not contaminated by the Prefectural Response Centre.
- (3) As for the about 100 residents in Futaba Town evacuated by bus, the results of measurement for 9 of the 100 residents were as follows. The evacuees, moving outside the Prefecture (Miyagi Prefecture), were divided into two groups, which joined later to Nihonmatsu City Fukushima Gender Equality Centre.

No. of Counts	No. of Persons
18,000cpm	1
30,000-36,000cpm	1
40,000cpm	1
little less than 40,000cpm*	1
very small counts	5

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

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

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

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

twice of the back ground was detected on 3 members. Therefore, all the 60 members were decontaminated.

- (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 March 27th, the screening was done to 98,944 people. Among them, 99 people were above the 100,000cpm, but when measured these people again without clothes, etc., the counts decreased to 100,000cpm and below, and there was no case which affects health.

2. 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 100mSv becomes 19, as the three workers (All the people were the subcontractor's employees.) who were laying cables in the turbine building of Unit 3 of the NPS were confirmed to be at the level of exposure more than 170mSv on March 24.

For two out of the three workers, 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.

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 1 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.

<Directive of screening levels for decontamination of radioactivity>

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

Old : 40 Bq/cm² measured by a gamma-ray survey meter or 6,000 cpm

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

<Directives of administrating stable Iodine during evacuation>

- (1) On March 16th, the Local Emergency Response Headquarters issued "Directive to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village).
- (2) On March 21st, the Local Emergency Response Headquarters issued Directive titled as "Administration of the stable Iodine" to the Prefectural Governor and the heads of cities, towns and villages (Tomioka Town, Hutaba Town, Okuma Town, Namie Town, Kawauchi Village, Naraha

Town, Minamisouma City, Tamura City, Kazurao Village, Hirono Town, Iwaki City and Iidate Village), which directs the above-mentioned governor and heads to administer stable Iodine under the direction of the headquarters and in the presence of medical experts, and not to administer it on personal judgements.

- (3) 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 Emergency Response Headquarters notified the related municipalities of forbidding entry to the evacuation area within the 20 km zone.

<Situation of the injured (As of 08:00 March 29th)>

1. Injury 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 missing (TEPCO's employee, missing in the turbine building of Unit 4)
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 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

- 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.)
- 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.)

<Situation of resident evacuation (As of 15:00 March 29th)>

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

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

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

<Directives regarding foods and drinks>

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

(1) Items under the suspension of shipment and restriction of intake (As of March 29th)

Prefectures	Suspension of shipment	Restriction of intake
Fukushima Prefecture	Non-head type leafy vegetables, head type leafy vegetables , flowerhead brassicas (Spinach, Cabbage, Broccoli, Cauliflower, <i>Komatsuna</i> *, <i>Kukitachina</i> *, <i>Shinobufuyuna</i> *, Rape, <i>Chijirena</i> , <i>Santouna</i> *, <i>Kousaitai</i> *, <i>Kakina</i> *, etc.), Turnip, Raw milk	Non-head type leafy vegetables, head type leafy vegetables , flowerhead brassicas (Spinach, Cabbage, Broccoli, Cauliflower, <i>Komatsuna</i> *, <i>Kukitachina</i> *, <i>Shinobufuyuna</i> , Rape, <i>Chijirena</i> , <i>Santouna</i> *, <i>Kousaitai</i> *, <i>Kakina</i> *, etc.)
Ibaraki Pref.	Spinach, <i>Kakina</i> *, Parsley, Raw milk	
Tochigi Pref.	Spinach, <i>Kakina</i> *	
Gunma Pref.	Spinach, <i>Kakina</i> *	

*a green vegetable

(2) Request for restriction of drinking for tap-water (As of 15:00 March 29th)

Scope under restriction	Water service (Local governments requested for restriction)
All residents	Iitate small water service (Iitate Village, Fukushima Prefecture)
Babies • Water services that continue to respond to the directive	<Fukushima Prefecture> Minami-soma City water service (Minami-soma City) Iwaki City water supply service (Iwaki City) Date City Tuskidate small water supply service (Date City)
• Tap-water supply service	Non

that continues to respond to the directive	
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<Directive regarding the ventilation when using heating equipments in the area of indoor evacuation >

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

< Fire Bureaus' Activities >

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

(Contact Person)

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東京電力(株)公表資料

3月30日(水) 10時30分予定

別紙

福島第一原子力発電所1号機トレンチ内の溜まり水の測定結果について

核種	試料濃度(Bq/cm ³)
Nb-95 (約35日)	約 4.7×10^{-2}
Tc-99m (約6時間)	約 2.0×10^{-1}
Ru-106 (約370日)	約 4.3×10^{-1}
Ag-110m (約250日)	約 3.6×10^{-2}
Te-129 (約70分)	約 2.1×10^1
Te-129m (約34日)	約 4.1×10^0
I-131 (約8日)	約 5.4×10^0
I-132 (約2時間)	約 1.8×10^0
Te-132 (約3日)	約 1.8×10^0
Cs-134 (約2年)	約 7.0×10^{-1}
Cs-136 (約13日)	約 5.1×10^{-2}
Cs-137 (約30年)	約 7.9×10^{-1}
La-140 (約2日)	約 8.1×10^{-2}