
From: ET07 Hoc
Sent: Sunday, March 27, 2011 9:38 AM
To: OST01 HOC
Cc: FOIA Response.hoc Resource
Subject: RE: Documents provided at March 27 MOFA briefing

Please remember to cc the FOIA response mailbox when you send emails for this event. Thanks.

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

From: OST01 HOC
Sent: Sunday, March 27, 2011 8:48 AM
To: ET07 Hoc; LIA06 Hoc; LIA03 Hoc; LIA08 Hoc; RST01 Hoc; PMT01 Hoc; PMT02 Hoc; PMT11 Hoc; Hoc, PMT12
Subject: FW: Documents provided at March 27 MOFA briefing

Please forward to applicable personnel, if necessary.

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

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Sunday, March 27, 2011 7:50 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Documents provided at March 27 MOFA briefing

From: JapanEmbassy, TaskForce[SMTP:JAPANEMBASSYTASKFORCE@STATE.GOV]
Sent: Sunday, March 27, 2011 7:47:28 AM

To: (b)(6)

(b)(6)

Subject: Documents provided at March 27 MOFA briefing Auto forwarded by a Rule

Please find attached documents presented at today's MOFA Briefing, some of the files might be useful to your efforts.

SBU

This email is UNCLASSIFIED

Jennifer Clever
Japan Emergency Command Center
U.S. Embassy, Tokyo

RRR/126

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

From: Zumwalt, James P

Sent: Sunday, March 27, 2011 8:00 PM

To: JapanEmbassy, TaskForce

Subject: Fw: official notice (27/03/2011) Documents of the briefing

For distribution.

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

From: PROTOCOLOFFICE-EM <protocoloffice-em@mofa.go.jp>

To: PROTOCOLOFFICE-EM <protocoloffice-em@mofa.go.jp>

Sent: Sun Mar 27 06:51:27 2011

Subject: official notice (27/03/2011) Documents of the briefing

— U r g e n t —

Official Notice

(27 March 2011)

To All Missions (Embassies, Consular posts and International Organizations in Japan)

The Ministry of Foreign Affairs has the honour to send for the perusal of Missions, documents which were distributed at the briefing on 27th March, 2011 at 17:00 for your reference.

List of attachments

1. List of briefers from Ministries other than the MOFA (27th, March)
2. Current situation for water supply works (27th, March 2011) (Ministry of Health, Labour and Welfare)
3. Instruction (23 March 2011) (Ministry of Health, Labour and Welfare)
4. Levels of radioactive contaminants in foods (data reported on 26 March 2011) (Ministry of Health, Labour and Welfare)
5. Press Release (23 March, 2011) (Cabinet Office)
6. System for Prediction of Environmental Emergency Dose Information

(Ministry of Education, Culture, Sports, Science and Technology)

7. Press Release (Evaluation of Environmental Radiation Monitoring Results--26 March, 2011) (Cabinet Office)
8. The result of nuclide analysis in the stagnant water on the basement floor of the turbine building of each Unit of Fukushima Dai-ichi Nuclear Power Station(March 27, 2011) (Nuclear and Industrial Safety Agency)
9. Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 06:00 March 27th, 2011) (Nuclear and Industrial Safety Agency)
10. Seismic Damage Information (the 55th Release, As of 18:30 March 26th, 2011) (Nuclear and Industrial Safety Agency)
11. Seismic Damage Information (the 56th Release, As of 8:00 March 27th, 2011) (Nuclear and Industrial Safety Agency)
12. Fukushima Dai-ichi Nuclear Power Station-Major Parameters of the Plant (As of 6:00, March 27th) (Nuclear and Industrial Safety Agency)
13. Fukushima Dai-ichi Monitoring points (March 27th, 2011) (Nuclear and Industrial Safety Agency)

(END)

From: Emche, Danielle
Sent: Sunday, March 27, 2011 3:50 AM
To: LIA03 Hoc
Subject: Re: Voice mail--is it working?

Holy cow, let us know when more is confirmed. I haven't checked all my emails. I will see what the IT staff sent and get back to you either way.

Danielle
Sent from an NRC BlackBerry.

From: LIA03 Hoc
To: Emche, Danielle
Sent: Sun Mar 27 03:47:13 2011
Subject: RE: Voice mail--is it working?

Hi, Danielle,

CNN and others are reporting evacuation of workers due to 100 R/hr fields at what appears to be the unit 2 turbine hall (?). We are trying to see if this is valid.

Besides assembling all the Chairman's travel coordinates, not too much is happening. Mark Shaffer wanted to find out more about the Chairman's schedule so that he could arrange a call with Ambassador Davies. We don't have any information about his schedule in Japan, so we haven't been able to help with this. I implored Mark to keep the information as close as possible until the WH makes the announcement of the visit.

I think someone sent you instructions for the voice mail. In any case, the help desk people are available pretty early—I'll make sure to add a note for the overnight Sunday people to contact them about your situation as soon as they open.

Be safe!
Elizabeth

From: Emche, Danielle
Sent: Sunday, March 27, 2011 3:37 AM
To: LIA03 Hoc
Subject: Re: Voice mail--is it working?

Hi Elizabeth,

I am here, Jack called right after I landed and filled me in about the breaking news. And yes, you listed the right bb number for me in Tokyo.

Thanks for asking about my voice mail, I still can't access it for this line or my normal line. This might need to wait for CSC on Monday, maybe the morning shift can contact them then. There might not be anything they can do, but it doesn't hurt to ask.

I still have to read the reports from during my flight. Have we learned anything new in the last hour or two?

Danielle
Sent from an NRC BlackBerry.

From: LIA03 Hoc
To: Emche, Danielle

RRR/107

Sent: Sun Mar 27 03:19:02 2011
Subject: Voice mail--is it working?

Hi, Danielle,

Happy landings? Hope so!

I understand that you may have been having trouble accessing your bb voicemail. Has this been resolved? Please let me know if I can help you take care of this.

Good luck and take care! Did you hear about the Chairman's trip? I'm sure the others will fill you in.

Best regards,

Elizabeth

PS—We also wanted to confirm your bb number; is it (b)(6) for the one you were issued for this trip?

From: Shaffer, Mark R <ShafferMr@state.gov>
Sent: Sunday, March 27, 2011 1:01 AM
To: LIA03 Hoc
Subject: Re: TRANSITION REPORT FOR MARCH 26, 2011 - 2300

Thank!!

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: Shaffer, Mark R
Sent: Sun Mar 27 00:56:02 2011
Subject: RE: TRANSITION REPORT FOR MARCH 26, 2011 - 2300

Hello, Mark,

Attached is the list with the most current information. I was under the impression that only Vince Holahan was traveling to Hawaii. The deputies meeting summary remains a work in progress, but we will make sure to send it to you when it is ready.

Best regards,

Elizabeth

International Liaison Team

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, March 27, 2011 12:51 AM
To: LIA03 Hoc; LIA02 Hoc
Subject: Re: TRANSITION REPORT FOR MARCH 26, 2011 - 2300

Can I get a copy of the Japan traveler list and Liaison with Navy list ??(Apparently Elmo and Vince are doing something with Honolulu??). And when a summary of the Deputies meeting is completed, I would appreciate a copy of that too. Thanks!

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: LIA02 Hoc <LIA02.Hoc@nrc.gov>
Cc: Doane, Margaret <Margaret.Doane@nrc.gov>; Mamish, Nader <Nader.Mamish@nrc.gov>; Abrams, Charlotte <Charlotte.Abrams@nrc.gov>; Wittick, Brian <Brian.Wittick@nrc.gov>; Afshar-Tous, Mugeh <Mugeh.Afshar-Tous@nrc.gov>; Shaffer, Mark R; Bloom, Steven <Steven.Bloom@nrc.gov>; Schwartzman, Jennifer <Jennifer.Schwartzman@nrc.gov>; Tobin, Jennifer <Jennifer.Tobin@nrc.gov>; Mayros, Lauren <Lauren.Mayros@nrc.gov>; Jones, Andrea <Andrea.Jones2@nrc.gov>; English, Lance <Lance.English@nrc.gov>; Smiroldo, Elizabeth <Elizabeth.Smiroldo@nrc.gov>; Young, Francis <Francis.Young@nrc.gov>; Henderson, Karen <Karen.Henderson@nrc.gov>; Ramsey, Jack <Jack.Ramsey@nrc.gov>; Shepherd, Jill <Jill.Shepherd@nrc.gov>; Baker, Stephen <Stephen.Baker@nrc.gov>; Emche, Danielle <Danielle.Emche@nrc.gov>; Fragoyannis, Nancy <Nancy.Fragoyannis@nrc.gov>; LIA03 Hoc <LIA03.Hoc@nrc.gov>; Stahl, Eric <Eric.Stahl@nrc.gov>; LIA02 Hoc <LIA02.Hoc@nrc.gov>; LIA07 Hoc <LIA07.Hoc@nrc.gov>; LIA06 Hoc <LIA06.Hoc@nrc.gov>; LIA08 Hoc <LIA08.Hoc@nrc.gov>; Owens, Janice <Janice.Owens@nrc.gov>
Sent: Sat Mar 26 22:58:26 2011
Subject: TRANSITION REPORT FOR MARCH 26, 2011 - 2300

~~OFFICIAL USE ONLY~~

TRANSITION REPORT FOR MARCH 26, 2011 – 2300

Jenny and Janice to Elizabeth

RRR/128

UPDATES DURING THIS SHIFT

- **Daily calls with UK/France/Canada.** 0930 daily call with the RST and the 1400 call with the PMT. Call will not occur over the weekend and maybe compressed to only have the 9:30 with both RST and PMT together. The new number to call into for the RST call is (b)(6) and the pin is (b)(6) *ctv*
- **2130 Daily DOS Interagency call.** Note: 3/26 call canceled but confirmed that 3/27 call will take place.
- **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 any further from the LT, ET may inquire about path forward.
- **Assistance to Navy (Pacific Command).** Vince Holahan will be performing a coordinating role with Admiral Willard in Honolulu, HI. Vince was added to the Japan traveler list and the Liaison Japan distribution list (along with Elmo Collins). Updates to the Liaison Japan distribution list is done through Cris Brown.
- **Consideration of J-village Relocation.** J-village in Fukushima prefecture is 12.5 miles from the Daiichi site. It appears that a lot of the work on the ground is being staged there so C. Casto suggested that the Japan team move their headquarters to J-village; he will be onsite at J-Village 3/27 to check it out. There is a hotel and restaurant on-site (previously this site was used as a training center for the Japan national soccer team). This information was provided to the ET, the translator has bookmarked the Japanese language websites that have the information in case we get further questions on the site. TEPCO, NISA, MoD and Special Defense Forces are stationed at J-village. It is the 1st level of information and is unfiltered and is where workers go for decontamination after working their shifts. Due to the proximity of the site to the damaged plant, during the 3/26 meeting with Chuck Casto the ET suggested that if NRC personnel embed there, that HP support may be needed. Chuck and John will be onsite 3/27 (7:30AM Japan time) flying in by helicopter and will hear presentations on what actions agencies are doing at J-village with 1 hour for Q&A.
- **Deputies Committee Decisions and Action Items:** The ET would like to capture decisions taken and action items of this Committee detailed in summary reports from the Deputies Committees meetings (which the Chairman attends). They wish to capture not only those impacting the NRC but other agencies involved as well. The 2300-0700 shift pulled the reports from emails sent to the LT director and saved them in M:\LT\White House. Also in M:\LT there is a summary spreadsheet containing what we have. Since several dates are missing the ET team asked us to call Annette Vietti-Cook (who is on the distribution list and who sent the reports to the ET Director) and see if she has others (an email message was sent to her from LIA03 at 3:36 am on 3/26 containing the spreadsheet indicating which ones are missing). In addition, the Federal Liaison put together a power point designed to show which agency has taken which decisions or actions, and also how our teams would interact. Called Annette Vietti-Cook to follow up on the email message regarding whether she has any missing reports to send us. She sent us all that she had. Have reviewed the reports and provided a report to the LT Director and Coordinator on NRC actions. This report was shared with ET. **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.
- **Emche Blackberry Voicemail Problems.** Forwarded directions from TSC to Danielle on how to access her voicemail. **Action:** March 26/27 (2300-0700 shift) Followup with Danielle to make sure she can get access and confirm hers and Eric's blackberry numbers).
- **Commissioner Apostolakis Request.** Commissioner wants login information for IAEA's website system termed PRIS. Email sent to Jen S. and Mark S. to request this information so he will not have to register. **Action:** Follow-up with Mark on the 3/26 (2300-0700) overnight shift to get him access.

FUTURE ACTIONS/OPEN ITEMS

- **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. Naomi Walcott of Japan Embassy replied wanting to know the specific website PMT found the original data. PMT responded with the website in an email. **Action:** If you receive further communication, please ensure PMT is cc on the email and walk a hard copy back to the meteorologists.

- **Japan Relief Team.**

- **Dosimetry:** LIA03 sent an email to LiaisonJapan (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 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. Brooke Smith is the last person from the original team leaving Japan on 3/31/2011.
 - 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.
- **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 required until Michele responds.**
 - **Request from U.S. Forces Japan.** LT Director received a request for specific reactor information from USFJ in preparation for some 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. **Action:** You may receive a request for information from USFJ that you would then coordinate with our team in Japan.
 - **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.
 - **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. **Action 3:** Make sure that the translated documents are marked appropriately (OUO- Sensitive Foreign Government Information).

- **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. Call will not occur over the weekend and maybe compressed to only have the 9:30 with both RST and PMT together. The new number to call into for the RST call is (b)(6) and the pin is (b)(6) efb
- **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) efb
- **21:30 Interagency Call.**
- **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.
- **1900 3/26 EDT call with IA and industry stakeholders:** The call was originally set up to discuss the list of items requested by the government of Japan (and already postponed once). Alan Blamey called and asked to again postpone this call until further notice because DOE can't participate until they coordinate with their headquarters counterparts on several issues. Since DOE has half the items on the list, the call would be unproductive without them in attendance. Alan Blamey will let us know when DOE can participate in the call, and hence when the call should be held. This was communicated to the LT coordinator, who spread the word regarding the postponement. Talked to Alan Blamey, DOE does not want to be part of future calls since they get their tasking at the White House Deputies Committee meetings. Alan also discussed with LT Director, who asked the ET if meeting should be cancelled, still awaiting an answer.
- **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 may need to contact the Ambassador about this issue. **No action required, just be aware in case the issue comes up.**

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.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 Dorman 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.
- **Sanitary wipes now available.** **Action:** Please wipe the keyboards, mice and phones before you leave.

~~OFFICIAL USE ONLY~~

From: Shaffer, Mark R <ShafferMr@state.gov>
Sent: Sunday, March 27, 2011 1:01 AM
To: LIA03 Hoc; LIA02 Hoc
Cc: Schwartzman, Jennifer; Doane, Margaret
Subject: Re: JAPANESE TRAVELER INFORMATION.docx

I cannot read the list on my Blackberry, so bear with me with a question that may be obvious when I get to a computer and can actually read the list...

Is the Chairman's cell phone (and hotel number) on the list. I need this information ASAP. I was not aware that the Chairman was going to Japan, but the Ambassador will undoubtedly want to talk to him very soon. Also, Margie asked me to set up a conference call with Ambassador and Chairman on Monday...I need to know when and where he will be before I start coordinating this call. Thanks

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: OST02 HOC <OST02.HOC@nrc.gov>; Liaison Japan <LiaisonJapan@nrc.gov>
Cc: LIA02 Hoc <LIA02.Hoc@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>; Mamish, Nader <Nader.Mamish@nrc.gov>; Shaffer, Mark R
Sent: Sat Mar 26 21:10:11 2011
Subject: JAPANESE TRAVELER INFORMATION.docx

All,

I thought with the addition of the new travelers (including the Chairman and his staff) that this updated list might be helpful. Please note that the Chairman and Ms. Coggins have special, new blackberry numbers for use in Japan. Please let me know if you need anything additional or if there are any updates required to the attached document.\

Thanks,
-Jenny

RRR/129

From: LIA02 Hoc
Sent: Friday, March 25, 2011 2:07 PM
To: LIA03 Hoc
Cc: 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; Smirolido, Elizabeth; Young, Francis; Henderson, Karen; Ramsey, Jack; Shepherd, Jill; Baker, Stephen; Emche, Danielle; Fragoyannis, Nancy; LIA03 Hoc; Stahl, Eric; LIA02 Hoc; LIA07 Hoc; LIA06 Hoc; LIA08 Hoc
Subject: TRANSITION REPORT 3/25, 1500

TRANSITION REPORT FOR MARCH 25, 2011 – 1500

Steve and Lance to Janice and Jenny

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. Followed up with an email to Chuck on 3/24 at 12:00. Despite several calls from us, he has not yet called back about this issue. Continue to follow-up and then close out the actions in the Task Tracker. Received mail from LIA08 at 11:10 which contained the meeting minutes from Chuck.
- **Daily calls with UK/France/Canada.** 0930 daily call with the RST and the 1400 call with the PMT. Call will not occur over the weekend and maybe compressed to only have the 9:30 with both RST and PMT together. The new number to call into for the RST call is (b)(6) and the pin is (b)(6)
- **State Liaison Request.** The State Liaison desk requested a talking point on how the NRC came up with the PAR, if there was consultation with Japan before the PAR was made (to compare with the NRC/State interactions on determining PARs). Draft talking point sent to OIP Management, waiting for final version to send to LIA04 (State Liaison). Did not receive this talking point during the 2300-0700 shift. Once received, transmit the OIP talking point to State Liaison once (Margie had some thoughts on feeding it back through OPA). Per Jack Ramsey and as discussed with the LT Director, OIP will not be developing a talking point.
- **Chairman's Call with NISA** – The Chairman had a call with NISA on at 5:30 p.m. EST on Thursday, March 24, 2011. The interpreter on duty sat in on this call in the Chairman's office. The call went well and the Chairman offered further assistance to NISA if/when requested. No further action. Action: The interpreter (Yokoyama) is going to write up his notes, forward to Danielle.
- **2130 Daily DOS Interagency call** (Note: call was cancelled on 3/24).
- **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 any further from the LT, ET may inquire about path forward. During the 2300-0700 shift, no one contacted us.
- **Sanitary wipes now available.** Action: Please wipe the keyboards, mice and phones before you leave.
- **Chairman's call with Ambassador Fujisaki scheduled at 1100 on 3/25/11.** Pulled together talking points with Kirk Foggie. LT Director decided to put together a more comprehensive briefing package,

- using the Situation Report and other data. The report on the Chairman's previous call with the Ambassador was used to determine possible questions he might receive. No further action required.
- **Congressional inquiry.** Received email at 4:58 am forwarded from LT Director containing 4 questions from Brian Sheron, which he received from Congress. The first two questions were answered. The fourth is outside our purview. Brooke was uncomfortable answering the third question because it was speculative. In any case, she may send further information when more time is available. Follow up with LT director to determine if it is necessary to follow through with question 3. Forwarded the answer at 13:13 to questions 1 thru 3 to Bob Nelson who will answer question 4 and then coordinate all of the responses with OPA. Forwarded all 4 answers at 13:56 to Brian Sheron.
- **Mailbox size increase requests.** Contacted CSC via email during the 3/25, 2300-0700 shift to request increases in the size of the email boxes for the next team of NRC travelers. **Action:** Follow up to ensure that CSC has responded to the message and informed us of how to proceed. Received email from ET02 with ticket numbers for this at 11:08.
- **International requests for information.** AIT/TECRO (Taiwan) has requested a briefing on the 50-mile evacuation zone and the plume modeling. Danielle Emche met with AIT/TECRO 3/24 and they requested the same information that the NRC has been sharing with France, UK and Canada on the daily calls with the PMT. PMT will contact Danielle to provide the call-in information to AIT/TECRO contact.
- **Mark Shaffer Question.** Received a request from Mark Shaffer asking that we send him information on three issues from the latest Situation Report. 1) The set of recommendations pertaining to severe accident management strategies that was provided to the NRC team in Japan, 2) The NARAC results, when they become available today, and 3) The exposure data the PMT is providing to NARAC. Received answer from RST for question 1 and forwarded it to Mark. **Action:** Still waiting for answer from PMT on questions 2 and 3. Follow up with PMT, sent them the request for information at 08:54.
- **New Traveler.** New traveler is Elmo Collins. Sent him checklist and requested that he get dosimetry and KI from his RSO. USAID contacting his secretary to get information for his travel. Put in request for Elmo to be added to Liaison Japan.

FUTURE ACTIONS/OPEN ITEMS

- **NISA Request for U.S. Emergency Response Information.** NISA emailed Brooke and asked her to provide them with Emergency Response info. Brooke emailed us to ask for the NUREG for this. Specifically, NISA wants info on U.S. policy for returning a population after evacuation due to a radiological event. Technical staff in the Ops Center said that this information is provided through the EPA. Lauren provided her with 2 documents: 1) federal register notice referencing the Protective Action Guides used to evacuate/re-enter after a radiological event and 2) the EPA's MANUAL OF PROTECTIVE ACTION GUIDES AND PROTECTIVE ACTIONS FOR NUCLEAR INCIDENTS. We are still trying to track down NUREG07278 as written in the previous transition report. Try to get a hold of this document and send it along to Brooke. We forwarded NUREG0728 to Brook as the LT Coordinator is not familiar with five digit NUREG #s. Followed up with FEMA Liaison contact, he provided information that had been approved by his legal staff. Forwarded answer to Brooke and Kirk, **no further action.**
- **NISA Request for Information on Long-Term Decommissioning for Damaged Reactors.** Request came from Mike Scott looking for response for Sunday call. RST informed us that RES is looking into this. Task Tracker 2536. RST is coordinating with RES, FSME and PMT to provide some short-term answers and to determine how long-term actions will be coordinated. Follow-up (3/25 0700 shift) to check with RST that a short-term response gets sent to Dan Dorman (and Mike Scott). Received responses from Jim Andersen and forward to Mike Scott at 12:26.
- **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. Naomi Walcott of Japan Embassy replied wanting to know the specific website PMT found the original data. PMT responded with the website in an email. **Action:** If you receive further

communication, please ensure PMT is cc on the email and walk a hard copy back to the meteorologists.

- **Japan Relief Team.**
 - **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, dosimetry and Blackberries, etc. have been arranged.
 - **No need for extension of travel orders beyond 3/31/2011:** Brooke Smith is the last person from the original team leaving Japan on March 31, 2011.
 - **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 on 3/24/11. All flight information has been updated in the Japan Traveler information sheet.
 - **Dosimetry:** LIA03 sent an email to LiaisonJapan (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 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. Brooke Smith is the last person from the original team leaving Japan on 3/31/2011.
 - **Dosimeter Distribution** – John O'Donnell stopped by on Wednesday afternoon and informed us that the dosimeters should be handed out in numerical order from now on. Whomever take the control dosimeter needs to call John and have him explain how to use it, but in short, the control dosimeter will measure occupational exposure versus environmental exposure. Therefore, the control dosimeter should stay safe in a desk at the Embassy and the last person back from Japan should bring it back with them. Danielle has the control dosimeter and discussed with John O'Donnell about how to use.
 - 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.**
- **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 required until Michele responds.**
- **Jim Trapp/Tony Uises 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. Jim provided his information to Mary directly. LIA 03 forwarded Tony's information to Mary. Received emails from USAID about Jim and Tony's flight information and others and forwarded to Mary Carter. **No further action.**
- **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. **Action: Report to the ET as soon as we get an answer (specifically Marty Virgilio). Contacted Mary Muessle and she said things are just about complete.**
- **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. **Action: 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 sat in on the call and indicated that another call with the RST is necessary to resolve the item, Jen is setting this up with NRR. **No further action.**
- **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.**
- **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. Action 3: Make sure that the translated documents are marked appropriately (OUO- Sensitive Foreign Government Information).**
- **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. **Call will not occur over the weekend and maybe compressed to only have the 9:30 with both RST and PMT together. 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.** **Contact the DOS Task Force (during 3/25 0700 shift) to find out when next call is. Thursday's (3/24) call was cancelled.**

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.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.

- 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 shafferrrr@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: Shaffer, Mark R <ShafferMr@state.gov>
Sent: Sunday, March 27, 2011 2:14 AM
To: LIA03 Hoc
Subject: Re: Contact telephone numbers

Will do. But I do plan to inform the Ambassador, unless someone tells me otherwise ASAP. Of course I will inform him of the instructions to wait until the White House issues the press release before sharing.

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: Shaffer, Mark R
Cc: Foggie, Kirk <Kirk.Foggie@nrc.gov>; Smith, Brooke <Brooke.Smith@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>
Sent: Sun Mar 27 02:06:23 2011
Subject: RE: Contact telephone numbers

We were told that we had to keep the information very close, and were not to share it before the White House issues its press release making the announcement (probably sometime tomorrow). Please be very careful!

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, March 27, 2011 2:03 AM
To: LIA03 Hoc
Cc: Foggie, Kirk; Smith, Brooke; Doane, Margaret
Subject: Re: Contact telephone numbers

I don't know (but doubt) if IAEA DG Amano has been informed of this development. We need to let Amano know soon. Does Chairman want Ambassador Davies to inform Amano?

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: Shaffer, Mark R
Cc: Foggie, Kirk <Kirk.Foggie@nrc.gov>; Smith, Brooke <Brooke.Smith@nrc.gov>
Sent: Sun Mar 27 01:53:42 2011
Subject: RE: Contact telephone numbers

Mark,

The flight information for both the Chairman and Angela is as follows:

Saturday March 26th
10:05PM – 10:15AM (next day)
United 924
IAD – LHR

Sunday March 27th
1:45PM – 9:30AM (Monday March 28th)
Virgin Atlantic 900
LHR – Narita (NRT)

Tuesday March 29th

RRR/130

11:05AM – 10:40AM (Same day)
United 9682
NRT – IAD

Unfortunately, we have no information here regarding the Chairman's schedule for this trip. Brook and/or Kirk, have any meetings been set up on your end? I know this was all very sudden and appreciate anything you might be able to share.

Thanks!
Elizabeth

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, March 27, 2011 1:47 AM
To: LIA03 Hoc
Subject: Re: Contact telephone numbers

Thanks so much Elizabeth. Sorry for all the questions....but do you know when the Chairman leaves for Japan and/or when he arrives, and what will he be doing there? How long will he be there? Will he be meeting with Ambassador Roos? Ambassador Davies will want to know this stuff as soon as I tell him the Chairman is going to Japan. I will be speaking to Ambassador Davies this morning, soon.

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: Shaffer, Mark R; LIA02 Hoc <LIA02.Hoc@nrc.gov>
Cc: Schwartzman, Jennifer <Jennifer.Schwartzman@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>
Sent: Sun Mar 27 01:37:37 2011
Subject: RE: Contact telephone numbers

Also, the phone numbers are:

Gregory Jaczko, (b)(6)
Angela Coggins, Commission staff, (b)(6)

The phone number at the (b)(6)

Please let me know if you need anything else.

Best regards,
Elizabeth

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, March 27, 2011 1:01 AM
To: LIA03 Hoc; LIA02 Hoc
Cc: Schwartzman, Jennifer; Doane, Margaret
Subject: Re: JAPANESE TRAVELER INFORMATION.docx

I cannot read the list on my Blackberry, so bear with me with a question that may be obvious when I get to a computer and can actually read the list...

Is the Chairman's cell phone (and hotel number) on the list. I need this information ASAP. I was not aware that the Chairman was going to Japan, but the Ambassador will undoubtedly want to talk to him very soon. Also, Margie asked me to set up a conference call with Ambassador and Chairman on Monday...I need to know when and where he will be before I start coordinating this call. Thanks

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: OST02 HOC <OST02.HOC@nrc.gov>; Liaison Japan <LiaisonJapan@nrc.gov>
Cc: LIA02 Hoc <LIA02.Hoc@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>; Mamish, Nader <Nader.Mamish@nrc.gov>; Shaffer, Mark R
Sent: Sat Mar 26 21:10:11 2011
Subject: JAPANESE TRAVELER INFORMATION.docx

All,

I thought with the addition of the new travelers (including the Chairman and his staff) that this updated list might be helpful. Please note that the Chairman and Ms. Coggins have special, new blackberry numbers for use in Japan. Please let me know if you need anything additional or if there are any updates required to the attached document.\

Thanks,
-Jenny

From: Shaffer, Mark R <ShafferMr@state.gov>
Sent: Sunday, March 27, 2011 2:39 AM
To: LIA03 Hoc
Subject: Re: Contact telephone numbers

Danke'

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
To: Shaffer, Mark R
Sent: Sun Mar 27 02:36:48 2011
Subject: RE: Contact telephone numbers

The itinerary below was sent to us by Patti Pace, the Chairman's secretary (I cut and pasted it directly from her message). It does not surprise me—the Chairman often has itineraries like this.

From: Shaffer, Mark R [mailto:ShafferMr@state.gov]
Sent: Sunday, March 27, 2011 2:30 AM
To: LIA03 Hoc
Subject: Re: Contact telephone numbers

Help me make sure I'm reading this right...

Chairman arrives Tokyo on Monday morning at 9:30 am (local time), and then leaves Tokyo on Tuesday morning at 11:05 am....that sounds crazy to me.

Can you just confirm I'm reading that correctly.

Thanks again for your help.

From: LIA03 Hoc <LIA03.Hoc@nrc.gov>
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LHR – Narita (NRT)

RRR/131

From: Doane, Margaret
Sent: Sunday, March 27, 2011 4:34 AM
To: 'ShafferMr@state.gov'; LIA03 Hoc; LIA02 Hoc
Cc: Schwartzman, Jennifer
Subject: Re: JAPANESE TRAVELER INFORMATION.docx

Mark. The call with Davies will have to be postponed until Chairman's office gives me direction. The idea of a call was discussed before the Japan trip was on the radar. But we are putting something together that can be discussed with Davies, but I need to get with Chairman's office. We'll talk.
Margie

Sent from an NRC Blackberry
Margaret Doane

From: Shaffer, Mark R <ShafferMr@state.gov>
To: LIA03 Hoc; LIA02 Hoc
Cc: Schwartzman, Jennifer; Doane, Margaret
Sent: Sun Mar 27 01:00:43 2011
Subject: Re: JAPANESE TRAVELER INFORMATION.docx

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Cc: LIA02 Hoc <LIA02.Hoc@nrc.gov>; Doane, Margaret <Margaret.Doane@nrc.gov>; Mamish, Nader <Nader.Mamish@nrc.gov>; Shaffer, Mark R
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-Jenny

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Thanks,
-Jenny

From: CMS TaskForce1D - Japan - Deputy Coordinator <1TFD@state.gov>
Sent: Monday, March 28, 2011 6:08 PM
To: Tong, Kurt W; Seiden, Maya D; Mace, Casey K; Leou, Nancy W; Klevorick, Caitlin B; Moy, Kin W; Gatz, Karen L; Donovan, Joseph R; Shear, David B; Japan-Embassy-Task-Force-DL; M_Staff; TaskForce-1 - Japan; TaskForce-3 - Libya; SES-O_Shift-III; EAP-Staff-Assistants-DL; nitops@nnsa.doe.gov; (b)(6)
(b)(6) ET07 Hoc;
rmtpactsu_rm@ofda.gov; james.turner@noaa.gov; dan.thompson@noaa.gov;
(b)(6) hhs.soc@hhs.gov;
Kasman.Mark@epamail.epa.gov; Faulkner.Mike@epa.gov;
Murray.Lumpkin@fda.hhs.gov; Molly.Muldoon@fda.hhs.gov
Subject: There is No 21:30 (EDT) conference call today, March 28

There is No 21:30 (EDT) conference call today, March 28

This is just a reminder.

Deputy Coordinator
Japan Earthquake Task Force (TFJP01)
U.S. Department of State
(202) 647-6611

RRR/132

From: LIA06 Hoc
Sent: Monday, March 28, 2011 5:03 PM
To: ET05 Hoc
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28
Attachments: image001.png

Please forward to ET members for their awareness. Note public meeting on 3/31 with PG&E (item 5 below).

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Nelson, Robert
Sent: Monday, March 28, 2011 3:57 PM
To: Leeds, Eric; Grobe, Jack; Boger, Bruce; Burnell, Scott; LIA06 Hoc; Roberts, Darrell; Lara, Julio; Kennedy, Kriss; Croteau, Rick; Landau, Mindy; Steger (Tucci), Christine; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry
Cc: West, Steven; Shear, Gary; Broaddus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Wall, Scott; Guzman, Richard; Lyon, Fred; Meighan, Sean; Nguyen, Quynh; Oesterle, Eric; Polickoski, James; Tam, Peter; Thomas, Eric
Subject: FYI: NRR External Comm Team SitRep - 3/28

1. Reminder - To assist you in responding to questions that you may get from both internal and external stakeholders, there are several sets of Q&A's that have been approved by OPA on the NRR SharePoint page under the heading "Japan Event Information" at the following link: <http://portal.nrc.gov/edo/nrr/default.aspx>. All of this info has been screened for public release. A link is provided to the Japan Event Information portion of the public web site.
2. For the longer term, we are currently in the process of developing a category-question-driven Q&A database that we believe can be used agency-wide to help respond to inquiries. We have just begun populating it with OPA approved Q&A's but still have some ways to go. We are working to get buy-in for its use as an agency-wide tool.
3. A spent fuel white paper was developed over the weekend with coordination by the Ops Center. It was provided to the White House. For this reason, OPA has recommended that we control its distribution. Please contact Mike Markley or Eric Oesterle if you want access to this paper.
4. Link to EPA website on Japanese Nuclear Emergency: <http://www.epa.gov/japan2011/index.html>
5. On Thursday, 3/31, there will be a category 1 public meeting with PG&E to discuss the licensee's plans to submit an amendment to incorporate a methodology for the review of new geotechnical information in the design and licensing basis for Diablo Canyon Power Plant, Unit Nos. 1 and 2. The meeting will be held in the Commission hearing room from 1 to 4. The meeting will be web cast and significant stakeholder interest is expected.
6. Completed screening of 4 potentially sensitive licensing actions (7 TACs) resulting in normal processing for each.
7. The NRR Comm Team will be meeting with Mindy Landau, OEDO, and her staff later this week to exchange information and improve coordination of communications.
8. We prepared an estimate of approx 1400 staff-hours and 22,000 pages to respond to the FOIA requesting all exemptions approved for power reactors.

R.A. Nelson

RRR/133

From: LIA04 Hoc
Sent: Monday, March 28, 2011 5:09 PM
To: Easson, Stuart; Flannery, Cindy; Lukes, Kim; Maupin, Cardelia; Noonan, Amanda; Rautzen, William; Rivera, Alison; Ryan, Michelle; Turtill, Richard; Virgilio, Rosetta
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28
Attachments: image001.png

FYI

From: LIA08 Hoc
Sent: Monday, March 28, 2011 5:04 PM
To: LIA01 Hoc; LIA11 Hoc; LIA02 Hoc; LIA03 Hoc; LIA05 Hoc; LIA04 Hoc; OST05 Hoc
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28

Just for your awareness...
Rani

From: LIA06 Hoc
Sent: Monday, March 28, 2011 5:00 PM
To: LIA08 Hoc
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

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Sent: Monday, March 28, 2011 3:57 PM
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Cc: West, Steven; Shear, Gary; Broaddus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Wall, Scott; Guzman, Richard; Lyon, Fred; Meighan, Sean; Nguyen, Quynh; Oesterle, Eric; Polickoski, James; Tam, Peter; Thomas, Eric
Subject: FYI: NRR External Comm Team SitRep - 3/28

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2. For the longer term, we are currently in the process of developing a category-question-driven Q&A database that we believe can be used agency-wide to help respond to inquiries. We have just begun populating it with OPA approved Q&A's but still have some ways to go. We are working to get buy-in for its use as an agency-wide tool.

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 5:15 PM
To: FOIA Response.hoc Resource
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28
Attachments: image001.png

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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~~DO NOT RELEASE OUTSIDE OF THE FEDERAL FAMILY~~

From: LIA08 Hoc
Sent: Monday, March 28, 2011 5:04 PM
To: LIA01 Hoc; LIA11 Hoc; LIA02 Hoc; LIA03 Hoc; LIA05 Hoc; LIA04 Hoc; OST05 Hoc
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28

Just for your awareness...
Rani

From: LIA06 Hoc
Sent: Monday, March 28, 2011 5:00 PM
To: LIA08 Hoc
Subject: FW: FYI: NRR External Comm Team SitRep - 3/28

Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Nelson, Robert
Sent: Monday, March 28, 2011 3:57 PM
To: Leeds, Eric; Grobe, Jack; Boger, Bruce; Burnell, Scott; LIA06 Hoc; Roberts, Darrell; Lara, Julio; Kennedy, Kriss; Croteau, Rick; Landau, Mindy; Steger (Tucci), Christine; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Glitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry
Cc: West, Steven; Shear, Gary; Broaddus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Wall, Scott; Guzman, Richard; Lyon, Fred; Meighan, Sean; Nguyen, Quynh; Oesterle, Eric; Polickoski, James; Tam, Peter; Thomas, Eric
Subject: FYI: NRR External Comm Team SitRep - 3/28

1. Reminder - To assist you in responding to questions that you may get from both internal and external stakeholders, there are several sets of Q&A's that have been approved by OPA on the NRR SharePoint page under the heading "Japan Event Information" at the following link: <http://portal.nrc.gov/edo/nrr/default.aspx>. All of this info has been screened for public release. A link is provided to the Japan Event Information portion of the public web site.
2. For the longer term, we are currently in the process of developing a category-question-driven Q&A database that we believe can be used agency-wide to help respond to inquiries. We have just begun populating it with OPA approved Q&A's but still have some ways to go. We are working to get buy-in for its use as an agency-wide tool.
3. A spent fuel white paper was developed over the weekend with coordination by the Ops Center. It was provided to the White House. For this reason, OPA has recommended that we control its distribution. Please contact Mike Markley or Eric Oesterle if you want access to this paper.
4. Link to EPA website on Japanese Nuclear Emergency: <http://www.epa.gov/japan2011/index.html>
5. On Thursday, 3/31, there will be a category 1 public meeting with PG&E to discuss the licensee's plans to submit an amendment to incorporate a methodology for the review of new geotechnical information in the design and licensing basis for Diablo Canyon Power Plant, Unit Nos. 1 and 2. The meeting will be held in the Commission hearing room from 1 to 4. The meeting will be web cast and significant stakeholder interest is expected.
6. Completed screening of 4 potentially sensitive licensing actions (7 TACs) resulting in normal processing for each.
7. The NRR Comm Team will be meeting with Mindy Landau, OEDO, and her staff later this week to exchange information and improve coordination of communications.
8. We prepared an estimate of approx 1400 staff-hours and 22,000 pages to respond to the FOIA requesting all exemptions approved for power reactors.

R.A. Nelson

Robert A. Nelson
NRR External Communications Coordinator, Japan Event
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation



E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102

From: Schwartzman, Jennifer
Sent: Monday, March 28, 2011 1:35 PM
To: Dempsey, Jeanne
Cc: LIA02 Hoc; LIA03 Hoc
Subject: RE: notification process for deployed

Sorry, I guess I misunderstood Dr. Cadoux's email.

Yes, the plan is that the OIP staff on shift in the operations center are in 24 hour communication with our team in Japan via an email alias that was created. You should therefore be emailing LIA02.hoc@nrc.gov and LIA03.hoc@nrc.gov if at any point you wish to get a message to the team telling them to take KI. You can also follow up with a phone call to the operations center at 816-5180 and the international liaison desk will answer (816-5100 is the HOO in case no one is answering). You should not be going through me or any other specific OIP staff member, since we are staffed in the ops center 24 hours a day and the recommendation may come in at any time when any of us are on shift.

From: Dempsey, Jeanne
Sent: Monday, March 28, 2011 1:34 PM
To: Schwartzman, Jennifer
Subject: RE: notification process for deployed

No – that is not the message. What I would like to discuss is do we have a plan for communicating with our deployed employees if there is a recommendation to take KI?

From: Schwartzman, Jennifer
Sent: Monday, March 28, 2011 1:31 PM
To: Dempsey, Jeanne
Subject: RE: notification process for deployed

Jeanne,

I am not in today because my daughter's daycare is closed for a professional day. Please clarify that the message here is "although you may be hearing that Tokyo residents are being advised to take KI, the NRC is not/not advising this at this time." If that's correct, I will pass it along to our folks on shift at the ops center who will pass it along to the alias we created for all of our Japan travelers.

From: Dempsey, Jeanne
Sent: Monday, March 28, 2011 1:17 PM
To: Schwartzman, Jennifer
Subject: FW: notification process for deployed

Hi Jennifer,
I left you a voice mail message, but also wanted to contact you via email in case you are able to check your email messages. This is not urgent, but I would like to touch base with you at your earliest convenience.
Thanks,

Jeanne Dempsey
Program Manager
Work Life and Benefits Branch, O3E17A
Office of Human Resources

RRR/134

U.S. Nuclear Regulatory Commission
Washington, DC 20555
Office: 301-415-2909

BB: (b)(6)

etf

From: Buchholz, Jeri
Sent: Monday, March 28, 2011 8:34 AM
To: Dempsey, Jeanne; Cohen, Miriam
Cc: Dosch, William
Subject: RE: notification process for deployed

I think it is a good idea. The question is who. Michele Evans has a lot to worry about. I think the person who got the e-mail from about the checklist was Jeri Schwartzman. You might start with her.

From: Dempsey, Jeanne
Sent: Friday, March 25, 2011 5:57 PM
To: Cohen, Miriam; Buchholz, Jeri
Cc: Dosch, William
Subject: FW: notification process for deployed

Miriam/Jeri – I think this is a good suggestion. When we had our conference call with State on Monday, there did not seem to be a clear plan for notifying those Federal employees working in Tokyo. Do you think we should contact someone in the Operations Center who has regular contact with our employees over there to ensure they have considered how to do this?

Jeanne

BB: (b)(6)

From: Cadoux, Claude
Sent: Friday, March 25, 2011 5:02 PM
To: Dempsey, Jeanne
Cc: Cohen, Miriam; Buchholz, Jeri; Dosch, William
Subject: notification process for deployed

Jeanne,

The process of preparing employees for travel continues to go smoothly. There is one process issue I'd like to raise for which I believe HR has shared responsibility and as such may wish to discuss with Japan deployment managers. Trish Milligan has confirmed for me the accuracy of a recent news account that Tokyo residents are being advised by their government to take KI. As you know, the NRC is providing KI to our Tokyo-bound employees and it is believed all have access to it at this time. It is currently the NRC's considered view that its employees not use KI.

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. Should this not have already been addressed, the NRC might benefit from a communication plan regarding a recommendation for KI, and that it be 1) clearly understood by all, 2) sufficiently time-sensitive and, 3) certain to reach all NRC employees who will need this information wherever they are, day or night.

Thanks, Jeanne, and enjoy your weekend.
Claude

Claude Cadoux MD, MPH
Medical Director

U. S. Nuclear Regulatory Commission
11555 Rockville Pike, Rm O-2 E13
Rockville, Maryland 20852
ph: 301.415.8400
claude.cadoux@nrc.gov

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From: Brown, Frederick
Sent: Monday, March 28, 2011 5:41 PM
To: RST06 Hoc
Subject: Fw: Proposal
Attachments: RST-DART Daily Communication Coordination Rev. 0.doc

From: Garchow, David F.(INPO) <GarchowDF@inpo.org>
To: Brown, Frederick
Sent: Mon Mar 28 17:28:01 2011
Subject: Proposal

David F. Garchow
Vice President Plant Technical Support
Institute of Nuclear Power Operations
(770)644-8464 (Office) (b)(6) (Cell)
Make a Difference!

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Thank you.

MAR/135

RST-DART Daily Communication Coordination

Revision 0

3/28/11

0300 – DART call from Japan to NRC RST

- Normal attendees; U.S. is in listening mode (INPO, GEH, EPRI)

When Japan DART hangs up, other U.S. industry attendees (INPO, EPRI, GEH) will stay on the line to coordinate actions for the day in the “Daily Task Alignment Meeting”.

~0330 – Daily Task Alignment Meeting

**NRC RST Lead, INPO ERC Tech Lead, INPO ED, GE Tech Lead, EPRI Tech Lead
(hang on phone after DART team call concludes)**

- What new requests do we have?
 - Who made the request? (Organization, person)
 - What is the purpose of the request?
 - With whom will the information (in the answer) be shared?
 - Do we need to actually work on the request (or is it just somebody’s musing)?
 - Which entities should work on the request?
 - What is the urgency of the request?
 - What is a reasonable due time or date?
 - What assumptions are we using as inputs to the problem?
- Does any of the new status data change our assumptions for previous recommendations?
- Update current RST Actions-Owners
- NRC RST distributes revised action list to 1100 meeting attendees.

1100 – Technical Refocus Meeting – Led by INPO Tech Lead

- 1) Status Open Actions
- 2) Deliver any responses for new actions that have been completed from the daily task alignment meeting
- 3) If actions are not complete:
 - a) Go around to the various parties that have worked on the request to present a brief status.
 - b) Conduct a brief brainstorming/additional helpful technical input from all attendees: 5-10 minutes (this is valuable to NRC and participants)
 - c) Rescope problem if needed
 - d) Determine new actions and responsible parties if applicable
 - e) Determine what the completion time should be; if possible deliver to NRC by 1530
 - f) Determine what the product will be (email, paper, etc.)
 - g) Is a 1600 phone call necessary? If so Identify:
 - i) who needs to participate?
 - ii) who is the lead of the call and will set it up?
 - iii) what is desired outcome of the call?
 - h) Adjourn

Subject: HHS State/Territory 2011 Pacific Basin Earthquake/Tsunami Conference Call
Location: ASPR Main Conference Room - 638G or via Conference Call

Start: Tue 3/29/2011 5:00 PM
End: Tue 3/29/2011 6:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Natarajan, Nitin (HHS/ASPR/OPEO)

NOTE: All speakers/Q&A participants, please notify the operator that you are a speaker when you connect.
NOTE: Each call has a NEW dial-in number, please see below.

Thanks again to all the speakers/interagency partners for your time and assistance on these calls. They have been very well received by our partners and we continue to have approximately 200 participants per call.

If you are unable to attend, if you could please forward this to a representative from your agency who could present on your behalf, it would be appreciated.

N

As stated on Tuesday's call, HHS would like to invite our State/Territorial partners to another informational conference call regarding the 2011 Pacific Basin Earthquake/Tsunami. An agenda and call-in information is below. There are a limited number of lines available (250), so we ask that participants from the same jurisdiction do their best to dial-in from the same location. We intend to hold follow-up calls as the situation warrants.

Participants: State/Territorial Health Officials, State/Territorial Preparedness Directors, State/Territorial Radiation Protection Program Leads, State/Territorial Public Affairs Officers, Staff of the Radiation Protection Alliance, NPHIC Staff

Date/Time: Tuesday March 29, 2011 5:00PM Eastern (We ask that participants dial-in at least five minutes prior to the start of the call)

Agenda:

1. NRC Update – NRC Staff
2. EPA Update – EPA Staff
3. CBP Update – CBP Staff
4. Food Safety Issues – FDA Staff
5. USDA Update – USDA Staff
6. Repatriation Issues – ACF Staff
7. Mental Health Issues – SAMHSA
8. HHS Response Update – ASPR/CDC
9. HHS Public Affairs Update – Gretchen Michael
10. Q&A

Dial-in Information

RRR/136

Toll-Free Phone Number: 888-972-6711
Toll Phone Number: 517-308-9423
Passcode: (b)(6)

Please note: All participants will be in a muted listen-only mode until the Q&A period begins.

Thanks in advance for your time and assistance and as always, if you have any questions or concerns, please feel free to contact us.

Nitin

Nitin Natarajan
Coordinating Director
HHS/ASPR/OPEO
202-260-2002 Office

(b)(6) STE
(b)(6) Cellular
nitin.natarajan@hhs.gov E-mail

From: LIA06 Hoc
Sent: Tuesday, March 29, 2011 4:39 PM
To: ET05 Hoc
Subject: FW: FYI: NRR Comm Team SitRep - 3/29
Attachments: FYI: Cancel GT Support Actions; image001.png

Please forward to ET members for awareness.

Marissa
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Nelson, Robert
Sent: Tuesday, March 29, 2011 4:15 PM
To: Leeds, Eric; Grobe, Jack; Boger, Bruce; Burnell, Scott; LIA06 Hoc; Roberts, Darrell; Kennedy, Kriss; Lara, Julio; Croteau, Rick; Landau, Mindy; Steger (Tucci), Christine; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Gitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry
Cc: West, Steven; Shear, Gary; Hay, Michael; Broaddus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Simms, Sophonia; Wall, Scott
Subject: FYI: NRR Comm Team SitRep - 3/29

1. Provided quick turnaround responses to OEDO & the Chairman's office in support of the Chairman's appearance before the Senate Appropriations Committee Water & Energy tomorrow.
2. Preparing a presentation for Eric Leeds to the National Governors Assoc on 4/4. We will use this material to prepare a generic to presentation that can be used by the regions at EOC and other public meetings.
3. Received, summarized, & distributed a preliminary report by the CA Coastal Commission re: the Japanese earthquake and implications for coastal CA.
4. Received and distributed the login info for agency access to the NEI environmental reporting database.
5. Continued populating the our category-question-driven Q&A database.
6. The MSNBC reporter has narrowed the scope of his FOIA regarding exemptions to records from 01/01/2008 to the present (03/23/2011) greatly reducing the burden of this FOIA.
7. See attached regarding responses to Congressional inquiries.

R.A. Nelson

Robert A. Nelson
NRR External Communications Coordinator, Japan Event
Deputy Director
Division of Operating Reactor Licensing
Office of Nuclear Reactor Regulation



E-mail: robert.nelson@nrc.gov | Office: (301) 415-1453 | Cell: (b)(6) | Fax: (301) 415-2102

RRR/137

From: RST06 Hoc
Sent: Tuesday, March 29, 2011 9:30 AM
To: RST01 Hoc
Subject: FW: Reducing oxygen in external water supply-- nitrogen sparging.

From: RST01 Hoc
Sent: Tuesday, March 29, 2011 8:02 AM
To: RST06 Hoc; Hoc, RST16; RST08 Hoc; RST09 Hoc
Subject: FW: Reducing oxygen in external water supply-- nitrogen sparging.

From: Sheron, Brian
Sent: Tuesday, March 29, 2011 7:12 AM
To: RST01 Hoc
Cc: ET01 Hoc; HOO Hoc; Weber, Michael; Virgilio, Martin
Subject: FW: Reducing oxygen in external water supply-- nitrogen sparging.

See below. Note that the recommendation is to "...give this information to the Japanese." Also note that the author is the Secretary of Energy, Steve Chu.

As Mike notes below, it was our understanding that all recommendations to the Japanese were first to be vetted through the industry/government group (i.e., NRC, DOE, INPO, NR, EPRI, GEH, Bettis, KAPL).

My suggestion is that you discuss this with the DOE rep on the RST and have the rep interact with DOE and make sure that this is vetted through the industry/government group above (like the way the severe accident management recommendations were vetted a few days ago).

Can you also alert the site team to this, in case DOE decides to send it over without the vetting process.

Thanks.

From: Weber, Michael
Sent: Monday, March 28, 2011 7:41 PM
To: Sheron, Brian
Cc: Zimmerman, Roy; McDermott, Brian; Brown, Frederick; LIA06 Hoc; LIA08 Hoc; Casto, Chuck; Dorman, Dan; Borchardt, Bill; Virgilio, Martin; ET01 Hoc; ET05 Hoc; OST02 HOC; FOIA Response.hoc Resource
Subject: Response - Reducing oxygen in external water supply-- nitrogen sparging.

Thanks, Brian. Please vet this through the RST and share with our Site Team. My understanding from the Chairman is that any such recommendations need to be coordinated among the agencies and industry partners (INPO, GEH, etc.) And channeled through the Site Team to our Japanese counterparts.

From: Sheron, Brian
To: Weber, Michael
Sent: Mon Mar 28 19:13:27 2011
Subject: Fw: Reducing oxygen in external water supply-- nitrogen sparging.

RRR/108

Mike, see below. I think DOE is starting to go directly to the Japanese with recommendations. I thought recommendations were supposed to be vetted among NRC, EPRI, NR, GEH, etc. ?

However, I'm not going to tell the Secretary of Energy what he can and can't do.

From: SCHU <SCHU@hq.doe.gov>
To: Garwin, Dick (IBM) <rlg2@us.ibm.com>; Binkley, Steve <Steve.Binkley@science.doe.gov>
Cc: Brinkman, Bill <Bill.Brinkman@science.doe.gov>; Binder, Jeff <binderj@oml.gov>; Hurlbut, Brandon <Brandon.Hurlbut@hq.doe.gov>; Sheron, Brian; Poneman, Daniel <Daniel.Poneman@hq.doe.gov>; Connell, Elizabeth <elizabeth.connell@inl.gov>; McFarlane, Harold <harold.mcfarlane@inl.gov>; 'Harold Denton' <(b)(6)>; Adams, Ian <Ian.Adams@Hq.Doe.Gov>; 'JOE H. PAYER' <jhp@po.cwru.edu>; Kelly, John E (NE) <JohnE.Kelly@Nuclear.Energy.Gov>; Grossenbacher, John (INL) <john.grossenbacher@inl.gov>; Owens, Missy <Missy.Owens@hq.doe.gov>; Peterson, Per <peterson@nuc.berkeley.edu>; Lyons, Peter <Peter.Lyons@Nuclear.Energy.gov>; Finck, Phillip <phillip.finck@inl.gov>; <(b)(6)>; Lee, Richard; Budnitz, Bob <RJBudnitz@lbl.gov>; Szilard, Ronaldo <ronaldo.szilard@inl.gov>; Aoki, Steven <Steven.Aoki@nnsa.doe.gov>; Koonin, Steven <Steven.Koonin@science.doe.gov>; <(b)(6)>; Binkley, Steve <Steve.Binkley@science.doe.gov>; DAgostino, Thomas <Thomas.DAgostino@nnsa.doe.gov>
Sent: Mon Mar 28 17:47:48 2011
Subject: RE: Reducing oxygen in external water supply-- nitrogen sparging.

Attached are some commercial methods to deoxygenate water for boiler feeds and other applications. I suggest that we give this information to the Japanese. Before fresh water is introduced into the RPV, deoxygenation could lower the risk of another hydrogen explosion.

Don't know what the risk will be if the venting is into the now missing secondary containment. In speaking with the Millstone reactor folks today (in Waterford Conn.), they expressed some doubt that a hydrogen explosion could occur if the top of the secondary containment is not there. Just to make sure, there are large door at the bottom of the buildings that can be opened to "chimney": away the hydrogen.

Membrane technology

<http://www.liqui-cel.com/applications/O2.cfm>

The web site claims the largest unit can deoxygenate at a rate of 70 – 400 gpm. They have a branch in Toyko.

Liqui-Cel® Membrane Contactors are used around the world for deoxygenation of water and other liquids. Oxygen (O2) negatively impacts many processes; it is corrosive and can oxidize materials. In the power and industrial areas, piping, boilers and equipment are susceptible to corrosion if deaeration is not present. Liqui-Cel® Contactors offer easy-to-operate, modular solutions for degassing and oxygen (O2) removal from water without chemicals and without large vacuum towers or deaerators. Liqui-Cel® Contactors also offer the benefit of simultaneous oxygen and carbon dioxide removal from water as well as N2 control with one step.

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Many plants are now using Liqui-Cel® Contactors for the deoxygenation of their boiler feedwater. Boiler deaeration extends boiler and piping life by preventing corrosion of critical parts. Liqui-Cel® Contactors facilitate boiler deaeration and corrosion control.

ion exchange resins

http://msdssearch.dow.com/PublishedLiteratureDOWCOM/dh_0035/0901b803800353b0.pdf?filepath=liquidseps/pdfs/no-reg/177-01840.pdf&fromPage=GetDoc

Steven Chu

Department of Energy

From: Garwin, Dick (IBM)

Sent: Sunday, March 27, 2011 5:42 PM

To: Binkley, Steve

Cc: Brinkman, Bill; Binder, Jeff; Hurlbut, Brandon; Sheron, Brian; Poneman, Daniel; Connell, Elizabeth; McFarlane, Harold; 'Harold Denton'; Adams, Ian; John Holdren; 'JOE H. PAYER'; Kelly, John E (NE); Grossenbacher, John (INL); Owens, Missy; Peterson, Per; Lyons, Peter; Finck, Phillip; Garwin, Dick (EOP); Lee, Richard (NRC); Budnitz, Bob; Szilard,

Ronaldo; SCHU; Aoki, Steven; Koonin, Steven; Steve Fetter; Binkley, Steve; DAgostino, Thomas
Subject: Reducing oxygen in external water supply-- nitrogen sparging.

A moment on the web gives me this:
Nitrogen Sparging and Blanketing of Water Storage Tanks

at <http://www.steamcycle.com/nitrogen.htm>

Please read and evaluate.

Dick Garwin *pel*

From: Coons, Albert <albert.coons@dhs.gov>
Sent: Tuesday, March 29, 2011 2:32 PM
To: LIA05 Hoc
Subject: RE: I-131 in PA

Ken
Thank you for the information.
Al

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA
202-212-2318
(b)(6)
703-305-0837 (fax)
E-mail: albert.coons@dhs.gov

From: prvs=0628bf20d=LIA05.Hoc@nrc.gov [mailto:prvs=0628bf20d=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Tuesday, March 29, 2011 2:31 PM
To: Coons, Albert
Cc: Dan Feighert; Andrew Seward; Harry Sherwood; John Simpson; Lisa Hamilton; Michelle Ralston; Rebecca Fontenot; Steve Horwitz; Tim Greten; Vanessa E. Quinn
Subject: I-131 in PA

Please find the attached.

Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Coons, Albert [mailto:albert.coons@dhs.gov]
Sent: Tuesday, March 29, 2011 10:14 AM
To: LIA05 Hoc
Subject: RE:

The news has been stating that minimal amounts of Iodine 131 has been have been detected in the precipitation in several cities. I did not read the news articles. This is rumor

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA
202-212-2318
(b)(6)
703-305-0837 (fax)
E-mail: albert.coons@dhs.gov

RRR/139

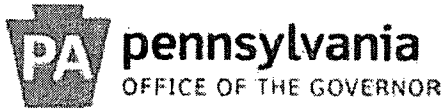
From: prvs=0628bf20d=LIA05.Hoc@nrc.gov [mailto:prvs=0628bf20d=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Tuesday, March 29, 2011 10:00 AM
To: Feighert, Dan; Coons, Albert
Subject:

Have you heard anything about the radiation issues in PA or other states?

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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News for Immediate Release

March 28, 2011

Governor Corbett says Public Water Supply Testing Finds No Risk to Public from Radioactivity Found in Rainwater

Experts monitoring water and air supplies after Japanese nuclear event

Harrisburg – Governor Tom Corbett today said weekend testing of public drinking water found no elevated levels of radioactivity.

On Friday, concentrations of Iodine-131, likely originating from the events at Japan's damaged nuclear plants, were found in rainwater samples collected from Pennsylvania's nuclear power plant facilities.

The numbers reported in the rainwater samples in Pennsylvania range from 40-100 picocuries per liter (pCi/L). Although these are levels above the background levels historically reported in these areas, they are still about 25 times below the level that would be of concern. The federal drinking water standard for Iodine-131 is three pCi/L.

As a result of the findings, Corbett immediately ordered the Department of Environmental Protection's Bureau of Water Quality, Radiation Protection and Laboratories to test the drinking water from six regions in the state.

Samples were taken from facilities in Norristown, East Stroudsburg, Harrisburg, Williamsport, Greenville and Pittsburgh. After repeated testing throughout the weekend, results showed normal levels of radioactivity and no Iodine-131 above the federal limit. In fact, no Iodine-131 was detected in the drinking water samples.

"We have been proactive and conducted immediate drinking water tests to provide hard facts, assuring the public that the water they drink is safe," Corbett said.

On Friday, rainwater samples were taken in Harrisburg, where levels were 41 pCi/L and at nuclear power plants at TMI and Limerick, where levels were 90 to 100 pCi/L.

Corbett emphasized that the drinking water is safe and there is no cause for health concerns. State officials will continue to carefully monitor the situation, Corbett said, and will keep the public informed.

"Rainwater is not typically directly consumed," Corbett said. "However, people might get alarmed by making what would be an inappropriate connection from rainwater to drinking water. By testing the drinking water, we can assure people that the water is safe."

Rainwater is diluted by water in reservoirs and rivers or filters through the ground - and it is treated before reaching consumers as drinking water - it would not be expected to be a concern in public water systems.

While the radioactive element is believed to have originated from Japan's damaged Fukushima Daiichi nuclear power plant, it is not considered to be a health risk in Pennsylvania or anywhere else in the country. Similar testing in other states, including California, Massachusetts and Washington, has shown comparable levels of Iodine-131 in rainwater samples.

"We do not expect the levels to increase and, in fact, the levels we see now should go down rather quickly over the next three months," Corbett said.

"DEP has an extensive network of radiation monitoring points at the nuclear plants and elsewhere, and we will continue to monitor water supplies to ensure there is no risk of contamination to the public," Corbett added.

Any Iodine-131 concentrations detected in rainwater samples are significantly higher than might be detected in a surface body of water, such as a lake or a pond.

Air quality is also being examined and test results are expected later this week. As soon as results are available, Corbett said, they will be made public.

DEP will continue to work with Pennsylvania's public water suppliers to enhance their monitoring and treatment operations as necessary. Residents whose drinking water originates from groundwater, and obtained from wells or springs, should not be affected.

DEP's Bureau of Radiation Protection is in regular contact with the Nuclear Regulatory Commission and Environmental Protection Agency, while the Department of Health is in contact with Centers for Disease Control and Prevention, and other states tracking Japan-related issues.

Pennsylvania residents should not take potassium iodide (KI) pills, Corbett advised. The pills are to be taken only during a specific emergency and only at the recommendation of public health officials or the governor.

"Taking KI now is unnecessary under the circumstances and could cause harmful side effects," said Corbett. "Although usually harmless, it can present a danger to people with allergies to iodine or shellfish, or those who have thyroid problems."

Additionally, the elevated levels of radioactivity found in the rainwater on Friday were still well below levels that could pose any harm to pets or livestock.

"Ironically, today marks the 32nd anniversary of the accident at Three Mile Island nuclear power plant," Corbett said. "The lessons we learned from that incident and the safeguards that were installed, including constant monitoring, have made us better prepared for situations like this."

Media contacts: Kevin Harley, 717-783-1116

###

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 4:36 PM
To: FOIA Response.hoc Resource
Subject: FW: Re:

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Madden, Marc [mailto:Marc.Madden@dhs.gov]
Sent: Monday, March 21, 2011 12:22 PM
To: LIA05 Hoc
Cc: Selby, Douglas (CTR)
Subject: Re:

I have not heard of a consolidated effort. However, many companies are either collecting (such as Costco at the registers) or doing matching donations for their employees.

USAID has a website that lists many different NGOs: <http://www.interaction.org/crisis-list/interaction-members-support-japan-earthquake-response> but it is best to recommend that they go to the organization of their choice website directly (i.e. go to www.redcross.org versus following any link). That reduces the risk of fraud.

Also, you might want to check with Doug (cc'ed - Private Sector Representative) to see if he has heard anything. We have some international folks who might know more - but I am out and can't hunt them down upstairs.

Marc Madden
Response Coordination Branch
National Response Coordination Center
Federal Emergency Management Agency
w- 202-646-4365

c-(b)(6)
Marc.Madden@fema.gov

From: prvs=054bd8b01=LIA05.Hoc@nrc.gov <prvs=054bd8b01=LIA05.Hoc@nrc.gov>
To: Marc.madden@dhs.gov <Marc.Madden@dhs.gov>
Sent: Mon Mar 21 12:09:15 2011
Subject:

The NRC Operation Center is getting requiring about private companies donations to the Japan event. Do you have any information on this? Is there a website, or agency or phone number we can direct them?

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300

RRR/140

FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 4:36 PM
To: FOIA Response.hoc Resource
Subject: FW:

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Small, Ashley [mailto:ashley.small@dhs.gov]
Sent: Monday, March 21, 2011 1:58 PM
To: LIA05 Hoc
Cc: Madden, Marc; Selby, Douglas (CTR)
Subject: FW:

This is what they can provide to inquiring private sector:

Dear Private Sector Stakeholder,

As most of you know, the response and recovery underway in Japan exceeds the authority of the Stafford Act and FEMA is not in the lead and does not have an official role. But we do have experience. We do care. And many of our partners like you are deeply engaged. We acknowledge that with our deepest respect and appreciation.

If your organization is interested in providing any type of assistance to Japan, it can be submitted to USAID Office of Foreign Disaster Assistance at: Rmtpactsu_crc@ofda.gov

Specific USAID re-direct for offers to help - <http://www.interaction.org/crisis-list/interaction-members-support-japan-earthquake-response>

Please feel free to share widely. Thank you for what you do.

Ashley Small

Liaison, Private Sector Division
Office of External Affairs
Federal Emergency Management Agency
Office: 202-646-2853

Cell: (b)(6)

RRR/14/1

Ashley.Small@dhs.gov

Visit us at www.fema.gov/privatesector

From: Selby, Douglas (CTR) [mailto:Douglas.Selby@associates.dhs.gov]
Sent: Monday, March 21, 2011 1:00 PM
To: Small, Ashley
Subject: Fw:

Ashley do you have this handy or I can send out on tuesday.

From: Madden, Marc
To: 'LIA05.Hoc@nrc.gov' <LIA05.Hoc@nrc.gov>
Cc: Selby, Douglas (CTR)
Sent: Mon Mar 21 12:21:48 2011
Subject: Re:

I have not heard of a consolidated effort. However, many companies are either collecting (such as Costco at the registers) or doing matching donations for their employees.

USAID has a website that lists many different NGOs: <http://www.interaction.org/crisis-list/interaction-members-support-japan-earthquake-response> but it is best to recommend that they go to the organization of their choice website directly (i.e. go to www.redcross.org versus following any link). That reduces the risk of fraud.

Also, you might want to check with Doug (cc'ed - Private Sector Representative) to see if he has heard anything. We have some international folks who might know more - but I am out and can't hunt them down upstairs.

Marc Madden
Response Coordination Branch
National Response Coordination Center
Federal Emergency Management Agency
w- 202-646-4365
c-(b)(6)
Marc.Madden@fema.gov

From: prvs=054bd8b01=LIA05.Hoc@nrc.gov <prvs=054bd8b01=LIA05.Hoc@nrc.gov>
To: Marc.madden@dhs.gov <Marc.Madden@dhs.gov>
Sent: Mon Mar 21 12:09:15 2011
Subject:

The NRC Operation Center is getting requiring about private companies donations to the Japan event. Do you have any information on this? Is there a website, or agency or phone number we can direct them?

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Castleman, Patrick
Sent: Wednesday, March 30, 2011 4:54 PM
To: ET07 Hoc; Orders, William; Franovich, Mike; Snodderly, Michael; Marshall, Michael; Hipschman, Thomas; Hart, Ken; Laufer, Richard; Andersen, James; Bates, Andrew
Cc: McDermott, Brian; HOO Hoc
Subject: Re: CA Calls
Attachments: image001.jpg

Sally,

Thanks very much for setting this up. 10 am works perfectly.

Pat

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

From: ET07 Hoc
To: Orders, William; Castleman, Patrick; Franovich, Mike; Snodderly, Michael; Marshall, Michael; Hipschman, Thomas; Hart, Ken; Laufer, Richard; Andersen, James; Bates, Andrew
Cc: McDermott, Brian; HOO Hoc
Sent: Wed Mar 30 16:04:49 2011
Subject: RE: CA Calls

All,

Due to conflicts with the Deputies Call at 0900 and with the briefing call from Chuck Casto/Site Team at ~0930, the ET set the morning CA briefing calls for 1000.

Sally Billings
ET Status Officer

From: HOO Hoc
Sent: Wednesday, March 30, 2011 2:28 PM
To: ET07 Hoc; LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: CA Calls

Jayne—Com. Asst Brief e-mail string below.

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



RRR/142

From: Andersen, James
Sent: Wednesday, March 30, 2011 2:26 PM
To: HOO Hoc
Cc: Laufer, Richard; Evans, Michele; Weber, Michael; Borchardt, Bill; Virgilio, Martin; Muesle, Mary
Subject: FW: CA Calls

As discussed. See discussion below concerning the number of CA call per day.

Jim Andersen
Deputy AO. TBPM, OEDO
415-1725

From: Laufer, Richard
Sent: Wednesday, March 30, 2011 1:49 PM
To: Andersen, James
Cc: Hart, Ken; Bates, Andrew
Subject: FW: CA Calls

Jim --

Can you pass this to the ET and see what proposed time below works best for them?

Thanks,
Rich

From: Orders, William
Sent: Wednesday, March 30, 2011 1:47 PM
To: Hart, Ken; Laufer, Richard
Cc: Castleman, Patrick; Franovich, Mike; Snodderly, Michael; Marshall, Michael; Hipschman, Thomas
Subject: CA Calls

Ken

I have spoken with Commissioner Magwood and Pat has spoken with Commissioner Svinicki re the number of CA calls required from the ET re Japan.

Both Commissioner Magwood and Commissioner Svinicki approve reducing the number to 1/day. I have also discussed the issue with Mike Marshall, Michael Snodderly and Mike Franovich who all support 1/day.

Path forward: 1) We do not need a call tonight. 2) We propose a daily call each morning at either 9:00 or 9:30. Of course if something significant occurs, we would expect a call.

Please communicate with ET and let us know the time.

Thanks

Bill

William T. Orders
Reactors Technical Assistant
Staff of Commissioner William D. Magwood IV
310-415-8430
William.Orders@nrc.gov

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 5:16 PM
To: FOIA Response.hoc Resource
Subject: FW:

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Coons, Albert [mailto:albert.coons@dhs.gov]
Sent: Tuesday, March 29, 2011 10:23 AM
To: LIA05 Hoc
Subject: RE:

Bonnie

I googled the subject rainwater and nuclear. Several articles showed up citing that fallout from Japan has been seen in rainwater across the U.S. I will make an inquiry this afternoon on the call with the Hill.

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA
202-212-2318
(b)(6) (cell)
703-305-0837 (fax)
E-mail: albert.coons@dhs.gov

From: prvs=0628bf20d=LIA05.Hoc@nrc.gov [mailto:prvs=0628bf20d=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Tuesday, March 29, 2011 10:16 AM
To: Coons, Albert; Feighert, Dan
Subject: RE:

Can we have someone find out so we can report it to the OPS center?

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

RRR/143

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From: Coons, Albert [mailto:albert.coons@dhs.gov]
Sent: Tuesday, March 29, 2011 10:14 AM
To: LIA05 Hoc
Subject: RE:

The news has been stating that minimal amounts of Iodine 131 has been have been detected in the precipitation in several cities. I did not read the news articles. This is rumor

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA

202-212-2318

(b)(6)

(cell)

703-305-0837 (fax)

E-mail: albert.coons@dhs.gov

From: prvs=0628bf20d=LIA05.Hoc@nrc.gov [mailto:prvs=0628bf20d=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Tuesday, March 29, 2011 10:00 AM
To: Feighert, Dan; Coons, Albert
Subject:

Have you heard anything about the radiation issues in PA or other states?

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 4:15 PM
To: FOIA Response.hoc Resource
Subject: FW: Chambersburg Public Opinion: Retired engineer in Greencastle says Japan's nuclear plant poses little threat to Franklin County

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Kenneth.wierman@dhs.gov [mailto:Kenneth.wierman@dhs.gov]
Sent: Wednesday, March 16, 2011 2:07 PM
To: LIA05 Hoc
Subject: Chambersburg Public Opinion: Retired engineer in Greencastle says Japan's nuclear plant poses little threat to Franklin County

This article link was mailed to you by: Kenneth.wierman@dhs.gov *

I thought you might find this article of interest.

[Retired engineer in Greencastle says Japan's nuclear plant poses little threat to Franklin County - Public Opinion Online](#)

By ROSCOE BARNES III Staff writer GREENCASTLE -- In light of the nuclear power plant crisis in Japan, it wouldn't be a bad idea to have the milk in this area tested for radiation, according to a retired engineer who served on the Nuclear Regulatory Commission. [View Full Story](#)

Most E-Mailed

(From the last 12 hours)

1. [Volvo to add 220 jobs to Shippensburg plant](#)
2. [PO GUEST ESSAY: Lawmakers consider gas infrastructure, markets](#)
3. [Retired engineer in Greencastle says Japan's nuclear plant poses...](#)
4. [Chambersburg's Elm Street program, Franklin County tourism face deep...](#)
5. [Student missing from school found asleep at home](#)

RRR/144

http://www.publicopiniononline.com/ei_17615599
<http://www.publicopiniononline.com>

This e-mail was delivered by machines from the following IP addresses (b)(6)

* Please note, the sender's email address has not been verified.

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 4:16 PM
To: FOIA Response.hoc Resource
Subject: FW: FYI - Seismic Q&As 3-16-11 3am version
Attachments: Seismic Questions for Incident Response 3-16-11 3am.pdf

Bonnie Sheffield. Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Weber, Michael
Sent: Wednesday, March 16, 2011 6:39 PM
To: RST01 Hoc; LIA05 Hoc
Cc: Burnell, Scott; McIntyre, David
Subject: FYI - Seismic Q&As 3-16-11 3am version

From: Kammerer, Annie
Sent: Wednesday, March 16, 2011 4:14 AM
To: Kammerer, Annie; Hiland, Patrick; Skeen, David
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Devlin, Stephanie; Nguyen, Quynh; Meighan, Sean; Vogel, Anton; Lantz, Ryan; Jones, Henry; Bagchi, Goutam; McIntyre, David; Thomas, Eric; Mahoney, Michael; Polickoski, James
Subject: Seismic Q&As 3-16-11 3am version

All,

Here's the latest version of the seismic Q&As. It is (I believe) a big improvement from yesterday. We had quite a few new questions today, which were included here (not all with answers yet).

A sharepoint site is being set up for the Q&As. The link will be provided as soon as we have it so that anyone can get the latest version.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me (annie) for compilation. Please also CC Cliff Munson and Jon Ake.

R.R.R./145

This is a living document and will be updated daily in the foreseeable future.

Cheers,
Annie

PS: the following people have questions assigned in this document or volunteered to help. Please look for your name or for the gaps in your area of expertise. Also, please review the questions in your area of expertise: Goutam Bagchi, Nilesh Chokshi, Henry Jones, Rich Raione, Mike Markley (if you can get me help on some), Jose Pires, Lara Uselding (help me get the RIV questions to the right people), Jon and Cliff. Thanks for the help!

From: Kammerer, Annie

Sent: Tuesday, March 15, 2011 3:41 AM

To: Hiland, Patrick; Skeen, David

Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael

Subject: latest version of Q&As

All,

This is the first draft of the seismic-specific Q&As. It is pretty rough and there are many answers still missing, but people have contributed a lot and we thought it may be useful for many people trying to answer questions coming in.

We are continuing to compile the questions that come in and update the seismic Q&A document. If you have suggested changes, or want to provide missing answers, please forward them to me for compilation.

This is a living document and will be updated daily in the foreseeable future.

Annie

Dr. Annie Kammerer, PE
Senior Seismologist and Earthquake Engineer
US Nuclear Regulatory Commission
Office of Nuclear Regulatory Research
Washington DC 20555

(b)(6) mobile

(b)(6) BB

From: Hoc, PMT12
Sent: Wednesday, March 30, 2011 6:11 PM
To: PMT09 Hoc
Subject: FW: Request for Ops Center RTS support
Attachments: 03-26-2100 Final RST assessment of Daiichi Units document.docx

What's your take on this?

From: RST06 Hoc
Sent: Wednesday, March 30, 2011 5:34 PM
To: Ruland, William; Arndt, Steven; Skeen, David; Cheok, Michael; Gibson, Kathy; Coe, Doug
Cc: Dudes, Laura; Uhle, Jennifer; Hiland, Patrick; Hackett, Edwin; RST01 Hoc; Hoc, PMT12; McDermott, Brian; Scott, Michael; Tinkler, Charles; Cool, Donald
Subject: RE: Request for Ops Center RTS support

Thanks Bill. You must be a fan of other tired, old, acts too – Cher maybe?

Before responding, can I ask that whomever has stepped-up to take the lead for this do a respond-all to let us know?

Objective for first question (energetic release potential): this information is important to the Ambassador in Japan and the US military command that would be responsible for movement of US citizens who were ordered to be evacuated from any locations in the Pacific. In fact, the Pacific Command asked the same question of the NRC at today's Deputies Meeting that is attended by the Chairman. The answer to this question may also impact when we as the NRC ramp down our activities? **We should attempt to address this by Friday (4/1).**

Objective for the second question is to support multiple questions/actions. There have been many requests of the PMT for "realistic" dose models. The RST Assessment document (original e-mail was supposed to have it attached, but I've added to this incase it did not go out the first time) also contains recommended actions for the Japanese to consider. These recommendations are based on the SAMGs, which all are intended to protect primary containment. Since primary containment is damaged on at least two units, we need to assess whether there may be new considerations/priorities that are not captured by the SAMGs. Also, the product of this effort helps us better clarify the assessment of potential energetic releases, along with identifying the best strategies to ensure that they don't happen. **This item does not have as short a deliverable date unless the PMT has one that I'm not aware of, but is still very significant in terms of our recommendations. Can we complete by Monday (4/4)?**

Of course, my request should be seen as the start of a process, and that others should add to it in order to shape into an end product that goes beyond, or corrects, the vision that I started with.

Fred

From: Ruland, William
Sent: Wednesday, March 30, 2011 10:36 AM
To: Arndt, Steven; Skeen, David; RST06 Hoc; Cheok, Michael; Gibson, Kathy
Cc: Dudes, Laura; Uhle, Jennifer; Hiland, Patrick; Hackett, Edwin; RST01 Hoc; Hoc, PMT12; McDermott, Brian; Coe, Doug; Scott, Michael
Subject: RE: Request for Ops Center RTS support

Great thinking! I've always been a Fred Brown fan! For my benefit, what is the objectives for this task and by when do we need to get the answers?

Handwritten signature and date: RRR/146

Regarding the core damage percentages, I understand that they were early numbers. Are we yet in a position to revise them?

Bill

From: Arndt, Steven
Sent: Wednesday, March 30, 2011 7:33 AM
To: Skeen, David; RST06 Hoc; Cheok, Michael; Gibson, Kathy
Cc: Ruland, William; Dudes, Laura; Uhle, Jennifer; Hiland, Patrick; Hackett, Edwin; RST01 Hoc; Hoc, PMT12; McDermott, Brian; Coe, Doug; Scott, Michael
Subject: Re: Request for Ops Center RTS support

I agree with Dave, this should be done out side of the Op Center. A group of RES folks are already doing some analysis in this area (DRA and DSA) to support the PMT. We should task them to do this and provide them with additional resources if needed.

Sent from a NRC blackberry

Steven Arndt

(b)(6)

From: Skeen, David
To: RST06 Hoc; Cheok, Michael; Gibson, Kathy
Cc: Ruland, William; Dudes, Laura; Uhle, Jennifer; Hiland, Patrick; Hackett, Edwin; RST01 Hoc; Hoc, PMT12; McDermott, Brian; Coe, Doug; Scott, Michael; Arndt, Steven
Sent: Tue Mar 29 23:43:46 2011
Subject: Re: Request for Ops Center RTS support

Good thought, Fred.

I think this would be a worthwhile task, and I think we need a small group of severe accident experts to discuss the potential worst case outcomes for each scenario.

I believe this effort should be conducted outside of the RST, on the normal day shift, with either NRR or RES taking the lead to put a team together to develop the potential outcomes.

Please let me know if you need any support from NRR/DE. We could potentially offer Steve Arndt to support.

From: RST06 Hoc
To: Cheok, Michael; Gibson, Kathy
Cc: Ruland, William; Dudes, Laura; Uhle, Jennifer; Hiland, Patrick; Hackett, Edwin; Skeen, David; RST01 Hoc; Hoc, PMT12; McDermott, Brian; Coe, Doug; Scott, Michael; RST01 Hoc
Sent: Tue Mar 29 23:01:43 2011
Subject: RE: Request for Ops Center RTS support

Please see below.

From: Brown, Frederick
Sent: Tuesday, March 29, 2011 10:56 PM
To: Cheok, Michael; Gibson, Kathy
Cc: Ruland, William; Dudes, Laura; Uhle, Jennifer; Hiland, Patrick; Hackett, Edwin; Skeen, David; RST01 Hoc; Hoc, PMT12; McDermott, Brian; Coe, Doug; Scott, Michael; Brown, Frederick; RST01 Hoc
Subject: Request for Ops Center RTS support
Importance: High

Mike, Kathy

First, I'm not sure that you two are the right folks to ask, but I know that you'll know where this should go.

I'd like to have folks with the right skill set look at two issues (the two are inter-related, but the first may be easier to give a quick answer to without the work that the second will take):

- 1) Given the known, or assumed, status of the three units and four pools, what realistic scenarios exist for energetic dispersion of high quantities of radioactive material that would result in mobile plumes? The point of this question is that there are many clear scenarios that present significant near-area radiological challenges, but given the time since shutdown (for the operating units) and age of much of the fuel (in the SFPs) what are the remaining scenarios of concern with respect to more distant locations (Tokyo with a large concentration of US citizens, Alaska, Hawaii, etc).
- 2) Given the assumed condition of the three units and four pools, can we generate basic event trees for the coming weeks/months? The point would be to identify key success criteria and to help identify key decision points/risk factors to be balanced (qualitative not quantitative analysis). For instance, take two units, each with significant core damage and prior release of volatile fission products, each with primary and secondary containment failure, but one with an intact RPV and the other with a breach of RPV - would there be a difference in potential releases that would lead to different strategies for flooding the primary containment of these two units? This question will make more sense if you look at the assumed conditions below and the attached assessment document where we recommend that TEPCO utilize the SAMG recommendation to flood all 3 units' containments.

Note that the intent is to limit this activity to hours and days, not weeks or years. Once we validate the concept of this evaluation, we can turn it over to US industry for further action/development.

Assumed status (slightly different than the status in the attached assessment):

Unit 1 Rx: Shutdown 3/11. 70% core damage. Cooling with 30 gpm. Significant salt deposits in vessel, core spray plugged. Primary pressure 65 psig. Drywell pressure 25 psig. Secondary containment destroyed. Containment has been vented at least once since fuel damage occurred. Attempting to establish Nitrogen purge prior to resuming venting.

Unit 2 Rx: Shutdown 3/11. 30% core damage. Significant salt deposits in vessel/drywell. Assumed RPV breach, with at least some core ex-vessel that occurred approximately 3/15. Primary containment breached in the torus. Secondary containment breached. Significant release of volatile fission products has occurred through both airborne release and also via water drainage out of the Rx building.

Unit 3 Rx: same assumptions as Unit 2, but do not assume RPV failure and location of primary containment breach may be the drywell.

SFP 1: 292 bundles. Pool intact. All fuel at least 12 years old. No secondary containment. Rubble on top of pool. Water can be added through external spray. Now at saturation temperature.

SFP 2: 587 bundles. Pool intact. Water added to the point of pool over-flow. Pool had reached saturation temperature at one time.

SFP 3: 548 bundles. ¼ core offload previous refueling. No checker boarding of hotter fuel. Structural damage to pool area suspected. Pool leakage possible. External addition of water has been made repeatedly, but flooding of pool may not be possible due to damage.

SFP 4: 1331 bundles. Full core offload about 120 days ago. No checker boarding of hotter fuel. Structural damage to pool area is known to exist, and structure may not support a full pool weight load. Pool leakage likely, requiring addition of water periodically. Pool was likely dry enough to have cladding/water reaction which produced enough hydrogen to lead to catastrophic explosion that destroyed secondary containment.

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 4:29 PM
To: FOIA Response.hoc Resource
Subject: FW: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Williams, Kevin
Sent: Friday, March 18, 2011 5:42 PM
To: Anderson, Joseph; LIA05 Hoc; Thaggard, Mark
Cc: McDermott, Brian; LIA11 Hoc; 'vanessa.quinn@dhs.gov'; 'harry.sherwood@dhs.gov'; 'timothy.greten@dhs.gov'; 'kenneth.wierman@dhs.gov'
Subject: Re: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

This is an NRC staff meeting with the Commission. FEMA is not being asked to attend. The focus is on NRC oversight and practices and what we are doing. The office of NRR has the lead.

Kevin

Sent from an NRC BlackBerry
Kevin Williams

(b)(6)

From: Anderson, Joseph
To: LIA05 Hoc; Thaggard, Mark
Cc: McDermott, Brian; Williams, Kevin; LIA11 Hoc; vanessa.quinn@dhs.gov <vanessa.quinn@dhs.gov>; harry.sherwood@dhs.gov <harry.sherwood@dhs.gov>; timothy.greten@dhs.gov <timothy.greten@dhs.gov>; kenneth.wierman@dhs.gov <kenneth.wierman@dhs.gov>
Sent: Fri Mar 18 17:37:36 2011
Subject: RE: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

Bonnie -- Since I'm out here at USAID, I was unaware of this meeting. Are you currently in the NRC Operations Center. If so, I would discuss with Liaison Team Director. However, I believe a FEMA presence in audience would be appropriate. Requests for participation would come from SECY.

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RRR/147

From: LIA05 Hoc
Sent: Friday, March 18, 2011 5:23 PM
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Sent: Friday, March 18, 2011 5:22 PM
To: Sherwood, Harry; Greten, Timothy; LIA05 Hoc; Seward, Andrew; Ralston, Michelle; Horwitz, Steve; Quinn, Vanessa
Cc: Kish, James
Subject: RE: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

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NRC RESPONSE TO RECENT JAPAN EVENT**

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Technological Hazards Division Deputy Director/
Federal Radiological Preparedness Coordination Committee Executive Secretariat
FEMA National Preparedness Directorate
Department of Homeland Security
1800 South Bell St.
Arlington, VA, 22202
timothy.greten@dhs.gov
office: (202) 646-3907
cell: (b)(6)

From: prvs=0514256dd=LIA05.Hoc@nrc.gov [mailto:prvs=0514256dd=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Friday, March 18, 2011 4:39 PM
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Subject: FW: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

NRC Public Meeting Information.

Bonnie Sheffield 0700-1500
Ken Wierman 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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To: LIA05 Hoc; OST02 HOC

Subject: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

From: OPA Resource

Sent: Friday, March 18, 2011 4:26 PM

To: Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borhardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffry; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Thomas, Ann; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason

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Office of Public Affairs
US Nuclear Regulatory Commission
301-415-8200
opa.resource@nrc.gov

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 4:28 PM
To: FOIA Response.hoc Resource
Subject: FW: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
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Cc: Kish, James
Subject: RE: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

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Cc: Kish, James <James.Kish@dhs.gov>
Sent: Fri Mar 18 16:53:12 2011
Subject: RE: FYI - *Once Again!* Media Advisory: Nuclear Regulatory Commission to Hold Public Meeting on NRC Response to Recent Japan Event

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NUCLEAR REGULATORY COMMISSION TO HOLD PUBLIC MEETING ON

RRR/148

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BAR/149

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NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200
Washington, D.C. 20555-0001

E-mail: opa_resource@nrc.gov Site: www.nrc.gov

Blog: <http://public-blog.nrc-gateway.gov>

March 18, 2011

*****MEDIA ADVISORY*****

NUCLEAR REGULATORY COMMISSION TO HOLD PUBLIC MEETING ON NRC RESPONSE TO RECENT JAPAN EVENT

The U.S. Nuclear Regulatory Commission will be briefed by its staff on the NRC's response to the ongoing nuclear event in Japan in a public meeting on March 21 at 9 a.m. at NRC Headquarters, 11555 Rockville Pike, Rockville, Md. The commission meeting will be open to public observation and will be webcast at: <http://www.nrc.gov/public-involve/public-meetings/webeast-live.html>.

Due to limited space availability, the meeting will be set up for a CBS broadcast network pool camera crew. Broadcast media outlets interested in receiving the feed should contact the network pool at 202-457-4444. For still photographers, this meeting will be pooled with AP, Reuters, AFP and Getty only.

In order for us to try to ensure sufficient seating for reporters, please notify the Office of Public Affairs at the contact information above if you plan to attend. There will be additional space available in our auditorium on a first-come, first-serve basis.

Pool photographers will have limited space at the meeting in which to take photos. Movement must be kept to a minimum so as not to be distracting and entry into the inner well closest to the Commission briefing table is prohibited. Plan to arrive in advance of the meeting at the Marinelli Road entrance of the NRC with proper media credentials. The NRC offices are located across the street from the White Flint Metro station. Parking is available at the White Flint metro parking garage on Marinelli Road.

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News releases are available through a free *listserv* subscription at the following Web address: <http://www.nrc.gov/public-involve/listserv-er.html>. The NRC homepage at www.nrc.gov also offers a SUBSCRIBE link. E-mail notifications are sent to subscribers when news releases are posted to NRC's website.

From: LIA05 Hoc
Sent: Wednesday, March 30, 2011 5:14 PM
To: FOIA Response.hoc Resource
Subject: FW: Meeting Agenda on Small Modular Reactors

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

*****~~FOR OFFICIAL USE ONLY~~*****

~~DO NOT RELEASE OUTSIDE OF THE FEDERAL FAMILY~~

From: Coons, Albert [mailto:albert.coons@dhs.gov]
Sent: Monday, March 28, 2011 4:07 PM
To: LIA05 Hoc
Subject: RE: Meeting Agenda on Small Modular Reactors

Ken
What are the details of this meeting? How did you become aware of the meeting?
Al

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA
202-212-2318
(b)(6) (cell)
703-305-0837 (fax)
E-mail: albert.coons@dhs.gov

From: prvs=0610c37e9=LIA05.Hoc@nrc.gov [mailto:prvs=0610c37e9=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Monday, March 28, 2011 2:37 PM
To: Coons, Albert
Cc: Dan Feighert; Andrew Seward; Harry Sherwood; John Simpson; Lisa Hamilton; Michelle Raiston; Rebecca Fontenot; Steve Horwitz; Tim Greten; Vanessa E. Quinn
Subject: Meeting Agenda on Small Modular Reactors

Please find the attached.

Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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RRR/150

From: ET02 Hoc
Sent: Thursday, March 31, 2011 11:52 AM
To: Reyes, Debra
Cc: LIA02 Hoc; LIA03 Hoc
Subject: RE: New travelers going to Japan

Debra:

We are going to check with him via e-mail now and try to call him later since it is just after midnight in Japan right now. I'll keep you posted as to whether he is still having problems or not or was able to get his BB to work. Thanks...karen

From: Reyes, Debra
Sent: Thursday, March 31, 2011 11:35 AM
To: ET02 Hoc
Subject: RE: New travelers going to Japan

Re: Ralph Way

From: ET02 Hoc
Sent: Thursday, March 31, 2011 11:16 AM
To: Heard, Robert
Cc: Reyes, Debra; Bernhard, Rudolph
Subject: RE: New travelers going to Japan

Rob:

I just got a call from Rudolph Bernhard saying that he needed to get the international blackberry for his trip. His cell phone is (b)(6) Thanks...karen

From: Heard, Robert
Sent: Thursday, March 31, 2011 7:38 AM
To: ET02 Hoc
Cc: Reyes, Debra
Subject: RE: New travelers going to Japan

Please let me know as soon as possible if Laptops are needed. There have no requests for blackberrys for any of these travelers. However Michael Hay in Region IV has decided to take his Verizon Blackberry device.

Please let me know what they need so that requests can be put in.

Rob

From: ET02 Hoc
Sent: Thursday, March 31, 2011 7:29 AM
To: LIA02 Hoc
Cc: Heard, Robert
Subject: RE: New travelers going to Japan

RRR/151

I have modified the Liaison Japan email group to include the 4 new travelers. Do you know if they need laptops or not? Thanks...karen

From: LIA02 Hoc
Sent: Thursday, March 31, 2011 1:45 AM
To: ET02 Hoc
Cc: Jackson, Karen; Heard, Robert
Subject: New travelers going to Japan

Good morning,

I'm not sure if this request has been brought to your attention on a previous shift; if it has, please disregard.

We have been informed that four new travelers will be going to Japan in the next few days: Michael Salay (RES), Michel Call (NMSS - note alternate spelling of Michel), Michael Hay (RIV) and Rudolph Bernhard (RII).

Could you please help get them added to the "Liaison Japan" email alias? Also, can you please confirm that requests have already been put into you concerning their blackberries?

Thank you,
LIA02

From: LIA05 Hoc
Sent: Thursday, March 31, 2011 4:05 PM
To: FOIA Response.hoc Resource
Subject: FW:

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Coons, Albert [mailto:albert.coons@dhs.gov]
Sent: Wednesday, March 30, 2011 11:34 AM
To: LIA05 Hoc
Subject: RE:

No I don't need anything right now.
Thanks
al

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA
202-212-2318
(b)(6) (cell)
703-305-0837 (fax)
E-mail: albert.coons@dhs.gov

From: prvs=063b80882=LIA05.Hoc@nrc.gov [mailto:prvs=063b80882=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Wednesday, March 30, 2011 11:32 AM
To: Coons, Albert
Subject:

Per your request. Do you need something from the Liaison team?

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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RRR/ISA

From: Southern, Glenn A CIV SEA 08 NR (b)(6)
Sent: Thursday, March 31, 2011 8:09 PM
To: ET05 Hoc
Subject: minutes and updated list

Please send to email to (b)(6)

RRR/153

Subject: FW: HHS State/Territory 2011 Pacific Basin Earthquake/Tsunami Conference Call
Location: ASPR Main Conference Room - 638G or via Conference Call

Start: Thu 3/31/2011 5:00 PM
End: Thu 3/31/2011 6:00 PM

Recurrence: (none)

Meeting Status: Accepted

Organizer: Natarajan, Nitin (HHS/ASPR/OPEO)

-----Original Appointment-----

From: Natarajan, Nitin (HHS/ASPR/OPEO)

Sent: Wednesday, March 30, 2011 4:14 PM

To: (b)(6)

(b)(6)

Subject: HHS State/Territory 2011 Pacific Basin Earthquake/Tsunami Conference Call

When: Thursday, March 31, 2011 5:00 PM-6:00 PM (GMT-05:00) Eastern Time (US & Canada).

Where: ASPR Main Conference Room - 638G or via Conference Call

RRR/154

NOTE: All speakers/Q&A participants, please notify the operator that you are a speaker when you connect.

NOTE: Each call has a NEW dial-in number, please see below.

Thanks again to all the speakers/interagency partners for your time and assistance on these calls. They have been very well received by our partners and we continue to have approximately 200 participants per call.

If you are unable to attend, if you could please forward this to a representative from your agency who could present on your behalf, it would be appreciated.

N

As stated on Tuesday's call, HHS would like to invite our State/Territorial partners to another informational conference call regarding the 2011 Pacific Basin Earthquake/Tsunami. An agenda and call-in information is below. There are a limited number of lines available (250), so we ask that participants from the same jurisdiction do their best to dial-in from the same location. We intend to hold follow-up calls as the situation warrants.

Participants: State/Territorial Health Officials, State/Territorial Preparedness Directors, State/Territorial Radiation Protection Program Leads, State/Territorial Public Affairs Officers, Staff of the Radiation Protection Alliance, NPHIC Staff

Date/Time: Thursday March 31, 2011 5:00PM Eastern (We ask that participants dial-in at least five minutes prior to the start of the call)

Agenda:

1. NRC Update – NRC Staff
2. EPA Update – EPA Staff
3. CBP Update – CBP Staff
4. Food Safety Issues – FDA Staff
5. Repatriation Issues – ACF Staff
6. Mental Health Issues – SAMHSA
7. HHS Response Update – ASPR/CDC
8. HHS Public Affairs Update – Gretchen Michael
9. Q&A

Dial-in Information

Toll-Free Phone Number: 800-369-3180

Toll Phone Number: 210-234-0097

Passcode: (b)(6)

Please note: All participants will be in a muted listen-only mode until the Q&A period begins.

Thanks in advance for your time and assistance and as always, if you have any questions or concerns, please feel free to contact us.

Nitin

Nitin Natarajan
Coordinating Director
HHS/ASPR/OPEO
202-260-2002 Office

(b)(6) STE

(b)(6) Cellular [redacted]
mlm.pnarjan@hhs.gov E-mail

Subject: White House Briefing Call
Start: Fri 4/1/2011 6:00 PM
End: Fri 4/1/2011 6:30 PM
Show Time As: Tentative
Recurrence: (none)
Meeting Status: Not yet responded
Organizer: LIA04 Hoc
Required Attendees: LIA04 Hoc; OST05 Hoc; LIA06 Hoc

When: Friday, April 01, 2011 6:00 PM-6:30 PM (GMT-05:00) Eastern Time (US & Canada).

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

There will be a call for governors offices in all states and territories, to brief them on the effects of the situation in Japan and the federal government's response. Below is the call-in information and an agenda for your reference. Please feel free to listen in on the call if you'd like. Let us know if you have any questions. Thanks!

CALL INFORMATION:

Friday April 1, 2011
6:00 PM EST/3:00 PM PST
Dial in: (800) 230-1766

In lieu of a passcode, please provide title of call:

AGENDA

- Introductions.....WH IGA
- Brief Update of the Situation.....DOE/NNSA
- Weather Update & Forecast.....NOAA
- Environmental Monitoring.....EPA
- Agriculture/Food Monitoring.....USDA & FDA
- Health Messaging.....CDC
- Port-of-Entry Monitoring.....DHS/CBP
- Open Discussion/Questions.....ALL
- Summary.....WH IGA

RRR/155

From: LIA05 Hoc
Sent: Friday, April 01, 2011 12:02 PM
To: Coons, Albert; Horton, Douglas; DeFelice, Anthony
Cc: Dan Feighert; Andrew Seward; Harry Sherwood; John Simpson; Lisa Hamilton; Michelle Ralston; Rebecca Fontenot; Steve Horwitz; Tim Greten; Vanessa E. Quinn
Subject: RE:

I can make some changes to make it apply .

Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

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From: Coons, Albert [mailto:albert.coons@dhs.gov]
Sent: Friday, April 01, 2011 11:55 AM
To: LIA05 Hoc; Coons, Albert; Horton, Douglas; DeFelice, Anthony
Cc: Dan Feighert; Andrew Seward; Harry Sherwood; John Simpson; Lisa Hamilton; Michelle Ralston; Rebecca Fontenot; Steve Horwitz; Tim Greten; Vanessa E. Quinn
Subject: RE:

Bonnie
We do not have procedure. How does the procedure you developed apply.

Albert Coons
Lead Program Specialist
HQ/NPD-THD-REPP
FEMA
202-212-2318
(b)(6) (cell)
703-305-0837 (fax)
E-mail: albert.coons@dhs.gov

From: prvs=065cfa8ba=LIA05.Hoc@nrc.gov [mailto:prvs=065cfa8ba=LIA05.Hoc@nrc.gov] **On Behalf Of** LIA05 Hoc
Sent: Friday, April 01, 2011 11:53 AM
To: Coons, Albert; Horton, Douglas; DeFelice, Anthony
Cc: Dan Feighert; Andrew Seward; Harry Sherwood; John Simpson; Lisa Hamilton; Michelle Ralston; Rebecca Fontenot; Steve Horwitz; Tim Greten; Vanessa E. Quinn
Subject:

Do we have a procedure for the on call staff? Any Commutation with the NRC Ops Center may be FOIA.
Bonnie Sheffield Dayshift 0700-1500
Ken Wierman Nightshift 1500-2300
FEMA REP Liaison
NRC Operations Center
(301) 816-5187

RRR/1526

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Subject: Agenda for Industry Consortium Daily Call (NOTE TIME CHANGE to 2000 HRS DAILY)
Location: Ops Center

Start: Fri 4/1/2011 8:00 PM
End: Fri 4/1/2011 9:00 PM

Recurrence: (none)

Meeting Status: Accepted

Organizer: LIA01 Hoc

Required Attendees: Al Hochevar; Alice Caponiti; Blamey, Alan (Alan.Blamey@nrc.gov); Blount, Tom (Tom.Blount@nrc.gov); Bruce Boger; Casto, Chuck (Chuck.Casto@nrc.gov); Christensen, Harold (Harold.Christensen@nrc.gov); Craig Gaddis; DORLCAL Resource (DORLCAL.Resource@nrc.gov); Dorman, Dan (Dan.Dorman@nrc.gov); DprNrrCal Resource (DprNrrCal.Resource@nrc.gov); Emche, Danielle (Danielle.Emche@nrc.gov); ET05 Hoc (ET05.Hoc@nrc.gov); ET07 Hoc (ET07.Hoc@nrc.gov); FOIA Response; Giitter, Joseph (Joseph.Giitter@nrc.gov); Glenn Southern; HOO Hoc (HOO.Hoc@nrc.gov); INPO; INPO; INPO; INPO; INPO; INPO; INPO; LIA01 Hoc (LIA01.Hoc@nrc.gov); LIA06 Hoc (LIA06.Hoc@nrc.gov); LIA08 Hoc (LIA08.Hoc@nrc.gov); LIA11 Hoc (LIA11.Hoc@nrc.gov); McDermott, Brian (Brian.McDermott@nrc.gov); McGinty, Tim (Tim.McGinty@nrc.gov); Miller, Chris (Chris.Miller@nrc.gov); Monninger, John (John.Monninger@nrc.gov); Morris, Scott (Scott.Morris@nrc.gov); NRC Liaison at USAID; OST02 HOC (OST02.HOC@nrc.gov); PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; PMT12; Rick Nielsen; Robert Gambone; Robert Mercer; Ross-Lee, MaryJane (MaryJane.Ross-Lee@nrc.gov); RST01 Hoc (RST01.Hoc@nrc.gov); RST01B Hoc (RST01B.Hoc@nrc.gov); Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin (Martin.Virgilio@nrc.gov); Weber, Michael (Michael.Weber@nrc.gov); Wiggins, Jim (Jim.Wiggins@nrc.gov); William Webster; Zimmerman, Roy (Roy.Zimmerman@nrc.gov)

When: Friday, April 01, 2011 8:00 PM-9:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Ops Center

Note: The GMT offset above does not reflect daylight saving time adjustments.

~~*~*~*~*~*~*~*~*

Attached please find the proposed agenda for the daily Consortium Call to be held at 2000hrs EDT on 04/01/11.

The matrix (Japanese Government Action Items and Material Request List) was sent earlier today. Please call Jeff Temple at 301-816-5185 with any additions or corrections to the Action Items and Material Request List.

The call in number is: (Passcode:)

Thanks,
Beth Reed
Federal Liaison Desk Officer

RRR/157

US Nuclear Regulatory Commission



Agenda for Daily Industry Consortium Teleconference Meeting

April 1, 2011 10:00 EDT

(b)(6)

(Passcode:

(b)(6)

Purpose of the Meeting: Alignment of US Government and US Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call
- Continued discussion of organizational Issues / Roles and Responsibilities
 - US Agency Roles and Leads
 - US Industry Support Structure and Roles
- INPO report on status of material requests
- INPO team report status of on-going work on requests for technical support
- Review Current Action Items
- New Actions
 - Rework matrix to eliminate deleted (duplicated) items and put highest priority items at the top of the list.

From: OST02 HOC
Sent: Friday, April 01, 2011 10:51 AM
To: PMT02 Hoc; PMT11 Hoc; Hoc, PMT12
Cc: FOIA Response.hoc Resource
Subject: FW: Radiation data by MEXT
Attachments: (English)20110401_18.pdf; (English)20110401_19..pdf; (English)20110401_20.pdf;
(English)20110401_21.pdf; (English)20110401_22.pdf; (English)20110401_23.pdf;
(unofficial)(English)20110401_18.pdf

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

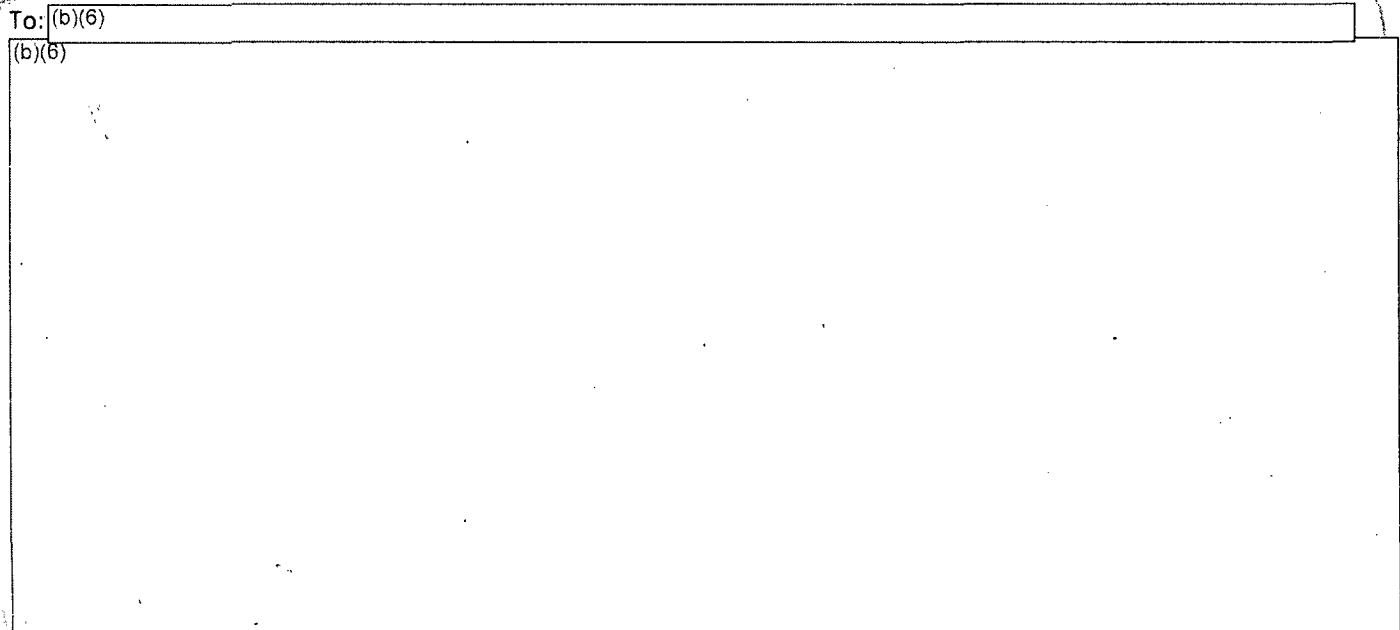
From: HOO Hoc
Sent: Friday, April 01, 2011 10:48 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Radiation data by MEXT

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

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

From: eda@mext.go.jp [mailto:eda@mext.go.jp]
Sent: Friday, April 01, 2011 10:22 AM

To: (b)(6)
(b)(6)



RRR/158

eto

(b)(6)

Cc: saigai03@mext.go.jp; akasaka@mext.go.jp; senami@mext.go.jp
Subject: Radiation data by MEXT

Dear Sir,

Please see attached the document.

Sincerely yours,
Kei EDA
EOC, Ministry of Education, Culture, Sports, Science & Technology (MEXT), Japan

	Prefecture	Fallout		
		I-131	Cs-137	Remarks
1	Hokkaido(Sapporo)	Not Detectable	Not Detectable	
2	Aomori(Aomori)	Not Detectable	Not Detectable	
3	Iwate(Morioka)	25.7	21.9	
4	Miyagi	-	-	Not be measured because of the earthquake disaster damage
5	Akita(Akita)	Not Detectable	Not Detectable	
6	Yamagata(Yamagata)	-	-	On Setting up the equipment
7	Fukushima(Fukushima)	-	-	Measurements arrived, though it had delayed.
8	Ibaraki(Hitachinaka)	74	26	
9	Tochigi(Utsunomiya)	-	-	Measurements arrived, though it had delayed.
10	Gunma(Maebashi)	7.0	4.7	
11	Saitama(Saitama)	18	25	
12	Chiba(Ichihara)	39	76	
13	Tokyo(Shinjuku)	38	26	
14	Kanagawa(Chigasaki)	13	5.9	
15	Niigata(Niigata)	Not Detectable	Not Detectable	
16	Toyama(Imizu)	Not Detectable	Not Detectable	
17	Ishikawa(Kanazawa)	Not Detectable	Not Detectable	
18	Fukui(Fukui)	Not Detectable	Not Detectable	
19	Yamanashi(Kofu)	Not Detectable	2.9	
20	Ngano(Nagano)	Not Detectable	Not Detectable	
21	Gifu(Kakamigahara)	-	-	Measurements arrived, though it had delayed.
22	Shizuoka(Omaezaki)	Not Detectable	3.4	
23	Aichi(Nagoya)	Not Detectable	Not Detectable	
24	Mie(Yokkaichi)	Not Detectable	Not Detectable	
25	Shiga(Otsu)	Not Detectable	Not Detectable	
26	Kyoto(Kyoto)	Not Detectable	Not Detectable	
27	Osaka(Osaka)	Not Detectable	Not Detectable	
28	Hyogo(Kobe)	Not Detectable	Not Detectable	
29	Nara(Nara)	Not Detectable	Not Detectable	
30	Wakayama(Wakayama)	Not Detectable	Not Detectable	
31	Tottori(Tohhaku)	Not Detectable	Not Detectable	
32	Shimane(Matsue)	Not Detectable	Not Detectable	
33	Okayama(Okayama)	Not Detectable	Not Detectable	
34	Hiroshima(Hiroshima)	Not Detectable	Not Detectable	
35	Yamaguchi(Yamaguchi)	Not Detectable	Not Detectable	
36	Tokushima(Tokushima)	Not Detectable	Not Detectable	
37	Kagawa(Takamatsu)	Not Detectable	Not Detectable	
38	Ehime(Yawatahama)	Not Detectable	Not Detectable	
39	Kochi(Kochi)	Not Detectable	Not Detectable	
40	Fukuoka(Dazaifu)	Not Detectable	Not Detectable	
41	Saga(Saga)	Not Detectable	Not Detectable	
42	Nagasaki(Ohmura)	Not Detectable	Not Detectable	
43	Kumamoto(Uto)	Not Detectable	Not Detectable	
44	Oita(Oita)	Not Detectable	Not Detectable	
45	Miyazaki(Miyazaki)	Not Detectable	Not Detectable	
46	Kagoshima(Kagoshima)	Not Detectable	Not Detectable	
47	Okinawa(Nanjo)	Not Detectable	Not Detectable	

*The table was made by MEXT, based on the reports from prefectures

Readings of the radiation rate with the cooperation of universities

Upper column: Reading of the integrated dose(24h)
Lower column: the reference value which was calculated as the number per one hour

Prefecture	Monitoring Point	City	3/31~4/1
Hokkaido	1	Muroran City	1 μ Sv (0.04 μ Sv/h)
	2	Obihiro City	1 μ Sv (0.04 μ Sv/h)
	3	Asahikawa City	1 μ Sv (0.04 μ Sv/h)
	4	Kitami City	2 μ Sv (0.08 μ Sv/h)
	5	Kushiro City	1 μ Sv (0.04 μ Sv/h)
	6	Hakodate City	1 μ Sv (0.04 μ Sv/h)
Aomori	7	Hirosaki City	2 μ Sv (0.08 μ Sv/h)
	8	Hachinohe City	1 μ Sv (0.04 μ Sv/h)
Miyagi	9	Sendai City	3 μ Sv (0.1 μ Sv/h)
Yamagata	10	Yonezawa City	3 μ Sv (0.1 μ Sv/h)
	11	Tsuruoka City	2 μ Sv (0.08 μ Sv/h)
Fukushima	12	Fukushima City	12 μ Sv (0.50 μ Sv/h)
Ibaraki	13	Tsukuba City	5 μ Sv (0.2 μ Sv/h)
Tochigi	14	Oyama City	2 μ Sv (0.08 μ Sv/h)
Gunma	15	Kiryu City	2 μ Sv (0.08 μ Sv/h)
Chiba	16	Chiba City	4 μ Sv (0.2 μ Sv/h)
	17	Kisarazu City	5 μ Sv (0.2 μ Sv/h)
Tokyo	18	Bunkyo Ward	4 μ Sv (0.2 μ Sv/h)
	19	Fuchu City	3 μ Sv (0.1 μ Sv/h)
	20	Meguro Ward	3 μ Sv (0.1 μ Sv/h)
	21	Minato Ward	2 μ Sv (0.08 μ Sv/h)
	22	Hachioji City	3 μ Sv (0.1 μ Sv/h)
Kanagawa	23	Yokohama City	2 μ Sv (0.08 μ Sv/h)
Niigata	24	Nagaoka City	—
Nagano	25	Matsumoto City	2 μ Sv (0.08 μ Sv/h)
	26	Ueda City	2 μ Sv (0.08 μ Sv/h)

* We have measured the integrated dose(24h) from around 2PM to the next
* Readings of lower column are the reference value because of the lower
* "-" in the column indicates that "now setting up for measuring".

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 19:00 April 1, 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : μ Sv / h)	測定位置	Weather	Reading by
Reading Point [1] (About60KmnorthWest)	2011/4/1 8:48	2.7 ^{*2}	N: 37° 44' 12.6" E: 140° 28' 02.9"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [2] (About55KmnorthWest)	2011/4/1 9:18	3.8 ^{*2}	N: 37° 41' 03.5" E: 140° 33' 08.2"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [3] (About45KmnorthWest)	2011/4/1 10:14	3.3 ^{*2}	N: 37° 45' 12.6" E: 140° 44' 05.5"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [5] (About45Kmnorth)	2011/4/1 11:12	0.8 ^{*2}	N: 37° 47' 04.8" E: 140° 55' 16.4"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [6] (About45Kmnorth)	2011/4/1 11:34	1.0 ^{*2}	N: 37° 42' 02.7" E: 140° 58' 00.0"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [7] (About45Kmnorth)	2011/4/1 11:43	1.1 ^{*2}	N: 37° 41' 13.6" E: 140° 57' 16.0"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [10] (About40KmnorthWest)	<u>2011/4/1 16:03</u>	<u>1.6^{*2}</u>	N: <u>37° 35' 00.1"</u> E: <u>140° 35' "</u>	<u>No Rain</u>	<u>MEXT</u>
Reading Point [12] (About40KmnorthWest)	2011/4/1 11:39	0.5 ^{*2}	N: 37° 25' 14.9" E: 140° 35' 12.3"	No Rain	MEXT
Reading Point [13] (About40KmnorthWest)	2011/4/1 11:53	0.5 ^{*2}	N: 37° 26' 06.0" E: 140° 37' 05.8"	No Rain	MEXT
Reading Point [14] (About35KmnorthWest)	2011/4/1 12:06	0.2 ^{*2}	N: 37° 26' 02.6" E: 140° 38' 13.8"	No Rain	MEXT
Reading Point [15] (About35KmnorthWest)	2011/4/1 12:19	0.6 ^{*2}	N: 37° 26' 15.0" E: 140° 40' 14.8"	No Rain	MEXT
Reading Point [20] (About45KmnorthWest)	2011/4/1 10:37	0.6 ^{*2}	N: 37° 29' 06.7" E: 140° 34' 15.1"	No 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv} / \text{h}$)	測定位置	Weather	Reading by
Reading Point 【21】 (About30KmWestNorthWest)	2011/4/1 11:09	2.3 ^{*2}	N: 37° 30' 08.0" E: 140° 42' 02.4"	No Rain	MEXT
Reading Point 【22】 (About30KmWestNorthWest)	2011/4/1 11:00	0.6 ^{*2}	N: 37° 30' 11.5" E: 140° 39' 08.0"	No Rain	MEXT
Reading Point 【23】 (About30KmWestNorthWest)	2011/4/1 10:48	0.6 ^{*2}	N: 37° 30' 05.3" E: 140° 34' 11.3"	No Rain	MEXT
Reading Point 【31】 (About30KmWestNorthWest)	2011/4/1 10:33	15.4 ^{*2}	N: 37° 33' 30.0" E: 140° 44' 54.0"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【32】 (About30KmNorthWest)	2011/4/1 10:56	36.2 ^{*2}	N: 37° 35' 30.0" E: 140° 45' 54.0"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【33】 (About30KmNorthWest)	2011/4/1 11:22	18.2 ^{*2}	N: 37° 36' 30.0" E: 140° 45' 54.0"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【34】 (About30KmNorthWest)	2011/4/1 13:02	5.8 ^{*2}	N: 37° 33' 00.8" E: 140° 44' 07.0"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【36】 (About40KmNorthWest)	2011/4/1 10:08	5.7 ^{*2}	N: 37° 36' 18.8" E: 140° 40' 07.9"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【37】 (About50kmNorthWest)	2011/4/1 9:57	4.6 ^{*2}	N: 37° 45' 06.7" E: 140° 41' 29.2"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【38】 (About35kmSouth)	2011/4/1 11:37	1.0 ^{*2}	N: 37° 07' 30.7" E: 140° 57' 06.4"	No Rain	MEXT
Reading Point 【39】 (About45kmNorth)	2011/4/1 10:53	1.3 ^{*2}	N: 37° 45' 52.7" E: 140° 51' 47.1"	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【51】 (About40KmSouthWest)	2011/4/1 13:45	0.3 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.
Reading Point 【51】 (About40KmSouthWest)	2011/4/1 10:42	0.3 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.
Reading Point 【52】 (About40KmWest)	2011/4/1 14:23	0.3 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.
Reading Point 【52】 (About40KmWest)	2011/4/1 12:05	0.3 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.
Reading Point 【61】 (About40KmNorthWest)	2011/4/1 14:59	6.1 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.
Reading Point 【61】 (About40KmNorthWest)	2011/4/1 12:46	7.1 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.
Reading Point 【62】 (About40KmNorthWest)	2011/4/1 15:15	7.4 ^{*3}	N: : : " E: : : "	No Rain	Fukushima Pref.

- * 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv} / \text{h}$)	測定位置	Weather	Reading by
Reading Point [62] (About40KmNorthWest)	2011/4/1 12:34	7.7 ^{*3}	N: E:	No Rain	Fukushima Pref.
Reading Point [63] (About45KmNorthWest)	2011/4/1 15:49	3.2 ^{*3}	N: E:	No Rain	Fukushima Pref.
Reading Point [63] (About45KmNorthWest)	2011/4/1 11:13	2.8 ^{*3}	N: E:	No Rain	Fukushima Pref.
Reading Point [71] (About25KmSouth)	2011/4/1 8:31	2.5 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [72] (About30KmSouth)	2011/4/1 12:42	1.6 ^{*2}		No Rain	MEXT
Reading Point [72] (About30KmSouth)	2011/4/1 9:11	0.8 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [73] (About35KmSouth)	2011/4/1 11:57	1.4 ^{*2}		No Rain	MEXT
Reading Point [73] (About35KmSouth)	2011/4/1 9:27	0.7 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [74] (About35KmSouth)	2011/4/1 11:08	0.2 ^{*2}		No Rain	MEXT
Reading Point [74] (About35KmSouth)	2011/4/1 9:55	0.3 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [75] (About45KmSouth)	2011/4/1 10:30	0.8 ^{*2}		No Rain	MEXT
Reading Point [75] (About45KmSouth)	2011/4/1 7:00	0.8 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [76] (About25KmSouthWest)	2011/4/1 11:03	0.6 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [77] (About25KmSouthWest)	2011/4/1 10:45	2.2 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [78] (About45KmNorthWest)	2011/4/1 7:47	0.8 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [79] (About30KmNorthWest)	2011/4/1 12:26	16.5 ^{*2}		No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [79] (About30KmNorthWest)	2011/4/1 9:56	15.5 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [80] (About25KmNorth)	2011/4/1 12:33	0.7 ^{*2}		No Rain	JAEA (Japan Atomic Energy Agency)

- * 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : μ Sv / h)	測定位置	Weather	Reading by
Reading Point [80] (About25kmNorth)	2011/4/1 12:02	0.7 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [81] (About30kmWestNorthWest)	2011/4/1 8:34	34.5 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [83] (About20kmNorthWest)	2011/4/1 12:47	70.9 ^{*2}		No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point [83] (About20kmNorthWest)	2011/4/1 10:11	60.5 ^{*2}		No Rain	Police (counter NBC operations unit)
Reading Point [84] (About40kmSouthWest)	2011/4/1 9:50	0.5 ^{*2}		No Rain	MEXT
Reading Point [85] (About60kmNorthWest)	2011/4/1 14:00	1.0 ^{*2}	N: 37' 42' 45.0" E: 140' 22' 59.0"	No Rain	Ministry of Defense
Reading Point [85] (About60kmNorthWest)	2011/4/1 6:00	0.3 ^{*2}	N: 37' 42' 45.0" E: 140' 22' 59.0"	No Rain	Ministry of Defense
Reading Point [86] (About55kmWest)	2011/4/1 14:00	1.1 ^{*2}	N: 37' 23' 57.0" E: 140' 19' 35.0"	No Rain	Ministry of Defense
Reading Point [86] (About55kmWest)	2011/4/1 6:00	1.3 ^{*2}	N: 37' 23' 57.0" E: 140' 19' 35.0"	No Rain	Ministry of Defense
Reading Point [87] (About30kmWestSouthWest)	2011/4/1 14:00	1.2 ^{*2}	N: 37' 23' 57.0" E: 140' 19' 35.0"	No Rain	Ministry of Defense
Reading Point [87] (About30kmWestSouthWest)	2011/4/1 6:00	1.0 ^{*2}	N: 37' 23' 57.0" E: 140' 19' 35.0"	No Rain	Ministry of Defense

Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP

As of 19:00 April 1, 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv} / \text{h}$)	Weather	Reading by
Reading Point 【1】 (About60KmNorthWest)	2011/4/1 8:48	2.7 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【2】 (About55KmNorthWest)	2011/4/1 9:18	3.8 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【3】 (About45KmNorthWest)	2011/4/1 10:14	3.3 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【5】 (About45KmNorth)	2011/4/1 11:12	0.8 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【6】 (About45KmNorth)	2011/4/1 11:34	1.0 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【7】 (About45KmNorth)	2011/4/1 11:43	1.1 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point <u>【10】</u> (About40KmNorthWest)	<u>2011/4/1 16:03</u>	<u>1.6^{*2}</u>	<u>No Rain</u>	<u>MEXT</u>
Reading Point 【12】 (About40KmWest)	2011/4/1 11:39	0.5 ^{*2}	No Rain	MEXT
Reading Point 【13】 (About40KmWest)	2011/4/1 11:53	0.5 ^{*2}	No Rain	MEXT
Reading Point 【14】 (About35KmWest)	2011/4/1 12:06	0.2 ^{*2}	No Rain	MEXT
Reading Point 【15】 (About35KmWest)	2011/4/1 12:19	0.6 ^{*2}	No 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv} / \text{h}$)	Weather	Reading by
Reading Point 【20】 (About45KmNorthWest)	2011/4/1 10:37	0.6 ^{*2}	No Rain	MEXT
Reading Point 【21】 (About30KmWestNorthWest)	2011/4/1 11:09	2.3 ^{*2}	No Rain	MEXT
Reading Point 【22】 (About30KmWestNorthWest)	2011/4/1 11:00	0.6 ^{*2}	No Rain	MEXT
Reading Point 【23】 (About30KmWestNorthWest)	2011/4/1 10:48	0.6 ^{*2}	No Rain	MEXT
Reading Point 【31】 (About30KmWestNorthWest)	2011/4/1 10:33	15.4 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【32】 (About30KmNorthWest)	2011/4/1 10:56	36.2 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【33】 (About30KmNorthWest)	2011/4/1 11:22	18.2 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【34】 (About30KmNorthWest)	2011/4/1 13:02	5.8 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【36】 (About40KmNorthWest)	2011/4/1 10:08	5.7 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【37】 (About50kmNorthWest)	2011/4/1 9:57	4.6 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【38】 (About35kmSouth)	2011/4/1 11:37	1.0 ^{*2}	No Rain	MEXT
Reading Point 【39】 (About45kmNorth)	2011/4/1 10:53	1.3 ^{*2}	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【51】 (About40KmSouthWest)	2011/4/1 13:45	0.3 ^{*3}	No Rain	Fukushima Pref.
Reading Point 【51】 (About40KmSouthWest)	2011/4/1 10:42	0.3 ^{*3}	No Rain	Fukushima Pref.
Reading Point 【52】 (About40KmWest)	2011/4/1 14:23	0.3 ^{*3}	No Rain	Fukushima Pref.
Reading Point 【52】 (About40KmWest)	2011/4/1 12:05	0.3 ^{*3}	No Rain	Fukushima Pref.
Reading Point 【61】 (About40KmNorthWest)	2011/4/1 14:59	6.1 ^{*3}	No Rain	Fukushima Pref.

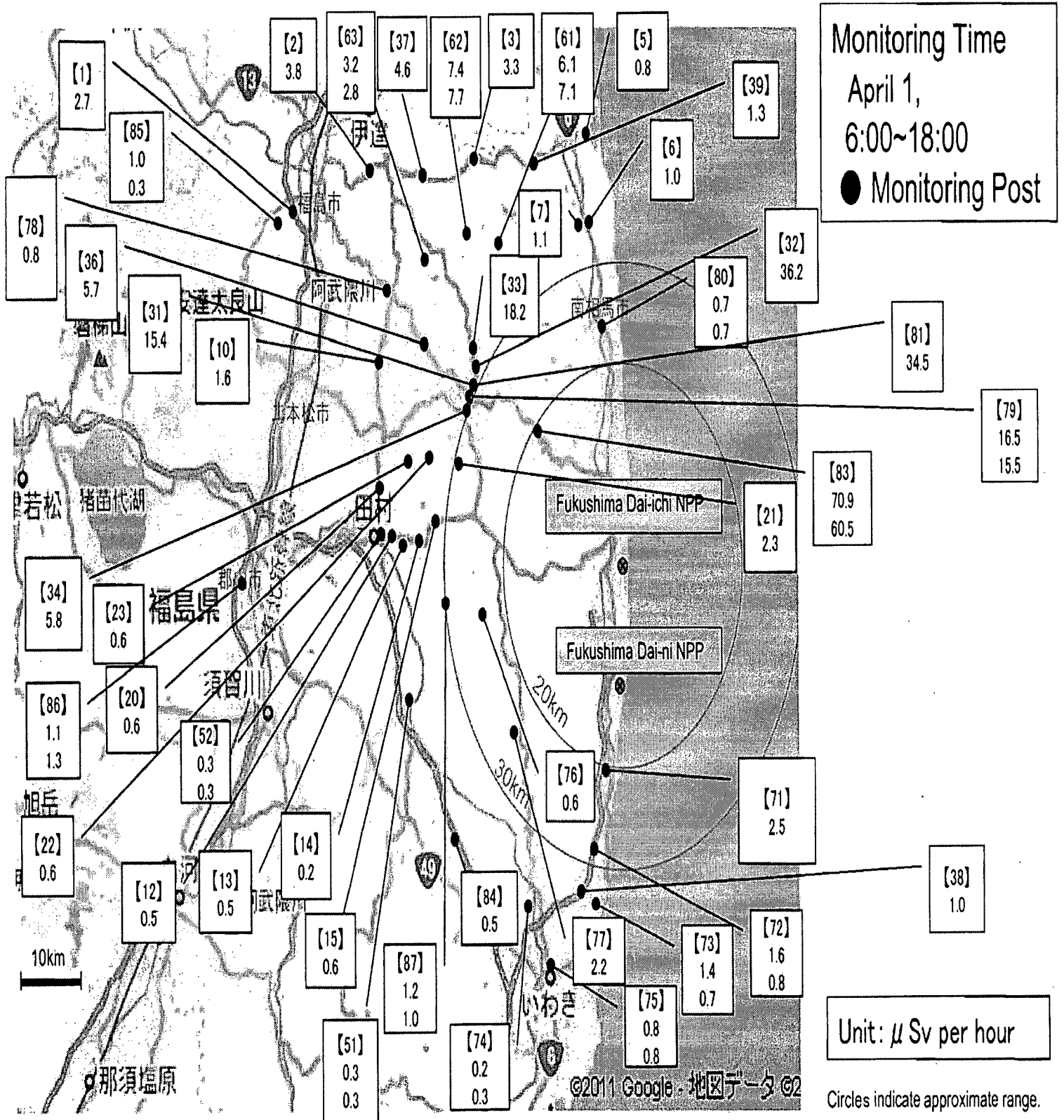
Monitoring Post (length from NPP)	Monitoring Time	Reading (unit: $\mu\text{Sv/h}$)	Weather	Reading by
Reading Point [61] (About40kmNorthWest)	2011/4/1 12:46	7.1 ^{*3}	No Rain	Fukushima Pref.
Reading Point [62] (About40kmNorthWest)	2011/4/1 15:15	7.4 ^{*3}	No Rain	Fukushima Pref.
Reading Point [62] (About40kmNorthWest)	2011/4/1 12:34	7.7 ^{*3}	No Rain	Fukushima Pref.
Reading Point [63] (About45kmNorthWest)	2011/4/1 15:49	3.2 ^{*3}	No Rain	Fukushima Pref.
Reading Point [63] (About45kmNorthWest)	2011/4/1 11:13	2.8 ^{*3}	No Rain	Fukushima Pref.
Reading Point [71] (About25kmSouth)	2011/4/1 8:31	2.5 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [72] (About30kmSouth)	2011/4/1 12:42	1.6 ^{*2}	No Rain	MEXT
Reading Point [72] (About30kmSouth)	2011/4/1 9:11	0.8 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [73] (About35kmSouth)	2011/4/1 11:57	1.4 ^{*2}	No Rain	MEXT
Reading Point [73] (About35kmSouth)	2011/4/1 9:27	0.7 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [74] (About35kmSouth)	2011/4/1 11:08	0.2 ^{*2}	No Rain	MEXT
Reading Point [74] (About35kmSouth)	2011/4/1 9:55	0.3 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [75] (About45kmSouth)	2011/4/1 10:30	0.8 ^{*2}	No Rain	MEXT
Reading Point [75] (About45kmSouth)	2011/4/1 7:00	0.8 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [76] (About25kmSouthWest)	2011/4/1 11:03	0.6 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [77] (About25kmSouthWest)	2011/4/1 10:45	2.2 ^{*2}	No Rain	Police (counter NBC operations unit)
Reading Point [78] (About45kmNorthWest)	2011/4/1 7:47	0.8 ^{*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

- * 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

Monitoring Post (length from NPP)	Monitoring Time	Reading (unit : $\mu\text{Sv} / \text{h}$)	Weather	Reading by
Reading Point 【79】 (About30KmNorthWest)	2011/4/1 12:26	16.5 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【79】 (About30KmNorthWest)	2011/4/1 9:56	15.5 *2	No Rain	Police (counter NBC operations unit)
Reading Point 【80】 (About25KmNorth)	2011/4/1 12:33	0.7 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【80】 (About25KmNorth)	2011/4/1 12:02	0.7 *2	No Rain	Police (counter NBC operations unit)
Reading Point 【81】 (About30KmWestNorthWest)	2011/4/1 8:34	34.5 *2	No Rain	Police (counter NBC operations unit)
Reading Point 【83】 (About20KmNorthWest)	2011/4/1 12:47	70.9 *2	No Rain	JAEA (Japan Atomic Energy Agency)
Reading Point 【83】 (About20KmNorthWest)	2011/4/1 10:11	60.5 *2	No Rain	Police (counter NBC operations unit)
Reading Point 【84】 (About40kmSouthWest)	2011/4/1 9:50	0.5 *2	No Rain	MEXT
Reading Point 【85】 (About60kmNorthWest)	2011/4/1 14:00	1.0 *2	No Rain	Ministry of Defense
Reading Point 【85】 (About60kmNorthWest)	2011/4/1 6:00	0.3 *2	No Rain	Ministry of Defense
Reading Point 【86】 (About55kmWest)	2011/4/1 14:00	1.1 *2	No Rain	Ministry of Defense
Reading Point 【86】 (About55kmWest)	2011/4/1 6:00	1.3 *2	No Rain	Ministry of Defense
Reading Point 【87】 (About30kmWestSouthWest)	2011/4/1 14:00	1.2 *2	No Rain	Ministry of Defense
Reading Point 【87】 (About30kmWestSouthWest)	2011/4/1 6:00	1.0 *2	No Rain	Ministry of Defense

Readings at Monitoring Post out of Fukushima Dai-ichi NPP



2011/4/1 19:00 **Monitoring data at Ibaraki prefecture** μ Sv/h

Date and Time	JAEA nuclear science research institute (Tokai-village in Ibaraki-prefecture)	JAEA Nuclear fuel cycle engineering laboratory (Tokai-village in Ibaraki-prefecture)	Yayoi in Tokyo University (Tokai-village in Ibaraki-prefecture)
2011/4/1			
0:00	1.44	0.84	1.12
1:00	1.43	0.84	1.24
2:00	1.44	0.84	1.19
3:00	1.43	0.84	1.16
4:00	1.43	0.84	1.28
5:00	1.42	0.84	1.19
6:00	1.42	0.84	1.25
7:00	1.42	0.84	1.21
8:00	1.42	0.83	1.21
9:00	1.41	0.83	1.13
10:00	1.40	0.82	1.21
11:00	1.40	0.81	1.15
12:00	1.39	0.81	1.22
13:00	1.39	0.81	1.16
14:00	1.39	0.80	1.17
15:00	1.39	0.80	1.19
16:00	1.39	0.80	1.18
17:00	1.38	0.80	1.22
18:00	1.38	0.80	

※The readings are measured once every hour from March 24th.

The readings of JAEA nuclear science research institute and JAEA Nuclear fuel cycle engineering laboratory

JAEA nuclear science research institute

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

JAEA Nuclear fuel cycle engineering laboratory

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

Reading of environmental radioactivity level by prefecture

2011.4.1 19:00

($\mu\text{Sv/h}$)

	Prefecture(City)	3/31							4/1							Usual Value Band
		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	Hokkaido(Sapporo)	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	0.02~0.105
2	Aomori(Aomori)	0.026	0.026	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.028	0.017~0.102
3	Iwate(Morioka)	0.026	0.029	0.027	0.026	0.028	0.026	0.027	0.027	0.027	0.027	0.028	0.027	0.027	0.028	0.014~0.084
4	Miyagi(Sendai)	0.088	0.086	0.086	0.085	0.085	0.084	0.083	0.083	0.083	0.082	0.082	0.081	0.080	0.081	0.0176~0.0513
5	Akita(Akita)	0.035	0.035	0.035	0.035	0.035	0.036	0.036	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.022~0.086
6	Yamagata(Yamagata)	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.064	0.064	0.064	0.064	0.063	0.064	0.064	0.025~0.082
7	Fukushima(Futaba)															0.037~0.071
8	Ibaraki(Mito)	0.195	0.194	0.194	0.194	0.194	0.193	0.193	0.193	0.192	0.193	0.192	0.191	0.192	0.191	0.036~0.056
9	Tochigi(Utsunomiya)	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.092	0.036~0.067
10	Gunma(Maebashi)	0.055	0.055	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.055	0.055	0.055	0.055	0.055	0.017~0.045
11	Saitama(Saitama)	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.080	0.079	0.079	0.079	0.080	0.080	0.080	0.031~0.060
12	Chiba(Ishihara)	0.072	0.071	0.071	0.070	0.071	0.071	0.071	0.071	0.071	0.071	0.071	0.070	0.071	0.071	0.022~0.044
13	Tokyo(Shinjyuku)	0.099	0.099	0.099	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.098	0.028~0.079
14	Kanagawa(Chigasaki)	0.073	0.070	0.069	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.068	0.035~0.069
15	Niigata(Niigata)	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	0.048	0.031~0.153
16	Toyama(Imizu)	0.048	0.049	0.048	0.048	0.048	0.048	0.049	0.049	0.049	0.050	0.049	0.050	0.049	0.050	0.029~0.147
17	Ishikawa(Kanazawa)	0.047	0.047	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.048	0.0291~0.1275
18	Fukui(Fukui)	0.045	0.046	0.046	0.046	0.046	0.046	0.047	0.046	0.047	0.046	0.047	0.047	0.047	0.047	0.032~0.097
19	Yamanashi(Kohu)	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.044	0.045	0.045	0.045	0.045	0.045	0.040~0.064
20	Nagano(Nagano)	0.047	0.046	0.045	0.045	0.045	0.045	0.046	0.046	0.046	0.047	0.047	0.047	0.048	0.048	0.0299~0.0974
21	Gifu(Kakamigahara)	0.060	0.060	0.060	0.060	0.061	0.061	0.061	0.061	0.062	0.062	0.062	0.062	0.063	0.063	0.057~0.110
22	Shizuoka(Shizuoka)	0.042	0.041	0.041	0.041	0.041	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.040	0.0281~0.0765
23	Aichi(Nagoya)	0.039	0.039	0.039	0.039	0.039	0.040	0.040	0.040	0.041	0.041	0.041	0.042	0.042	0.042	0.035~0.074
24	Mie(Yokkaichi)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.047	0.047	0.0416~0.0789
25	Shiga(Otsu)	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.034	0.035	0.035	0.035	0.036	0.036	0.037	0.031~0.061
26	Kyoto(Kyoto)	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.039	0.039	0.039	0.039	0.039	0.040	0.040	0.033~0.087
27	Osaka(Osaka)	0.043	0.043	0.042	0.042	0.043	0.043	0.042	0.043	0.043	0.043	0.043	0.043	0.044	0.044	0.042~0.061
28	Hyogo(Kobe)	0.037	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.038	0.038	0.037	0.037	0.038	0.038	0.035~0.076
29	Nara(Nara)	0.047	0.047	0.048	0.048	0.048	0.048	0.048	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.046~0.08
30	Wakayama(Wakayama)	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.033	0.033	0.033	0.033	0.033	0.033	0.034	0.031~0.056
31	Tottori(Tohhaku)	0.063	0.063	0.063	0.063	0.064	0.064	0.063	0.063	0.064	0.064	0.064	0.064	0.064	0.064	0.036~0.11
32	Shimane(Matsue)	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.039	0.039	0.039	0.040	0.040	0.040	0.040	0.033~0.079
33	Okayama(Okayama)	0.049	0.048	0.049	0.049	0.049	0.049	0.050	0.050	0.051	0.051	0.051	0.051	0.051	0.052	0.043~0.104
34	Hiroshima(Hiroshima)	0.046	0.046	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.049	0.049	0.049	0.049	0.049	0.035~0.069
35	Yamaguchi(Yamaguchi)	0.091	0.092	0.092	0.092	0.092	0.092	0.093	0.093	0.094	0.095	0.094	0.094	0.095	0.096	0.084~0.128
36	Tokushima(Tokushima)	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.039	0.039	0.039	0.039	0.039	0.039	0.040	0.037~0.067
37	Kagawa(Takamastu)	0.059	0.062	0.063	0.063	0.064	0.066	0.068	0.069	0.070	0.070	0.071	0.067	0.069	0.071	0.051~0.077
38	Ehime(Matsuyama)	0.047	0.047	0.047	0.048	0.048	0.048	0.049	0.049	0.049	0.049	0.050	0.050	0.050	0.050	0.045~0.074
39	Kochi(Kochi)	0.025	0.025	0.025	0.025	0.026	0.026	0.026	0.026	0.027	0.027	0.027	0.027	0.027	0.027	0.023~0.076
40	Fukuoka(Dazafu)	0.036	0.036	0.036	0.036	0.037	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.038	0.038	0.034~0.079
41	Saga(Saga)	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.041	0.037~0.086
42	Nagasaki(Ohmura)	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.027~0.069
43	Kumamoto(Uto)	0.027	0.027	0.027	0.027	0.027	0.028	0.027	0.027	0.028	0.028	0.029	0.029	0.029	0.029	0.021~0.067
44	Oita(Oita)	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.051	0.051	0.051	0.051	0.051	0.048~0.085
45	Miyazaki(Miyazaki)	0.026	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	Kagoshima(Kagoshima)	0.035	0.034	0.034	0.035	0.035	0.035	0.035	0.035	0.036	0.036	0.035	0.036	0.036	0.036	0.0306~0.0943
47	Okinawa(Uruma)	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

*Figures for Miyagi Prefecture are measured by transportable monitoring post.

*Refer to other title "Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP" for the datas in Fukushima. It could not be measured by Monitoring Post since the radiation level around it is so high.

*Blanks are caused by device maintenance, but the area was measured by Monitoring Posts.

*These figures are estimated as $1 \mu\text{Gy/h} = 1 \mu\text{Sv/h}$.

*The table was made by MEXT, based on the reports from prefectures.

Reading of environmental radioactivity level by prefecture

2011.4.1 19:00

(μ Sv/h)

	Prefecture(City)	4/1										Usual Value Band
		7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	
1	Hokkaido(Sapporo)	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.028	0.02~0.105
2	Aomori(Aomori)	0.028	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.017~0.102
3	Iwate(Morioka)	0.027	0.027	0.027	0.028	0.026	0.026	0.026	0.025	0.026	0.025	0.014~0.084
4	Miyagi(Sendai)	0.082	0.087	0.091	0.092	0.091	0.091	0.091	0.091	0.090	0.088	0.0176~0.0513
5	Akita(Akita)	0.036	0.036	0.036	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.022~0.086
6	Yamagata(Yamagata)	0.064	0.063	0.063	0.062	0.062	0.062	0.062	0.062	0.062	0.062	0.025~0.082
7	Fukushima(Futaba)											0.037~0.071
8	Ibaraki(Mito)	0.192	0.191	0.190	0.189	0.189	0.189	0.189	0.188	0.188	0.188	0.036~0.056
9	Tochigi(Utsunomiya)	0.091	0.091	0.090	0.090	0.090	0.090	0.090	0.089	0.089	0.089	0.030~0.067
10	Gunma(Maebashi)	0.055	0.054	0.054	0.054	0.053	0.053	0.053	0.053	0.053	0.052	0.017~0.045
11	Saitama(Saitama)	0.080	0.079	0.079	0.079	0.078	0.078	0.078	0.078	0.077	0.078	0.031~0.060
12	Chiba(Ishihara)	0.070	0.070	0.069	0.069	0.069	0.069	0.068	0.068	0.068	0.068	0.022~0.044
13	Tokyo(Shinjyuku)	0.098	0.099	0.099	0.099	0.098	0.098	0.098	0.097	0.097	0.097	0.028~0.079
14	Kanagawa(Chigasaki)	0.068	0.067	0.067	0.067	0.067	0.066	0.067	0.066	0.066	0.066	0.035~0.069
15	Niigata(Niigata)	0.048	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.046	0.046	0.031~0.153
16	Toyama(Imizu)	0.050	0.049	0.049	0.049	0.049	0.048	0.048	0.048	0.048	0.048	0.029~0.147
17	Ishikawa(Kanazawa)	0.048	0.048	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.0291~0.1275
18	Fukui(Fukui)	0.047	0.047	0.046	0.045	0.044	0.044	0.044	0.044	0.044	0.045	0.032~0.097
19	Yamanashi(Kohu)	0.045	0.045	0.044	0.044	0.044	0.044	0.044	0.044	0.043	0.044	0.040~0.064
20	Nagano(Nagano)	0.048	0.047	0.046	0.046	0.046	0.046	0.045	0.046	0.045	0.045	0.0299~0.0974
21	Gifu(Kakamigahara)	0.063	0.063	0.062	0.062	0.061	0.061	0.060	0.060	0.060	0.060	0.057~0.110
22	Shizuoka(Shizuoka)	0.040	0.040	0.042	0.043	0.043	0.044	0.043	0.042	0.042	0.041	0.0281~0.0765
23	Aichi(Nagoya)	0.043	0.043	0.043	0.041	0.040	0.040	0.039	0.039	0.039	0.039	0.035~0.074
24	Mie(Yokkaichi)	0.047	0.047	0.047	0.047	0.047	0.047	0.046	0.046	0.046	0.046	0.0416~0.0789
25	Shiga(Otsu)	0.037	0.036	0.035	0.035	0.034	0.033	0.032	0.032	0.032	0.032	0.031~0.061
26	Kyoto(Kyoto)	0.040	0.040	0.039	0.038	0.038	0.038	0.038	0.037	0.037	0.037	0.033~0.087
27	Osaka(Osaka)	0.044	0.043	0.043	0.043	0.042	0.042	0.042	0.042	0.042	0.042	0.042~0.061
28	Hyogo(Kobe)	0.039	0.038	0.037	0.037	0.037	0.036	0.037	0.037	0.037	0.037	0.035~0.076
29	Nara(Nara)	0.050	0.049	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.046~0.08
30	Wakayama(Wakayama)	0.033	0.033	0.033	0.032	0.032	0.032	0.032	0.031	0.032	0.031	0.031~0.056
31	Tottori(Tohhaku)	0.064	0.064	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.036~0.11
32	Shimane(Matsue)	0.040	0.040	0.039	0.038	0.038	0.037	0.037	0.037	0.036	0.037	0.033~0.079
33	Okayama(Okayama)	0.052	0.051	0.050	0.050	0.050	0.049	0.049	0.049	0.049	0.048	0.043~0.104
34	Hiroshima(Hiroshima)	0.050	0.050	0.049	0.048	0.047	0.047	0.046	0.046	0.046	0.046	0.035~0.069
35	Yamaguchi(Yamaguchi)	0.096	0.096	0.094	0.094	0.093	0.093	0.092	0.091	0.091	0.092	0.084~0.128
36	Tokushima(Tokushima)	0.039	0.039	0.039	0.038	0.038	0.038	0.038	0.038	0.038	0.038	0.037~0.067
37	Kagawa(Takamatsu)	0.056	0.056	0.064	0.066	0.067	0.054	0.058	0.062	0.054	0.054	0.051~0.077
38	Ehime(Matsuyama)	0.050	0.049	0.049	0.048	0.048	0.047	0.047	0.047	0.046	0.047	0.045~0.074
39	Kochi(Kochi)	0.027	0.027	0.027	0.026	0.025	0.024	0.024	0.024	0.024	0.024	0.023~0.076
40	Fukuoka(Dazaifu)	0.038	0.037	0.037	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.034~0.079
41	Saga(Saga)	0.041	0.041	0.041	0.041	0.040	0.040	0.040	0.040	0.039	0.040	0.037~0.086
42	Nagasaki(Ohmura)	0.029	0.029	0.030	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.027~0.069
43	Kumamoto(Uto)	0.029	0.029	0.029	0.028	0.028	0.028	0.028	0.026	0.027	0.027	0.021~0.067
44	Oita(Oita)	0.051	0.051	0.052	0.050	0.050	0.051	0.051	0.050	0.050	0.050	0.048~0.085
45	Miyazaki(Miyazaki)	0.027	0.027	0.027	0.027	0.027	0.026	0.026	0.026	0.026	0.026	0.0243~0.0684
46	Kagoshima(Kagoshima)	0.036	0.036	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.034	0.0306~0.0943
47	Okinawa(Uruma)	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.020	0.021	0.021	0.0133~0.0575

*Figures for Miyagi Prefecture are measured by transportable monitoring post.

*Refer to other title "Readings at Monitoring Post out of 20 Km Zone of Fukushima Dai-ichi NPP" for the datas in Fukushima. It could not be measured by

*Blanks are caused by device maintenance, but the area was measured by Monitoring Posts.

*These figures are estimated as 1μ Gy/h= 1μ Sv/h.

*The table was made by MEXT, based on the reports from prefectures.

Subject: Agenda for Industry Consortium Daily Call (NOTE TIME CHANGE to 2000 HRS DAILY)
Location: Ops Center

Start: Fri 4/1/2011 8:00 PM
End: Fri 4/1/2011 9:00 PM

Recurrence: (none)

Meeting Status: Accepted

Organizer: LIA01 Hoc

Required Attendees: Al Hochevar; Alice Caponiti; Blamey, Alan (Alan.Blamey@nrc.gov); Blount, Tom (Tom.Blount@nrc.gov); Bruce Boger; Casto, Chuck (Chuck.Casto@nrc.gov); Christensen, Harold (Harold.Christensen@nrc.gov); Craig Gaddis; DORLCAL Resource (DORLCAL.Resource@nrc.gov); Dorman, Dan (Dan.Dorman@nrc.gov); DprNrrCal Resource (DprNrrCal.Resource@nrc.gov); Emche, Danielle (Danielle.Emche@nrc.gov); ET05 Hoc (ET05.Hoc@nrc.gov); ET07 Hoc (ET07.Hoc@nrc.gov); FOIA Response; Giitter, Joseph (Joseph.Giitter@nrc.gov); Glenn Southern; HOO Hoc (HOO.Hoc@nrc.gov); INPO; INPO; INPO; INPO; INPO; INPO; INPO; LIA01 Hoc (LIA01.Hoc@nrc.gov); LIA06 Hoc (LIA06.Hoc@nrc.gov); LIA08 Hoc (LIA08.Hoc@nrc.gov); LIA11 Hoc (LIA11.Hoc@nrc.gov); McDermott, Brian (Brian.McDermott@nrc.gov); McGinty, Tim (Tim.McGinty@nrc.gov); Miller, Chris (Chris.Miller@nrc.gov); Monninger, John (John.Monninger@nrc.gov); Morris, Scott (Scott.Morris@nrc.gov); NRC Liaison at USAID; OST02 HOC (OST02.HOC@nrc.gov); PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; PMT12; Rick Nielsen; Robert Gambone; Robert Mercer; Ross-Lee, MaryJane (MaryJane.Ross-Lee@nrc.gov); RST01 Hoc (RST01.Hoc@nrc.gov); RST01B Hoc (RST01B.Hoc@nrc.gov); Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin (Martin.Virgilio@nrc.gov); Weber, Michael (Michael.Weber@nrc.gov); Wiggins, Jim (Jim.Wiggins@nrc.gov); William Webster; Zimmerman, Roy (Roy.Zimmerman@nrc.gov)

When: Friday, April 01, 2011 8:00 PM-9:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Ops Center

Note: The GMT offset above does not reflect daylight saving time adjustments.

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Attached please find the proposed agenda for the daily Consortium Call to be held at 2000hrs EDT on 04/01/11.

The matrix (Japanese Government Action Items and Material Request List) was sent earlier today. Please call Jeff Temple at 301-816-5185 with any additions or corrections to the Action Items and Material Request List.

The call in number is: (b)(6) (Passcode: (b)(6))

Thanks,
Beth Reed
Federal Liaison Desk Officer

RER/159

US Nuclear Regulatory Commission



Agenda for Daily Industry Consortium Teleconference Meeting

April 1, 2011 10:00 EDT

(b)(6) (Passcode: (b)(6))

Purpose of the Meeting: Alignment of US Government and US Nuclear Industry support for Japan in responding to the Fukushima Nuclear Event.

Expected Outcome: Reinforce roles and responsibilities; identify problems and open issues surrounding our support

Meeting Chair: US NRC

- Roll Call
- Continued discussion of organizational Issues / Roles and Responsibilities
 - US Agency Roles and Leads
 - US Industry Support Structure and Roles
- INPO report on status of material requests
- INPO team report status of on-going work on requests for technical support
- Review Current Action Items
- New Actions
 - Rework matrix to eliminate deleted (duplicated) items and put highest priority items at the top of the list.

From: Droggitis, Spiros
Sent: Friday, April 01, 2011 2:53 PM
To: Riley (OCA), Timothy
Subject: RE: Japan distribution

I didn't have the last one, Diane Berry. I'll send it to her. Is the Kucinich guy who asked about this issue in here?

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

From: Riley (OCA), Timothy
Sent: Friday, April 01, 2011 2:51 PM
To: Droggitis, Spiros
Subject: Japan distribution

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jeanette_lyman@tomudall.senate.gov<mailto:jeanette_lyman@tomudall.senate.gov>;
jeff.baran@mail.house.gov<mailto:jeff.baran@mail.house.gov>;
jen.stewart@mail.house.gov<mailto:jen.stewart@mail.house.gov>;
jeremiah_baumann@merkley.senate.gov<mailto:jeremiah_baumann@merkley.senate.gov>;
jesse.lashbrook@mail.house.gov<mailto:jesse.lashbrook@mail.house.gov>;
Jessica_Smith@crapo.senate.gov<mailto:Jessica_Smith@crapo.senate.gov>;
jetta.wong@mail.house.gov<mailto:jetta.wong@mail.house.gov>;
jim.richardson@mail.house.gov<mailto:jim.richardson@mail.house.gov>;
john.billings@mail.house.gov<mailto:john.billings@mail.house.gov>;
john.rainbolt@mail.house.gov<mailto:john.rainbolt@mail.house.gov>;
JohnM@mail.house.gov<mailto:JohnM@mail.house.gov>;
jonathan.levenshus@mail.house.gov<mailto:jonathan.levenshus@mail.house.gov>;
jonathan.phillips@mail.house.gov<mailto:jonathan.phillips@mail.house.gov>;
Jonathan_Epstein@bingaman.senate.gov<mailto:Jonathan_Epstein@bingaman.senate.gov>;
jordan.downs@mail.house.gov<mailto:jordan.downs@mail.house.gov>;
Joseph.Levin@mail.house.gov<mailto:Joseph.Levin@mail.house.gov>;
jt.jezierski@mail.house.gov<mailto:jt.jezierski@mail.house.gov>;
karen.wayland@mail.house.gov<mailto:karen.wayland@mail.house.gov>;
karen_billups@energy.senate.gov<mailto:karen_billups@energy.senate.gov>;
Katherine_Field@Feinstein.senate.gov<mailto:Katherine_Field@Feinstein.senate.gov>;
kathryn_isaacson@sessions.senate.gov<mailto:kathryn_isaacson@sessions.senate.gov>;
Kathy_Dedrick@epw.senate.gov<mailto:Kathy_Dedrick@epw.senate.gov>;
katie.murtha@mail.house.gov<mailto:katie.murtha@mail.house.gov>;
katie.ott@mail.house.gov<mailto:katie.ott@mail.house.gov>;
kimberly.betz@mail.house.gov<mailto:kimberly.betz@mail.house.gov>;
kyle.victor@mail.house.gov<mailto:kyle.victor@mail.house.gov>;
laura_haynes@carper.senate.gov<mailto:laura_haynes@carper.senate.gov>;
laurel.angell@mail.house.gov<mailto:laurel.angell@mail.house.gov>;
lee.lilley@mail.house.gov<mailto:lee.lilley@mail.house.gov>;
lindsay.mosshart@mail.house.gov<mailto:lindsay.mosshart@mail.house.gov>;
lisa.wright@mail.house.gov<mailto:lisa.wright@mail.house.gov>;

(b)(6)

Marc.Rigas@mail.house.gov<mailto:Marc.Rigas@mail.house.gov>;
mariah.sixkiller@mail.house.gov<mailto:mariah.sixkiller@mail.house.gov>;
marty.gelfand@mail.house.gov<mailto:marty.gelfand@mail.house.gov>;
mary.frances.repko@mail.house.gov<mailto:mary.frances.repko@mail.house.gov>;
mary.neumayr@mail.house.gov<mailto:mary.neumayr@mail.house.gov>;

maryam.brown@mail.house.gov<mailto:maryam.brown@mail.house.gov>;
marybeth_schultz@hsgac.senate.gov<mailto:marybeth_schultz@hsgac.senate.gov>;
matthew.kaplan@mail.house.gov<mailto:matthew.kaplan@mail.house.gov>;
megan.bel@mail.house.gov<mailto:megan.bel@mail.house.gov>;
michael.beckerman@mail.house.gov<mailto:michael.beckerman@mail.house.gov>;
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mike_burke@cardin.senate.gov<mailto:mike_burke@cardin.senate.gov>;
natalie.farr@mail.house.gov<mailto:natalie.farr@mail.house.gov>;
nathan.rea@mail.house.gov<mailto:nathan.rea@mail.house.gov>;
Neena_Imam@alexander.senate.gov<mailto:Neena_Imam@alexander.senate.gov>;
neil_chatterjee@mccconnell.senate.gov<mailto:neil_chatterjee@mccconnell.senate.gov>;
pablo.duran@mail.house.gov<mailto:pablo.duran@mail.house.gov>;
Patrick_Lehman@johanns.senate.gov<mailto:Patrick_Lehman@johanns.senate.gov>;
Peter.Spencer@mail.house.gov<mailto:Peter.Spencer@mail.house.gov>;
Philip_Moore@boozman.senate.gov<mailto:Philip_Moore@boozman.senate.gov>;
Rob.Blair@mail.house.gov<mailto:Rob.Blair@mail.house.gov>;
ruth_vanmark@epw.senate.gov<mailto:ruth_vanmark@epw.senate.gov>;
ryan.tracy@mail.house.gov<mailto:ryan.tracy@mail.house.gov>;
Sam_Fowler@energy.senate.gov<mailto:Sam_Fowler@energy.senate.gov>;
Sandra_Luff@sessions.senate.gov<mailto:Sandra_Luff@sessions.senate.gov>;
sarah_neimeyer@durbin.senate.gov<mailto:sarah_neimeyer@durbin.senate.gov>;
Scott.Tranter@mail.house.gov<mailto:Scott.Tranter@mail.house.gov>;
shane.skelton@mail.house.gov<mailto:shane.skelton@mail.house.gov>;
Shea_Loper@barrasso.senate.gov<mailto:Shea_Loper@barrasso.senate.gov>;

(b)(6)

shimmy.stein@mail.house.gov<mailto:shimmy.stein@mail.house.gov>;
taunja.berquam@mail.house.gov<mailto:taunja.berquam@mail.house.gov>;
tuley.wright@mail.house.gov<mailto:tuley.wright@mail.house.gov>;
Tyler_Owens@appro.senate.gov<mailto:Tyler_Owens@appro.senate.gov>;
vance_serchuk@hsgac.senate.gov<mailto:vance_serchuk@hsgac.senate.gov>;
vic.edgerton@mail.house.gov<mailto:vic.edgerton@mail.house.gov>;
will.hupman@mail.house.gov<mailto:will.hupman@mail.house.gov>;
wyndee.parker@mail.house.gov<mailto:wyndee.parker@mail.house.gov>;
Mitchell.Vakerics@mail.house.gov<mailto:Mitchell.Vakerics@mail.house.gov>;
christopher.king@mail.house.gov<mailto:christopher.king@mail.house.gov>;
Alexander_McDonough@reid.senate.gov<mailto:Alexander_McDonough@reid.senate.gov>;
Jaime_shimek@murray.senate.gov<mailto:Jaime_shimek@murray.senate.gov>;
Brendon_Plack@rpc.senate.gov<mailto:Brendon_Plack@rpc.senate.gov>;
Dan.Pearson@mail.house.gov<mailto:Dan.Pearson@mail.house.gov>;
john.ohly@mail.house.gov<mailto:john.ohly@mail.house.gov>;
Erin.Alexander@mail.house.gov<mailto:Erin.Alexander@mail.house.gov>;
keith.barnicle@mail.house.gov<mailto:keith.barnicle@mail.house.gov>;
Franzw@coons.senate.gov<mailto:Franzw@coons.senate.gov>;
erick_lutt@bennelson.senate.gov<mailto:erick_lutt@bennelson.senate.gov>;
Greg.Dotson@mail.house.gov<mailto:Greg.Dotson@mail.house.gov>;
Alison.Cassady@mail.house.gov<mailto:Alison.Cassady@mail.house.gov>;
diane.berry@mail.house.gov<mailto:diane.berry@mail.house.gov>

Spires,

Your distribution should be very similar, but can you make sure the last three names were included?

Timothy Riley
Congressional Affairs Officer
U. S. Nuclear Regulatory Commission
Office of Congressional Affairs
Phone: 301-415-8492
Blackberry: (b)(6)

From: ET05 Hoc
Sent: Friday, April 01, 2011 10:20 PM
To: LIA06 Hoc; LIA08 Hoc
Subject: Consortium Cal1 4111.doc
Attachments: Consortium Cal1 4111.doc

Attached you will find Meeting Minutes form 4/1/11 20:00.

Hope this helps.

Thanks

RRR/161

Consortium Call – 4/1/11 20:00

Attendees:

- NRC Headquarters Operations Officer
- Kevin Mulligan, INPO
- Rick M Nielsen, INPO
- Randy Trapasso, INPO
- Lt Col. Price, PACOM w/radiation support team
- Lt. Cmdr. Robert Mercer, J4
- Thomas G Vavoso, Naval Reactors
- Alan Blamey, NRC Japan
- Glenn A Southern, Naval Reactors
- Col. Patrick Wall

Item #1: Shipment delay to Japan. Looking at logistics on how to ship items.

Item #15: Will need to work with Embassy to get shipment faster. Contact Ted Gehr, USAID. Cargo weigh is 850 pounds and dimensions are 26" x 56" x 29" for monitors. Joint Forces doesn't have validation from Joint Staff of Japan. Also needs correct logistics on how to process request like this. Embassy should give information to LNO's point of contacts. Col Towne can be reached at (b)(6) Embassy to bring in additional people to work-out logistics to get items moving. Items in Canada ready for pickup on Tuesday. To transport via C-17 from mid U.S. to Japan is \$250,000 DoD rate and non-DoD but govt mission little over \$400,000. Cargo is 8.5 short tons of gear. Might need to be a special airlift mission to ship cargo via C-17.

Item #20 & 22: Mobil devices on ground – DOE & NRC will follow-up. Leave item open.

Item #18: Sharing raw data with Japan on models.

Item #19: Providing training to Japan. Received 3 requests from Japanese ministries for detectors for screening drinking water and soil samples. Still open.

Item #21: Shipment planned for April 5. DoD to send 2 experts on hardened cameras and robotics to help with training.

Item #22: DoD and NRC will follow-up with Embassy. Embassy needs definition.

Item #23: Leave open.

Item #24: Japan doesn't see need for additional pumps.

Item #25: Covered in item #1.

Item #27: Close, this item is on Embassy's list.

Item #28: Might close.

Item #29: Close, this item is on Embassy's list.

Item #30, 31 & 32: Provided white paper outlining strategy.

Item #33: Not enough information on shielding loads. Planning a meeting with Japan about shielding.

Item #34: Looking for additional source for equipment.

** Next meeting planned for 4/2/11 @ 20:00 (same time tomorrow)

From: Weber, Michael
Sent: Friday, April 01, 2011 8:50 AM
To: RST01 Hoc; LIA06 Hoc; LIA08 Hoc
Cc: ET07 Hoc; ET05 Hoc; OST02 HOC; FOIA Response.hoc Resource; Sheron, Brian; Boger, Bruce; Carpenter, Cynthia
Subject: FYI - you might have seen those high resolution images already

We had requested Brian to share the photos with the Secretary of Energy's Science Panel to support their brainstorming of strategies to help control the plants and recover from the accident.

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

From: Sheron, Brian
Sent: Friday, April 01, 2011 8:26 AM
To: Borchardt, Bill; Weber, Michael; Virgilio, Martin
Subject: FW: you might have seen those high resolution images already

FYI.

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

From: Per F. Peterson [mailto:peterson@nuc.berkeley.edu]
Sent: Thursday, March 31, 2011 11:45 PM
To: Kelly, John E (NE); Adams, Ian; Aoki, Steven; Binkley, Steve; Brinkman, Bill; Budnitz, Bob; Butnitz, Bob (pacbell.net); Finck, Phillip; Garwin, Dick (EOP); Garwin, Dick (IBM); Grossenbacher, John (INL); Hurlbut, Brandon; Lee, Richard; Lyons, Peter; McFarlane, Harold; Miller, Neile; Mustin, Tracy; Peterson, Per; Sheron, Brian; Steve Fetter; Szilard, Ronaldo; Owens, Missy
Cc: Smith, Haley; Chambers, Megan (S4); Narendra, Blake; Fitzgerald, Paige; Pitzer, Karrie S.
Subject: Fwd: you might have seen those high resolution images already

If you've not had a chance to look at high-resolution photos of the Unit 1-4 reactors at Fukushima, I recommend reviewing these photos.

They provide a better understanding of the scale and logistical challenges of working at the site, and make it pretty clear why remotely operated heavy construction equipment will be needed for the remediation effort. Clearing debris at ground level will be important to get space for setting up cranes that can clear debris from the tops of the reactor buildings. There is a massive amount of material that will need to be moved. This is an area where advice from experts in building demolition is needed soon.

-Per

>Date: Thu, 31 Mar 2011 18:18:58 -0700
>From: Peter Hosemann <peterh@berkeley.edu>
>To: faculty <NE-faculty@nuc.berkeley.edu>
>Subject: you might have seen those high resolution images already
>
>but in case you did not:
>
><http://cryptome.org/eyeball/daiichi-npp/daiichi-photos.htm>
>

R R R / 162

>Peter
>
>--
>Dr. Peter Hosemann
>Assistant Professor
>Nuclear Engineering
>University of California Berkeley
>phone: (c)(b)(6)
>peterh@berkeley.edu

--

Per F. Peterson
Professor and Chair
Department of Nuclear Engineering
University of California
4153 Etcheverry Hall
Berkeley, California 94720-1730
peterson@nuc.berkeley.edu
Office: (510) 643-7749 Fax: (510) 643-9685
http://www.nuc.berkeley.edu/People/Per_Peterson

From: (b)(6)
Sent: Friday, April 01, 2011 8:59 PM
To: ET05 Hoc
Subject: FW: Commercial RADIACS from INPO

I dialed in to the VTC on 1 Apr (US Time) 2 Apr (Japan Time) and was discussing the GOJ request validation process.

V/R
Patrick L. Wall
Colonel, USMC
Logistics Operations Center
J4, Joint Support Force
DSN: (315) 225-4708
NIPR: (b)(6)

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

From: Harden, Ernest CAPT USN
Sent: Saturday, April 02, 2011 8:56 AM
To: Wall, Patrick L Col USMC USFJ J4
Subject: FW: Commercial RADIACS from INPO

FYI.

R/Ernie

E. D. HARDEN
CAPT, SC, USN
DSN 315-225-6732

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

From: East, Jared V CDR PACOM, J423 (b)(6)
Sent: Thursday, March 31, 2011 5:26 PM
To: Harden, Ernest CAPT USN
Cc: Martin, Les CAPT PACOM, J40; Hession, Tiger Col PACOM, J42
Subject: FW: Commercial RADIACS from INPO

CAPT Harden,
Details on the Radiation Monitoring Equipment are listed below.
Spec sheets for all but 3 are enclosed.

RRR/163

v/r,
Jared

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

From: Burris, Rick E (INPO) [mailto:BurrisRE@INPO.org]

Sent: Sunday, March 27, 2011 7:38 AM

To: Dusterhoff, David C LTC PACOM, J423

Cc: Hochevar, Albert R. (INPO); Nielsen, Rick M (INPO); Connelly, Cynthia L. (INPO); INPO EmergencyResponseCtr (INPO); East, Jared V CDR PACOM, J423; Jones, David A MAJ PACOM, J4; Maxwell, Brian W LCDR PACOM, J41; Hession, Tiger Col PACOM, J42; Tremblay, Peter J Lt Col PACOM, J422; Scanlon, Katherine A COL PACOM, J46

Subject: RE: Commercial RADIACS from INPO

Importance: High

Good Afternoon Colonel,

I am responding to your request to Al Hochevar (INPO on location in Japan) for information on the capabilities of the "radiacs" that are being gathered from two US utilities (South Texas Project and San Onofre Nuclear Generating Station) and from Bruce Power in Canada. I am including a number of attachments for the specifications of the equipment that I found available on the internet from the various manufacturers. There was no information available on the following items:

1. DOZ 862 0 - 1.5 R Pocket Ion Chambers (PIC) Total quantity
= 60 Includes 11 PIC Chargers
2. DOZ 865 0 - 200 mR Pocket Ion Chambers Total Quantity
= 120
3. FH 40F5 Radiameter 300 micro R/h - 100R/h Total Quantity
= 5

The remaining equipment on the list included:

1. Aptec C7s or C7PC Hand and Foot monitors Donated from
Bruce Power Station in Canada Quantity = 50 - 60 monitors
Specs Attached
2. Sentinel teletectors 6112B dose-rate meters Donated by San Onofre
nuclear Generating Station Quantity = 6
Specs Attached
3. Ludlum 43-2 Alpha probe Donated by South Texas
Project Quantity = 5 Specs
Attached
4. Ludlum 44-10 NaI Probe (wide energy gamma) Donated by South Texas
Project Quantity = 2 Specs
Attached
5. Ludlum 2929 Dual Channel Alpha/Beta Scaler Donated by South Texas
Project Quantity = 2 Specs
Attached
6. Ludlum 44-6 Beta/Gamma detector Probe Donated by South Texas
Project Quantity = 55 Specs
Attached
7. Ludlum 177 General Purpose bench top Ratemeter Donated by South Texas
Project Quantity = 19 Specs

Attached

8. FH 40GX digital Survey meter Donated by South Texas
Project Quantity = 1 Specs

Attached

9. F&J LV-1 Low Volume Air Sampler Donated by South Texas
Project Quantity = 1 Specs

Attached

10. F&J HV-1 High Volume Air Sampler Donated by
South Texas Project Quantity = 12
Specs Attached

Should there be any other information you may need please contact me at the below numbers.

Best regards,

Rick Burris

Richard E. Burris
Institute of Nuclear Power Operations
Senior Representative
Entergy Nuclear Fleet Senior Representative

(770) 644-8634 (Office) *rel*
(b)(6) (Mobile)

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

From: INPO EmergencyResponseCtr (INPO)
Sent: Sunday, March 27, 2011 9:17 AM
To: INPOERCAssistance
Subject: FW: Commercial RADIACS from INPO

Please obtain the additional information requested below regarding the capabilities of radiacs to be provided.

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

From: Hochevar, Albert R. (INPO)
Sent: Sunday, March 27, 2011 9:06 AM
To: INPO EmergencyResponseCtr (INPO)
Subject: Fw: Commercial RADIACS from INPO

Please take for action
AI

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

From: (b)(6)

To: Hochevar, Albert R. (INPO)

Cc: (b)(6)

(b)(6)

Sent: Sun Mar 27 08:45:17 2011
Subject: Commercial RADIACS from INPO

Sir,

Could you provide me information on the capabilities of the "radiacs" referenced below? We are trying to ascertain if we have similar assets in the military to perform the monitoring required at Fukushima.

Thank you.
V/R,
LTC David Dusterhoff
PACOM J423
DSN 315 477-0687
(808) 477-0687

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

From: (b)(6) On Behalf Of Hotmail

Sent: Sunday, March 27, 2011 1:33 AM
To: Grana, Brian T. Maj USMC
Cc: Harris, Jeffrey W CIV PACOM, J4; Whitney, Andrew L Civ USAF PACAF 374 CONS/CD; Cook, William; Young, Joseph ChiefPolMil AMEMB JP; USFJ-CAT-J5; MDAO Org Box; Kubista, Theodore LTC USA MDAO; Collier, Andrew H. CDR USN MDAO; Tokyo PolMil Unit; Bock, Yoni; Scanlon, Katherine A COL PACOM, J46; Pickett, Timothy LCDR PACOM, J46; Cote, Benjamin F LCDR USN USFJ J52; Hackman, Michael R LtCol USAF PACAF 374 CONS/CC; Gurwith, Nicola,, DSCA/PGM/HDM; Vanderau, Bradley E LTC PACOM, J06; Clark, Ngoc CIV OSD POLICY; Roark, Thomas E CIV J45; Wilcox, Paul R CIV PACOM, J512; Watabayashi, Diane J PACOM J510, CIV; <j3temp5@jso.mod.go.jp>; Theodore MDAO Kubista LTC USA; Spurlock Ken CAPT; hochevarar@inpo.org
Subject: Commercial RADIACS from INPO

Brian,
Several days ago at the Cabinet Level Crisis Management meeting, the GoJ asked for assorted monitoring equipment.

INPO-Institute of Nuclear Power Operations (Mr. Hochevar) surveyed those in the nuclear industry and made an offer about 300+ various radiacs for monitoring and use at Fukushima.
GoJ responded that they would like to receive all of the equipment. The equipment is divided in three different areas-San Onofre, South Texas Project (Houston) and Bruce (Canada-Great Lakes?).

I do not know the size, distribution, priority of need but would just like to give you a heads up regarding another logistics request.

Mr. Hochevar, the US POC for the radiacs is included on the cc line. Can you help coordinate the logistics or point us in the right direction so the US can deliver on this request?

r/

Ken Spurlock
CAPT, USN

.DISCLAIMER:

This e-mail and any of its attachments may contain proprietary INPO or WANO information that is privileged, confidential, or protected by copyright belonging to INPO or WANO. This e-mail is intended solely for the use of the individual or entity for which it is intended. If you are not the intended recipient of this e-mail, any dissemination, distribution, copying, or action taken in relation to the contents of and attachments to this e-mail is contrary to the rights of INPO or WANO and is prohibited. If you are not the intended recipient of this e-mail, please notify the sender immediately by return e-mail and permanently delete the original and any copy or printout of this e-mail and any attachments.

Thank you.

From: ET07 Hoc
Sent: Friday, April 01, 2011 9:41 AM
To: Vavoso, Thomas G CIV NAVSEA, 08
Subject: RE: DASD report

Tom:

We have tried to contact Mr. Schiffer but are unable to get an answer on his cell phone and left a message with his office. Please let me know if you know of an alternate means to contact Mr. Schiffer.

Jane Marshall
Status Officer, USNRC Incident Response

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

From: Vavoso, Thomas G CIV NAVSEA, 08 (b)(6)
Sent: Friday, April 01, 2011 7:28 AM
To: ET07 Hoc
Subject: DASD report

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

From: (b)(6)
To: (b)(6)

(b)(6)

Sent: Fri Apr 01 04:25:42 2011
Subject: Japan Nuclear Update

Michele, all,

Huddled with the NRC-headed nuclear team based at the Embassy this afternoon to get an assessment from the folks working this in the field about where we are, and where we are going. Their bottom line assessments are:

- The "domino theory" (the plausible hypothetical worst case) is not any longer credibly possible; it is highly unlikely to happen. (They said, in essence, that we had that situation a couple of weeks ago...and it didn't happen. Since then things have progressed such that the fission geometry no longer exists for the hypothetical bounding case to be able happen.)

RRR/164

- Not that we are out of the woods, but the situation is getting safer every day. It is "static", if not necessarily "stable". (That takes nothing away from the challenges created by the radioactive leaks of the past few weeks, or the contaminated water and ground at the plant or immediate surrounding area.)

- Even if the worst happens - which as per above they don't view as a credible possibility any more - sheltering in place for Tokyo and area (including Yokosuka) for a couple of days "maximum" is recommended COA.

- TEPCO and GoJ made a decision not to flood the reactors, which was the NRC recommendation, (in part because they were concerned with a "CNN moment" (pressure might build during the flood and there would be a visible vent), but they appear to be managing things and are on a good glide-path. Not as ideal as if they had flooded, but "they [TEPCO] might be right".

- Leading indicator if things get out of control will be an increase in pressure and the vessel temperature going up at Unit 1 from the current 150-200 back to 700+. But if that happens there will be lead time (and cascade unlikely).

- Their "realistic pessimistic case" is that we continue with the current slow bleed, which means the 50 mile remains in place but no danger to Tokyo, Yokosuka, and the like. Things will keep looking like they do now until a structure can be built over the plant to confine it.

- Modelers from Sandia who arrived today are running code to see if they can make a determination about when we will reach a "point of little concern".

Lots more detail which I will spare you, but the above is the relevant assessment which may prove useful for SD for the PC discussion. Please let me know if you need anything else or have any questions for me to put to the team here in Tokyo.

Michael

From: Fraass.Ron@epamail.epa.gov
Sent: Friday, April 01, 2011 4:51 PM
To: PMT09 Hoc
Subject: Question

PMT desk.

We had a call from a private citizen asking about typical reverse osmosis systems and their ability to filter out radionuclides. Most of the systems can pull metals, but I don't know about iodine or cesium. I recall about 30 years ago about an effort to use reverse osmosis on milk. Not very successful due to milk fat and other solids. I sent the request on to our EOC, but my assumption is that there is good data somewhere in the NRC system. The individual would like to send some units to family in Japan to provide them better drinking water. I would appreciate any thoughts and will share them with our Environmental Unit at our EOC. While it is not a problem here in the US, it certainly is in parts of Japan.

Thanks,
Ron

Ronald G. Fraass, Director
National Air and Radiation Environmental Laboratory U.S. Environmental Protection Agency
540 South Morris Avenue
Montgomery, AL 36115-2601
Phone: 334 270-3401
Cell: (b)(6)
FAX: 334 270-3454
Fraass.Ron@epa.gov
URL www.epa.gov/narel

|----->
| From: |
|----->
>-----|
| PMT09 Hoc <PMT09.Hoc@nrc.gov> |
>-----|
|----->
| To: |
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| Ron Fraass/MTG/USEPA/US@EPA, Mike Flynn/DC/USEPA/US@EPA, Jonathan Edwards/DC/USEPA/US@EPA, EOC
Manager@EPA, EOC Planning@EPA, EOC |
| Environmental Unit@EPA |
>-----|
|----->
| Cc: |
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>-----|
| "Hoc, PMT12" <PMT12.Hoc@nrc.gov> |
>-----|

RRR/165

|----->
| Date: |
|----->
>-----|
|04/01/2011 10:36 AM |
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|----->
| Subject: |
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>-----|
|RE: Potential Interest in Deploying RADNET Units to Japan |
>-----|

Ron

Just to follow up. Our inquiry was for information only. Please do not do anything. We note that DOE has remote monitoring capability in country and it may make more sense to deploy that rather than ask EPA to spin up resources from US. In any case, the decision to deploy is not NRC's area of authority. Although the information would be useful, etc.

Thanks for the information

Randy Sullivan NRC HQ PMT Director

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

From: Fraass.Ron@epamail.epa.gov [mailto:Fraass.Ron@epamail.epa.gov]

Sent: Friday, April 01, 2011 9:50 AM

To: PMT09 Hoc; Flynn.Mike@epamail.epa.gov; Edwards.Jonathan@epamail.epa.gov; EOC_Manager@epamail.epa.gov; EOC_Planning@epamail.epa.gov; EOC_Environmental_Unit@epamail.epa.gov

Cc: Hoc, PMT12

Subject: Re: Potential Interest in Deploying RADNET Units to Japan

Spoke with Duane and indicated the limitations of the deployable units.

I explained that the request and any decisions will need to flow through our EOC. I suggest the planning unit be in contact with NRC's PMT unit to further discuss the options.

Deployables will need electrical power and a local operator. Filters need to be changed daily and sent to a lab for analysis. For deployables, the only near real time data about radiation comes from the onboard compensated GM system. No spectral data is available unlike the RadNet fixed (permanent) monitors.

Ron

Ronald G. Fraass, Director

National Air and Radiation Environmental Laboratory U.S. Environmental Protection Agency

540 South Morris Avenue

Montgomery, AL 36115-2601

Phone: 334 270-3401

FAX: 334 270-3454

Fraass.Ron@epa.gov

URL www.epa.gov/narel

|----->
| From: |
|----->

>-----|

|PMT09 Hoc <PMT09.Hoc@nrc.gov>
|

>-----|

|----->
| To: |
|----->

>-----|

|Ron Fraass/MTG/USEPA/US@EPA
|

>-----|

|----->
| Cc: |
|----->

>-----|

|"Hoc, PMT12" <PMT12.Hoc@nrc.gov>
|

>-----|

|----->
| Date: |
|----->

>-----|

|04/01/2011 08:40 AM
|

>-----|

|----->
| Subject: |
|----->

>-----|

| Potential Interest in Deploying RADNET Units to Japan
|

>-----|

Ron,

Thanks for talking. This is a follow-up, in part to establish e-mail contact as we discussed. The best e-mail contact for us here is the PMT12 e-mail (PMT12.hoc@nrc.gov), which I'm copying.

Our interest in potential deployment of RadNet units is only preliminary at this time. We will be having further discussions here, and will let our managers know the capabilities of the deployable RadNet units. So I would not push this much with your management just yet.

Thanks,

Duane Schmidt
Protective Measures Team
US Nuclear Regulatory Commission

From: Hoc, RST16
Sent: Friday, April 01, 2011 8:35 AM
To: Scott, Michael
Subject: FW: DASD report

Mike

This is the email we discussed from a Michael Schiffer in OSD.MIL.

Andy

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

From: ET07 Hoc
Sent: Friday, April 01, 2011 8:12 AM
To: RST01 Hoc
Subject: FW: DASD report

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

From: (b)(6)
Sent: Friday, April 01, 2011 7:28 AM
To: ET07 Hoc
Subject: DASD report

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

From: (b)(6)
To: (b)(6)

(b)(6)

Sent: Fri Apr 01 04:25:42 2011
Subject: Japan Nuclear Update

Michele, all,

Huddled with the NRC-headed nuclear team based at the Embassy this afternoon to get an assessment from the folks working this in the field about where we are, and where we are going. Their bottom line assessments are:

RRR/166

- The "domino theory" (the plausible hypothetical worst case) is not any longer credibly possible; it is highly unlikely to happen. (They said, in essence, that we had that situation a couple of weeks ago...and it didn't happen. Since then things have progressed such that the fission geometry no longer exists for the hypothetical bounding case to be able happen.)

- Not that we are out of the woods, but the situation is getting safer every day. It is "static", if not necessarily "stable". (That takes nothing away from the challenges created by the radioactive leaks of the past few weeks, or the contaminated water and ground at the plant or immediate surrounding area.)

- Even if the worst happens - which as per above they don't view as a credible possibility any more - sheltering in place for Tokyo and area (including Yokosuka) for a couple of days "maximum" is recommended COA.

- TEPCO and GoJ made a decision not to flood the reactors, which was the NRC recommendation, (in part because they were concerned with a "CNN moment" (pressure might build during the flood and there would be a visible vent), but they appear to be managing things and are on a good glide-path. Not as ideal as if they had flooded, but "they [TEPCO] might be right".

- Leading indicator if things get out of control will be an increase in pressure and the vessel temperature going up at Unit 1 from the current 150-200 back to 700+. But if that happens there will be lead time (and cascade unlikely).

- Their "realistic pessimistic case" is that we continue with the current slow bleed, which means the 50 mile remains in place but no danger to Tokyo, Yokosuka, and the like. Things will keep looking like they do now until a structure can be built over the plant to confine it.

- Modelers from Sandia who arrived today are running code to see if they can make a determination about when we will reach a "point of little concern".

Lots more detail which I will spare you, but the above is the relevant assessment which may prove useful for SD for the PC discussion. Please let me know if you need anything else or have any questions for me to put to the team here in Tokyo.

Michael

From: (b)(6)
Sent: Friday, April 01, 2011 6:45 PM
To: RST03 Hoc
Subject: FW: Bio of DASD author attached
Attachments: ATT00001..txt

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

From: (b)(6)

To: (b)(6)

(b)(6)

Cc: (b)(6)

(b)(6)

Sent: Fri Apr 01 04:25:42 2011

Subject: Japan Nuclear Update

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Michael

A MIME attachment of type <application/octet-stream> was removed here
by a drop-attachments-by-name filter rule on the host <mail1.nrc.gov>.

From: LIA11 Hoc
Sent: Saturday, April 02, 2011 9:57 PM
To: LIA06 Hoc; LIA08 Hoc
Subject: FW: REVISED - In Preparation for 2000 hour NRC Consortium Call for Japan

Based on 2000 hour meeting.

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

From: Mercer, Robert LCDR USN USFJ J3; (b)(6)
Sent: Saturday, April 02, 2011 9:53 PM
To: LIA11 Hoc; Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; INPO; Jay Tilden; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy
Subject: RE: REVISED - In Preparation for 2000 hour NRC Consortium Call for Japan

Good evening,

Thanks again for everyone's support on this morning's call. Your continued efforts are important to the overall recovery and stabilization process here in Japan.

In terms of the spread sheet I would like to add the following columns if possible:

- lead time from receiving authorization to get an item/items into Japan
- A field to cover the way forward i.e. - Next Action / Responsible Party/ Target Response Date
- A field to address propose/desired funding method i.e.

donation, TEPCO, GOJ, USAID etc for both material and transportation

Thank you for your consideration.

Sincerely,
LCDR Rob Mercer

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

From: LIA11 Hoc [mailto:LIA11.Hoc@nrc.gov]
Sent: Sunday, April 03, 2011 7:56 AM
To: Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; Jay Tilden; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Mercer, Robert LCDR USN USFJ J3; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc;

Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster;
Zimmerman, Roy

Subject: REVISED - In Preparation for 2000 hour NRC Consortium Call for Japan

See attached

From: LIA02 Hoc
Sent: Saturday, April 02, 2011 1:42 PM
To: Bernhard, Rudolph
Cc: Emche, Danielle; Stahl, Eric; LIA03 Hoc
Subject: Info requested
Attachments: NRC team phone & email INFORMATION as of April 2 2011.docx

Rudy,

Below is the information on how to get to the (b)(6) and the list of phone numbers of the team currently on the ground is attached.

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

(b)(6)

There are regular limousine hotel bus services running between the airport and all main Tokyo Hotels. Please 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 (b)(6) (e.g. Intercon) and then catch a taxi to (b)(6). All these expenses are reimbursable, so please 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 you with the best options on how to get to the hotel.

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

Have a safe trip.

Cheers,

Karen

KRR/169

AS OF 4/2/2011 1300
NRC TEAM PHONE/EMAIL INFORMATION IN JAPAN

Name	Phone Number	Email			
Chuck Casto Deputy Regional Administrator, Region II	(b)(6)	Chuck.casto@nrc.gov			
John Monninger Deputy Chief-of-Staff, Office of the Chairman	(b)(6)	John.monninger@nrc.gov			

Dan Dorman Deputy Director, NMSS - leaves 3/19	(b)(6) NRC BB	Daniel.Dorman@nrc.gov			
Mike Scott (Acting) Deputy Director, Division of Systems Analysis, RES Leaves 3/22	301-251-7524 (b)(6) (NRC bb)	Michael.Scott@nrc.gov Picked up dosimeter at OPS Center			
Alan Blamey, RII Chief of Construction Project Branch Leaves 3/22	(b)(6) (b)(6) (NRC bb)	Alan.Blamey@nrc.gov Picked up KI in Region II			
Jack Giessner, RIII Branch Chief Division of Reactor Projects Leaves 3/24	(b)(6) (b)(6) NRC BB	John.Giessner@nrc.gov			
Rob Taylor SG Tube Integrity and Chemical Engineering Branch, NRR Leaves 3/24	(b)(6) NRC BB	Robert.Taylor@nrc.gov Picked up dosimeter and KI at OPS Center			

<p>Todd Jackson Commercial and R&D Branch, DNMS, RI Leaves 3/24</p>	<p>(b)(6) NRC BB</p>	<p>Todd.Jackson@nrc.gov Had dosimeter from the region.</p>			
<p>Marie Miller Chief, Material Security and Industrial Branch, RI Leaves 3/24</p>	<p>(b)(6) NRC BB</p>	<p>Marie.Miller@nrc.gov Had dosimeter from the region.</p>			
<p>Syed Ali Senior Level Advisor, Div of Engineering, RES Leaves 3/24</p>	<p>(b)(6) NRC BB</p>	<p>Syed.Ali@nrc.gov Picked up dosimeter 03/22</p>			
<p>Abdul Sheikh, NRR Leaves 3/24</p>	<p>(b)(6) NRC BB</p>	<p>Abdul.Sheikh@nrc.gov Picked up dosimeter 03/22</p>			
<p>Ralph Way, Sr Level Advisor, Division of Security Operations, NSIR Leaves 3/24</p>	<p>(b)(6) (cell) (b)(6) (bb in US) (b)(6) NRC BB</p>	<p>Ralph.Way@nrc.gov Picked up dosimeter 03/22</p>			
<p>Danielle Emche, International Relations Specialist, OIP Leaves 3/26</p>	<p>(b)(6) NRC BB (b)(6) NRC (internat.BB)</p>	<p>Danielle.Emche@nrc.gov</p>			
<p>Eric Stahl, International Relations Specialist, OIP Leaves 3/28</p>	<p>(b)(6) NRC BB (b)(6) NRC (internat.BB)</p>	<p>Eric.Stahl@nrc.gov</p>			

<p>Elmo Collins, RA, RIV Leaves 3/29</p>	<p>(b)(6) NRC BB</p>	<p>Elmo.Collins@nrc.gov</p>			
<p>Vince Holahan, Sr. Level Advisor, FSME Leaves 3/28 (b)(6)</p>	<p>Direct line: 808-477-7360 – CANNOT CARRY BB ON SITE Alt: 808-477-9286 Sr. Watch Office: 808-477-8173</p>	<p>Vincent. holahan@nrc.gov</p>			
<p>Rudy Bernhard, Region II Expertise in severe accident management, B5b and accident recovery, Leaves 4/2</p>	<p>BB: (b)(6)</p>	<p>Rudolph.Bernhard@nrc.gov</p>			
<p>Michel (Mike) Call, NMSS Nuclear Engineer Fluent in Japanese and (b)(6) (b)(6) Leaves 4/2</p>	<p>BB: (b)(6)</p>	<p>Michel.Call@nrc.gov</p>			
<p>Elmo Collins, RIV Executive level – Assistant Team Leader. Will replace Dan Dorman, Leaves 3/29</p>	<p>BB: (b)(6)</p>	<p>Elmo.Collins@nrc.gov</p>			
<p>Mike Hay, RIV Extensive experience in emergency planning and event response experience. Masters in HP, Leaves 4/22</p>	<p>BB: (b)(6)</p>	<p>Michael.Hay@nrc.gov</p>			
<p>Mike Salay, RES Severe accident expertise, OECD - leaves 4/2 or 3</p>	<p>BB: (b)(6)</p>	<p>Michael.Salay@nrc.gov</p>			

Embassy Fax: 81-3-3224-5538

Team Room: (b)(6)

Satellite phone: (b)(6)

EVERYBODY IS STAYING AT HOTEL IN TOKYO

(b)(6)

From:

(b)(6)

Sent:

Saturday, April 02, 2011 9:53 PM

To:

LIA11 Hoc; Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; INPO; Jay Tilden; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy

Subject:

RE: REVISED - In Preparation for 2000 hour NRC Consortium Call for Japan

Good evening,

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donation, TEPCO, GOJ, USAID etc for both material and transportation

Thank you for your consideration.

Sincerely,

LCDR Rob Mercer

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

From: LIA11 Hoc [mailto:LIA11.Hoc@nrc.gov]

Sent: Sunday, April 03, 2011 7:56 AM

To: Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; Jay Tilden;

LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Mercer, Robert LCDR USN USFJ J3; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy

Subject: REVISED - In Preparation for 2000 hour NRC Consortium Call for JAPAN

See attached

RFR/170

From: ET02 Hoc
Sent: Monday, April 04, 2011 3:12 PM
To: ET07 Hoc
Subject: FW: Reoccurring Daily Actions and Calls Rev. 24
Attachments: Reoccurring Daily Actions and Calls Rev 24.docx

From: ET01 Hoc
Sent: Monday, April 04, 2011 3:12:08 PM
To: ET02 Hoc
Subject: FW: Reoccurring Daily Actions and Calls Rev. 24
Auto forwarded by a Rule

From: LIA08 Hoc
Sent: Monday, April 04, 2011 3:12:07 PM
To: LIA06 Hoc; LIA02 Hoc; LIA11 Hoc; LIA01 Hoc; Hoc, PMT12; RST01 Hoc; ET05 Hoc; ET01 Hoc; ET07 Hoc; ET02 Hoc; HOO Hoc
Subject: Reoccurring Daily Actions and Calls Rev. 24
Auto forwarded by a Rule

Please find attached the updated version (revision 24) of the Reoccurring Daily Actions and Calls matrix.

The added item is:

1100	Info Exchange: US Environmental Monitoring Data <i>(new call proposed to start 4/4)</i>	Arranged by NEI	"Radiological Status & Implications" call betw OSTP. NEI or OSTP will set up the bridge line.
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LT Coordinator

KRP/171

Reoccurring Daily Actions and Calls

-Time (EDT)	Description	Lead Team	Action/Purpose of the Call
0230	Input for SIT REP	All Team Directors	Submit input to EBT Coordinator
0300	RST/PMT call with Japan Team	RST/PMT (arranged by the HOO) (b)(6)	Daily update for Site Team and HQ (convenient time for the Site Team)
0430	Status update & 2 pager/Sit Rep (BRIEFING ONLY-not a call)	All Team Directors	Provide input to EBT Coordinator for development of Agency briefing documents
0600	One Pager	ET, Response Advisor	Provide input to EBT Coordinator
0600	Congressional Update		Taken From Status Update
0715	Chairman's Brief	ET	Update chairman and staff during turnover
0800	While the Chairman is in Vienna April 5-6		
	Deputy Secretaries (as scheduled)	ET	White House lead (-Chairman participates) -Interagency discussion
0900	RST Status Call with INPO	RST	Update status of Reactors and SFPs
0930	UK/Canada/France Call	RST/PMT ** (arranged by HOO) Bridg (b)(6)	Information Exchange. Focused on Operational issues (Combining PMT call from 1400 for Dose issues. Starting 3/28)
1000	TAs & CAs briefing	ET ** (arranged by HOO) (b)(6)	ET Director lead -briefed Commission TAs and ODs
1100 M/W/F	ESF8-(Public Health & Medical Services)	LT (Conference number provided by HHS)	HHS Secretarys Operations Center lead -Interagency discussion NOTE: call will be held on Tuesdays and Fridays only
1100	Technical Coordination with Industry Consortium	RST (arranged by HOO) (b)(6)	Technical discussion
1100	Info Exchange: US Environmental Monitoring Data (new call) proposed to start 4/4	Arranged by NEI	"Radiological Status & Implications" call between NRC, NEI, EPA, DOE, OSTP. NEI or OSTP will set up the bridge line.
1230	NTAG teleconference (chaired by NSS)	PMT Director to lead	Nuclear Technical Advisory Group -email sent out daily with phone # and pass code
1400	USAID Starting 4/5 call will be on Tuesdays only 877.334.8037 Password (b)(6)	LT/OCA	USAID lead NOTE-this call only on Tues and Thurs now -Interagency discussion: Starting 4/5 call will be on Tuesdays only. Federal pre-coordination takes place at 1:45 and then the 2pm call with Congressional staff.

Reoccurring Daily Actions and Calls

1400	NARAC	PMT ** (arranged by HOO)	DOE lead -Interagency discussion of dose models
1400	Advisory Team	White House/PMT	Call with the White House to help with coordination and ensure PMT/White House is aware of current information Call: (b)(6) Pin: (b)(6) (b)(6) Pin #: (b)(6)
1500	One Pager	ET, Response Advisor	Provide Input to EBT Coordinator
1500	Congressional call	OCA & NRC Go-To Team (Leeds, M. Johnson, Sherron, B. Boger, etc) 800-593-7189 (b)(6)	OCA lead -Audience is Congressional staff who have or are near a plant; Oversight committees; House & Senate leadership
1515	Chairman's brief	ET (arranged by HOO)	
1600	Input to Status Update	All Team Directors	Provide input to EBT Coordinator
1700	PACOM J2 call	RST	May not reoccur daily-call done as needed
1700	HHS call with 50 states and federal partners	LT/State Liaison	Meeting occurs each Tuesday and Thursday evening, as organized by HHS (N.Natarajan). HHS provides bridge line day of call
1700	DOE Science Panel	RES	Brian Sheron and Richard Lee, out of the box solutions.
1700	RST/PMT call with Japan Team	RST/PMT (arranged by the HOO) (b)(6)	Daily update for Site Team and HQ (convenient time for the Site Team)
1800	Status update & 2 pager/Sit Rep (BRIEFING ONLY-not a call)	EBT	EBT developed agency briefing documents
1830	Chairman's Call with Chuck Casto (Canceled for Sunday, April 3 rd)	Chairman/Chuck	Brief on status
1900	Call with Vince Holahan PACCOM	PMT	Status of Radiological Conditions Vince Direct Line – 808.477.7360, if no answer (b)(6) or SWO (b)(6)
2000	HHS Call with Pacific	HHS	Meeting occurs each Wed. evening. Call in 888-455-7847, JAPAN CALL is the passcode. PMT to participate
2000 re-initiated 3/29	Call with Industry Consortium (daily)	ET ***arranged by HOO (b)(6) XXXX	ET Led High-level discussions with industry and NRC Site Team
2100	PMT call with Japan Team	PMT (arranged by the HOO)	Daily update for Site Team and HQ (convenient time for the Site Team)

Reoccurring Daily Actions and Calls

		(b)(6)	
2130	DOS	LT ** (arranged by HOO)	DOS lead -Interagency discussion
2200	One Pager	ET, Response Advisor	Provide Input to EBT Coordinator
2200	One pager	EBT	Update chairman via email using one-pager

From: RST01 Hoc
Sent: Monday, April 04, 2011 1:04 PM
To: Hayden, Elizabeth
Cc: FOIA Response.hoc Resource; RST08 Hoc; RST09 Hoc; RST06 Hoc
Subject: FW: FW2: TEPCO Earthquake Information Update on April 4: Fukushima-Daiichi Status
Attachments: image002.jpg; image001.jpg; TEPCO water discharge.TIF

Beth,

Info from the TEPCO Washington office on the water being discharged.

Tom Boyce
RST Coordinator

From: RST01B Hoc
Sent: Monday, April 04, 2011 12:41 PM
To: RST01 Hoc
Subject: FW: FW2: TEPCO Earthquake Information Update on April 4: Fukushima-Daiichi Status

Per discussion

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: Versluis, Rob [mailto:ROB.VERSLUIS@nuclear.energy.gov]
Sent: Monday, April 04, 2011 12:37 PM
To: RST01B Hoc
Subject: FW2: TEPCO Earthquake Information Update on April 4: Fukushima-Daiichi Status

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (o) (b)(6) (m)

From: 松尾 建次 [mailto:matsuo.kenji@wash.tepco.com] **On Behalf Of** matsuo.kenji@tepco.co.jp
Sent: Monday, April 04, 2011 11:50 AM
To: matsuo.kenji@tepco.co.jp
Subject: TEPCO Earthquake Information Update on April 4: Fukushima-Daiichi Status

RRR/172

Dear Friends,

Please take a look for updates at Fukushima-Daiichi NPS.

- (1) Discharge of low level radioactive accumulated water in the Fukushima Daiichi NPS to the sea
- (2) Outflow of fluid containing radioactive materials to the sea from areas near intake channel of Fukushima Daiichi NPS Unit 2
- (3) Missing TEPCO Employees at Fukushima Daiichi NPS

Contacts:

TEPCO Washington Office 202-457-0790

Kenji Matsuo, Director and General Manager

Yuichi Nagano, Deputy General Manager,

Masayuki Yamamoto, Manager, Nuclear Power Programs

=====

(1) Discharge of low level radioactive accumulated water in the Fukushima Daiichi NPS to the sea

There is currently great amount of radioactive waste water in the turbine buildings of the Fukushima Daiichi NPS and especially the turbine building of Unit 2 has extremely high level radioactive waste water.

We think it is necessary to transfer the radioactive waste water to the Central Radioactive Waste Disposal Facility in order to store it in a stable condition. However, ten thousand tons of low level radioactive waste water has been already stored and we have to discharge the existing low level radioactive waste water to receive new liquids.

In addition, as low radioactive subsurface water is piling up in sub drain pits of Unit 5 and 6 and a part of subsurface water is running into buildings, important equipment to secure the safety of reactors will be submerged.

Based on the Section 1 of the Article 64 of the Nuclear Reactor Regulation Law, we have decided to discharge to the sea approximately ten thousand tons of the accumulated low level radioactive water and a total of 1,500 tons of the low level radioactive subsurface water stored in the sub drain pits of Unit 5 and 6.

We evaluate approximately 0.6 mSv of effective radioactive doses per year for adults as the impact on the discharge of the low radioactive waste water to the sea if they eat adjacent fish and seaweeds every day. The amount (0.6 mSv of effective radioactive doses per year) is one-fourth of annual radioactive dose to which the general public is exposed in nature.

Afterwards, we were preparing to discharge the low radioactive waste water to the sea. We started discharging the low radioactive waste water stored in the Central Radioactive Waste Disposal Facility to the sea at 7:00 pm on April 4th. In addition, at 9:00 pm on April 4, we started discharging the low level radioactive subsurface water stored in the sub drain pits to the sea.

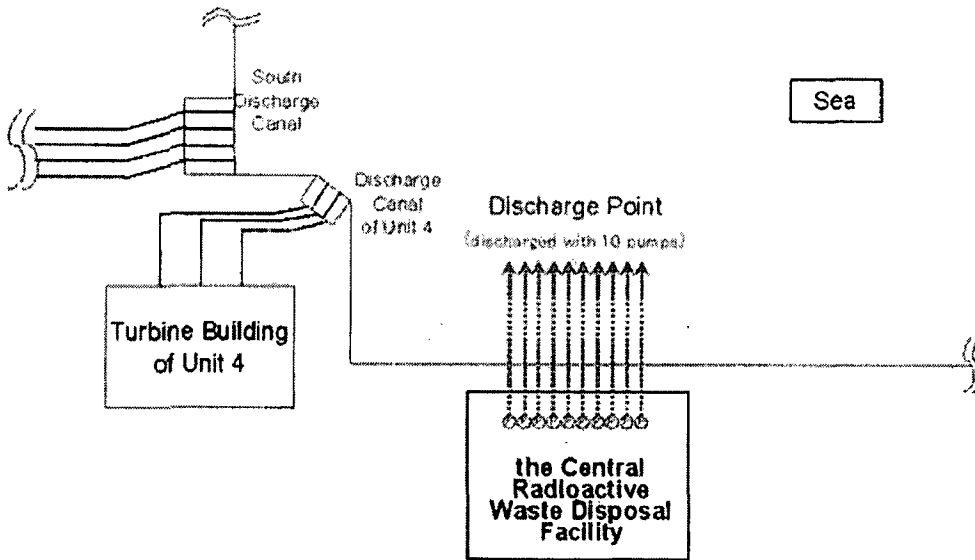
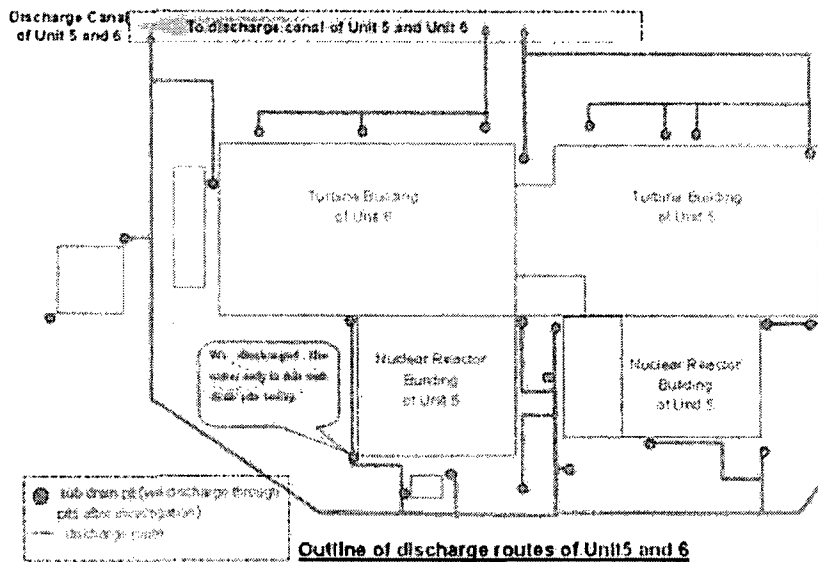


Image of discharge of the low radioactive waste water to the sea at Fukushima Daiichi Power Station



(2) Outflow of fluid containing radioactive materials to the sea from areas near intake channel of Fukushima Daiichi NPS Unit 2

On April 2, at around 9:30 am, TEPCO detected water containing radiation dose over 1,000 mSv/h in the pit* where supply cables are stored near the intake channel of Unit 2. Furthermore, there was a crack about 20 cm on

the concrete lateral of the pit, from where the water in the pit was outflowing. At around 12:20 pm, we reaffirmed the event at the scene.

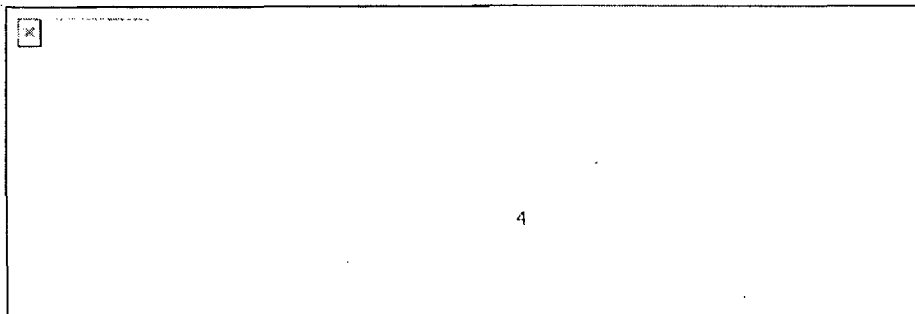
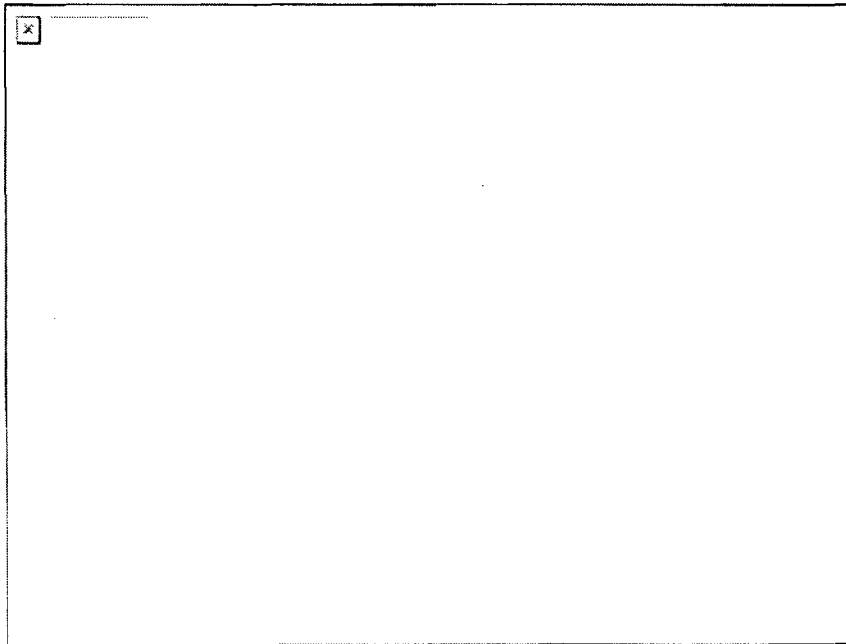
We have implemented sampling of the water in the pit, together with the seawater in front of the bar screen near the pit. These samples were sent to Fukushima Daini NPS for analysis.

In addition to seawater sampling conducted in the coastal areas of Fukushima Daiichi /Daini NPS (sampling conducted at 4 points), we have initiated additional seawater sampling at 3 points in the areas 15 km offshore from the relevant power stations. Taking into account the result of these monitoring, we are intending to conduct a comprehensive assessment.

In order to block the leakage, we have injected concrete to fill up the pit and close the crack. But it turned out that leakage into the sea still continues. Then we tried to plug the path by putting sawdust, polymer and newspaper into the path from the afternoon on April 3. The water still keep spilling into the sea. This morning (April 4th), from 7:08 to 7:11 am, tracer (opaque white powder) was poured into the pit through the horizontal shaft of the trench for seawater piping and began to investigate the water path. The amount of tracer power was approx 13kg.

We will investigate the influx route of contaminated water in the pit and implement necessary measures to prevent such influx.

*pit: a shaft made of concrete



(3) Missing TEPCO Employees at Fukushima Daiichi NPS

Due to the Tohoku-Taiheiyou-Oki Earthquake which occurred on March 11th 2011, two TEPCO employees, who had been working at the turbine building of Unit 4 for site investigation, went missing.

We had put all our efforts to search them, and approximately at 3:25 pm and at 3:53 pm, March 30, those employees were found at the basement of the turbine building and we confirmed their death on March 31.

We would like to offer our deep regret that our employees died while working at the plant and heartfelt condolences to the bereaved families.

From: Versluis, Rob <ROB.VERSLUIS@nuclear.energy.gov>
Sent: Monday, April 04, 2011 12:22 PM
To: RST01 Hoc; RST01B Hoc
Subject: FW: TEPCO Earthquake Information Update on April 4: Fukushima-Daiichi Status
Attachments: ATT00001..txt; ATT00002..txt; image002.jpg; image001.jpg; ATT00003..txt; image008.png; ATT00004..txt; image010.png

Fyi, nice diagrams

Rob Versluis, PhD, DOE NE-71, 301-903-1890 (a) (b)(6) (m)

From: 松尾 建次 [mailto:matsuo.kenji@wash.tepco.com] **On Behalf Of** matsuo.kenji@tepco.co.jp
Sent: Monday, April 04, 2011 11:50 AM
To: matsuo.kenji@tepco.co.jp
Subject: TEPCO Earthquake Information Update on April 4: Fukushima-Daiichi Status

Dear Friends,

Please take a look for updates at Fukushima-Daiichi NPS.

- (1) Discharge of low level radioactive accumulated water in the Fukushima Daiichi NPS to the sea
- (2) Outflow of fluid containing radioactive materials to the sea from areas near intake channel of Fukushima Daiichi NPS Unit 2
- (3) Missing TEPCO Employees at Fukushima Daiichi NPS

Contacts:

TEPCO Washington Office 202-457-0790
Kenji Matsuo, Director and General Manager
Yuichi Nagano, Deputy General Manager,
Masayuki Yamamoto, Manager, Nuclear Power Programs

=====

(1) Discharge of low level radioactive accumulated water in the Fukushima Daiichi NPS to the sea

There is currently great amount of radioactive waste water in the turbine buildings of the Fukushima Daiichi NPS and especially the turbine building of Unit 2 has extremely high level radioactive waste water.

We think it is necessary to transfer the radioactive waste water to the Central Radioactive Waste Disposal Facility in order to store it in a stable condition. However, ten thousand tons of low level radioactive waste water

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has been already stored and we have to discharge the existing low level radioactive waste water to receive new liquids.

In addition, as low radioactive subsurface water is piling up in sub drain pits of Unit 5 and 6 and a part of subsurface water is running into buildings, important equipment to secure the safety of reactors will be submerged.

Based on the Section 1 of the Article 64 of the Nuclear Reactor Regulation Law, we have decided to discharge to the sea approximately ten thousand tons of the accumulated low level radioactive water and a total of 1,500 tons of the low level radioactive subsurface water stored in the sub drain pits of Unit 5 and 6.

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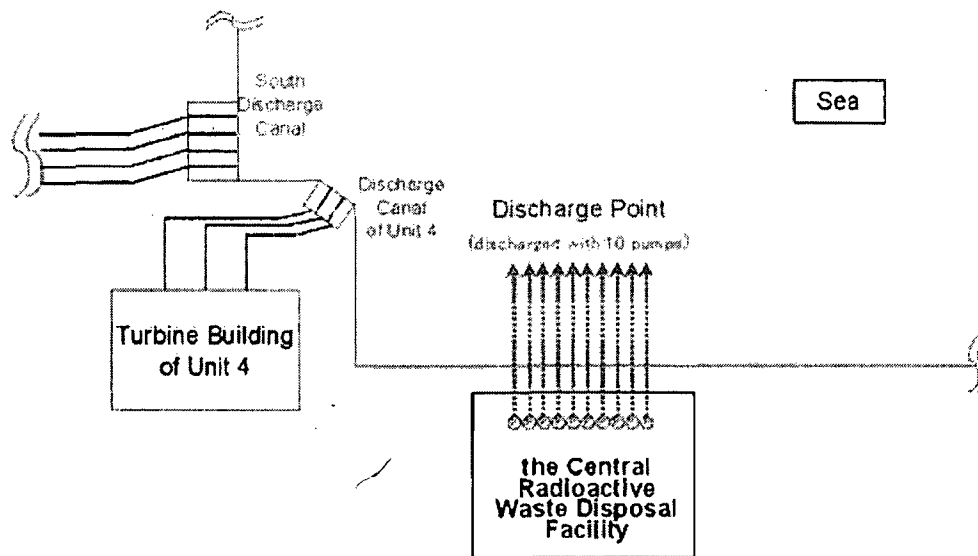
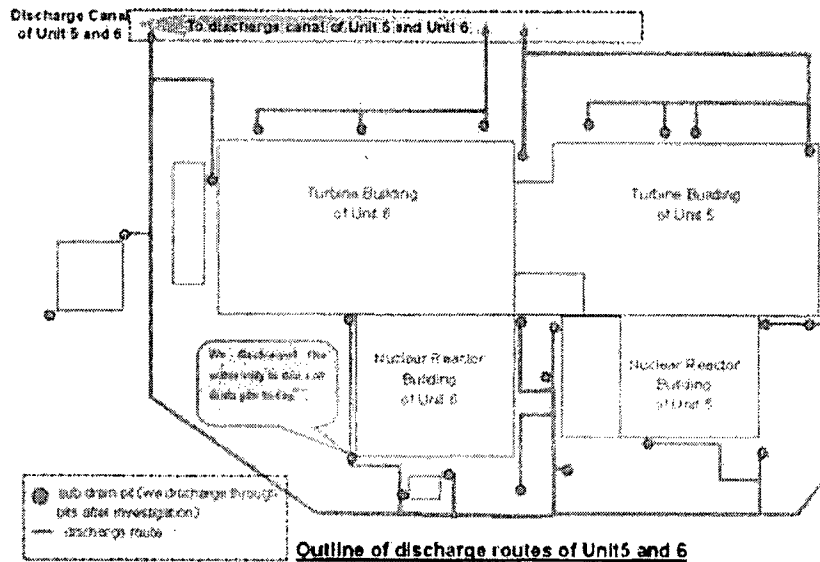


Image of discharge of the low radioactive waste water to the sea
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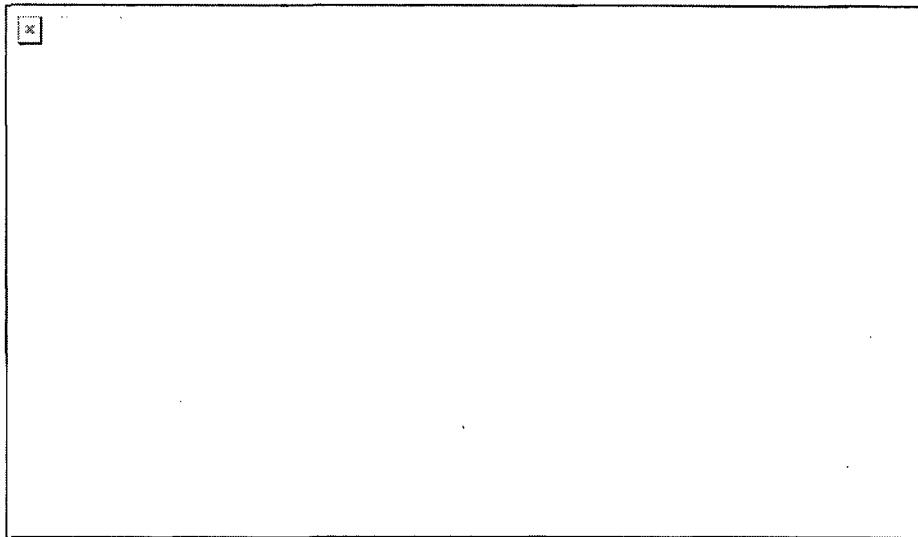
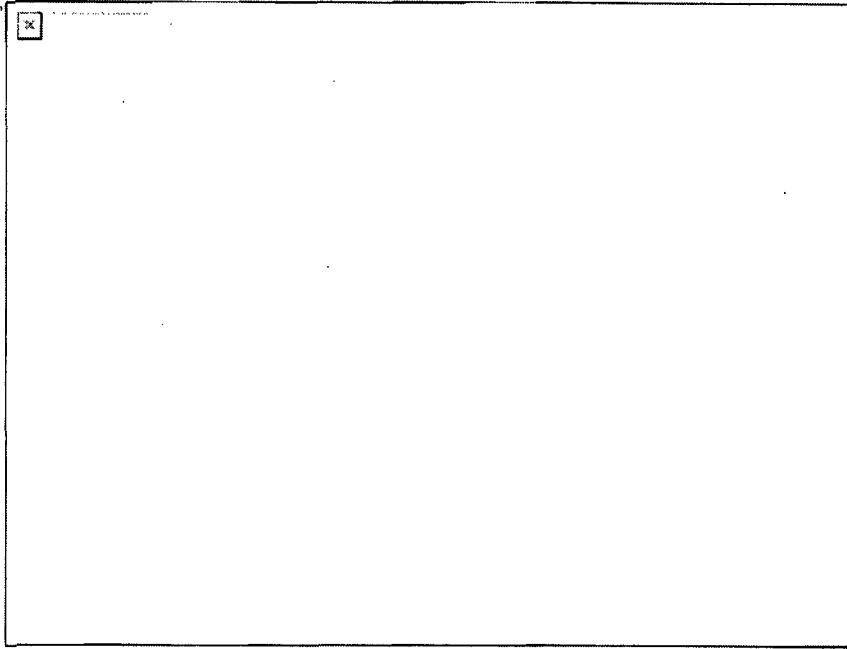
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We would like to offer our deep regret that our employees died while working at the plant and heartfelt condolences to the bereaved families.

A MIME attachment of type <application/x-ms-wmz> was removed here
by a drop-attachments-by-name filter rule on the host
<mail1.nrc.gov>.

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<maill.nrc.gov>.

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by a drop-attachments-by-name filter rule on the host
<mail1.nrc.gov>.

From: PMT02 Hoc
Sent: Monday, April 04, 2011 12:37 PM
To: PMT11 Hoc
Subject: FW: Request for assistance from NRC Japan site team

From: Hoc, PMT12
Sent: Monday, April 04, 2011 12:34 PM
To: Miller, Marie
Cc: (b)(6) PMT09 Hoc; Casto, Chuck; PMT02 Hoc; PMT03 Hoc; FOIA Response.hoc Resource
Subject: Request for assistance from NRC Japan site team

As a follow-up action to a meeting held today with NARAC to discuss running source term scenarios for DoD, the PMT was asked to contact Lt. Col Evan Holt (located at Yokota (sp?)) from DoD to better understand the purpose and basis of the additional source term scenarios. What we understand at this point is that DoD is requesting from NARAC to run a plausible, realistic upper bound scenario for radioactive material released that are hypothesized to occur from the site at some time period within the next 2 months to assist with long term planning decisions. The PMT would be expected to develop the source term based on the assessment of DoD needing the information. The PMT would like you to try and contact Lt. Col Evan Holt to get the info because you are co-located and it might be easier to get the info first hand so we can better define what is needed.

Please also coordinate with the Japan team of Sandia modelers (Randy Gauntt and Jeff LaChance) who are familiar with running Melcor to determine if they may be able to develop a source term from Japan.

The only contact information we have for Evan Holt is his email: (b)(6)

We would like to discuss your findings at today's 9:00 EST call, however we are available if you want to discuss earlier.

RRR/174

From: LIA04 Hoc
Sent: Monday, April 04, 2011 9:56 AM
To: RST01 Hoc
Subject: FW: ACTION from White House
Attachments: Dry storage safety.docx

Importance: High

Would you please give me a status on this document? Has it been issued? If so, may I provide the final document to NY in response to some questions that NY had on damage to the casks?

Cindy Flannery
State Liaison – Liaison Team
Incident Response Center
301-816-5193
LIA04.HOC@nrc.gov

From: LIA06 Hoc
Sent: Sunday, April 03, 2011 10:29 PM
To: LIA04 Hoc; OST05 Hoc
Cc: LIA06 Hoc; LIA08 Hoc
Subject: FW: ACTION from White House
Importance: High

I just came across this email. You may want to track it down within the RST whether they issued the document or not and what distribution it got. Pieces of it may be useful in the response to NY if it can be released.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Ordaz, Vonna
Sent: Saturday, March 26, 2011 7:41 PM
To: Jones, Steve; White, Bernard; Ruland, William; Waters, Michael; Benner, Eric
Cc: LIA06 Hoc; LIA08 Hoc; Weaver, Doug
Subject: Fw: ACTION from White House
Importance: High

Bernie,

I just spoke to Bill Ruland. He's on shift as the RST Dir tonight until 11pm. Steve Jones is completing his writeup, and will send it to you and Bill. We would ask you to integrate it into one document this evening, if possible. Then, Bill and I can perform a final review and he can give it to the ET Dir tonight. The Chairman will be expecting it by morning for review before sending it downtown.

Many thanks for your efforts!

Vonna

RRR/175

From: White, Bernard
To: Ordaz, Vonna; Weaver, Doug; Benner, Eric; Waters, Michael; Temps, Robert
Sent: Sat Mar 26 16:15:29 2011
Subject: RE: ACTION from White House

Sorry, lost my internet connection. Attached is the final version for one last review, prior to sending forward.

Bernie

From: Ordaz, Vonna
Sent: Saturday, March 26, 2011 11:03 AM
To: White, Bernard; Weaver, Doug; Benner, Eric; Waters, Michael
Cc: Ruland, William; Jones, Sam; Casto, Greg
Subject: ACTION from White House
Importance: High

Good Morning,

Bill Ruland and I just received a call from the Ops Center (M. Weber and J. Dyer). The White House has requested a white paper on "Why does NRC have confidence that wet and dry spent fuel in the U.S. is safely stored today?"

In response, we need to generate a white paper that lays out:

1. Requirements for wet/dry storage
2. Compliance status of the plants as compared to the requirements
3. What independent confirmation do we perform (e.g., inspections/oversight)

The product should be a white paper (few pages) of both wet/dry storage combined in response to the question above. Bernie is the POC for us. He will pull together any existing info on the web, and send a draft response to Mike Waters and Eric Benner around noon or so, for review/confirmation. Then, Bernie will coordinate our input with NRR's folks, which may be Greg Casto and Sam Jones, according to Bill.

Once complete, please send it to Bill Ruland and I, then we will deliver it to the ET Director today. Bill is on the 3pm shift today, and he may be able to coordinate it with the Liaison Team to send our response to the White House contact.

Doug – I was able to reach Bernie by phone. Would you please call Eric/Mike to make sure they see this request.

If you have any questions, please call me at (b)(6)

Thanks,
Vonna

Interim storage of spent fuel in wet or dry storage systems is safe and presents low risk to the public. There is a significant experience base in the U.S. and abroad with the safe storage of spent fuel. Spent fuel casks confine and cool spent nuclear fuel for long periods, and do not require active systems (such as pumps or electricity) to provide cooling and confinement during storage. Typically, spent fuel is cooled 3 to 20 years in a spent fuel pool, before being placed into dry cask storage, such that the heat generation and radiological source terms per fuel assembly is significantly less than it is immediately after removal from the reactor. In addition to the much lower decay heat, the robust designs are manufactured to high quality standards, and are designed and built using numerous industry codes and standards.

Currently there are 63 ISFSI licensees located at 57 facilities—two licensees have neither built nor loaded their storage facility and four facilities have both a site-specific and general license—who NRC ensures maintain compliance with the regulations for spent fuel storage at an ISFSI. There are over 1400 loaded storage casks in the United States, mostly at active or decommissioned reactor sites.

Currently, a nuclear power reactor licensee (with either a license to operate or possess fuel) that needs additional storage space for its spent fuel can pursue either a site-specific or general license for an independent spent fuel storage installation (ISFSI). However, away-from-reactor ISFSIs, whose activities are not performed pursuant to a nuclear power plant license to possess fuel, must be approved via site-specific licensing. While there are differences in the application requirements and licensing procedures they are effectively licensed to similar standards. The licensing requirements for a site specific license are identified in Title 10 of the Code of Federal Regulations Part 72 (10 CFR Part 72) Subpart B—License Application, Form, and Contents identifies the requirements for a license application. The license requirements include:

- Safety Analysis Report
- Decommissioning Plan
- Emergency Plan
- Environmental Report
- Quality Assurance Program
- Physical Security Plan
- Safeguards Contingency Plan
- Personnel Training Program
- Proposed License Conditions

The safety analysis report describes the evaluation of the storage system for normal and accident conditions. ISFSIs are evaluated against a number of design-bases events, including hurricanes, tornados and wind driven missiles, floods and water surges (i.e., dam failures and seiches), earthquakes and where appropriate tsunamis. Additionally, they are evaluated against

hazards to the storage site from nearby activities, such as explosion of chemicals, flammable gases, or munitions, detonation of the maximum amount of explosives permitted to be stored at mines or stone quarries near the site, and fires, such as brush or forest fires, transportation accidents, and adjacent industries. After evaluation of these hazards, the applicant must show that the storage facility will maintain sufficient containment, shielding, and subcriticality of the spent fuel in order to meet maximum offsite dose requirements specified in Part 72.

In order for a nuclear power plant licensee to utilize the general license, the licensee must use an NRC-approved storage cask, perform a written evaluation to show that the conditions in the NRC approval (certificate of compliance) have been met, cask storage pads and areas have been designed to adequately support the static and dynamic loads of the stored casks (including potential amplification of earthquakes) and the facility will meet the dose requirements in Part 72. Additionally, the licensee must review the storage cask's safety analysis report referenced in the certificate of compliance and the related NRC safety evaluation report, prior to use of the general license, to determine whether or not the reactor site parameters, including analyses of earthquake intensity and tornado missiles, are enveloped by the cask design bases considered in these reports. This review is similar to that performed in the safety analysis report for a site-specific license.

Similarly to the site-specific license application, the nuclear power plant licensee must review its facility and documentation to determine whether storage of spent fuel under this general license involve a change in the facility technical specifications or require a license amendment for the facility, protect the spent fuel against radiological sabotage and review its physical security program

Since the terrorist events of September 11, 2001, the NRC staff has augmented the security requirements for storage locations of nuclear materials including spent nuclear fuel and performed evaluations and assessments which show that the likelihood that a physical attack on dry storage casks or spent fuel pools would result in a significant radiological release is extremely low. Extensive security measures required by NRC protect against radiological sabotage or theft and diversion. The NRC currently has in place a set of regulatory requirements specifically for the physical protection of commercial spent fuel. In addition, NRC maintains a threat assessment capability that includes close and ongoing contacts with Federal law enforcement and intelligence agencies.

NRC's regulatory program includes oversight of the independent review and certification of storage cask designs and on-site inspection of cask designers, fabricators, and licensees to ensure compliance with NRC storage regulations, certificates of compliance for each NRC-approved storage system requires that the general licensee perform internal demonstrations of all activities needed safely load a cask in the pool and transfer it to the storage pad, as well as the reverse in the event a loaded cask has to be unloaded and its fuel returned to the pool. NRC inspectors with specific knowledge of ISFSI operations observe and assess the adequacy of the licensee's demonstrations (usually referred to as the NRC-observed dry run) and these inspectors observe all initial cask loadings. Subsequent loadings may be observed by regional inspectors or the on-site resident inspectors. The regional offices also perform periodic inspections of routine ISFSI operations.

The industry's record over the past 25 years while storing spent fuel in ISFSIs is excellent. There has been no release of radioactive material or over-exposure to the public. In addition, given all of the inspections performed, there have been few escalated enforcement actions.

From: LIA04 Hoc
Sent: Monday, April 04, 2011 5:00 PM
To: OST05 Hoc
Subject: FW: Launch of FAQ Related to Events Occuring in Japan

Importance: High

From: Piccone, Josephine
Sent: Wednesday, March 16, 2011 4:53 PM
To: LIA04 Hoc; OST.HOC@nrc.gov
Subject: FW: Launch of FAQ Related to Events Occuring in Japan
Importance: High

See link for NRR SharePoint site, below

Rosetta at Josie's pc

Josephine M. Piccone, Ph.D.
Director, Division of Intergovernmental Liaison and Rulemaking
Office of Federal and State Materials and Environmental Management Programs (FSME)
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001
(301) 415-8429

From: Deegan, George
Sent: Tuesday, March 15, 2011 1:29 PM
To: Miller, Charles; Moore, Scott; Virgilio, Rosetta; McGrady-Finneran, Patricia
Cc: Piccone, Josephine; Jackson, Deborah; Camper, Larry; Persinko, Andrew; McConnell, Keith; Lewis, Robert; Reis, Terrence; Luehman, James; Webber, Robert; Delligatti, Mark; MorganButler, Kimyata; Rivera, Alison; Felsher, Harry
Subject: FW: Launch of FAQ Related to Events Occuring in Japan
Importance: High

Charlie, Scott, Rosetta, Patricia: FYI. Info on the new NRR Share point link. Thanks to DILR for providing the RSLO contact information. Please see instructions below regarding usage and dissemination of this information.

From: Nguyen, Quynh
Sent: Tuesday, March 15, 2011 1:16 PM
To: Thomas, Eric; Sigmon, Rebecca; Powell, Amy; Riley (OCA), Timothy; Browder, Rachel; Erickson, Randy; Tifft, Doug; McNamara, Nancy; Trojanowski, Robert; Woodruff, Gena; Barker, Allan; Logaras, Harral; Maier, Bill
Cc: Stone, Rebecca; Westreich, Barry; Scales, Kerby; Leeds, Eric; Boger, Bruce; Grobe, Jack; Diec, David; Deegan, George; Williams, Donna; Rini, Brett; Wittick, Brian; Andersen, James; Brenner, Eliot; Couret, Ivonne; Burnell, Scott; Harrington, Holly; Azeem, Almas; Cartwright, William; Cusumano, Victor; Heida, Bruce; Mahoney, Michael; Meighan, Sean; Nguyen, Quynh; Roquecruz, Carla; Susco, Jeremy; Titus, Brett; Valentine, Nicholee; Wertz, Trent; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David

Subject: Launch of FAQ Related to Events Occuring in Japan
Importance: High

All,

Per Eric Leeds' request and working closely with NSIR and OPA...

The below SharePoint link is the location of our **INTERNAL USE ONLY** activities regarding the Japan Events and the effects on their nuclear operations. Again, **NO PUBLIC RELEASE** of any documents.

Given lessons learned from 9-11, we want to **ensure clear, concise messages in alignment with the Chairman and focus of our safety mission in the United States**. To this end, we established this SharePoint as a centralized location to collect our questions from stakeholders and our draft responses. These draft responses will be vetted by OPA and once approved by OPA – it is OK for use by the staff to answer questions from stakeholders.

As such, please understand that, while we are doing our best to be timely with the most up-to-date information, it is more important to ensure accurate information is being posted.

<http://portal.nrc.gov/edo/nrrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Forms/AllItems.aspx>

Note: "Chairman JaczkoQA7_031511" contains parts that are PUBLIC and additional information for NRC staff.

All correspondence to the public should be directed to our Office of Public Affairs (OPA)!

Additionally, if questions arise out of the Region, please let us know. We'll do our best to coordinate the answer and ensure that we get OPA's blessing.

Thank you for all your support during this time and understanding!

POC:

Quynh Nguyen (301) 415-5844; BlackBerry

(b)(6)

Sean Meighan (301) 415-1020

From:
Sent:
To:

RST01 Hoc
Monday, April 04, 2011 11:40 PM

(b)(6)
(b)(6)

Subject:
Attachments:

FW: UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS
UPDATED LIST OF CURRENT RST-CONSORTIUM ACTIONS 2300EDT4-4-11.docx

From: Hoc, RST16
Sent: Monday, April 04, 2011 11:20 PM
To: RST01 Hoc
Cc: Hoc, RST16; RST06 Hoc
Subject: RE: UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS

To Consortium Members, NRC Japan Detachment, and RST members, please see the latest update to the document "Updated List of Current RST/Consortium Actions" as of 2300EDT 4/4/2011.

Please review this status document (pasted below and attached).

Please think of other issues and items that should be discussed at the 0300EDT teleconference call between RST, Japan Detachment and the members of the Consortium, and provide your inputs to the meeting agenda back to the RST at RST01.Hoc@nrc.gov as soon as you can.

Thank you.

UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS – 2300 EDT on 4/4/11

1. Provide evaluation of TEPCO differing views on merits of flooding vs. status quo, including hydrogen assumptions.
 - a. Status:
 1. INPO is the Lead: draft document due to consortium/RST by 4/4/11(20:00 am-EDT) (Still awaiting as of 2230 4/4/2011)
 2. Discussion of hydrogen/steam assumptions in original analysis and draft response to occur during status telecom 4/4/11 – **This document was issued to Japan Detachment during Day Shift 4/4/2011.**
2. Respond to site team question on possible additional measures to maximize the success of their current feed-and-bleed strategy.
 - a. Status:

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1. Draft document sent to consortium/site team on 4/4/11 (0240 EDT)
 2. Comments from consortium due to RST by 4/4/11 (2000 EDT)
 3. Comments received from GEH, and from INPO 2245 EDT 4/4/2011
 4. Level of concurrence discussed with ET and concurrence will stay with the RST.
3. SFP for unit 4 white paper. Received Rob Taylor feedback/input on rough draft at 0717 EDT on 4/4/11.
 - a. Status:
 1. BWR Analyst incorporating R. Taylor input into SFP assessment –Still working as of 2230 4/4/2011
 2. NRC line organization working task - response received 1900EDT 4/4/2011
 4. Input on Japan request regarding what a stable reactor condition (no further energetic events or major rad releases) looks like.
 - a. Status:
 1. RST has developed draft document and shared with consortium-expected 4/4/11 (11:00am EDT)
 2. Replies received from NR and DOE evening of 4/4/2011, still awaiting INPO- & INPO reviewed GEH reply
 3. Expected discussion item as working copy for telecom 4/5/11 (3:00 am EDT)
 5. Words from consortium (GE) to close loop on why guidance for flooding impact on containment pressure is not practical or value-added.
 - a. Status:
 1. RST to follow up with consortium during next telecom 4/4/11 (11:00am EDT) – RST sent e-mail to GEH @ 1910 EDT on 4/4/11 requesting 1 paragraph explaining guidance.
 6. Evaluate the consequences of inadvertently adding the organic fixing agent to the spent fuel pools. Due Tuesday Japan time.
 - a. Status:
 1. INPO responded to question 3/31/11 (attached document)
Sent request to Richard Lee for RES analysis on new information including possible impact on SFPs @ 1941 EDT on

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 - a. Status:
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2. Respond to site team question on possible additional measures to maximize the success of their current feed-and-bleed strategy.
 - a. Status:
 1. Draft document sent to consortium/site team on 4/4/11 (0240 EDT)
 2. Comments from consortium due to RST by 4/4/11 (2000 EDT)
 3. Comments received from GEH, and from INPO 2245 EDT 4/4/2011
 4. Level of concurrence discussed with ET and concurrence will stay with the RST.
3. SFP for unit 4 white paper. Received Rob Taylor feedback/input on rough draft at 0717 EDT on 4/4/11.
 - a. Status:
 1. BWR Analyst incorporating R. Taylor input into SFP assessment –**Still working as of 2230 4/4/2011**
 2. NRC line organization working task - **response received 1900EDT 4/4/2011**
4. Input on Japan request regarding what a stable reactor condition (no further energetic events or major rad releases) looks like.
 - a. Status:
 1. RST **has developed draft document and shared with consortium-expected 4/4/11 (11:00am EDT)**
 2. Replies received from NR and DOE evening of 4/4/2011, still awaiting INPO- & INPO reviewed GEH reply
 3. Expected discussion item as **working copy for telecom 4/5/11 (3:00 am EDT)**
5. Words from consortium (GE) to close loop on why guidance for flooding impact on containment pressure is not practical or value-added.
 - a. Status:
 1. RST **to follow up with consortium during next telecom 4/4/11 (11:00am EDT) – RST sent e-mail to GEH @ 19:10 EDT on 4/4/11 requesting 1 paragraph explaining guidance.**
6. Evaluate the consequences of inadvertently adding the organic fixing agent to the spent fuel pools. Due Tuesday Japan time.
 - a. Status:
 1. INPO responded to question 3/31/11 (attached document)
Sent request to Richard Lee for RES analysis on new information including possible impact on SFPs @ 1941 EDT on 4/4/11

From: Weber, Michael
Sent: Tuesday, April 05, 2011 7:55 PM
To: LIA01 Hoc
Cc: LIA06 Hoc; LIA08 Hoc; ET01 Hoc; ET05 Hoc
Subject: Response - information from video conference on 4/5/11 that may be of interest to the consortium

Thanks, Mark. Now I'm confused - I thought that DOE/DOD has the lead to coordinate technical support for Japan. Has this changed? The summary below states that the Ambassador, Embassy staff, DOE, DOD, and NRC are leading different, but related components. Please advise. If we need to clarify, we can escalate.

From: LIA01 Hoc

To: (b)(6)

(b)(6)

Sent: Tue Apr 05 19:28:12 2011

Subject: FW: information from video conference on 4/5/11 that may be of interest to the consortium

From: LIA06 Hoc

Sent: Tuesday, April 05, 2011 7:21 PM

To: LIA01 Hoc

Subject: informatoin from video conference on 4/5/11 that may be of interest to the consortium

Please send to the consortium distribution:

I wanted to make you all aware of a secure video conference that was hosted today at 1600 Washington, DC time by Major General Jeff Mathis of JCS J3 to discuss coordination of Humanitarian Assistance Disaster Relief (HADR) and Foreign Consequence Management (FCM) efforts in Japan. The conference was attended by White House-NSS, DOS, Admiral Scott Swift of PACOM, OMB, OSD, GSA, and NRC-HQ. While meeting minutes will be issued by J3 by tomorrow morning, items of interest to the consortium from my notes included:

- Ambassador Roos and the NRC are the clearing house for all requests for GoJ (it was stated later that DOE has the technical lead as discussed in the Deputy's meeting yesterday in DC).

RRR/178

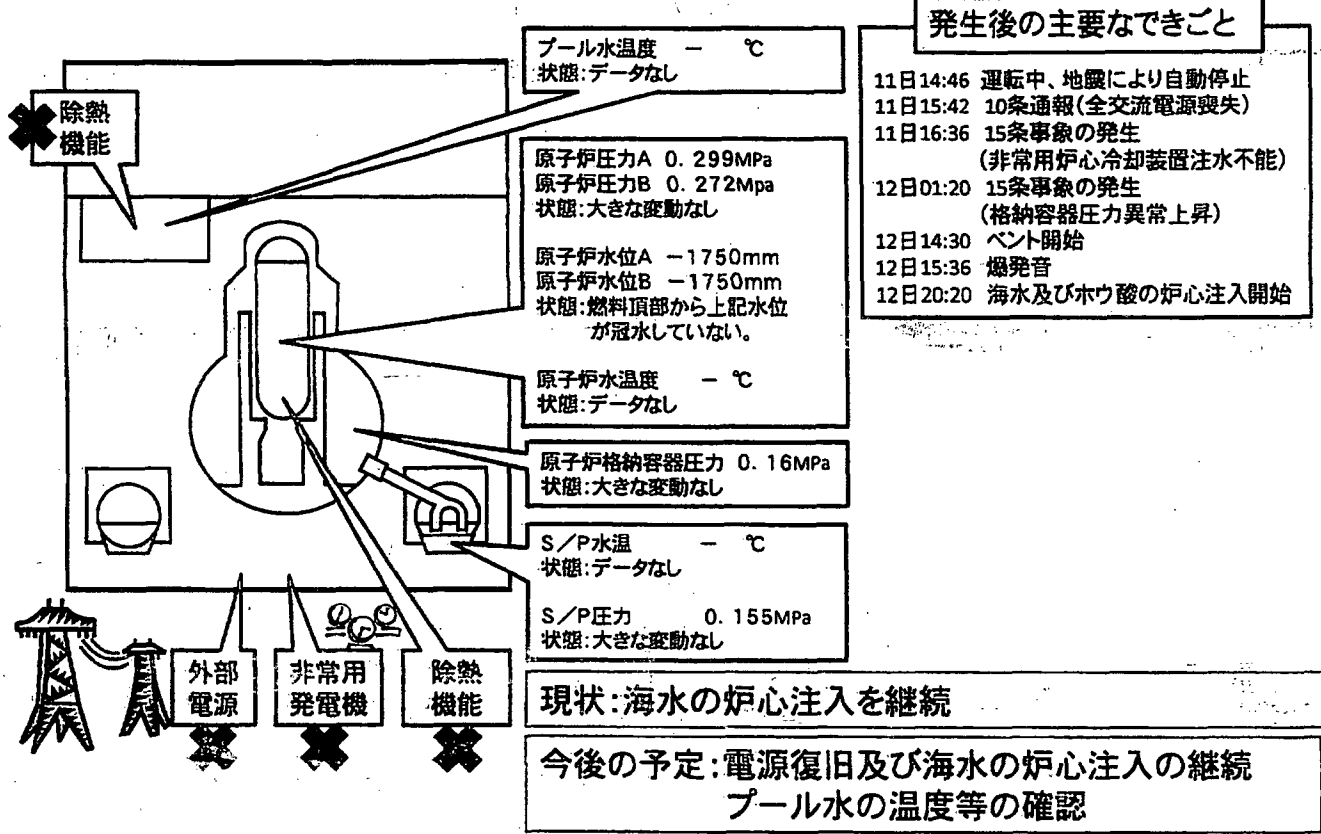
- I discussed the industry consortium and its activities to maintain the list of technical support requests from the GoJ, and that we had eliminated humanitarian requests from our list. Admiral Swift did not think his folks were tied into this effort. I did not have the names of the PACOM participants in the consortium calls to pass on. Admiral Swift is checking through his channels to make sure the right folks are plugged into the consortium.
- A video conference with the embassy team in Japan will be set up in the coming days.
- A lead agency needs to be designated. This is being discussed at high levels and a decision will be forthcoming (no target date given).
- A process for validation of funding sources will be established in the next 48 hours or so, including the Japanese reimbursement piece.
- OMB is supporting the funding effort and has the lead to coordinate between DOE (the technical lead) and others.
- There is a need to capture the process, define the interfaces, and include funding needs. I asked who would own the list of approved requests and own and manage the process from womb to tomb. The reply was that this will be determined as the process is developed.
- DOS and NSS will pull the process together. An organization chart will be included.
- The process should include the HADR and FCM requests.
- NRC should take its list and compare it to the two lists provided by OSD (one of them is the list developed by the Embassy in Japan who is in charge of maintaining the list according to the phone call (Bruce Howard) but this is being done by NRC-HQ with input from the members of the consortium) and then push it to DOS. We are reviewing the lists now to identify deltas.
- It was not clear if similar calls would be held going forward.

We can discuss at the call tonight if needed.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

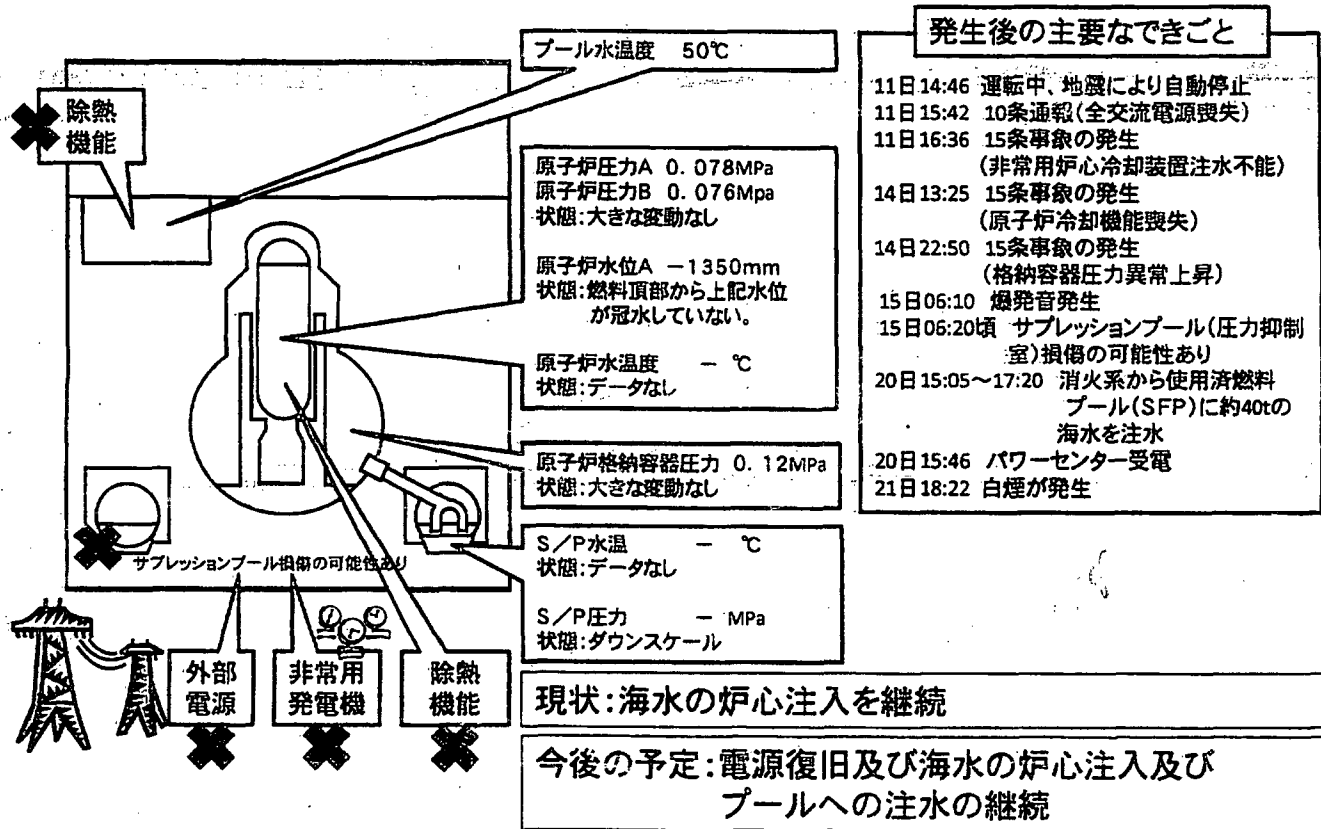
福島第一原子力発電所1号機の状況

(3月21日 17:00現在)



福島第一原子力発電所2号機の状況

(3月21日 17:00現在)



福島第一原子力発電所3号機の状況

(3月21日 17:00現在)

発生後の主要なできごと

- 11日14:46 運転中、地震により自動停止
- 11日05:42 10条通報(全交流電源喪失)
- 13日05:10 15条事象の発生
(非常用炉心冷却装置注水不能)
- 13日09:20 ベント開始
- 14日07:44 15条事象の発生
(格納容器圧力異常上昇)
- 11日11:01 爆発音
- 16日08:30頃 白煙が発生
- 17日09:48~10:01 自衛隊ヘリによる放水
(計4回)を実施
- 17日19:05~20:07 高圧放水車による散水
(警察1回、自衛隊5回)
- 18日14時前~14:38 自衛隊消防車6台による
地上放水
~14:45 米軍消防車1台による地上放水
- 19日0:00~01:00 消防庁による放水
- 19日14:10~20日3:40 消防庁による放水
- 20日11:00 格納容器内圧力が上昇(320kPa)。その後、低下。
- 20日20:39~21日3:58 消防庁による放水
- 21日15:55頃 灰色がかかった煙が発生

プール水温度 - °C
状態: データなし

原子炉圧力C 0.013MPa
原子炉圧力A 0.146Mpa
状態: 下降傾向

原子炉水位A -1550mm
原子炉水位B -2025mm
状態: 燃料頂部から上記水位が冠水していない。

原子炉水温度 - °C
状態: データなし

原子炉格納容器圧力 0.110MPa
状態: 監視中

S/P水温 - °C
状態: データなし

S/P圧力 - MPa
状態: ダウンスケール

除熱機能 (外部電源、非常用発電機、除熱機能) すべて停止

現状: プールへの放水作業及び海水の炉心注入、外部電源復旧作業を継続。

今後の予定: 電源復旧及び海水の炉心注入の継続。

原子力ハンドブック編集委員会, 原子力ハンドブック

福島第一原子力発電所4号機の状況

(3月21日 17:00現在)

定検停止中

発生後の主要なできごと

- 地震発生時、定期検査により停止中
- 11日15:42 第10条通報(全交流電源喪失)
- 14日04:08 使用済燃料プール温度84°C
- 15日06:14 4Fの壁が一部破損の確認
- 15日09:38 3階部分で火災(12:25鎮火)
- 16日05:45 4号機で火災。事業者によると現場での火は確認できず(06:15)
- 20日09:43~ 自衛隊による使用済燃料プール(SFP)への放水
- 20日18:30頃 ~ 19:46 自衛隊によるSFPへの放水
- 21日06:37~08:41 自衛隊によるSFPへの放水
- 21日15:00頃 パワーセンターまでのケーブル敷設完了

プール水温度は不明

原子炉内に燃料体なし

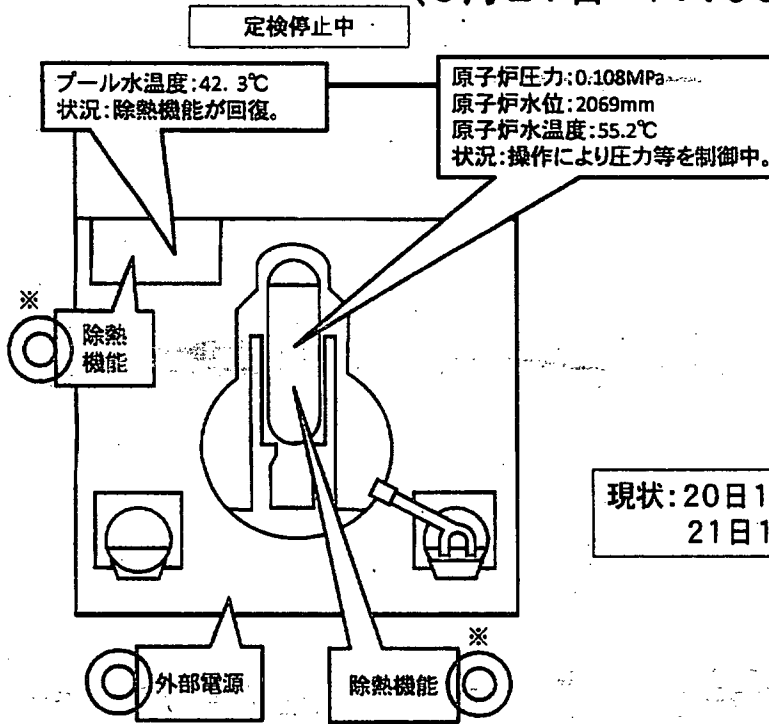
除熱機能 (外部電源、非常用発電機、除熱機能) すべて停止

現状: 原子炉圧力容器に燃料体が存在しない
プールには水が残っていると評価(東電)

今後の予定: 電源の復旧及びプールへの放水作業の継続。

原子力ハンドブック編集委員会, 原子力ハンドブック

福島第一原子力発電所5号機の状況 (3月21日 17:00現在)

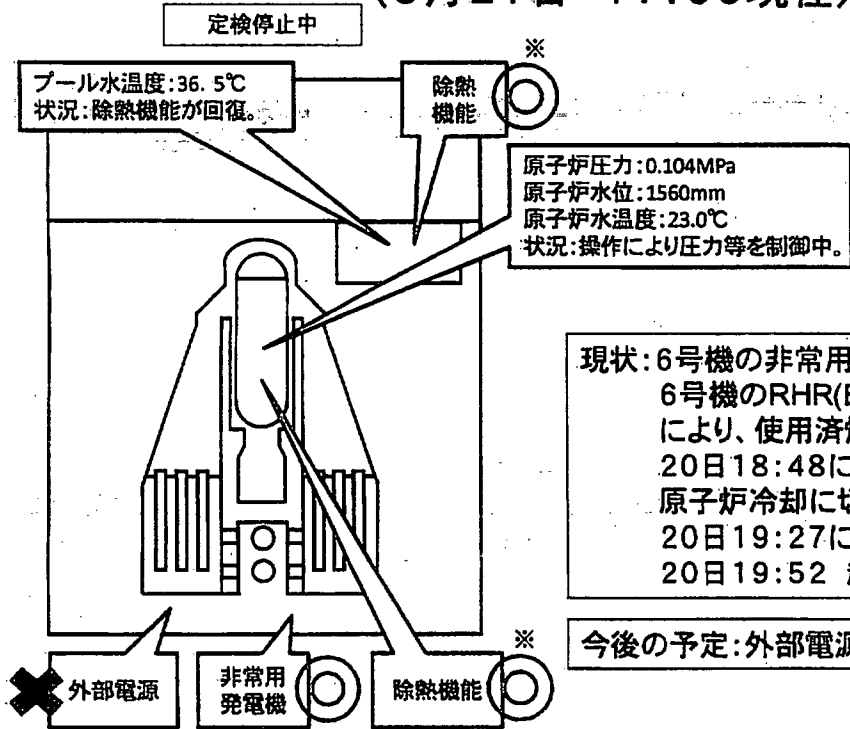


現状: 20日14:30に冷温停止。
21日11:36に外部電源から受電開始。

※ 炉水とプール水を切替えて除熱

原子カハンドブック編集委員会, 原子カハンドブック

福島第一原子力発電所6号機の状況 (3月21日 17:00現在)



現状: 6号機の非常用発電機により電力供給中。
6号機のRHR(B)ポンプ起動(19日22:14)により、使用済燃料プールを除熱。
20日18:48に使用済燃料プール冷却から原子炉冷却に切替。
20日19:27に冷温停止。
20日19:52 起動用変圧器まで受電。

今後の予定: 外部電源復旧作業

※ 炉水とプール水を切替えて除熱

原子カハンドブック編集委員会, 原子カハンドブック

March 22, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 43rd Release)
(As of 18:00 March 22nd, 2011)

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

Major updates are as follows.

1. Nuclear Power Stations (NPSs)

- Fukushima Dai-ichi NPS

<Situation of Water Injection and Water Spray>

- Injection of 18t of Seawater to the Spent Fuel Pool of Unit 2 was carried out. (from 16:07 till 17:01 March 22nd)
- Water spray over Unit 3 by Hyper Rescue Unit of Tokyo Fire Department was carried out. (from 15:10 till 15:59 March 22nd)
- Water spray over Unit 4 using a Concrete Pump Truck (50t/h) was started. (The duration of water spray is scheduled to be 3 hours) (17:17 March 22nd)

(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 17:00 March 22nd)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Reactor Pressure*1 [MPa]	0.317(A) 0.270(B)	0.072(A) 0.069(B)	0.000(C) 0.137(A)	—	0.108	0.109
CV Pressure (D/W) [kPa]	175	110	100	—	—	—
Reactor Water Level*2 [mm]	-1,800(A) -1,750(B)	-1,300(A) Not available(B)	-1,575(A) -2,350(B)	—	2,059	1,926
Suppression Pool Water Temperature (S/C) [°C]	—	—	—	—	—	—
Suppression Pool Pressure (S/C) [kPa]	160	down scale	down scale	—	—	—
Spent Fuel Pool Water Temperature [°C]	—	50	—	Not available*3	33.5	27.5
Time of Measurement	15:30 March 22nd	15:30 March 22nd	10:35 March 22nd		17:00 March 22nd	17:00 March 22nd

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

*3: As of 04:08 March 14th, 84°C

(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)
- 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)
- Seawater is being injected. (As of 18:00 March 22nd)

<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)
- 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)
- A sound of explosion was made in Unit 2. As the pressure in Suppression Chamber decreased (06:10 March 15th), there was a possibility that an incident occurred in the Chamber. (About 06:20 March 15th)
- Electric power receiving at the emergency power source transformer from the external transmission line was completed. The work for laying

the electric cable from the facility to the load side was carried out. (As of 13:30 March 19th)

- Injection of 40t of Seawater to the Spent Fuel Pool was started.(from 15:00 till 17:20 March 20th)
- Power Center of Unit 2 received electricity (15:46 March 20th)
- White smoke generated from Unit 2. (18:22 March 21st)
- White smoke was died down and almost invisible. (As of 07:11 March 22nd)
- Injection of 18t of Seawater to the Spent Fuel Pool was carried out. (from 16:07 till 17:01 March 22nd)
- Seawater injection to RPV continues. (As of 18:00 March 22nd)

<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 using a fire engine.

(19:35 March 17th)

- The water spray from the ground was carried out by the riot police. (From 19:05 till 19:13 March 17th)
- The water spray from the ground was carried out by the Self-Defense Force using 5 fire engines. (19:35, 19:45, 19:53, 20:00 and 20:07 March 17th)
- The water spray from the ground using 6 fire engines (6 tons of water spray per engine) was carried out by the Self-Defence Force. (From before 14:00 till 14:38 March 18th)
- The water spray from the ground using a fire engine provided by the US Military was carried out. (Finished at 14:45 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department (14 vehicles) arrived at the Main Gate (23:10 March 18th) and 6 vehicles of them entered the NPS in order to spray water from the ground. (23:30 March 18th)
- Hyper Rescue Unit of Tokyo Fire Department carried out the water spray. (Finished at 03:40 March 20th)
- The pressure in PCV of Unit 3 rose (320 kPa as of 11:00 March 20th). Preparation to lower the pressure was carried. Judging from the situation, immediate pressure relief was not required. Monitoring the pressure continues (120 kPa at 12:15 March 21st).
- On-site survey for leading electric cable (From 11:00 till 16:00 March 20th)
- Water spray over the Spent Fuel Pool of Unit 3 by Hyper Rescue Unit of Tokyo Fire Department was carried out (From 21:39 March 20th till 03:58 March 21st).
- Works for the recovery of external power supply is being carried out.
- Grayish smoke generated from Unit 3. (At around 15:55 March 21st)
- The smoke was confirmed to be died down. (17:55 March 21st)
- Grayish smoke changed to be whitish and seems to be ceasing. (As of 07:11 March 22nd)
- Water spray by Hyper Rescue Unit of Tokyo Fire Department was carried out. (from 15:10 till 15:59 March 22nd)
- Seawater is being injected to RPV. (As of 18:00 March 22th)

<Unit 4>

- Because of the replacement work of the Shroud of RPV, no fuel was

inside the RPV.

- The temperature of water in the Spent Fuel Pool at Unit 4 had increased. (84 °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-Defence Force was started. (From around 18:30 till 19:46 March 20th).
- Water spray over the Spent Fuel Pool by Self-Defence Force using 13 fire engines was started (From 06:37 till 08:41 March 21st).
- Works for laying electricity cable to the Power Center was completed. (At around 15:00 March 21st)
- Power Center received electricity. (10:35 March 22nd)
- Water spray over Unit 4 using Concrete Pump Truck (50t/h) was started. (The duration of water spray is scheduled to be 3 hours.) (17:17 March 22nd)

<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 the External Power Supply. (11:36 March 21st)

<Common Spent Fuel Pool>

- ・ It was confirmed that the water level of Spent Fuel Pool was maintained full at after 06:00 March 18th.
- ・ As of 09:00 March 19th, the water temperature in the pool is 57°C.
- ・ Water spray over the Common Spent Fuel Pool was started (From 10:37 till 15:30 March 21st)
- ・ As of 16:30 March 21st, water temperature of the pool was around 61°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 17:00 March 22nd)

	Unit	Unit 1	Unit 2	Unit 3	Unit 4
Reactor Pressure*1	MPa	0.15	0.12	0.11	0.15
Reactor water temperature	°C	31.6	29.0	33.2	31.0
Reactor water level*2	mm	9,196	10,246	8,259	8,785

Suppression pool water temperature	°C	25	24	25	29
Suppression pool pressure	kPa (abs)	110	107	104	105
Remarks		cold shutdown	cold shutdown	cold shutdown	cold shutdown

*1: Converted from reading value to absolute pressure

*2: Distance from the top of fuel

(3) Report concerning other incidents

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

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

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

(1) The state of operation

Unit 1 (524MWe): automatic shutdown, cold shut down at 0:58, March 12th

Unit 2 (825MWe): automatic shutdown, cold shut down at earthquake

Unit 3 (825MWe): automatic shutdown, cold shut down at 1:17, March

12th

(2) Readings of monitoring post, etc.

MP2 (Monitoring at the North End of Site Boundary)

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

18:08 Regarding Unit 1 of Fukushima Dai-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 Directive.

06:07 Regarding of 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-ni NPS, TEPCO, pursuant to the Paragraph 3, the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:

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

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

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

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

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

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

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

(March 13th)

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

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

09:08 Pressure suppression and fresh water injection started for Unit 3 of

Fukushima Dai-ichi NPS.

- 09:20 The Pressure Vent Valve of Unit 3 of Fukushima Dai-ichi NPS was opened.
- 09:30 Directive was issued for the Governor of Fukushima Prefecture, the Mayors of Okuma Town, Futaba Town, Tomioka Town and Namie Town in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity decontamination screening.
- 09:38 TEPCO reported to NISA that Unit 1 of Fukushima Dai-ichi NPS reached a situation specified in the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 13:09 Tohoku Electric Power Co. reported to NISA that Onagawa NPS reached a situation specified in the Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness.
- 13:12 Fresh water injection was switched to seawater injection for Unit 3 of Fukushima Dai-ichi NPS.
- 14:36 TEPCO reported to NISA the event (Unusual increase of radiation dose at the site boundary) falling under the Article 15 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi NPS.

(March 14th)

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

Concerning Nuclear Emergency Preparedness regarding Unit 3 of Fukushima Dai-ichi NPS.

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

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

< Possibility on radiation exposure (As of 18:00 March 22nd) >

1. Exposure of residents

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

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

(3) As for the about 100 residents in Futaba Town evacuated by bus, the results of measurement for 9 of the 100 residents were as follows. The

evacuees, moving outside the Prefecture (Miyagi Prefecture), were divided into two groups, which joined later to Nihonmatsu City Fukushima Gender Equality Centre.

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

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

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

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

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

2. Exposure of workers

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

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

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

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

3. Others

- (1) Fukushima Prefecture has started the screening from 13 March. It is carried out by rotating the evacuation sites and at the 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.

<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.

<Situation of the injured (As of 18:00 March 22nd)>

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

- Four employees were injured at the explosion and smoke of Unit 1 around turbine building (non-controlled area of radiation) and were examined by Kawauchi Clinic.

3. Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS

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

4. Other injuries

A person who visited the clinic in Fukushima Dai-ichi 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 18:00 March 22nd)>

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-ichi NPS, necessary measures have already been taken.

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

<Directive regarding foods and drinks>

On March 21st, Directive from the Head of Government Nuclear Emergency Response Headquarters to the Prefectural Governors of Fukushima, Ibaraki, Tochigi and Gunma was issued, which directs above-mentioned governors to issue a request to relevant businesses and

people to suspend shipment of the following products (①, ②) for the time being.

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

<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.

(Contact Person)

Mr. Toshihiro Bannai

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NISA/METI

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Governmental Decisions and Recommendations

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<p>Q1:</p> <p>What has your government recommended with regard to your citizens living in or visiting Japan?</p>	<p>Australia</p>	<p>As a precautionary measure, that Australians within an 80 km zone from the Fukushima nuclear power plant move out of the area.</p> <p>As the situation continues to develop, all Australians in Japan are strongly encouraged to follow the protective measures recommended by the Japanese and Australian Governments. This may include sheltering.</p> <p>Australians returning home from Japan are highly unlikely to be contaminated or exposed to significant radiation and will not require checks for radioactivity. However, if people wish to seek medical advice they should contact their local GP.</p> <p>ARPANSA and the Chief Medical Officer advise that iodine tablets are only required when exposed to substantial radiation doses from radioactive iodine. There is no current need for those returning from Japan or those in Japan outside the exclusion Zone to consider the use of potassium iodide tablets.</p> <p>At the present time, Australia's food standards Regulator, Food Standards Australia New Zealand (FSANZ), considers the risk of Australian consumers being exposed to radionuclides in food imported from Japan to be negligible.</p> <p>Australia does not import fresh produce from Japan. In fact Australia imports very little food from Japan. Imports are limited to a small range of specialty products, for example seaweed-based products, sauces etc.</p> <p>A joint communique for the World Health Organization, the International Atomic Energy Agency, the World Meteorological Organization, the International Maritime Organization and the International Civil Aviation Organization advises that there is no current restriction) on international flight and maritime operations can continue normally into and out of Japan's major airports and sea ports</p> <p>Full text at www.arpansa.gov.au</p>	<p>Last Updated 0900 AEDST (UTC+11) March 19</p>	<p>Various categories -Australians in Japan; Australian Passengers returning from Japan; Medical Practitioners; Food Imports; Advise to Airlines and Shipping</p>

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
Austria	<p>Partial travel warning for the north east of Japan. It is also recommended that Austrians should leave this area and in addition the Tokio Province</p> <p>The Austrians in Japan are recommended to strictly follow the instructions of authorities in Japan.</p>	<p>Since 15.03.2011</p>	<p>Travelers; Austrians in Japan</p>
Belgium	<p>Travel advice for Japan runs as follows: All trips to Japan are advised against till further notice. Belgian citizens whose stay in Japan is not essential are being advised to leave the country.</p> <p>organized consular assistance of Belgian citizens from Japan on a voluntary basis</p>		
Czech Republic	<p>Recommendation of the national regulatory authority (State Office for Nuclear Safety - SONS) and Ministry of foreign affairs (MFA):</p> <p>MFA (www.mz.cz):</p> <p>To travel to north-east parts of the island Honsue is not recommended in particular to the areas up to 80 km from Fukushima NPP.</p> <p>To travel to Tokyo and north – east parts of Japan should be limited only to urgent cases.</p> <p>The Czech citizens living in the affected areas should leave those areas.</p> <p>Czechs living in Japan should not consume the food from the affected areas and should avoid buying the food at local market places.</p> <p>SONS (www.sujb.cz)</p> <p>To travel to other parts of the Asia there is no restriction.</p> <p>The Czech embassy in Tokyo has been provided by iodine tablets, but no other protective means have been delivered.</p> <p>All Czechs in Japan are encouraged to follow and to respect the recommendations of the local Japanese authorities.</p> <p>Czechs returning home from Japan if wish could ask for the whole body measurement. There is a contact to the measuring facility (www.suro.cz)</p> <p>SONS advise that iodine tablets for preventive use are not recommended. There is no current need for those returning from Japan or those in Japan outside the exclusion Zone to consider the use of potassium iodide tablets.</p> <p>At the present time, the Czech Agriculture and Food Inspection Authority (CAFIA)</p>	<p>Since 15.3.2011</p>	<p>Various categories –Czechs in Japan; Czechs returning from Japan; Food in Japan; Iodine tablets; Food Imports;</p>

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
	<p>assure the measurement of all from Japan imported food stuff.</p> <p>The Czech Republic does not import fresh food from Japan. Only small range of foodstuff and food products is imported to the Czech Republic.</p> <p>Full texts on www.sujb.cz; www.mz.cz; www.suro.cz; http://www.szpi.gov.cz/en</p>		
France	<p>Travel to Japan is strongly discouraged.</p> <p>For French living in Tokyo : they are recommended to leave the Tokyo area for the south of Japan or for France.</p> <p>In addition to the air capabilities of Air France, the French authorities have made available two government planes.</p> <p>Travel in the prefectures of Hokkaido, Aomori, Iwate, Miyagi, Fukushima, Ibaraki, Chiba, is strongly discouraged.</p> <p>Recommendation to follow the instructions given by the Japanese authorities in case of announcement of a worsening situation.</p> <p>Regarding the issue of KI, pills were sent last week to the French Embassy in Tokyo and were pre-distributed to our nationals.</p> <p>This doesn't mean that the French authorities recommend the ingestion of stable iodine!!!</p>	Updated on March 21	
Ireland	<p>[DFA] Advise avoiding non-essential travel to Japan, including Tokyo, and do not travel to affected areas in the north-eastern part of the main, Honshu island of Japan.</p> <p>[DFA] Advises against all travel to this area [Fukushima and 30 km zone].</p> <p>Given the difficulties arising from the present situation, including potential disruptions to the supply of essential goods and services, [DFA] would encourage Irish citizens to consider leaving the north east of Japan and the Tokyo region. This is particularly the case for people with small children.</p> <p>[DFA = Dept of Foreign Affairs]</p>	15 March	Irish citizens considering travelling to Japan and those living in/currently visiting Japan
Italy	<p>The Italian Embassy in Japan strongly recommends to the fellow countrymen to turn away from the four prefectures affected by the tsunami, from the prefectures to the north of the capital and from Tokyo itself</p>	March 15, 2011	Italian fellow in Japan
Luxembourg	<p>If presence is not necessary and if feasible, to move to the southern parts of Japan.</p> <p>Follow advices of Japanese authorities</p>	14/03/2011	50 persons

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
Slovenia	<p>Slovenian citizens living in Japan were recommended to follow the instructions issued by local authorities. They were warned that in case of bad weather condition the radioactive contamination might spread to central part of Honshu island including Tokyo region. People were recommended to take this information in to account when planning their stay in Japan.</p> <p>All travels to Japan were dissuaded. If a trip can not be postponed extra caution and follow up from other sources of information was recommended.</p>	March 15, 2011	Slovenian citizens in Japan and Slovenian citizens planning to visit Japan.
Sweden	<p>It is recommended that Swedish residents within 80 kilometres of the Fukushima reactors evacuate.</p> <p>Also, it is currently being planed by the Swedish government to offer to all Swedish citizens in Japan transport back to Sweden.</p>	2011-03-16	
Sweden	<p>It is recommended that Swedish residents within 80 kilometres of the Fukushima reactors evacuate.</p> <p>Also, it is currently being planed by the Swedish government to offer to all Swedish citizens in Japan transport back to Sweden.</p>	2011-03-19 18:30 UTC time	
Switzerland	<p>The Foreign Ministry advises not to travel to the north-east of Japan and to the prefectures of Nagano and Niigata.</p> <p>The Foreign Ministry advises not to travel to Japan, neither for touristic nor other not urgent reasons.</p> <p>For Swiss citizens staying in Japan: The Foreign Ministry recommends all Swiss citizens staying in the affected area in the north-east of Japan and within the wider area of Tokyo/Yokohama, should temporary leave the region if safely possible, if their presence is not necessary.</p> <p>Swiss citizens are urged to follow the instructions of the local authorities.</p>	Immediately	<p>Swiss citizens living or staying in Japan</p> <p>Swiss citizens intending to travel to Japan</p>
Portugal	<p>Recommendation was made to Portuguese citizens to leave Tokyo and "go south". No indications/recommendation to leave Japan were adopted. The Portuguese Embassy remains operational in Tokyo. ITN is advising the staff of the Portuguese Embassy (electronically, by phone, email) on radiation-related matters</p>	17-18 March	<p>Portuguese citizens living in Japan</p> <p>Staff at the Portuguese Embassy</p>

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
United Kingdom	Advising UK nationals withing 80km of the Fukushima Daiichi Nuclear Power Plant to evacuate the area		
United States	<p>US citizens living within 50 miles (80 km) of the Fukushima Daiichi Nuclear Power Plant have been adviced to evacuate the area or take shelter indoors if evacutation is not practical</p> <p>State Department has urged US citizens to defer non-essential travel to Japan at this time</p> <p>Voluntary departure of eligble family members of USG personnel in Japan has been authorized</p> <p>State Department message: http://travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html</p>		

U.S. Embassy
 Tokyo, Japan
 March 16, 2011
 Statement by U.S. Ambassador John V. Roos

The United States Nuclear Regulatory Commission (NRC), the Department of Energy and other technical experts in the U.S. Government have reviewed the scientific and technical information they have collected from assets in country, as well as what the Government of Japan has disseminated, in response to the deteriorating situation at the Fukushima Nuclear Power Plant. Consistent with the NRC guidelines that apply to such a situation in the United States, we are recommending, as a precaution, that American citizens who live within 50 miles (80 kilometers) of the Fukushima Nuclear Power Plant evacuate the area or to take shelter indoors if safe evacuation is not practical.

We want to underscore that there are numerous factors in the aftermath of the earthquake and Tsunami, including weather, wind direction and speed, and the nature of the reactor problem that affect the risk of radioactive contamination within this 50 mile (80 km) radius or the possibility of lower-level radioactive materials reaching greater distances.

The U.S. Embassy will continue to update American citizens as the situation develops. U.S. citizens in need of emergency assistance should send an e-mail to JapanEmergencyUSC@state.gov with detailed information about their location and contact information, and monitor the U.S. Department of State website at travel.state.gov.

The United States is continuing to do everything in its power to help Japan and American citizens who were there at the time of these tragic events. To support our citizens there, the Embassy is working around the clock, we have our consular services available 24 hours a day to determine the whereabouts and well-being of all U.S. citizens in

Emergency Response Governmental Decision and Recommendations Information Exchange

Japan and we have offered our Japanese friends includes disaster response experts, search and rescue teams, technical advisers with nuclear expertise and logistical support from the United States military.

Emergency Response Governmental Decision and Recommendations Information Exchange

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<p>Q2:</p> <p>What has your government recommended with respect to the monitoring of passengers returning, by air, from Japan?</p>	Austria	No recommendations by the Austrian government. Austrian Airlines organized contamination measurements for flights from Tokio to Vienna	Since 16.03.2011	travelers
	Belgium	<p>Possibility for screening of the thyroid gland in Belgium on a voluntary basis for Belgian citizens planning to return, returning or returned from Japan</p> <p>If proven necessary from the voluntary screening, a total body count can be proceeded to.</p>		
	Czech Republic	Monitoring of food and foodstuff imported from Japan is based on EC recommendation, and performed by the Czech Agriculture and Food Inspection Authority and State Veterinary Administration. There is only a small range of the food/foodstuff imported from Japan. http://www.szpi.gov.cz/en	17.03.2011	
	France	<p>Notice issued from the French Foreign Ministry (http://www.diplomatie.gouv.fr) to passengers coming from Japan</p> <ul style="list-style-type: none"> - Contact point to know more about radiation exposure from nuclear facilities - Contact point to know about relatives in Japan - A questionnaire is available for those French people who where in Japanese territory since 11 March so that they can be contacted if needed. Questionnaire available at www.invs.sante.fr 		
		<p>People arriving from an area located up to 60 km from the Fukushima NPP are proposed to have a whole body counting at the IRSN facilities to check the absence/presence of internal contamination. People arriving from Tokyo are not proposed to have this in-vivo measurement. The situation might evolve; it is still under discussion within the French government.</p>	March 21	
	Ireland	No direct flights from Ireland to Japan.		
	Italy	No specific recommendations so far, according to my knowledge		
	Luxembourg	No recommendation		
	Slovenia	No monitoring of passengers was introduced.		
Sweden	Passengers from Japan who have been in the area within 80 kilometers from the Fukushima plant can, if requested, be offered monitoring through their ordinary caregivers.	2011-03-17		

Emergency Response Governmental Decision and Recommendations Information Exchange

	Switzerland	Reception centre for returning people who were staying in the evacuation zones	Since 16.3.	People arriving in Switzerland who were staying in the evacuation zones
	Portugal	No monitoring is in place. However, representatives from the General Directorate of Health, ITN, and the emergency-related agencies provide at the Lisbon airport information upon arrival for passengers arriving from Japan	Week 14-18 March	Passengers returning from Japan
	United Kingdom	No official statement to date Contingency plans for monitoring people at airports are being developed	March 19	
	United States	Radiation detection devices are routinely used by Customs and Border Protection to screen passengers Public messages and health alerts for travelers are developed and being cleared for release.	March 21	

Emergency Response Governmental Decision and Recommendations Information Exchange

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<p>Q3:</p> <p>What has your government recommended with respect to the importing of food or goods from Japan?</p>	Austria	Monitoring of food- and feedstuff from Japan based on EC recommendation.	Since 15.03.2011	----
	Czech Republic	No direct commercial flights from Japan to the Czech republic. Approx. 100 Czech citizens have been transferred from Japan back by air force (after arrival all passengers and airplane were monitored and no contamination was estimated) Currently - all who wish could ask for whole body measurement after arrival from Japan		
	France	This point is still under discussion in the French government	March 21	
	Ireland	Considering situation in light of EC (DG SANCO) recommendation to to the effect that Member States should analyse food and feed from Japan. Food Safety Authority of Ireland (FSAI) checking with Customs & Excise re direct imports to Ireland and liaising with FSA (UK). FSAI/DAFF/RPII to discuss further in the next few days. (DAFF = Dept of Agriculture, Fisheries and Food; RPII = Radiological Protection Institute of Ireland)		
	Italy	Italian Health Minister has ordered the ban on imports of food from Japan (fish and worked vegetables) dated after March 11, 2011	March 16, 2011	Italian
	LU	No direct importations	17/03/2011	
	Slovenia	Additional control of foodstuffs imported from Japan is introduced in agreement with common EU approach.		
	Sweden	None so far.		
	Switzerland	Foodstuffs <i>Spot Checks of imported goods</i> <i>Feeding Stuffs</i> Spot Checks of imported goods	25.03.11 25.03.11	
	Portugal	No decision is taken yet, waiting decisions at the European Union level. Most likely the recommendation from DG-SANCO (RASFF - to analyse the level of radioactivity in feed and food from plant or animal origin (mainly fishery products) imported from today from Japan) will be adopted soon.	Next week ?	

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
United Kingdom	No additional measures, Criteria being used by Japan are at least as restrictive as EU criteria	March 19	
United States	<p>Japan has halted all export from affected region</p> <p>Based on current information there is no risk to the US food supply</p> <p>Food & Drug Administration's is flagging all imports of FDA regulated products from Japan and is paying special attention to shipments from companies in the affected area</p> <p>US Custom & Border Patrol routinely use radiation detection equipment to screen food imports, cargo and travellers</p> <p>FDA has posted fact sheet on food and medical goods importation from Japan: http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm</p>	March 20	

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
Belgium	Iodine tablets are put at the disposal of the Belgian embassy in Japan, the intake of which only happens at the advice of the Japanese authorities.		
France	<p>KI pills are being provided to French nationals in Japan</p> <p>They are being advised not to take KI and instead to follow the advice of Japanese authorities</p> <p>Possibility to get iodine tablets at the French embassy (although information is given that Japanese authorities will proceed if needed to distribute iodine tablets to people)</p> <p>Information about the intake of iodine tablets and other recommendations for French citizens in Japan is available at: http://www.diplomatie.gouv.fr/fr/IMG/pdf/Messages_pour_la_communaute_francaise_au_Japon.pdf</p>	March 21	
Germany	<p>German embassy has KI tablets</p> <p>Current policy is not to distribute</p>	March 21	
Japan	KI has been distributed to the public	March 21	

Emergency Response Governmental Decision and Recommendations Information Exchange

	Country	Decision taken or	Recommendation made	Applicable Date	Applicable Population
	United Kingdom	Distributing KI to nationals in Japan with priority for children and pregnant or breast-feeding women	Instructed not take KI unless advised to by Japanese authorities or UK government	March 20	
	United States	US is making KI available to US government personnel and dependents in Japan as a precautionary measure	Instructions are not to consume KI unless advised by US government Statement from State Department: http://travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html	March 21	
Activation of a call center for information of the public	Austria	Information for concerned public		Since 12.03.2011	Persons concerned
	Czech Republic	Information available on web sites: www.sujb.cz www.suro.cz www.szpi.cz www.mz.cz Radiation protection issues – call center - during working hours (SÚJB), media, news			
	Switzerland	Special attention to the high volume sampler measurements		14.03.11	
		Measurement of additional air filters and precipitation samples		21.03.11	
		Collection and measurements of high altitude air samples		23.03.11	

Emergency Response Governmental Decision and Recommendations Information Exchange

General Question:

It is likely that, in the coming weeks, there will be discussion of the collective dose received by the Japanese population. I also feel that it is likely that there will be, in the press, discussion of the number of projected cancer deaths, using the collective dose and the 5%/Sv risk factor. Given this situation, I feel that it would be useful for the RF community represented by the CRPPH to consider how such claims could be addressed.

- Do you agree that we could address this issue?
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate?

Austria

- Do you agree that we could address this issue? YES
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate?

Italy

- Yes
- I'd need some more time to formulate this answer. I think the right way is that proposed by the Chernobyl forum for that accident

Luxembourg

- In respect for what is at stake in Japan, we are not willing to enter such a discussion right now. If really a need, it should be postponed to a more adequate date.

Slovenia

- It should be stressed that 5%/Sv refers to cancer incidence risk and not to cancer deaths risk.

Sweden

- Concerning the General Question we prefer not to address that right now, but are all in favour of co-ordination in these topics.

Portugal

- Do you agree that we could address this issue? **YES**
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate? **As you are well aware, the correctness of using "collective dose" for these purposes is disputed by some experts... but in my very personal opinion, the number obtained should be used as an estimation – better than no number !**

20 March, 2011

Fukushima Dai-ichi
Monitoring points

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

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

Monitoring point	①																							
monitoring car	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	4:00
reading (μ Sv/h)	2814.0	2808.0	2805.0	2803.0	2791.0	2797.0	2794.0	2793.0	2788.0	2785.0	2781.0	2778.0	2773.0	2771.0	2767.0	2764.0	2761.0	2759.0	2745.0	2745.0	2741.0	2758.0	3185.0	2939.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	SW	W	SW	WSW	WSW	NW	NW	W	NE	SW	W	SW	WNW	W	W	NW	NW	WNW	WSW	SE	NNE	W	S	W
wind speed (m/s)	3.7	2.8	3.5	3.0	3.4	4.6	3.2	3.0	2.9	2.1	2.5	1.8	2.1	1.6	1.8	1.5	2.3	2.1	1.0	1.1	1.0	1.1	1.0	0.9

Monitoring point	①						③						①											
monitoring car	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	8:00
reading (μ Sv/h)	2771.0	2743.0	2739.0	273.2	271.8	271.2	270.9	270.4	269.8	269.5	2683.1	2679.0	2679.0	2677.0	2670.0	2654.0	2664.0	2661.0	2661.0	2659.0	2652.0	2653.0	2637.0	2630.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	S	SW	NNW	N	NNW	WNW	N	NNE	NE	N	NE	NE	ENE	ENE	ENE	E	ENE	ESE	SSE	NE	NE	N	NE
wind speed (m/s)	0.5	0.8	0.8	3.5	1.6	1.5	1.5	0.7	0.6	0.6	2.2	0.6	0.7	0.9	0.8	0.6	0.9	1.1	0.6	0.6	0.6	0.8	0.9	1.3

①→③ West Gate (near MP-5) (approx. 1.1km from Unit 2 in west direction) ※Move for measuring at fixed point

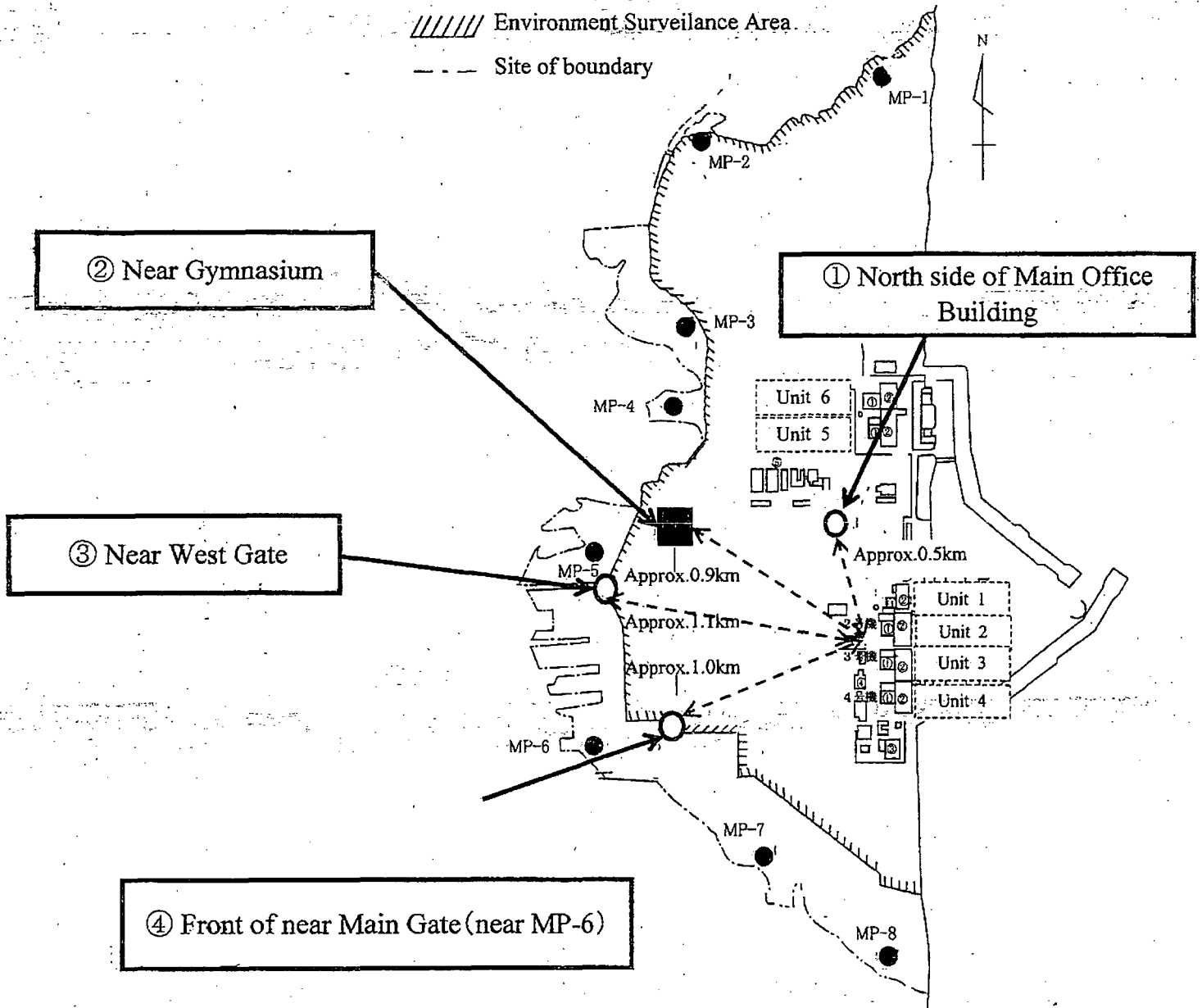
③→① North side of office building (approx. 0.5km from Unit 2 in northwest direction) ※Move to nearer point for measuring the effects of water spraying

Monitoring point	①																							
monitoring car	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	12:00
reading (μ Sv/h)	2629.0	2627.0	2625.0	2619.0	2617.0	2614.0	2614.0	2608.0	2623.0	2661.0	2742.0	2726.0	2608.0	2605.0	2596.0	2589.0	2583.0	2579.0	2578.0	2569.0	2571.0	2562.0	2564.0	2559.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NE	NE	E	NNE	ENE	E	ENE	SE	ESE	SSE	NE	SSE	E	E	NE	E	NE	ENE	ENE	NE	ENE	NE	NE	E
wind speed (m/s)	1.3	1.5	1.3	1.5	1.4	1.2	1.2	1.0	1.0	1.5	1.2	1.2	1.1	1.2	1.3	0.7	1.3	1.4	1.8	1.5	1.4	1.2	1.3	1.3

Monitoring point	①																							
monitoring car	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	16:00
reading (μ Sv/h)	2558.0	2552.0	2551.0	2551.0	2550.0	2567.0	2588.0	2660.0	2593.0	2654.0	2741.0	2768.0	2999.0	2923.0	3056.0	3202.0	3346.0	3054.0	3071.0	3342.0	3337.0	3003.0	3046.0	3171.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	S	SE	SE	NE	SE	E	SE	SE	SE	SE	SE	SE	S	SE	SE	SSE	S	SSE	S	S	S	S	SSE	S
wind speed (m/s)	1.1	1.2	1.0	1.1	1.3	1.5	1.4	1.6	1.7	1.8	2.0	1.6	1.7	1.8	1.9	2.3	2.1	2.0	1.9	1.9	1.7	1.9	2.1	1.8

Monitoring point	①																							
monitoring car	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	20:00
reading (μ Sv/h)	2940.0	2851.0	2830.0	2960.0	2839.0	2773.0	2763.0	2758.0	2729.0	2715.0	2707.0	2693.0	2680.0	2673.0	2658.0	2651.0	2658.0	2623.0	2683.0	2614.0	2602.0	2595.0	2632.0	2828.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	S	S	SSW	S	SSW	S	SW	SSW	SE	SSW	SW	SSW	S	S	SW	WSW	NNE	W	WSW	SW	SW	NNW	NE	W
wind speed (m/s)	2.0	1.9	2.2	2.0	2.1	2.1	1.8	2.0	1.7	2.1	1.7	1.8	2.6	2.6	2.4	1.8	1.0	1.4	1.0	2.0	1.8	0.8	1.2	1.2

Monitoring point	①																							
monitoring car	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	0:00
reading (μ Sv/h)	2704.0	2682.0	2586.0	2552.0	2550.0	2542.0	2637.0	2532.0	2518.0	2517.0	2510.0	2506.0	2503.0	2492.0	2487.0	2485.0	2483.0	2475.0	2469.0	2462.0	2455.0	2457.0	2453.0	2452.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NE	NW	W	WNW	NW	WNW	W	WNW	W	W	WNW	WNW	NW	NW	WNW	NW	W	WNW	WNW	W	WNW	W	W	W
wind speed (m/s)	1.4	1.0	1.6	1.2	1.0	2.0	2.2	2.4	2.4	2.0	2.0	2.2	1.6	2.2	2.6	3.2	1.2	1.3	0.8	1.0	1.2	1.0	0.8	1.0



福島第一原子力発電所敷地内の線量率

Dose rate in the sit of Fukushima Dai-ichi NPS

$\mu\text{Sv/h}$

6000.0

5000.0

4000.0

3000.0

2000.0

1000.0

0.0

事務
本館北

North side of main office building

正門
付近
前
Front of near
Main Gate

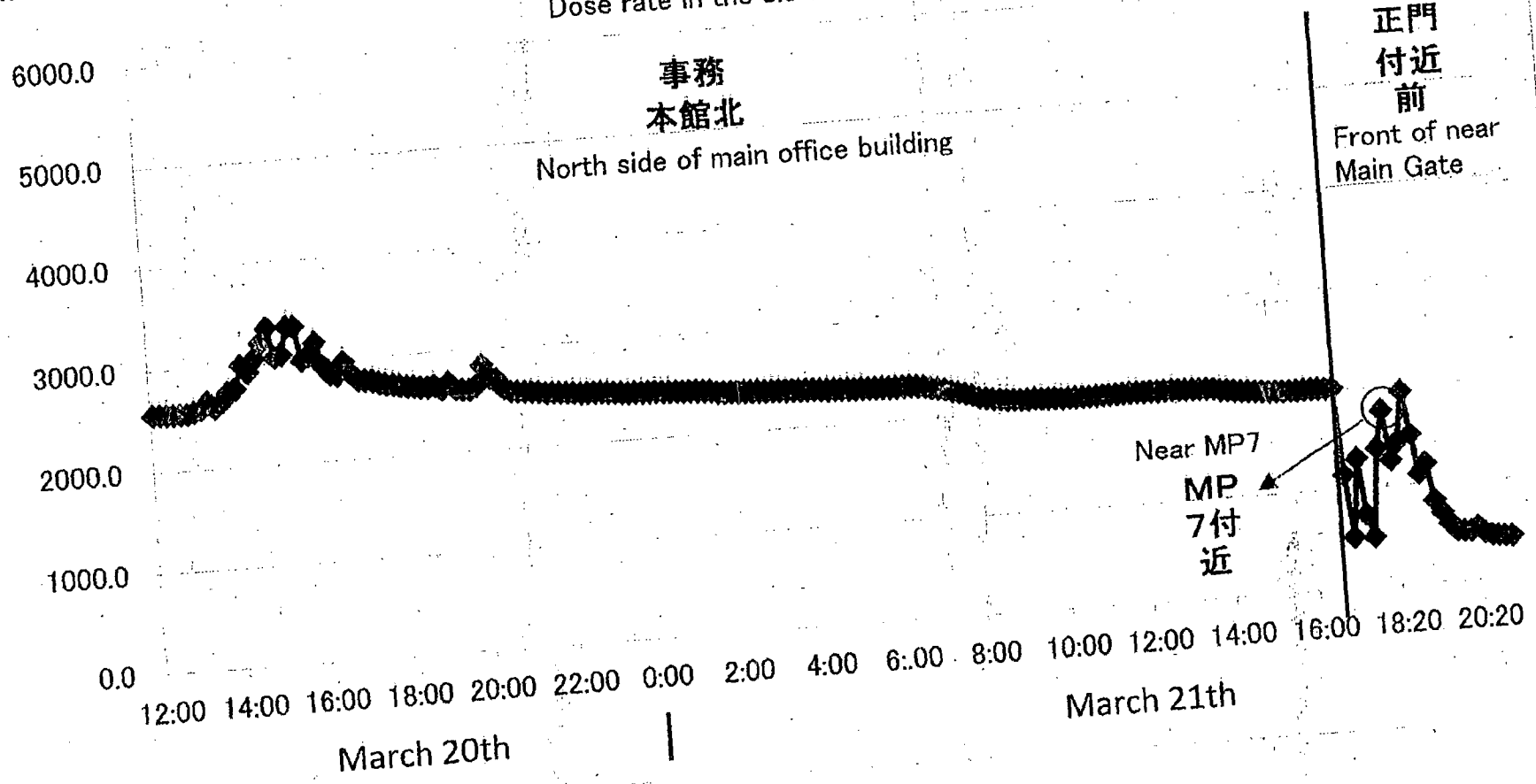
Near MP7

MP
7付
近

12:00 14:00 16:00 18:00 20:00 22:00 0:00 2:00 4:00 6:00 8:00 10:00 12:00 14:00 16:00 18:20 20:20

March 20th

March 21th



(2P)

Mushima Dai-ni (TEPCO's Monitoring Post)

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

21 March, 2011																								
Monitoring Posts	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)	15.153	15.113	15.130	15.070	15.060	15.103	15.193	15.243	15.350	15.587	15.420	15.757	15.497	16.813	16.227	15.260	15.037	15.030	15.027	14.950	15.040	14.943	14.973	14.973
MP2 (μ Sv/h)	9.223	9.193	9.137	9.113	9.093	9.110	9.143	9.220	9.293	9.370	9.373	9.513	9.490	10.510	9.877	9.167	9.003	8.997	8.990	8.977	8.957	8.990	8.957	8.957
MP3 (μ Sv/h)	15.273	15.277	15.237	15.213	15.180	15.137	15.160	15.110	15.260	15.317	15.363	15.413	15.247	16.433	15.583	15.030	15.030	14.977	14.993	14.943	14.973	14.953	14.950	14.950
MP4 (μ Sv/h)	10.730	10.673	10.693	10.640	10.637	10.603	10.610	10.623	10.690	10.760	10.800	10.820	10.880	11.757	12.027	10.517	10.467	10.457	10.460	10.430	10.433	10.467	10.450	10.450
MP5 (μ Sv/h)	10.533	10.487	10.487	10.387	10.387	10.387	10.380	10.413	10.433	10.480	10.633	10.640	10.913	11.633	12.513	10.433	10.287	10.287	10.287	10.227	10.287	10.240	10.220	10.220
MP6 (μ Sv/h)	11.733	11.693	11.677	11.633	11.607	11.660	11.613	11.667	11.663	11.697	11.747	11.707	11.923	12.087	13.337	11.780	11.517	11.547	11.513	11.470	11.510	11.507	11.483	11.483
MP7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NW	NNW	NNW	NNW	N	N	NNW	NW	NNW	NW	N	NNW	NW	NW	NW	WNW	WNW	WNW	NW	NNW	WNW	NW	NW	NW
Wind speed(m/s)	1.3	1.7	1.6	2.0	3.2	1.9	1.8	1.4	1.1	1.3	1.3	1.4	1.3	1.1	0.9	0.5	0.6	0.5	0.4	1.0	1.0	0.7	1.4	1.4

21 March, 2011																								
Monitoring Posts	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)	14.883	14.930	14.883	14.840	14.893	15.123	15.580	14.997	14.923	14.917	15.013	14.957	14.823	14.737	14.690	14.633	14.563	14.547	14.473	14.473	14.467	14.487	15.623	15.623
MP2 (μ Sv/h)	8.960	8.920	8.927	8.907	8.917	8.950	9.670	9.027	9.000	8.953	9.260	9.063	8.917	8.837	8.797	8.747	8.633	8.627	8.553	8.617	8.590	9.017	12.857	10.7
MP3 (μ Sv/h)	14.937	14.897	14.870	14.893	14.880	14.853	15.290	14.983	15.007	14.973	15.240	15.193	15.107	14.877	14.757	14.727	14.677	14.567	14.707	15.710	16.007	20.413	24.880	22.8
MP4 (μ Sv/h)	10.450	10.460	10.433	10.380	10.413	10.407	11.043	10.730	10.547	10.540	10.710	10.740	10.740	10.407	10.340	10.237	10.173	10.170	10.113	10.763	10.863	13.090	19.050	17.5
MP5 (μ Sv/h)	10.187	10.193	10.193	10.187	10.100	10.153	10.873	10.667	10.333	10.387	10.533	10.633	10.613	10.193	10.193	10.073	9.947	9.900	9.833	10.387	10.480	11.860	19.647	18.0
MP6 (μ Sv/h)	11.433	11.450	11.417	11.423	11.457	11.433	11.863	11.693	11.440	11.473	11.627	11.547	11.573	11.357	11.333	11.277	11.190	11.183	11.047	11.057	11.167	11.373	13.073	16.0
MP7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NW	NNW	NNW	N	N	N	NE	NNE	NNE	NNE	NE	NE	NNE	NNE	NNE	N	NNE	N	N	N	N	N	N	N
Wind speed(m/s)	0.7	0.5	1.9	1.8	1.3	0.9	2.5	2.9	2.9	3.7	2.9	3.3	3.5	3.0	5.6	6.1	5.4	6.5	5.8	5.0	4.4	4.3	3.3	3.3

21 March, 2011																								
Monitoring Posts	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	12:00
MP1 (μ Sv/h)	20.987	36.294	50.254	34.704	33.504	35.174	38.697	24.467	23.794	22.160	21.834	21.374	21.094	20.884	20.760	20.423	20.060	21.597	23.924	27.280	23.367	21.844	21.180	20.9
MP2 (μ Sv/h)	20.380	38.340	42.694	24.630	18.920	24.397	17.813	13.593	12.667	12.127	11.977	11.823	11.683	11.550	11.610	11.437	11.317	11.773	15.060	18.283	15.753	12.980	12.127	12.2
MP3 (μ Sv/h)	28.370	34.600	28.524	20.160	18.797	18.727	17.970	17.653	17.447	17.273	17.263	17.100	17.057	16.997	16.953	16.960	16.940	16.903	18.830	22.074	22.647	20.113	20.163	21.9
MP4 (μ Sv/h)	22.714	28.377	26.327	18.713	15.777	16.687	15.243	13.660	13.500	13.403	13.330	13.263	13.250	13.190	13.187	13.153	13.187	13.167	15.187	17.647	18.713	15.643	15.057	16.2
MP5 (μ Sv/h)	21.687	30.114	28.907	20.053	16.767	17.547	16.427	12.700	12.607	12.507	12.480	12.347	12.347	12.347	12.300	12.347	12.307	12.347	14.913	17.393	19.247	14.920	14.113	15.4
MP6 (μ Sv/h)	16.027	23.500	31.797	26.607	24.197	20.367	21.160	15.370	15.250	14.847	14.723	14.607	14.533	14.463	14.420	14.337	14.310	14.400	16.170	18.193	18.703	16.520	15.413	15.2
MP7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	N	N	N	NNE	NNE	N	NNE	N	N	N	N	N	N	N	N	N	N	NNE	N	NNE	NNE	N	N	N
Wind speed(m/s)	5.4	4.2	3.7	6.2	5.3	13.7	6.6	7.4	7.1	6.3	8.0	8.2	8.8	7.9	6.3	5.0	6.4	5.6	5.0	3.5	6.3	7.0	6.5	6.5

ushima Dai-ri (TEPCO's Monitoring Post)

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

20 March, 2011																								
Monitoring Posts	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50	
MP1 (μSv/h)	16.340	16.333	16.300	16.927	16.267	16.327	16.243	16.243	16.257	16.200	16.227	16.160	16.153	16.133	16.090	16.117	16.147	16.123	16.087	16.027	16.020	16.073	15.957	15.9
MP2 (μSv/h)	9.920	9.863	9.917	9.887	9.863	9.880	9.867	9.840	9.890	9.813	9.820	9.783	9.770	9.757	9.787	9.750	9.733	9.743	9.710	9.727	9.710	9.687	9.720	9.6
MP3 (μSv/h)	16.483	16.460	16.407	16.410	16.427	16.363	16.327	16.377	16.343	16.333	16.297	16.263	16.253	16.293	16.233	16.207	16.093	16.173	16.130	16.147	16.080	16.153	16.100	16.1
MP4 (μSv/h)	11.323	11.323	11.303	11.320	11.303	11.300	11.303	11.290	11.233	11.310	11.277	11.267	11.247	11.190	11.187	11.197	11.210	11.150	11.177	11.170	11.157	11.093	11.130	11.1
MP5 (μSv/h)	11.267	11.260	11.213	11.207	11.300	11.167	11.167	11.173	11.167	11.167	11.140	11.133	11.067	11.120	11.073	11.113	11.073	11.073	11.073	11.067	11.073	10.973	10.973	10.9
MP6 (μSv/h)	12.613	12.647	12.603	12.600	11.167	12.597	12.563	12.557	12.587	12.533	12.503	12.513	12.527	12.523	12.527	12.490	12.470	12.460	12.487	12.443	12.423	12.447	12.453	12.3
MP7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.
Wind direction	W	WSW	W	W	W	WSW	WNW	W	WNW	NW	NW	NW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WNW	WN
ind speed(m/s)	6.8	7.7	10.2	9.6	6.4	7.9	9.1	8.9	9.0	10.8	9.4	9.4	10.3	9.0	11.2	8.8	10.5	9.7	8.8	9.8	8.6	8.8	9.0	

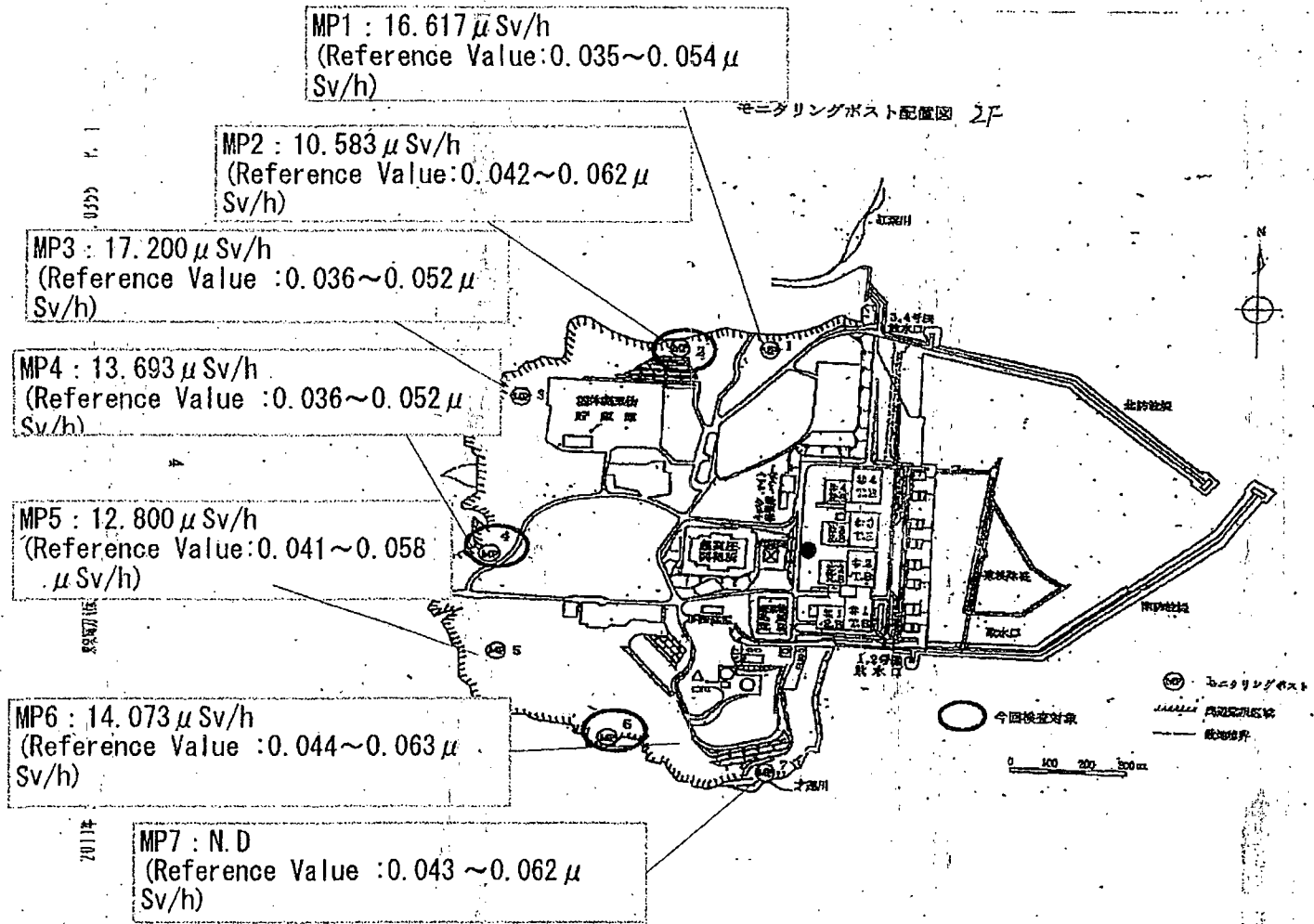
20 March, 2011																								
Monitoring Posts	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	7:50	8
MP1 (μSv/h)	16.007	16.010	15.953	15.973	15.940	15.937	15.910	15.900	15.910	18.700	20.417	17.670	20.740	17.830	17.177	16.870	19.260	21.310	20.917	20.984	19.613	19.030	19.127	18.1
MP2 (μSv/h)	9.667	9.663	9.693	9.660	9.673	9.647	9.653	9.643	9.647	10.020	16.447	10.903	14.283	11.443	10.787	10.640	12.560	14.973	15.303	14.313	13.543	12.443	12.077	11.4
MP3 (μSv/h)	16.130	16.050	16.073	16.083	16.087	16.033	16.017	16.043	16.037	16.040	24.170	17.930	19.593	18.590	17.777	17.330	20.087	21.017	23.834	20.984	20.460	19.863	19.963	19.5
MP4 (μSv/h)	11.083	11.110	11.107	11.080	11.087	11.057	11.060	11.060	11.043	11.133	19.093	12.487	15.200	12.433	13.427	12.733	16.243	16.413	21.604	16.437	15.540	15.287	16.093	14.4
MP5 (μSv/h)	10.973	10.973	10.973	10.973	10.973	10.973	10.973	10.973	10.973	11.387	20.974	12.533	12.533	15.500	14.153	13.013	15.927	17.160	25.774	17.227	15.687	16.147	16.393	14.2
MP6 (μSv/h)	12.360	12.333	12.370	12.400	12.360	12.353	12.313	12.333	12.343	16.200	18.430	13.497	14.823	15.540	14.193	13.573	14.993	15.853	21.450	15.593	15.467	17.017	15.437	14.3
MP7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.I
Wind direction	WNW	WNW	WNW	NW	NW	NW	NW	NNW	NNW	N	NE	NE	NE	NE	NE	NNE	NNE	NE	NNE	NNE	NNE	N	S	E
ind speed(m/s)	6.1	4.0	3.8	3.8	4.4	5.5	5.2	4.7	3.9	1.2	3.3	6.0	6.3	6.0	4.7	4.4	5.0	4.1	4.1	3.7	3.3	1.8	0.8	

20 March, 2011																								
Monitoring Posts	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	12
MP1 (μSv/h)	17.680	17.250	17.170	17.063	16.980	16.900	18.830	16.760	16.647	16.553	16.603	16.467	16.430	16.413	16.333	16.263	16.257	16.230	16.143	16.027	16.070	16.027	15.923	15.9
MP2 (μSv/h)	10.913	10.303	10.227	10.173	10.153	10.077	10.053	10.013	9.973	9.893	9.887	9.863	9.830	9.770	9.780	9.757	9.730	9.683	9.693	9.657	9.617	9.603	9.570	9.5
MP3 (μSv/h)	18.550	17.657	17.553	17.470	17.360	17.267	17.117	17.030	17.010	16.913	16.800	16.770	16.753	16.683	16.560	16.517	16.523	16.510	16.403	16.390	16.360	16.220	16.270	16.1
MP4 (μSv/h)	13.650	12.923	12.693	12.573	12.470	12.390	12.297	12.217	12.110	12.023	11.983	11.907	11.870	11.800	11.773	11.697	11.720	11.630	11.570	11.520	11.497	11.480	11.427	11.4
MP5 (μSv/h)	13.193	12.240	12.053	11.953	11.920	11.807	11.760	11.707	11.587	11.567	11.480	11.467	11.420	11.367	11.320	11.267	11.267	11.220	11.167	11.167	11.073	11.073	11.073	11.0
MP6 (μSv/h)	13.860	13.240	13.187	13.117	13.050	13.003	12.937	12.897	12.820	12.810	12.767	12.713	12.670	12.640	12.587	12.527	12.537	12.460	12.500	12.453	12.460	12.400	12.383	12.3
MP7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.I
Wind direction	ENE	ENE	NE	ENE	ENE	E	SE	SE	ESE	SE	SE	ESE	ENE	E	NE	NE	NE	NE	NE	E	NE	NE	NE	NE
ind speed(m/s)	1.6	2.5	3.3	4.3	3.0	3.2	1.5	1.8	2.7	2.6	2.2	1.9	1.3	1.1	3.3	2.7	2.5	2.2	1.9	1.6	2.2	2.9	2.4	1

20 March, 2011																								
Monitoring Posts	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	1
MP1 (μ Sv/h)	15.967	15.917	15.880	15.850	15.790	15.787	15.797	15.710	15.717	15.713	15.687	15.697	15.667	15.643	15.587	15.553	15.543	15.560	15.507	15.453	15.470	15.457	15.473	15.4
MP2 (μ Sv/h)	9.567	9.527	9.527	9.507	9.513	9.487	9.487	9.463	9.423	9.420	9.403	9.400	9.377	9.340	9.353	9.330	9.333	9.340	9.367	9.283	9.300	9.270	9.280	9.1
MP3 (μ Sv/h)	16.060	16.163	16.117	16.103	16.050	15.987	15.987	15.933	15.947	15.863	15.900	15.850	15.803	15.803	15.780	15.743	15.777	15.730	15.723	15.693	15.693	15.663	15.610	15.4
MP4 (μ Sv/h)	11.403	11.343	11.320	11.270	11.263	11.257	11.190	11.180	11.127	11.133	11.097	11.067	11.057	11.057	11.030	10.997	10.970	10.940	10.923	10.967	10.920	10.883	10.843	10.1
MP5 (μ Sv/h)	10.973	10.973	10.973	10.880	10.873	10.873	10.873	10.873	10.847	10.780	10.780	10.813	10.780	10.773	10.733	10.707	10.687	10.680	10.680	10.680	10.627	10.680	10.587	10.1
MP6 (μ Sv/h)	12.347	12.277	12.307	12.263	12.210	12.193	12.147	12.160	12.130	12.123	12.123	12.063	12.063	12.063	12.043	12.033	12.077	12.020	11.960	12.000	11.963	11.937	11.943	11.1
MP7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N
Wind direction	NE	E	ENE	E	E	E	ESE	SSE	ESE	ESE	SSE	SSE	SE	SE	SSE	SE	SSE	SSE	SSE	S	S	SSW	S	S
Wind speed(m/s)	2.0	1.3	1.7	2.6	2.5	2.5	2.2	1.9	1.5	1.4	1.9	2.4	1.8	2.7	2.5	1.9	2.2	3.2	3.6	2.9	2.9	0.7	0.4	

20 March, 2011																								
Monitoring Posts	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	2
MP1 (μ Sv/h)	15.477	15.423	15.390	15.357	15.387	15.380	15.350	15.340	15.347	15.327	15.323	15.270	15.307	15.263	15.250	15.290	15.210	15.223	15.213	15.183	15.137	15.150	15.153	15.1
MP2 (μ Sv/h)	9.280	9.283	9.233	9.267	9.230	9.243	9.203	9.230	9.207	9.210	9.227	9.190	9.230	9.197	9.180	9.160	9.197	9.187	9.147	9.133	9.200	9.173	9.160	9.1
MP3 (μ Sv/h)	15.583	15.557	15.593	15.500	15.540	15.497	15.520	15.517	15.537	15.437	15.503	15.450	15.453	15.400	15.360	15.383	15.393	15.333	15.393	15.360	15.367	15.370	15.310	15.3
MP4 (μ Sv/h)	10.883	10.870	10.827	10.850	10.803	10.803	10.820	10.787	10.817	10.823	10.767	10.753	10.750	10.777	10.730	10.740	10.680	10.717	10.703	10.703	10.717	10.680	10.697	10.6
MP5 (μ Sv/h)	10.587	10.587	10.580	10.580	10.587	10.587	10.587	10.587	10.553	10.540	10.587	10.520	10.480	10.480	10.513	10.480	10.480	10.480	10.433	10.487	10.447	10.480	10.487	10.4
MP6 (μ Sv/h)	11.900	11.900	11.890	11.863	11.880	11.860	11.853	11.847	11.843	11.863	11.803	11.843	11.820	11.820	11.803	11.787	11.737	11.767	11.730	11.767	11.783	11.763	11.7	
MP7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N
Wind direction	NW	NNW	W	N	S	S	SSW	S	ENE	SW	S	WSW	W	WSW	NW	SW	SW	WSW	SW	NNE	NE	NE	NE	S
Wind speed(m/s)	0.6	0.8	0.7	0.2	0.2	0.3	1.2	0.7	0.1	0.8	0.6	0.5	0.6	0.8	0.5	1.3	1.1	1.3	0.3	0.7	0.6	0.5	0.9	

20 March, 2011																									
Monitoring Posts	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	3	
MP1 (μ Sv/h)	15.203	15.127	15.150	15.140	15.173	15.127	15.093	15.073	15.097	14.997	15.060	15.097	15.923	17.843	15.900	15.823	15.667	15.617	15.357	15.377	15.377	15.273	15.243	15.2	
MP2 (μ Sv/h)	9.143	9.123	9.157	9.140	9.140	9.117	9.097	9.093	9.083	9.120	9.067	9.090	9.200	10.477	9.813	9.693	9.610	9.657	9.437	9.447	9.363	9.313	9.303	9.2	
MP3 (μ Sv/h)	15.280	15.270	15.330	15.353	15.263	15.337	15.247	15.247	15.193	15.203	15.247	15.260	15.213	15.573	15.393	15.723	15.647	15.757	15.513	15.507	15.423	15.370	15.400	15.3	
MP4 (μ Sv/h)	10.670	10.677	10.650	10.670	10.653	10.673	10.627	10.610	10.620	10.573	10.620	10.607	10.587	10.957	10.900	11.127	11.013	11.167	11.007	10.857	10.907	10.817	10.873	10.7	
MP5 (μ Sv/h)	10.400	10.427	10.433	10.387	10.473	10.387	10.387	10.387	10.387	10.380	10.380	10.387	10.380	10.387	10.380	10.680	10.933	11.067	10.880	11.120	10.973	10.760	10.780	10.680	10.5
MP6 (μ Sv/h)	11.680	11.720	11.707	11.717	11.693	11.717	11.687	11.697	11.717	11.660	11.653	11.613	11.633	12.037	12.517	12.293	12.077	12.133	12.040	11.900	11.890	11.790	11.810	11.7	
MP7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N	
Wind direction	NE	WNW	SSE	ENE	NNE	NNE	N	N	N	NNW	NNW	NNW	N	N	NNW	NNW	N	N	N	N	NNW	NNW	NNW	NN	
Wind speed(m/s)	0.5	0.0	0.2	0.5	1.4	1.3	1.3	1.1	1.4	1.9	2.2	2.4	2.5	2.4	1.2	0.8	0.6	2.3	5.1	2.5	1.3	1.6	1.9		



Results of the environmental monitoring at each NPSs etc

単位: μ Sv/h

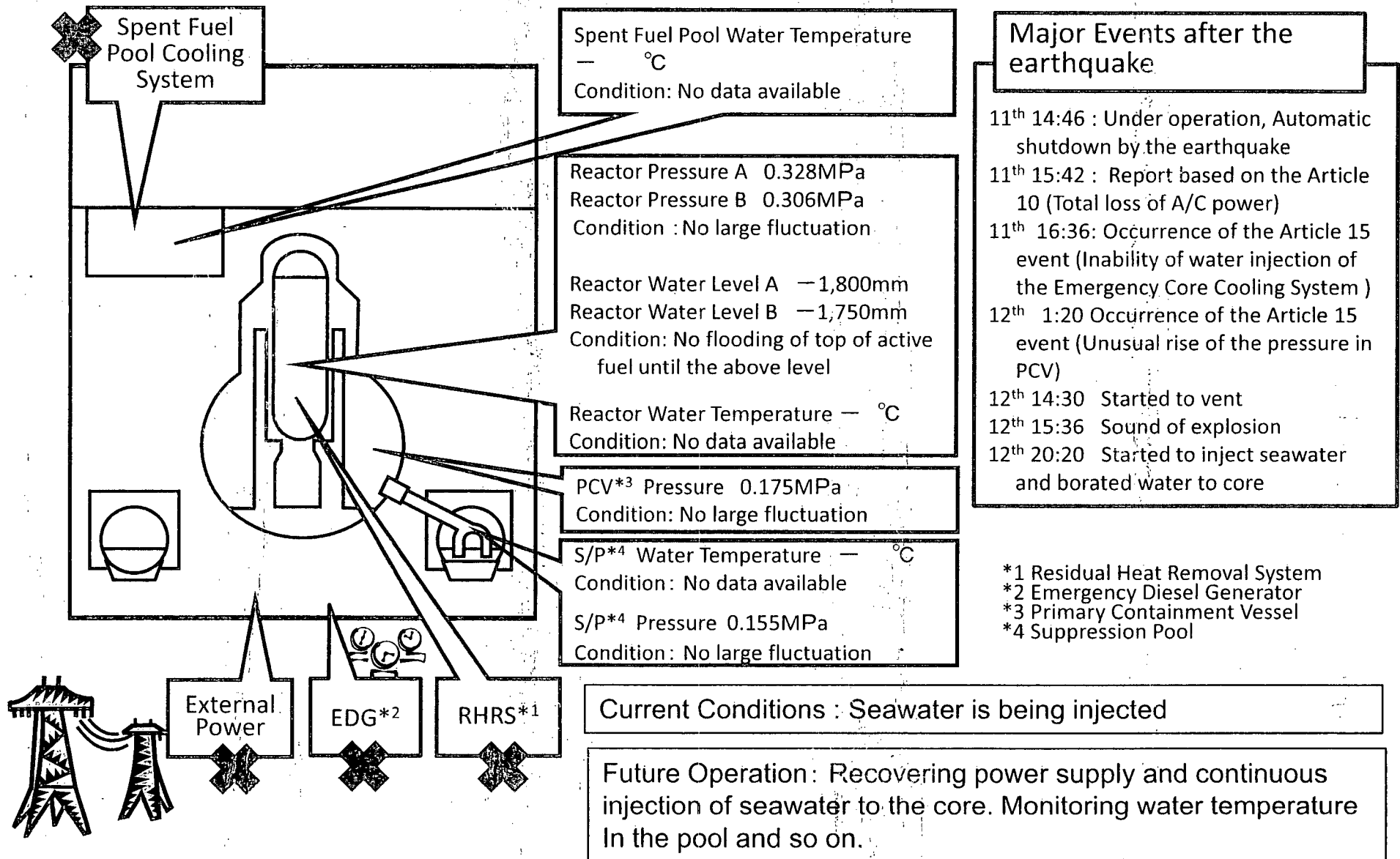
Range of normal average value	Company	NPS	20 March, 2011											
			12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0.023~0.027	Hokkaido Electric Power Co.	Tomari NPS	0.024	0.024	0.024	0.023	0.024	0.024	0.024	0.023	0.024	0.024	0.023	0.024
0.024~0.060	Tohoku Electric Power Co.	Onagawa NPS	2.000	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.900	1.800	1.800	1.800
0.012~0.060		Higashidori NPS	0.017	0.018	0.017	0.017	0.017	0.018	0.017	0.017	0.017	0.017	0.017	0.017
0.033~0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi*	2558	2587	2768	3054	3171	2773	2693	2623	2828	2542	2506	2475
0.036~0.052		Fukushima Dai-ichi*	18.163	15.987	15.850	15.730	15.663	15.497	15.450	15.333	15.317	15.337	15.260	15.757
0.011~0.159		kashiwazaki kariwa NPS	0.065	0.085	0.066	0.066	0.066	0.069	0.070	0.073	0.074	0.072	0.071	0.068
0.036~0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	0.592	0.571	0.565	0.555	0.549	0.546	0.543	0.539	0.538	0.539	0.536	0.535
0.039~0.110		Tsuruga NPS	0.074	0.075	0.078	0.076	0.077	0.078	0.076	0.075	0.075	0.074	0.089	0.099
0.064~0.108	Chubu Electric Power Co.	Hamaoka NPS	0.069	0.069	0.088	0.068	0.068	0.071	0.075	0.074	0.070	0.068	0.067	0.067
0.0207~0.132		Shika NPS	0.032	0.033	0.033	0.036	0.041	0.048	0.055	0.054	0.048	0.047	0.032	0.033
0.028~0.130	Chugoku Electric Power Co.	Shimane NPS	0.033	0.033	0.032	0.035	0.034	0.033	0.042	0.047	0.042	0.038	0.033	0.032
0.070~0.077		Mihama NPS	0.071	0.073	0.075	0.074	0.076	0.075	0.072	0.073	0.073	0.075	0.090	0.093
0.045~0.047	Tokyo Electric Power Co.	Takahama NPS	0.044	0.043	0.043	0.042	0.044	0.044	0.044	0.042	0.043	0.044	0.045	0.051
0.036~0.040		Ooi NPS	0.035	0.035	0.035	0.035	0.037	0.036	0.034	0.035	0.035	0.038	0.044	0.049
0.011~0.080	Shikoku Electric Power Co.	Ikata NPS	0.014	0.017	0.017	0.023	0.027	0.024	0.019	0.015	0.018	0.018	0.019	0.016
0.023~0.087		Genkai NPS	0.030	0.030	0.036	0.033	0.033	0.031	0.031	0.032	0.033	0.030	0.030	0.030
0.034~0.120	Kyushu Electric Power Co.	Sandai NPS	0.037	0.038	0.037	0.044	0.046	0.044	0.043	0.043	0.043	0.039	0.035	0.036
0.009~0.069		Japan Nuclear Fuel Reprocessing Plant	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.015	0.016	0.018	0.017	0.017
0.009~0.071	Japan Nuclear Fuel Plant Disposal	0.018	0.017	0.017	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.020	0.020	0.020

※ There could be small deviation on the monitoring time and area because of operational situation.

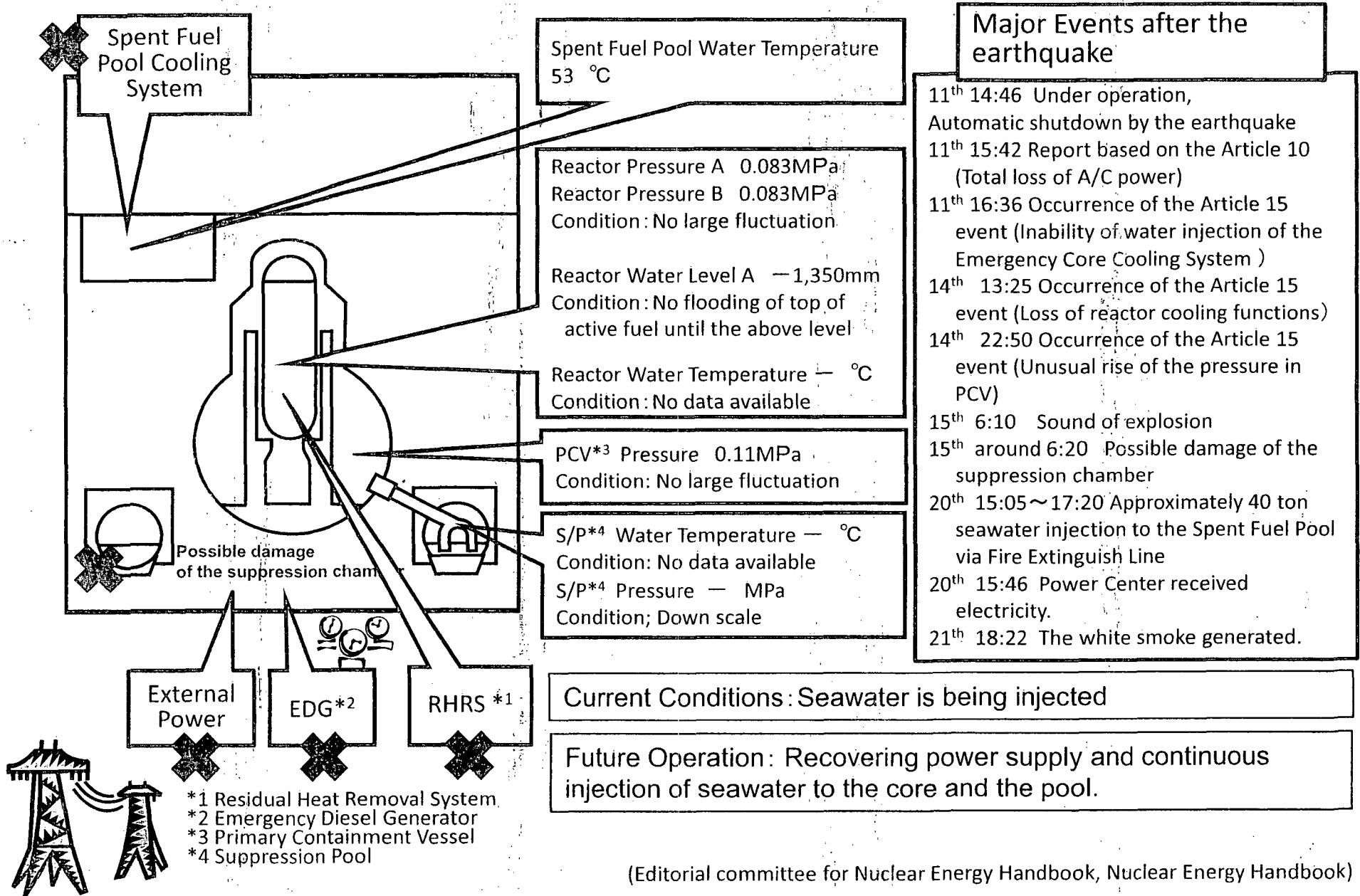
Range of normal average value	Company	NPS	21 March, 2011											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.023~0.027	Hokkaido Electric Power Co.	Tomari NPS	0.024	0.023	0.024	0.024	0.024	0.024	0.024	0.024	0.025	0.025		
0.024~0.060	Tohoku Electric Power Co.	Onagawa NPS	1.800	1.800	1.800	1.800	1.800	1.700	1.700	1.700	1.700			
0.012~0.060		Higashidori NPS	0.017	0.018	0.018	0.017	0.018	0.018	0.017	0.018	0.017	0.017		
0.033~0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi*	2452	2431	2396	2378	2362	2343	2324	2283	2168	2122		
0.036~0.052		Fukushima Dai-ichi*	15.353	15.137	15.413	14.977	14.960	14.853	15.193	14.567	22.844	18.727		
0.011~0.159		kashiwazaki kariwa NPS	0.069	0.072	0.075	0.076	0.074	0.073	0.072	0.071	0.071	0.072		
0.036~0.053	Japan Atomic Power Co.	Tokai Dai-ni NPS	0.531	0.527	0.525	0.525	1.400	1.610	1.460	1.510	1.320	1.370		
0.039~0.110		Tsuruga NPS	0.096	0.085	0.090	0.086	0.086	0.083	0.084	0.084	0.083	0.075		
0.064~0.108	Chubu Electric Power Co.	Hamaoka NPS	0.067	0.068	0.068	0.068	0.069	0.070	0.068	0.069	0.073	0.073		
0.0207~0.132		Shika NPS	0.032	0.033	0.033	0.036	0.041	0.048	0.055	0.054	0.048	0.047		
0.028~0.130	Chugoku Electric Power Co.	Shimane NPS	0.033	0.032	0.032	0.039	0.040	0.042	0.045	0.038	0.038	0.031		
0.070~0.077		Mihama NPS	0.091	0.080	0.083	0.081	0.080	0.080	0.081	0.083	0.078	0.074		
0.045~0.047	Tokyo Electric Power Co.	Takahama NPS	0.052	0.048	0.056	0.055	0.053	0.053	0.051	0.056	0.055	0.049		
0.036~0.040		Ooi NPS	0.051	0.044	0.057	0.053	0.049	0.046	0.045	0.048	0.045	0.040		
0.011~0.080	Shikoku Electric Power Co.	Ikata NPS	0.014	0.014	0.013	0.014	0.014	0.014	0.014	0.014	0.019	0.021		
0.023~0.087		Genkai NPS	0.028	0.030	0.028	0.027	0.027	0.026	0.033	0.041	0.041	0.035		
0.034~0.120	Kyushu Electric Power Co.	Sandai NPS	0.037	0.033	0.036	0.037	0.036	0.035	0.034	0.037	0.039	0.037		
0.009~0.069		Japan Nuclear Fuel Reprocessing Plant	0.017	0.017	0.016	0.015	0.016	0.016	0.015	0.015	0.015	0.016	0.016	
0.009~0.071	Japan Nuclear Fuel Plant Disposal	0.019	0.019	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018	0.018		

※ There could be small deviation on the monitoring time and area because of operational situation.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 11:00 March 22nd, 2011)

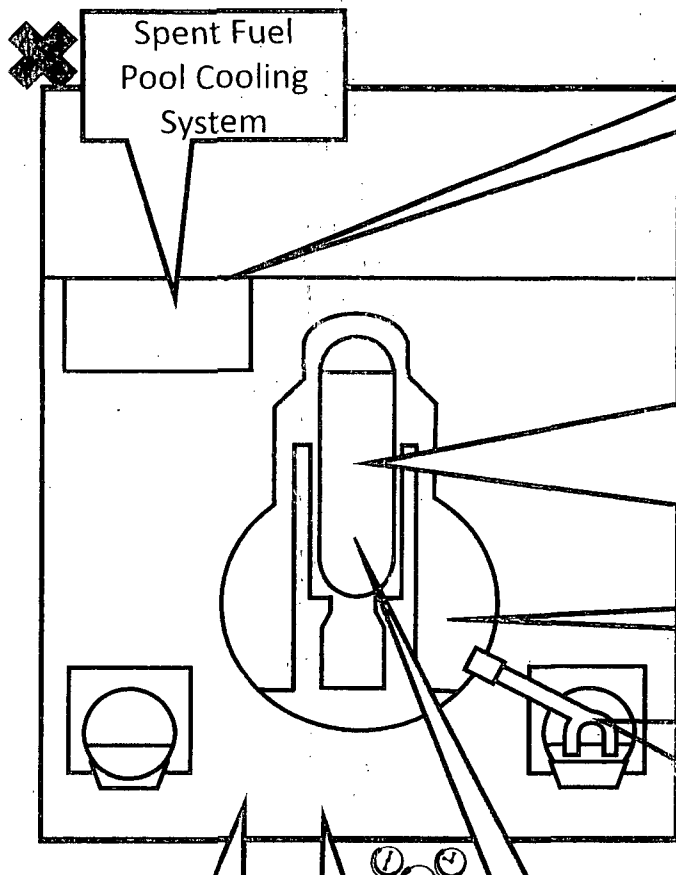


Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2 (As of 11:00 March 22nd, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3 (As of 11:00 March 22nd, 2011)

Major Events after the earthquake



Spent Fuel Pool Water
Temperature — °C
Condition: No data available

Reactor Pressure C 0.000MPa
Reactor Pressure B 0.137MPa
Condition: Tend to decrease

Reactor Water Level A —1,575mm
Reactor Water Level B —2,350mm
Condition: No flooding of top of active fuel until the above level

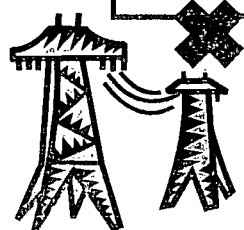
Reactor Water Temperature — °C
Condition: No data available

PCV*³ Pressure 0.100MPa
Condition: Monitoring

S/P*⁴ Water Temperature — °C
Condition: No data available
S/P*⁴ Pressure — MPa
Condition; Down scale

11th 14:46 Under operation, Automatic shutdown by the earthquake
11th 5:42 Report based on the Article 10 (Total loss of A/C power)
13th 5:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
13th 9:20 Started to vent.
14th 7:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
14th 11:01 Sound of explosion
16th around 8:30 White smoke generated.
17th 9:48~10:01 Water discharge by the helicopters of Self-Defense Force (4 times)
19:05~20:07 Water spray from the ground by High pressure water-cannon trucks (Police: once, Self-Defense Force: 5 times)
18th before 14:00~14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
~14:45 Water spray from the ground by a fire engine of the US Military
19th 0:00 ~01:00 Water spray by Tokyo Fire Department
19th 14:10 ~ 20th 3:40 Water spray by Tokyo Fire Department
20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
20th 20:39 ~ 21st 3:58 Water spray by Tokyo Fire Department
21th about 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.

External Power
EDG *2
RHRS*1

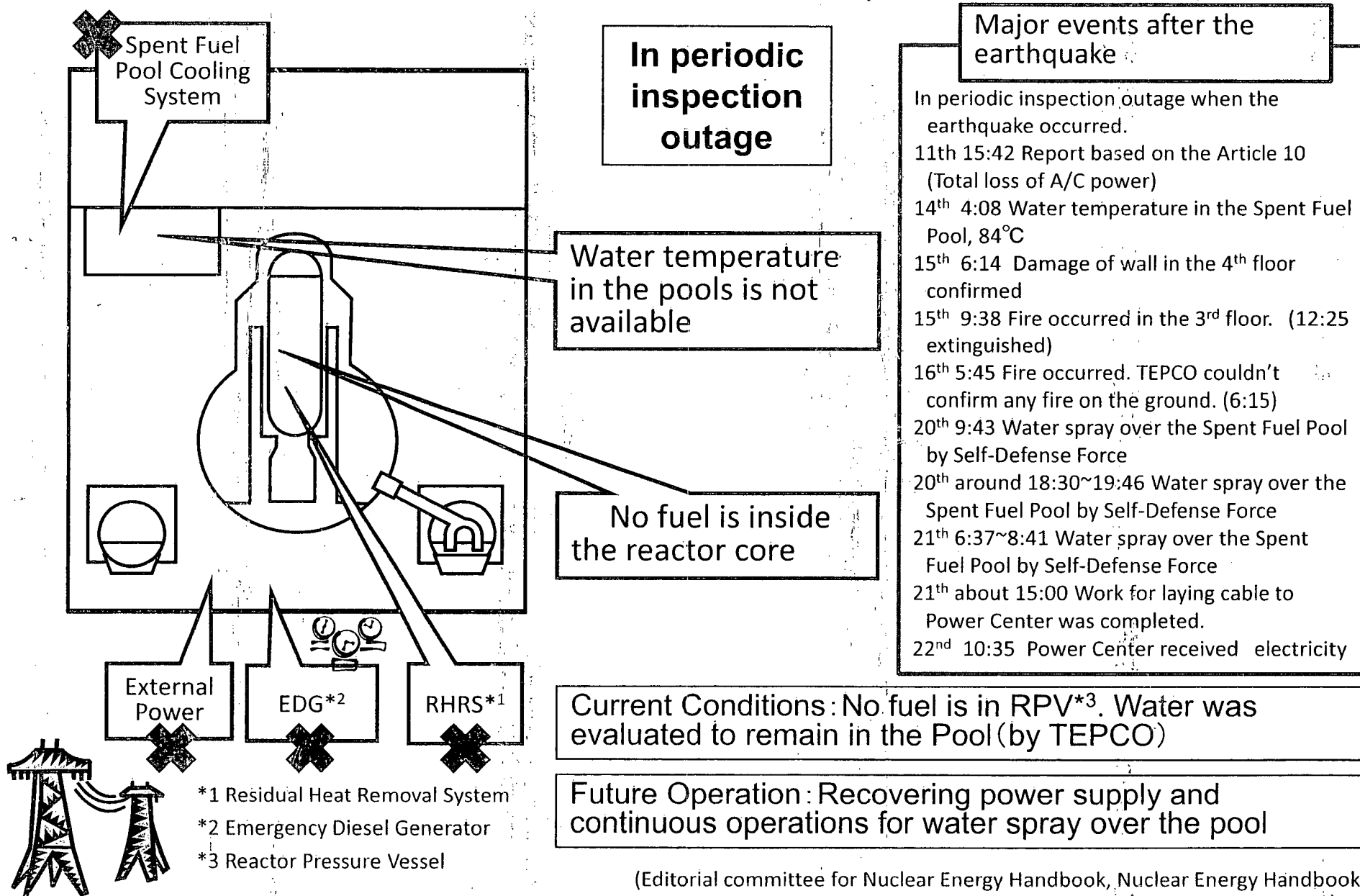


*1 Residual Heat Removal System
*2 Emergency Diesel Generator
*3 Primary Containment Vessel
*4 Suppression Pool

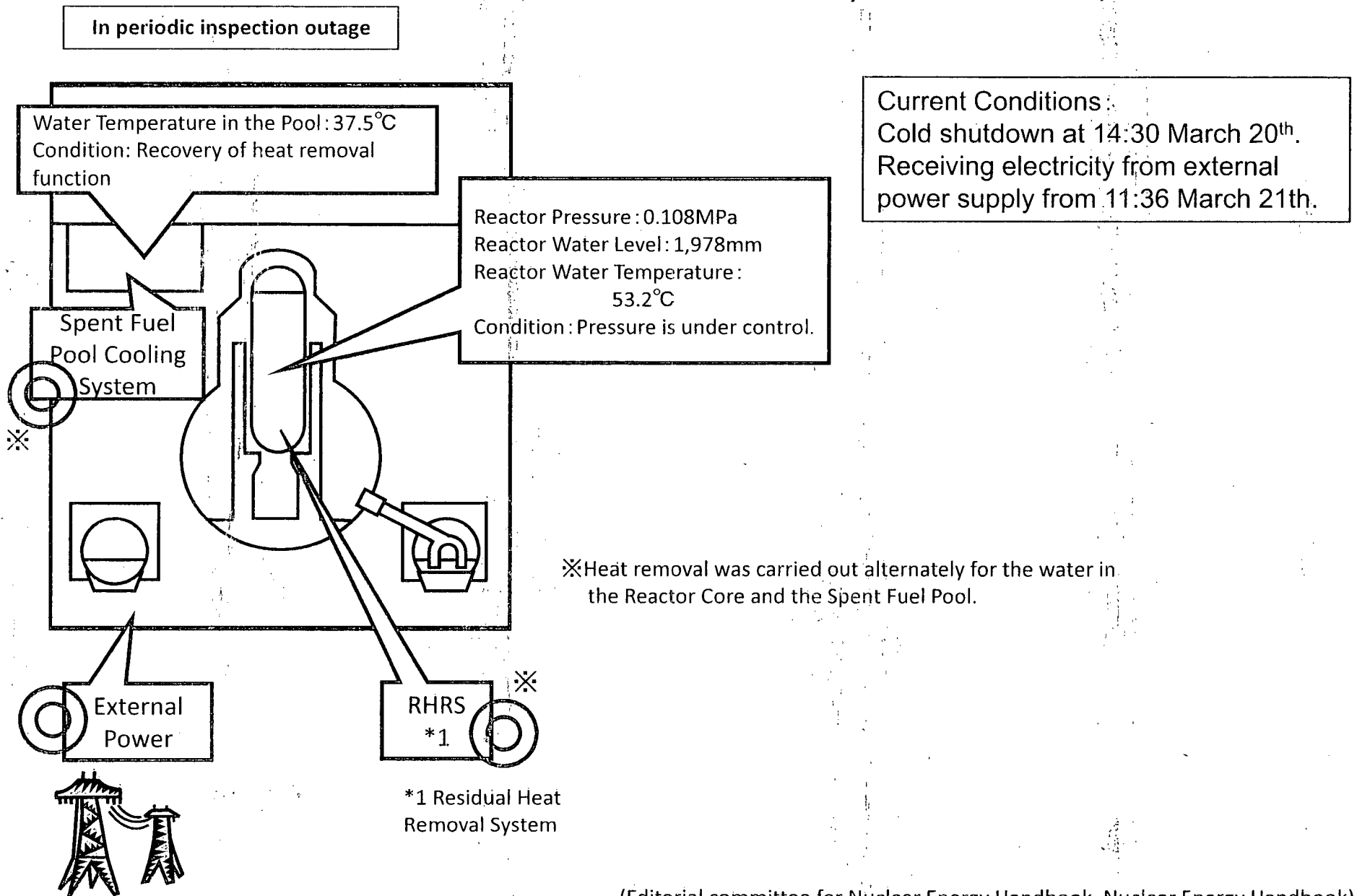
Current Conditions: Continuous operations for water spray over the pool and seawater injection to the core, and continuous works for recovering external power supply

Future Operation: Recovering power supply and continuous injection of seawater to the core.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4 (As of 11:00 March 22nd, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 11:00 March 22nd, 2011)

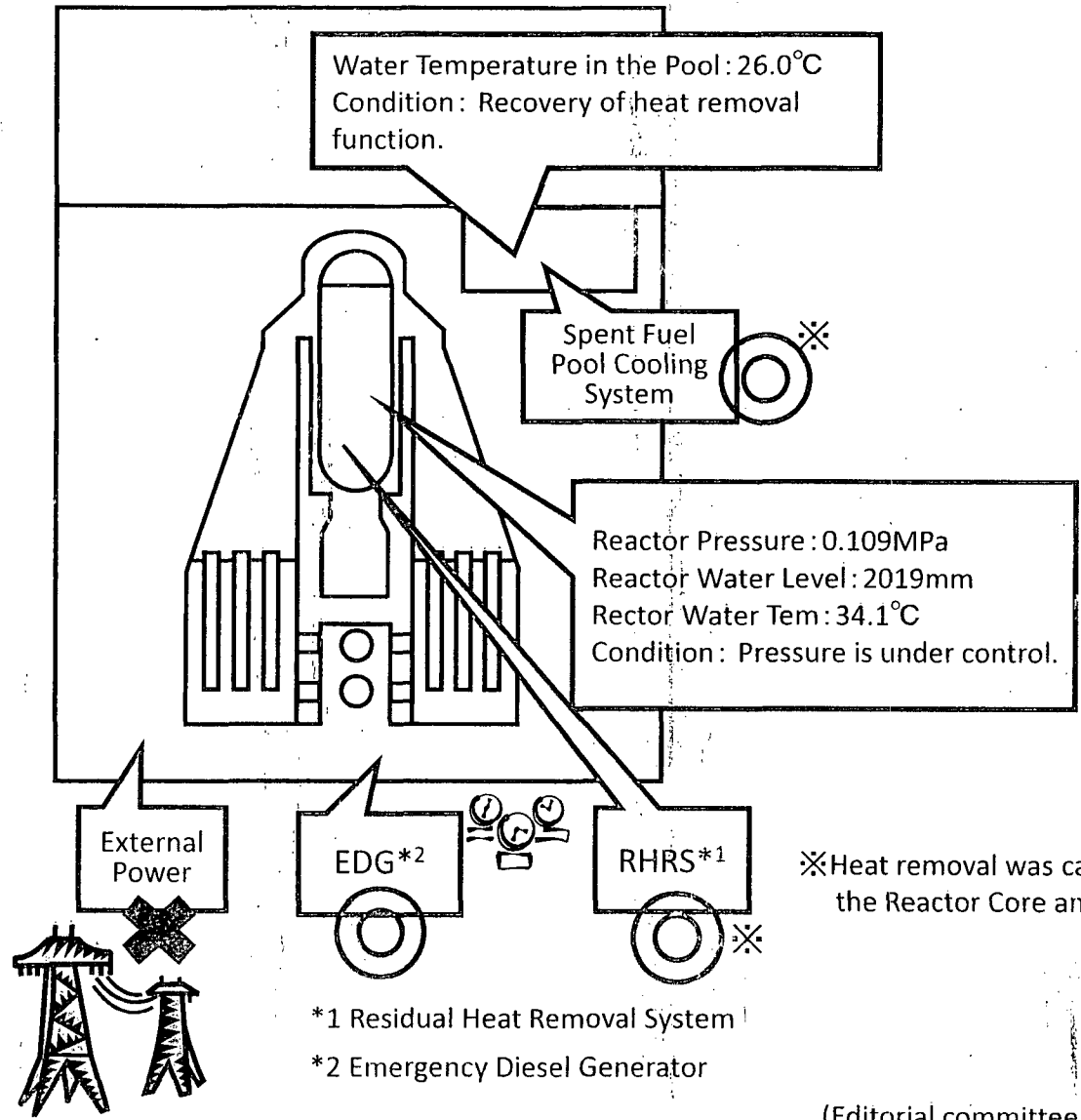


Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 11:00 March 22nd, 2011)

In periodic inspection outage

Current Conditions:
 Emergency Diesel Generator for Unit 6 is being operated.
 Pump for RHR (B) for Unit 6 started up (22:14 March 19th) and carried out heat removal for the Spent Fuel Pool.
 At 18:48 March 20th Changed the objective for heat removal from the Spent Fuel Pool to the Reactor Core
 Cold shutdown at 19:27 March 20th
 Receiving electricity reached to the transformer of starter at 19:52 March 20th.

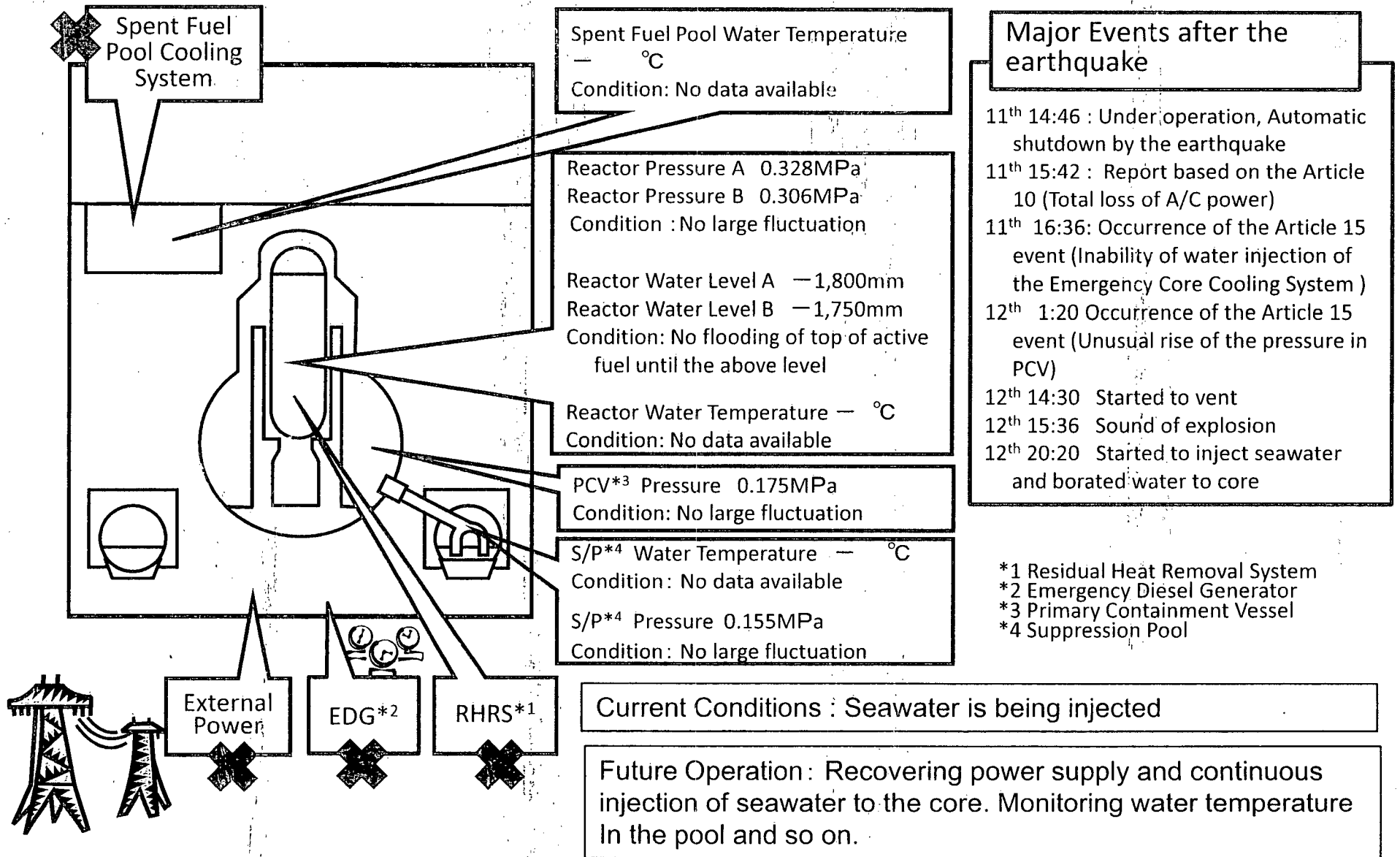
Future Operation: Works for recovering external power supply.



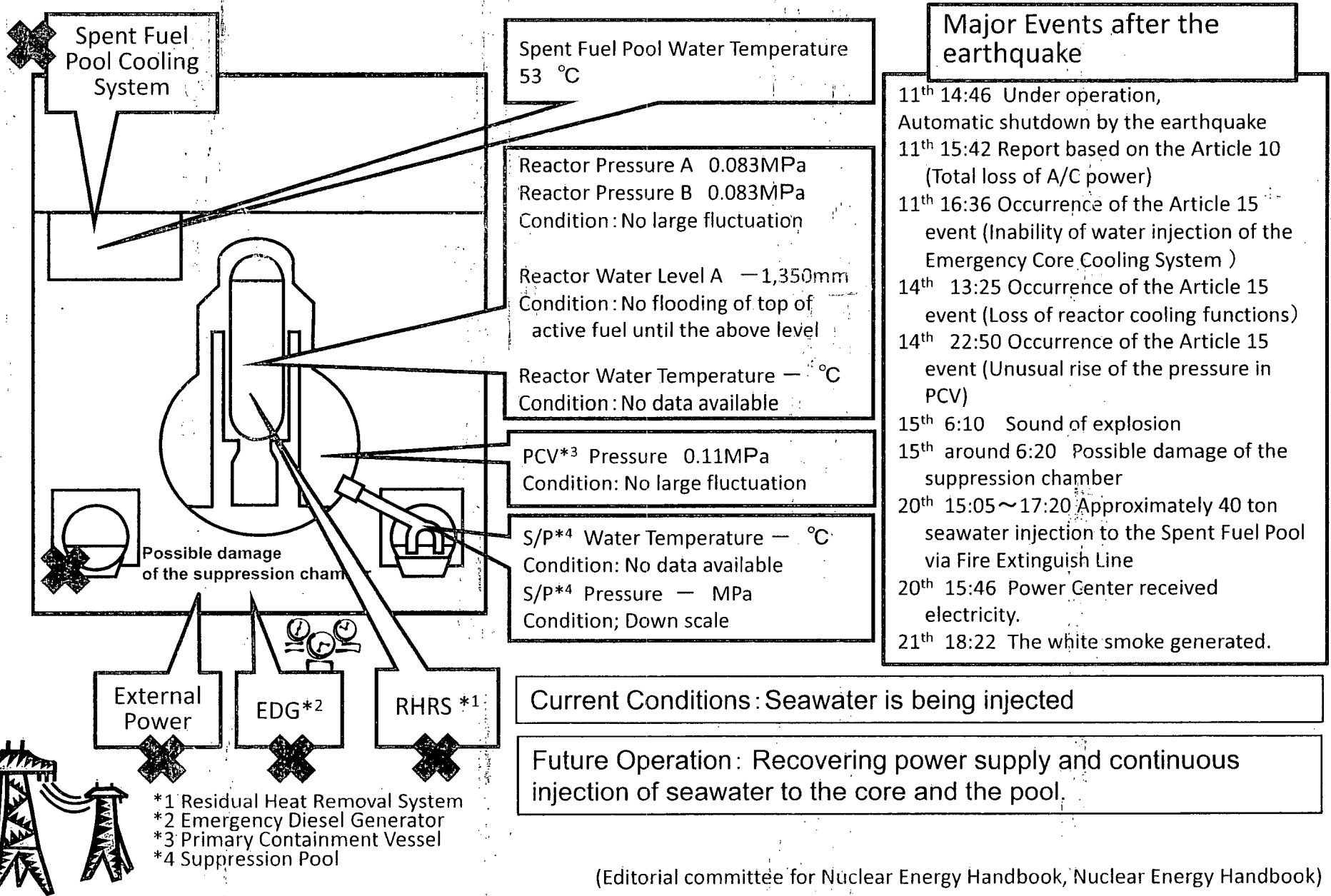
※Heat removal was carried out alternately for the water in the Reactor Core and the Spent Fuel Pool.

*1 Residual Heat Removal System
 *2 Emergency Diesel Generator

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 11:00 March 22nd, 2011)



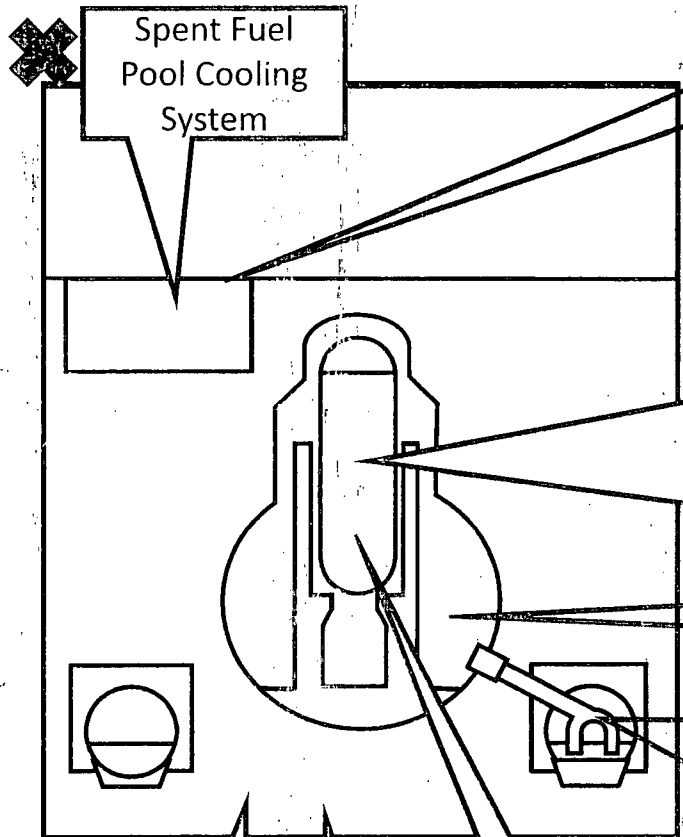
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2 (As of 11:00 March 22nd, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3

(As of 11:00 March 22nd, 2011)

Major Events after the earthquake



Spent Fuel Pool Water
 Temperature — °C
 Condition: No data available

Reactor Pressure C 0.000MPa
 Reactor Pressure B 0.137MPa
 Condition: Tend to decrease

Reactor Water Level A —1,575mm
 Reactor Water Level B —2,350mm
 Condition: No flooding of top of active fuel until the above level

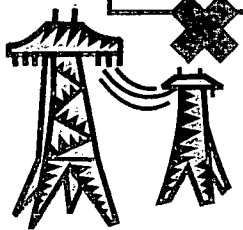
Reactor Water Temperature — °C
 Condition: No data available

PCV*³ Pressure 0.100MPa
 Condition: Monitoring

S/P*⁴ Water Temperature — °C
 Condition: No data available
 S/P*⁴ Pressure — MPa
 Condition; Down scale

11th 14:46 Under operation, Automatic shutdown by the earthquake
 11th 5:42 Report based on the Article 10 (Total loss of A/C power)
 13th 5:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
 13th 9:20 Started to vent
 14th 7:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
 14th 11:01 Sound of explosion
 16th around 8:30 White smoke generated.
 17th 9:48~10:01 Water discharge by the helicopters of Self-Defense Force (4 times)
 19:05~20:07 Water spray from the ground by High pressure water-cannon trucks (Police: once, Self-Defense Force: 5 times)
 18th before 14:00~14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
 ~14:45 Water spray from the ground by a fire engine of the US Military
 19th 0:00 ~01:00 Water spray by Tokyo Fire Department
 19th 14:10 ~ 20th 3:40 Water spray by Tokyo Fire Department
 20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
 20th 20:39 ~ 21st 3:58 Water spray by Tokyo Fire Department
 21th about 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.

External Power
 EDG *2
 RHRS*1

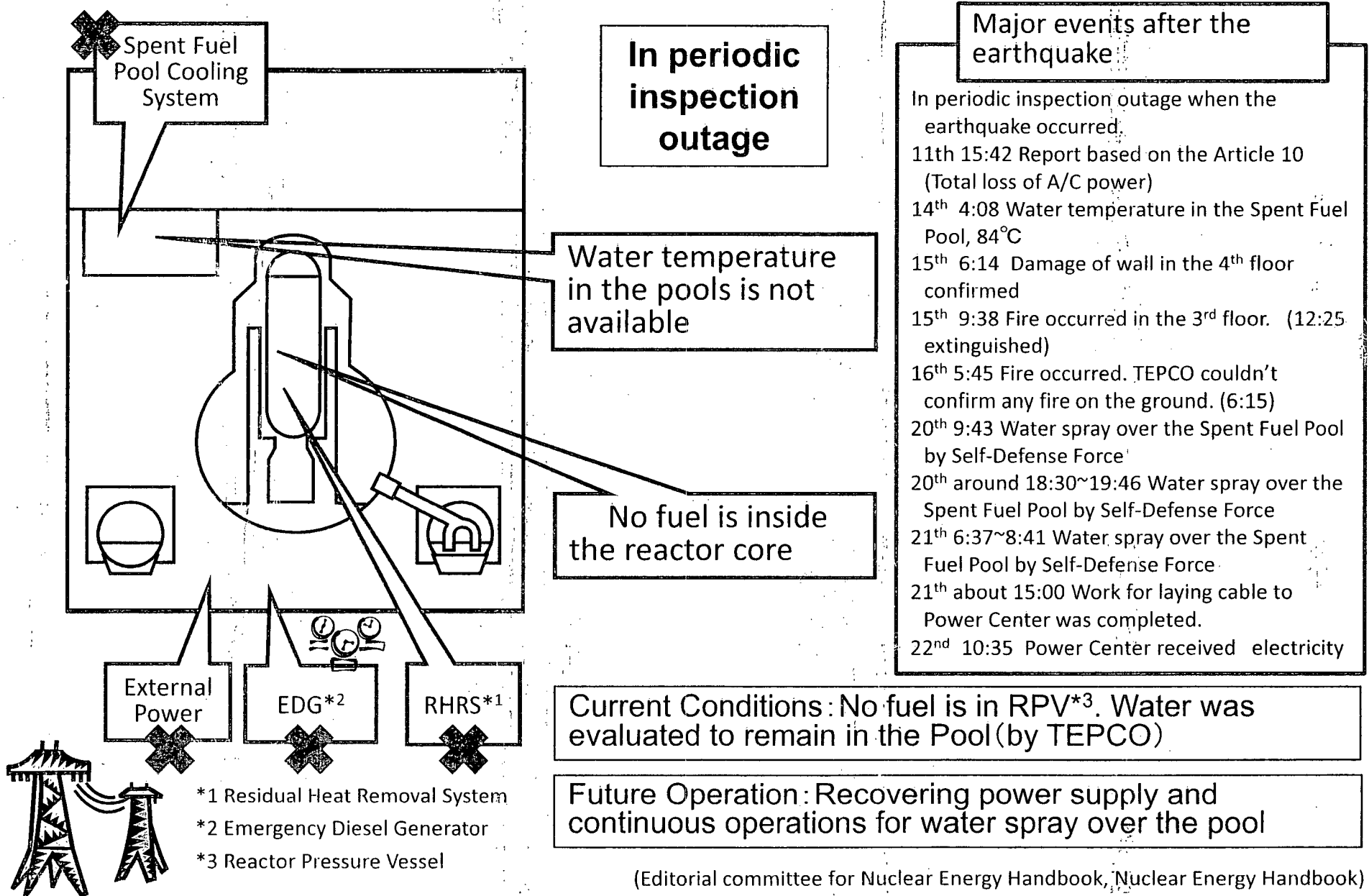


- *1 Residual Heat Removal System
- *2 Emergency Diesel Generator
- *3 Primary Containment Vessel
- *4 Suppression Pool

Current Conditions: Continuous operations for water spray over the pool and seawater injection to the core, and continuous works for recovering external power supply

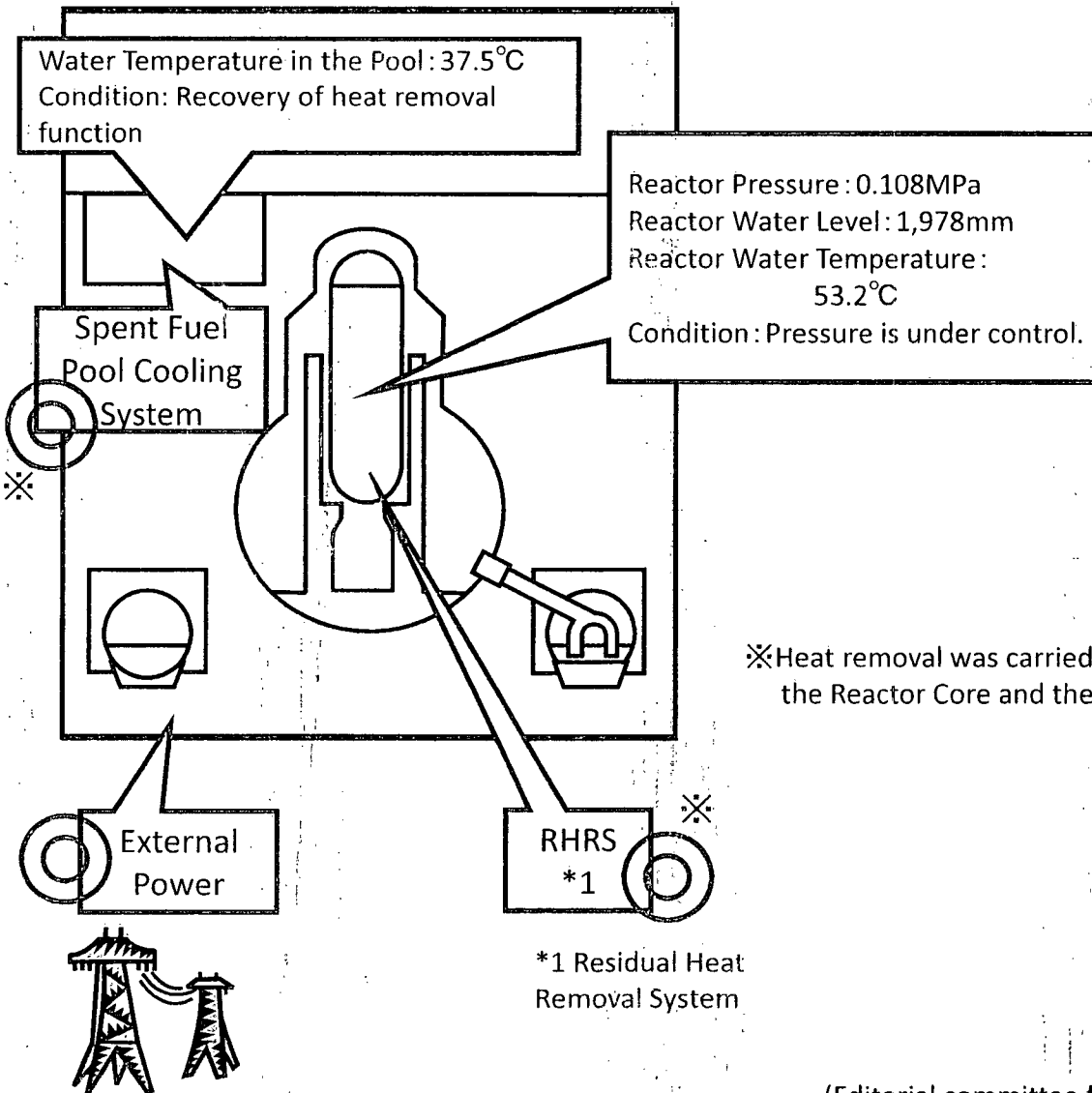
Future Operation: Recovering power supply and continuous injection of seawater to the core.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4 (As of 11:00 March 22nd, 2011)



Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 11:00 March 22nd, 2011)

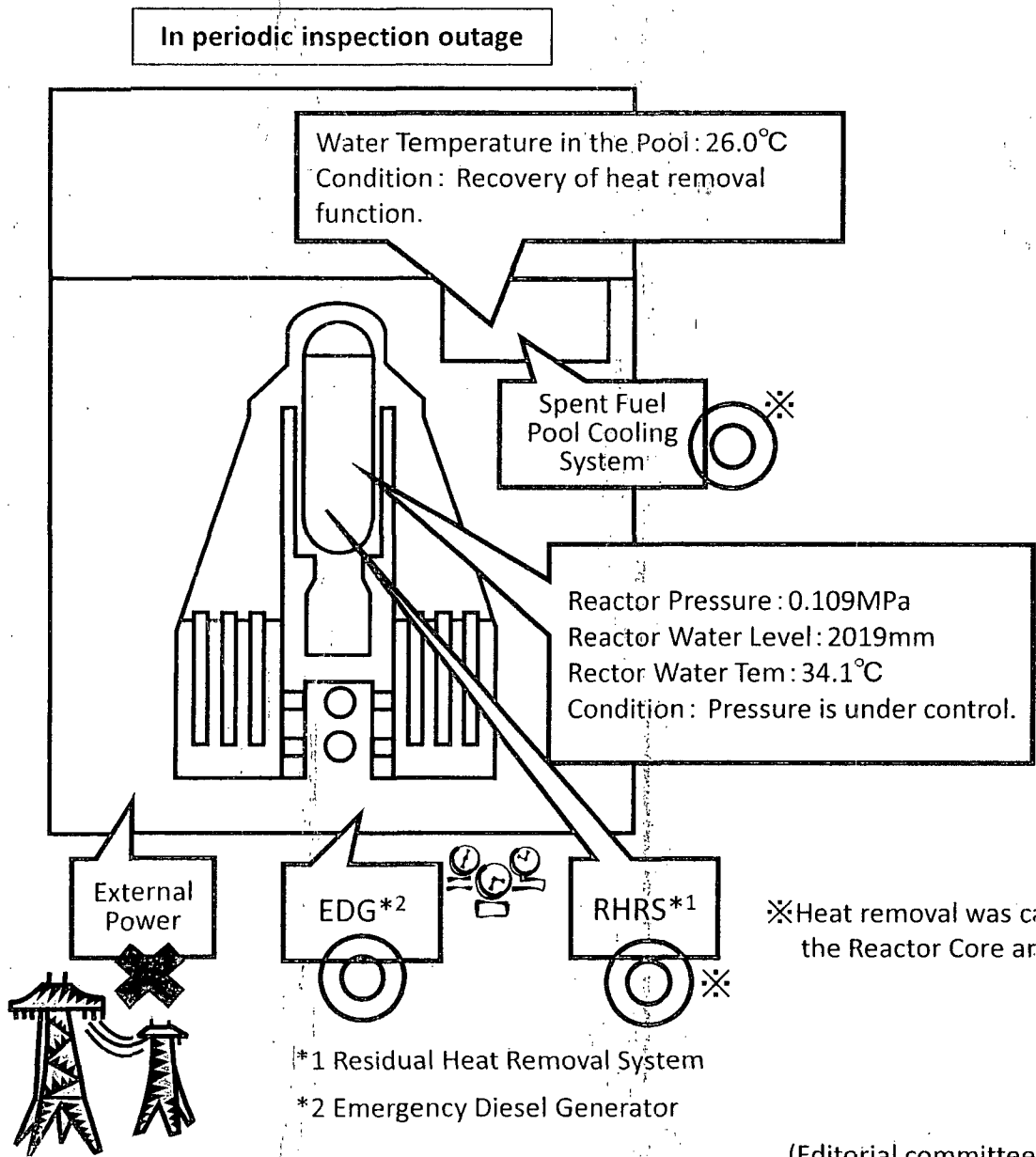
In periodic inspection outage



Current Conditions:
Cold shutdown at 14:30 March 20th.
Receiving electricity from external
power supply from 11:36 March 21th.

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 11:00 March 22nd, 2011)



In periodic inspection outage

Current Conditions:
 Emergency Diesel Generator for Unit 6 is being operated.
 Pump for RHR (B) for Unit 6 started up (22:14 March 19th) and carried out heat removal for the Spent Fuel Pool.
 At 18:48 March 20th Changed the objective for heat removal from the Spent Fuel Pool to the Reactor Core
 Cold shutdown at 19:27 March 20th
 Receiving electricity reached to the transformer of starter at 19:52 March 20th.

Future Operation: Works for recovering external power supply.

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

(Attachment)

March 22, 2011

Nuclear and Industrial Safety Agency

Regarding the result of analyzing the samples from the seawater around Fukushima Dai-ichi Nuclear Power Station of Tokyo Electric Power Co.

1. At 14:30 March 21th, Tokyo Electric Power Co.(TEPCO) took the samples of seawater at the coast line from about 100m south of the water discharge gates of Units 1 to 4 of Fukushima Dai-ichi Nuclear Power Station (NPS) and carried out Radioactive Nuclide Analysis.
2. The result of the analysis was reported at 21:40 March 21th. It showed that the radioactive nuclides of Cobalt, Iodine and Cesium were detected as given in the table below.
3. Among those nuclides detected, Iodine-131, Cesium-134 and Cesium-137 exceeded "the concentration criteria in the liquid effluents outside the surrounding area given by the notification of radiation dose."
4. Although the measured results exceeded the allowable criteria of concentration, considering the evacuation of the residents within 20-kilometer radius from the Fukushima Dai-ichi NPS and the current situation of usage of this ocean area, there is no immediate risk to human health.
5. We are asking Nuclear Security Commission (NSC) of Japan to assess the measured results. However, we have only one survey point at the current moment and NSC may be unable to present an appropriate assessment by this data only. Therefore, Ministry of Education, Culture, Sports, Science and Technology will start the monitoring survey of the ocean and TEPCO will also continue the survey.

Major radioactive nuclides detected	Concentration of radioactive nuclide (Bq/cm ³)	Allowable concentration of radioactive nuclide in the liquid effluents (Bq/cm ³)
Cobalt-58	6.0×10^{-2}	1.0×10^0
Iodine-131	5.1×10^0	4.0×10^{-2}
Iodine-132	2.1×10^0	3.0×10^0
Cesium-134	1.5×10^0	6.0×10^{-2}
Cesium-136	2.1×10^{-1}	3.0×10^{-1}
Cesium-137	1.5×10^0	9.0×10^{-2}

福島第一原子力発電所付近の海水からの放射性物質の検出について
(第二報)

平成 23 年 3 月 22 日
東京電力株式会社

平成 23 年 3 月 21 日、周辺環境のモニタリングの一環として、東北地方太平洋沖地震で被災した福島第一原子力発電所の放水口付近（南側）において、海水に含まれる放射性物質のサンプリング調査を行った結果、放射性物質が検出されたことから、原子力安全・保安院ならびに福島県へ連絡いたしました。

(お知らせ済み)

その後、福島第一原子力発電所で検出された放射性物質の海洋への拡散を評価するために、採取場所を拡大してサンプリング調査を行いました。別紙のとおり、放射性物質が検出されたことから、原子力安全・保安院ならびに福島県へ連絡いたしました。

今後も、同様のサンプリング調査を実施することとしております。

以 上

海水核種分析結果

試料採取日時刻	平成23年3月22日 06時30分			
採取場所	1F 南放水口付近 (1~4号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	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)
Co-58	1.868E-02	2.138E-02	1E+00	0.0
I-131	1.190E+00	2.293E-02	4E-02	29.8
I-132	1.362E+00	7.721E-02	3E+00	0.5
Cs-134	1.504E-01	1.769E-02	6E-02	2.5
Cs-136	2.350E-02	1.056E-02	3E-01	0.1
Cs-137	1.535E-01	1.626E-02	9E-02	1.7

海水核種分析結果

試料採取日時刻	平成23年3月22日 0時38分			
採取場所	2F富岡川河口付近 (3, 4u放水口から北側に約2, 000m地点) (1Fから約6 km)			
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	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)
Co-58	7. 028E-02	1. 253E-02	1E+00	0. 0
I-131	3. 211E+00	1. 694E-02	4E-02	80. 3
I-132	8. 761E-01	4. 236E-02	3E+00	0. 3
Cs-134	7. 535E-02	1. 102E-02	8E-02	1. 3
Cs-136	1. 159E-02	7. 718E-03	3E-01	0. 0
Cs-137	7. 760E-02	1. 186E-02	9E-02	0. 9

海水核種分析結果

試料採取日時刻	平成23年3月21日 23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	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)
Co-58	5.704E-03	7.570E-03	1E+00	0.0
I-131	1.085E+00	1.284E-02	4E-02	27.1
I-132	1.597E-01	4.392E-02	3E+00	0.1
Cs-134	4.815E-02	9.213E-03	6E-02	0.8
Cs-136	6.682E-03	4.722E-03	3E-01	0.0
Cs-137	5.283E-02	8.822E-03	9E-02	0.6

海水核種分析結果

試料採取日時刻	平成23年3月21日 23時45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16km)			
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	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)
Co-58	検出限界以下	6.845E-03	1E+00	-
I-131	6.558E-01	1.226E-02	4E-02	16.4
I-132	1.205E-01	4.146E-02	3E+00	0.0
Cs-134	3.110E-02	8.657E-03	6E-02	0.5
Cs-136	5.474E-03	4.840E-03	3E-01	0.0
Cs-137	3.292E-02	8.303E-03	9E-02	0.4



21 March, 2011

Fukushima Dai-ichi
Monitoring points

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

Monitoring points	①																							
monitoring car	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	4:00
Reading (μ Sv/h)	2449.0	2444.0	2439.0	2438.0	2433.0	2431.0	2428.0	2426.0	2421.0	2401.0	2398.0	2386.0	2392.0	2389.0	2365.0	2363.0	2380.0	2378.0	2375.0	2372.0	2370.0	2366.0	2364.0	2362.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	WNW	W	W	WNW	WNW	WNW	W	W	W	NW	NW	NW	W	NW	SW	N	W	ESE	WNW	W	NW	NW	WNW	WNW
wind speed (m/s)	1.3	0.9	0.8	0.9	1.0	1.0	0.8	0.6	0.5	0.7	0.8	0.5	0.9	0.8	1.0	1.0	0.6	0.5	0.8	0.8	0.7	0.7	1.1	0.8

Monitoring points	①																							
monitoring car	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	8:00
Reading (μ Sv/h)	2356.0	2351.0	2350.0	2347.0	2345.0	2343.0	2341.0	2339.0	2336.0	2333.0	2330.0	2324.0	2328.0	2325.0	2319.0	2312.0	2293.0	2283.0	2271.0	2251.0	2232.0	2215.0	2200.0	2188.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	NW	WNW	WNW	WNW	W	E	E	ENE	E	E	NE	SW	SW	NE	E	E	NNE	NNE	WNW	NE	NW	WSW	W
wind speed (m/s)	0.6	1.1	1.3	1.6	0.9	0.7	0.7	0.8	0.7	1.0	1.4	1.2	1.1	0.9	1.6	1.4	1.2	1.0	0.8	0.7	0.8	0.8	0.9	1.2

Monitoring points	①																							
monitoring car	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	12:00
Reading (μ Sv/h)	2161.0	2147.0	2140.0	2128.0	2126.0	2122.0	2120.0	2127.0	2114.0	2111.0	2108.0	2098.0	2100.0	2100.0	2100.0	2102.0	2105.0	2107.0	2107.0	2108.0	2110.0	2112.0	2113.0	2108.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NW	NW	NW	W	W	N	NE	W	W	NW	NW	NW	NW	W	NW	NW	NW	NW	N	SW	N	NE	E	NNE
wind speed (m/s)	1.0	0.8	0.7	0.7	1.7	4.6	5.0	3.0	2.0	4.4	4.1	2.1	2.6	2.0	1.4	1.5	1.0	0.9	0.8	1.2	1.5	1.7	1.5	1.1

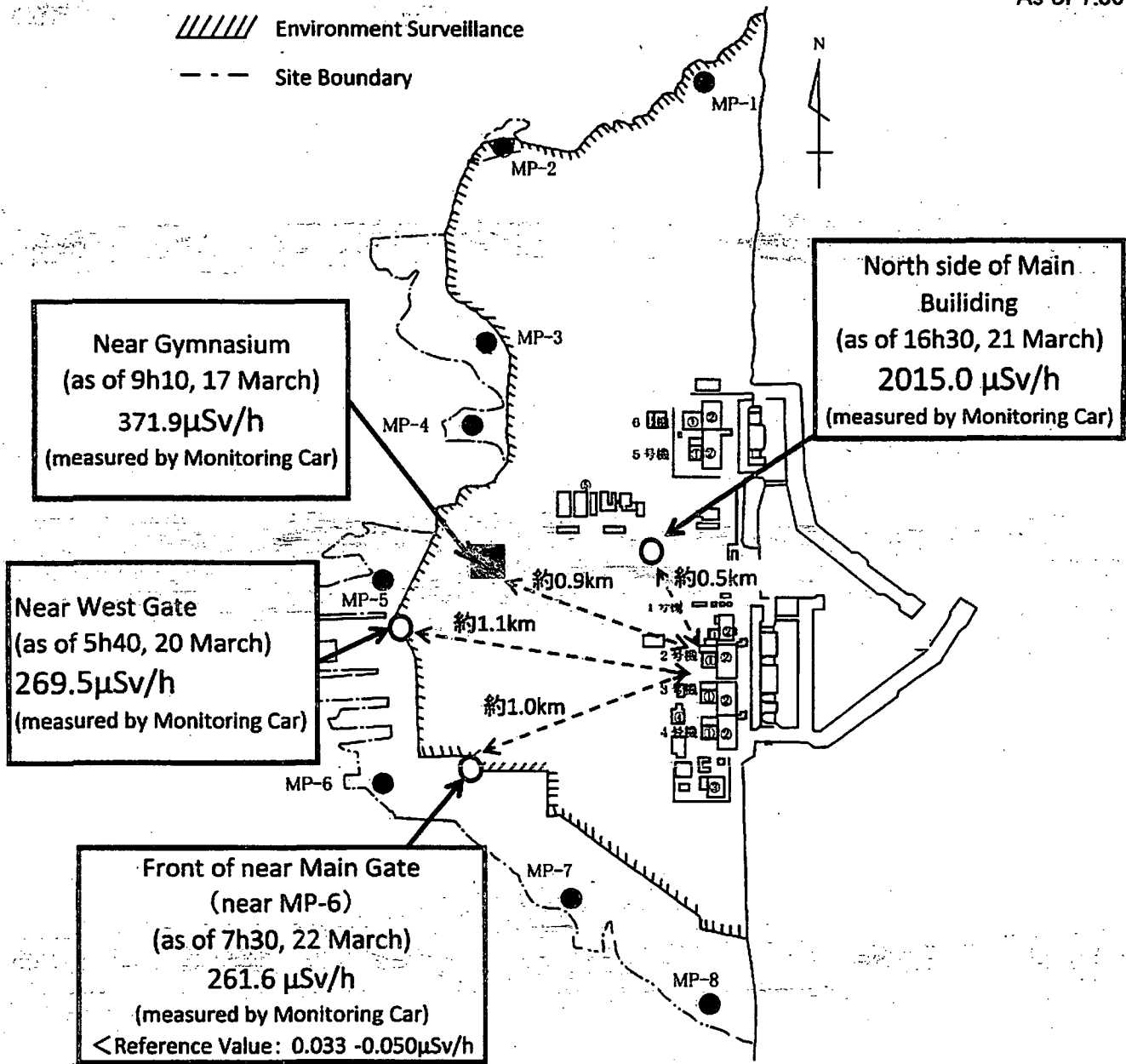
Monitoring points	①																							
monitoring car	12:10	12:20	12:30	12:40	12:50	13:00	13:10	13:20	13:30	13:40	13:50	14:00	14:10	14:20	14:30	14:40	14:50	15:00	15:10	15:20	15:30	15:40	15:50	16:00
Reading (μ Sv/h)	2112.0	2107.0	2111.0	2112.0	2110.0	2105.0	2103.0	2098.0	2092.0	2089.0	2088.0	2084.0	2053.0	2043.0	2039.0	2035.0	2029.0	2019.0	2019.0	2013.0	2013.0	2012.0	2013.0	2016.0
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	SE	NW	NW	NW	N	SW	E	NE	E	NE	NE	NE	N	NE	NE	N	NE	N	N	NE	NE	NE	NE	N
wind speed (m/s)	0.9	1.9	1.1	0.9	0.7	0.6	0.8	1.0	0.8	1.5	4.3	4.0	3.7	1.1	1.2	1.3	3.8	2.1	3.8	5.7	6.8	5.8	6.3	4.9

Monitoring points	①					④		MP-7付近	④															
monitoring car	16:10	16:20	16:30	16:42	16:50	17:06	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	20:00
Reading (μ Sv/h)	2013.0	2011.0	2015.0	1140.0	508.0	1292.0	-	-	729.0	494.3	1383.0	1757.0	1256.0	1428.0	1932.0	1499.0	1105.0	1201.0	823.8	700.1	587.3	503.9	486.2	483.5
neutron	N.D	N.D	N.D	N.D	N.D	N.D	-	-	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	NE	N	NE	E	S	SW	-	-	E	SE	ESE	ENE	ENE	NNW	SE	SSE	WSW	W	W	WNW	W	WSW	WNW	SW
wind speed (m/s)	5.9	5.7	4.8	4.9	0.7	2.5	-	-	3.5	0.9	0.7	0.5	0.7	0.5	0.3	0.4	0.3	0.4	0.4	0.4	0.2	0.5	0.7	0.7

①→④ Front of near Main Gate (near MP-6) (approx. 1.0km from Unit 2 in westnorthwest direction) ※Move by request of fire authority

Monitoring points	④																							
monitoring car	20:10	20:20	20:30	20:40	20:50	21:00	21:10	21:20	21:30	21:40	21:50	22:00	22:10	22:20	22:30	22:40	22:50	23:00	23:10	23:20	23:30	23:40	23:50	
Reading (μ Sv/h)	529.3	471.2	442.2	432.4	424.5	417.1	410.4	403.8	398.0	390.6	384.9	380.0	374.5	369.6	365.0	360.9	356.0	352.7	348.5	344.6	341.5	338.5	334.1	
neutron	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
wind direction	S	WSW	WNW	WNW	WNW	W	WSW	WNW	W	W	W	WNW	W	WNW	NW	SSW	SW	S	W	WNW	NW	WSW	W	
wind speed (m/s)	0.3	0.4	0.4	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.8	0.6	0.6	0.5	0.5	0.6	0.3	0.2	0.3	0.4	0.5	0.5	0.7	

Environment Surveillance
Site Boundary



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

March, 2011																								
Monitoring Posts	0:00	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	
P1 (μSv/h)	18.187	17.870	17.880	17.917	17.953	18.153	18.277	18.007	17.667	17.497	17.483	17.847	17.840	17.403	17.263	16.903	16.943	16.653	16.497	16.440	16.373	16.323	16.243	16.187
P2 (μSv/h)	11.920	11.883	11.873	11.587	11.743	11.840	12.010	11.733	11.423	11.327	11.247	11.480	11.767	11.397	11.183	10.850	10.817	10.643	10.500	10.420	10.357	10.340	10.233	10.187
P3 (μSv/h)	17.570	17.423	17.453	17.397	17.437	17.643	17.567	17.437	17.240	17.110	17.057	17.077	17.330	17.393	17.010	16.920	16.870	16.637	16.450	16.380	16.340	16.313	16.247	16.187
P4 (μSv/h)	14.283	14.293	14.587	14.500	14.577	14.530	14.503	14.527	14.400	14.090	13.870	13.793	13.983	14.387	13.973	13.903	13.507	13.600	13.300	13.250	13.143	13.110	13.080	13.000
P5 (μSv/h)	14.573	14.367	14.860	14.567	14.667	14.653	14.513	14.473	14.567	14.207	13.920	13.713	13.833	14.367	13.880	13.820	13.293	13.467	13.000	12.900	12.800	12.753	12.700	12.600
P6 (μSv/h)	14.930	14.730	14.793	14.837	14.793	14.723	14.670	14.740	14.607	14.467	14.173	14.033	14.193	14.560	14.147	14.113	13.717	13.893	13.570	13.460	13.413	13.387	13.333	13.280
P7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	W	WNW	W	W	W	W	WNW	W	W	WSW	W	WSW	NNW	N	NNW	W	NNW	NNW	NNW	W	NNW	N	N	N
Wind speed (m/s)	6.3	1.8	2.9	1.5	8.8	8.2	1.8	4.4	4.6	1.1	4.1	2.0	0.9	2.3	0.8	2.6	1.7	2.7	1.1	4.4	1.1	1.9	2.2	

March, 2011																								
Monitoring point	4:00	4:10	4:20	4:30	4:40	4:50	5:00	5:10	5:20	5:30	5:40	5:50	6:00	6:10	6:20	6:30	6:40	6:50	7:00	7:10	7:20	7:30	7:40	
P1 (μSv/h)	16.160	16.140	16.100	16.213	17.327	19.673	18.193	18.620	18.310	17.980	17.803	17.690	17.463	17.250	17.173	17.103	16.910	16.763	16.683	16.490	16.483	16.440	16.380	16.320
P2 (μSv/h)	10.180	10.147	10.093	10.187	11.027	13.457	11.027	11.367	11.100	10.963	10.833	10.730	10.620	10.477	10.447	10.327	10.263	10.147	10.093	9.977	9.937	9.923	9.913	9.870
P3 (μSv/h)	16.153	16.177	16.073	16.160	17.037	16.577	16.457	16.650	16.673	16.573	16.483	16.380	16.237	16.157	16.093	15.983	16.017	15.880	15.800	15.710	15.777	15.673	15.667	15.600
P4 (μSv/h)	12.987	12.930	12.937	12.930	14.000	13.177	13.283	14.240	14.133	13.963	13.860	13.773	13.853	13.507	13.357	13.357	13.180	13.057	13.033	12.907	12.847	12.820	12.780	12.700
P5 (μSv/h)	12.607	12.527	12.507	12.507	13.433	13.040	12.940	14.160	13.993	13.687	13.580	13.413	13.200	13.087	13.000	12.860	12.700	12.607	12.507	12.373	12.347	12.293	12.247	12.180
P6 (μSv/h)	13.270	13.193	13.193	13.217	13.743	13.897	14.467	17.233	16.990	16.603	16.287	16.023	15.823	15.470	15.340	15.130	14.967	14.783	14.673	14.397	14.300	14.220	14.150	14.080
P7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	N	N	NNE	NNE	N	N	N	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW	NNW
Wind speed (m/s)	1.5	0.8	2.2	3.7	4.3	4.6	4.9	6.1	7.1	7.3	6.8	8.0	5.8	5.7	5.5	6.6	7.2	5.9	6.6	7.8	6.8	6.9	6.9	

March, 2011																								
Monitoring point	8:00	8:10	8:20	8:30	8:40	8:50	9:00	9:10	9:20	9:30	9:40	9:50	10:00	10:10	10:20	10:30	10:40	10:50	11:00	11:10	11:20	11:30	11:40	11:50
P1 (μSv/h)	16.220	16.107	16.087	16.007	15.910	15.913	15.847	15.787	15.780	15.737	15.663	15.593	15.550	15.510	15.387	15.413	15.330	15.340	15.300	15.247	15.220	15.183	15.130	15.080
P2 (μSv/h)	9.923	9.770	9.743	9.730	9.867	9.697	9.633	9.637	9.580	9.580	9.547	9.533	9.520	9.470	9.423	9.403	9.323	9.323	9.317	9.300	9.283	9.283	9.263	9.210
P3 (μSv/h)	15.567	15.550	15.563	15.440	15.477	15.450	15.447	15.377	15.333	15.350	15.313	15.333	15.323	15.243	15.193	15.117	15.103	15.127	15.107	15.020	15.033	15.080	15.067	15.000
P4 (μSv/h)	12.700	12.643	12.583	12.587	12.560	12.523	12.497	12.447	12.467	12.423	12.387	12.370	12.370	12.290	12.213	12.160	12.170	12.100	12.137	12.113	12.043	12.053	12.037	11.980
P5 (μSv/h)	12.153	12.127	12.060	12.047	11.960	11.953	11.953	11.947	11.893	11.907	11.853	11.807	11.760	11.753	11.660	11.660	11.560	11.467	11.467	11.467	11.467	11.433	11.407	11.350
P6 (μSv/h)	13.970	13.843	13.780	13.707	13.660	13.600	13.537	13.467	13.443	13.350	13.360	13.300	13.230	13.180	13.093	13.003	12.923	12.883	12.813	12.767	12.790	12.737	12.720	12.660
P7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NNW	NW	NW	NW	NW	NW	NW	NNW	NNW	NNW	NNW	N	NNW	NNW	NNW	NNW	SW	N	NNW	N	N	N	NNW	NNW
Wind speed (m/s)	6.5	6.5	6.8	6.6	5.4	4.9	3.8	4.7	4.2	3.6	3.9	4.0	2.8	2.1	3.3	3.8	1.4	3.0	3.3	2.9	3.0	3.5	2.5	

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

Monitoring point	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	
P1 (μSv/h)	15.153	15.113	15.130	15.070	15.060	15.103	15.193	15.243	15.350	15.587	15.420	15.757	15.497	16.813	16.227	15.280	15.037	15.030	15.027	14.950	15.040	14.943	14.973	14.973
P2 (μSv/h)	9.223	9.193	9.137	9.113	9.093	9.110	9.143	9.220	9.293	9.370	9.373	9.513	9.490	10.510	9.877	9.167	9.003	8.997	8.990	8.977	8.957	8.990	8.957	8.957
P3 (μSv/h)	15.273	15.277	15.237	15.213	15.180	15.137	15.160	15.110	15.260	15.317	15.363	15.413	15.247	16.433	15.583	15.030	15.030	14.977	14.993	14.943	14.973	14.953	14.950	14.950
P4 (μSv/h)	10.730	10.673	10.693	10.640	10.637	10.603	10.610	10.623	10.690	10.760	10.800	10.820	10.880	11.757	12.027	10.517	10.467	10.457	10.460	10.430	10.433	10.467	10.450	10.450
P5 (μSv/h)	10.533	10.487	10.487	10.387	10.387	10.387	10.380	10.413	10.433	10.480	10.633	10.640	10.913	11.633	12.513	10.433	10.287	10.287	10.287	10.227	10.287	10.240	10.220	10.220
P6 (μSv/h)	11.733	11.693	11.677	11.633	11.607	11.660	11.613	11.667	11.663	11.697	11.747	11.707	11.923	12.087	13.337	11.780	11.517	11.547	11.513	11.470	11.510	11.507	11.483	11.483
P7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NW	NNW	NNW	NNW	N	N	NNW	NW	NNW	NW	N	NNW	NW	NW	NW	WNW	WNW	WNW	NW	NNW	WNW	NW	NW	NW
Wind speed (m/s)	1.3	1.7	1.6	2.0	3.2	1.9	1.8	1.4	1.1	1.3	1.3	1.4	1.3	1.1	0.9	0.5	0.6	0.5	0.4	1.0	1.0	0.7	1.4	

Monitoring point	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	
P1 (μSv/h)	14.883	14.930	14.883	14.840	14.893	15.123	15.580	14.997	14.923	14.917	15.013	14.957	14.823	14.737	14.690	14.633	14.563	14.547	14.473	14.473	14.467	14.487	15.623	15.623
P2 (μSv/h)	8.960	8.920	8.927	8.907	8.917	8.950	9.670	9.027	9.000	8.953	9.260	9.063	8.917	8.837	8.797	8.747	8.633	8.627	8.553	8.617	8.580	9.017	12.857	10.757
P3 (μSv/h)	14.937	14.897	14.870	14.893	14.880	14.853	15.290	14.983	15.007	14.973	15.240	15.193	15.107	14.877	14.757	14.727	14.677	14.567	14.707	15.710	16.007	20.413	24.880	22.880
P4 (μSv/h)	10.450	10.460	10.433	10.380	10.413	10.407	11.043	10.730	10.547	10.540	10.710	10.740	10.740	10.407	10.340	10.237	10.173	10.170	10.113	10.763	10.863	13.090	19.050	17.550
P5 (μSv/h)	10.187	10.193	10.193	10.187	10.100	10.153	10.873	10.387	10.333	10.387	10.533	10.633	10.613	10.193	10.193	10.073	9.947	9.900	9.833	10.387	10.480	11.860	19.647	18.000
P6 (μSv/h)	11.433	11.450	11.417	11.423	11.457	11.433	11.863	11.693	11.440	11.473	11.627	11.547	11.573	11.357	11.333	11.277	11.180	11.183	11.047	11.057	11.167	11.373	13.073	16.000
P7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NW	NNW	NNW	N	N	N	NE	NNE	NNE	NNE	NE	NE	NNE	NNE	NNE	N	NNE	N	N	N	N	N	N	N
Wind speed (m/s)	0.7	0.5	1.9	1.8	1.3	0.9	2.5	2.9	2.9	3.7	2.9	3.3	3.5	3.0	5.6	6.1	5.4	6.5	5.8	5.0	4.4	4.3	3.3	

Monitoring point	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	12:00
P1 (μSv/h)	20.987	36.294	50.254	34.704	33.504	35.174	38.697	24.467	23.794	22.160	21.834	21.374	21.094	20.884	20.760	20.423	20.080	21.597	23.924	27.280	23.367	21.844	21.180	20.987
P2 (μSv/h)	20.380	38.340	42.694	24.630	18.920	24.397	17.813	13.593	12.667	12.127	11.977	11.823	11.683	11.550	11.610	11.437	11.317	11.773	15.080	18.283	15.753	12.980	12.127	12.257
P3 (μSv/h)	28.370	34.800	28.524	20.160	18.797	18.727	17.970	17.653	17.447	17.273	17.263	17.100	17.057	16.997	16.953	16.960	16.940	16.903	18.830	22.074	22.647	20.113	20.163	21.987
P4 (μSv/h)	22.714	28.377	26.327	18.713	15.777	16.687	15.243	13.660	13.500	13.403	13.330	13.263	13.250	13.180	13.187	13.153	13.187	13.167	15.187	17.647	18.713	15.643	15.057	16.257
P5 (μSv/h)	21.687	30.114	28.907	20.053	16.767	17.547	16.427	12.700	12.607	12.507	12.460	12.347	12.347	12.347	12.300	12.347	12.307	12.347	14.913	17.393	19.247	14.920	14.113	15.487
P6 (μSv/h)	16.027	23.500	31.797	26.607	24.197	20.367	21.160	15.370	15.250	14.847	14.723	14.607	14.533	14.463	14.420	14.337	14.310	14.400	16.170	18.193	18.703	16.520	15.413	15.257
P7 (μSv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	N	N	N	NNE	NNE	N	NNE	N	N	N	N	N	N	N	N	N	N	NNE	N	NNE	NNE	N	N	N
Wind speed (m/s)	5.4	4.2	3.7	6.2	5.3	13.7	6.6	7.4	7.1	6.3	8.0	8.2	8.8	7.9	6.3	5.0	6.4	5.6	5.0	3.5	6.3	7.0	6.5	

Ishima Dai-ri (TEPCO's Monitoring Post)

2011/3/

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

12:20:00																								
Monitoring point	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	16:00
P1 (μ Sv/h)	20.597	20.427	20.260	20.107	19.887	19.500	19.293	19.067	18.887	18.727	18.463	18.307	18.120	17.880	17.740	17.613	17.460	17.373	17.173	17.097	17.033	16.930	16.800	16.7
P2 (μ Sv/h)	12.000	11.880	12.197	12.417	12.147	11.830	11.293	11.173	11.097	10.993	10.877	10.727	10.640	10.477	10.413	10.327	10.200	10.153	10.203	10.140	10.080	10.073	9.997	9.9
P3 (μ Sv/h)	20.573	20.700	25.507	27.727	25.510	23.097	21.447	21.140	20.860	20.803	20.303	20.023	19.847	19.527	19.310	19.227	18.960	18.827	18.713	18.587	18.427	18.273	18.147	18.0
P4 (μ Sv/h)	15.377	15.307	18.253	19.037	17.800	16.210	15.260	15.067	14.917	14.790	14.617	14.453	14.380	14.167	13.990	14.050	13.860	13.870	13.903	13.823	13.720	13.627	13.493	13.3
P5 (μ Sv/h)	14.253	14.273	16.920	16.947	16.933	15.013	13.927	13.740	13.613	13.487	13.373	13.193	13.073	12.800	12.720	12.767	12.660	12.607	12.700	12.600	12.533	12.473	12.440	12.3
P6 (μ Sv/h)	15.233	15.133	15.383	15.547	15.690	15.347	14.843	14.697	14.603	14.463	14.343	14.210	14.070	13.903	13.827	13.820	13.740	13.700	13.770	13.710	13.600	13.583	13.523	13.4
P7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	7.280	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	NNE	N	NNE	N	N	NNE	NNE	NNE	NNE	NNE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE	NE
Wind speed (m/s)	7.1	8.5	6.9	6.4	5.5	6.4	4.1	4.3	5.5	5.7	6.5	5.6	5.0	6.4	6.3	7.7	5.7	6.2	6.5	6.2	5.0	4.8	4.8	

12:20:00																								
Monitoring point	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	20:00
P1 (μ Sv/h)	17.377	17.697	18.033	18.017	18.213	18.430	18.287	18.137	18.003	17.830	17.723	17.637	17.483	17.393	17.333	17.210	17.177	17.103	16.987	16.927	16.800	16.713	16.683	16.6
P2 (μ Sv/h)	10.783	11.360	11.830	11.850	12.063	12.310	12.210	12.063	11.997	11.850	11.700	11.557	11.507	11.430	11.297	11.277	11.120	11.097	10.987	10.953	10.900	10.843	10.727	10.7
P3 (μ Sv/h)	18.703	19.340	20.007	19.827	19.797	20.130	19.977	19.667	19.543	19.303	19.233	19.033	18.930	18.763	18.627	18.460	18.390	18.287	18.183	18.033	17.907	17.837	17.790	17.7
P4 (μ Sv/h)	14.330	14.980	15.737	15.660	15.770	16.127	15.913	15.760	15.680	15.510	15.337	15.230	15.090	14.977	14.910	14.790	14.710	14.623	14.517	14.413	14.340	14.257	14.157	14.0
P5 (μ Sv/h)	13.093	13.640	14.340	14.373	14.440	14.707	14.613	14.513	14.373	14.267	14.127	14.073	13.920	13.787	13.787	13.687	13.587	13.540	13.487	13.433	13.340	13.240	13.193	13.1
P6 (μ Sv/h)	14.293	15.097	15.863	16.030	15.977	16.313	16.227	16.023	15.943	15.783	15.593	15.513	15.420	15.303	15.183	15.110	14.997	14.957	14.813	14.763	14.737	14.593	14.577	14.4
P7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	ENE	ENE	E	E	E	ENE	E	E	E	ENE	ENE	ENE	NE	NE	NE	NE	NE	NE	NE	NE	NNE	NNE	NNE	N
Wind speed (m/s)	3.1	3.0	2.8	2.9	3.2	3.1	3.3	3.5	3.6	3.3	2.9	2.6	2.6	2.0	1.9	2.2	1.6	1.4	1.1	1.2	2.2	1.8	2.0	

12:20:00																							
Monitoring point	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
P1 (μ Sv/h)	16.570	16.533	16.400	16.363	16.313	16.237	16.617	27.777	24.767	20.427	21.244	25.794	23.964	20.680	21.164	21.477	20.977	21.257	19.533	18.980	18.580	18.350	18.390
P2 (μ Sv/h)	10.667	10.633	10.537	10.490	10.497	10.443	10.583	20.037	19.770	16.260	15.897	17.097	25.594	15.273	15.000	16.183	15.620	14.590	13.247	12.553	12.583	11.893	12.127
P3 (μ Sv/h)	17.630	17.493	17.420	17.407	17.273	17.223	17.200	18.900	26.220	25.140	22.697	21.710	26.324	28.017	20.797	21.307	19.370	20.173	18.893	18.000	17.767	17.640	17.610
P4 (μ Sv/h)	14.043	13.977	13.903	13.833	13.793	13.763	13.693	14.157	19.700	23.404	20.380	17.690	22.524	29.884	20.347	18.333	17.013	16.710	15.357	15.133	14.983	14.757	14.453
P5 (μ Sv/h)	13.093	13.000	13.000	12.607	12.907	12.867	12.800	13.053	17.740	28.707	25.840	20.240	21.194	33.107	26.247	20.487	19.160	16.613	16.500	15.393	15.053	14.860	14.473
P6 (μ Sv/h)	14.417	14.387	14.347	14.207	14.173	14.127	14.073	14.170	16.543	21.870	21.790	17.807	18.390	26.530	18.433	16.757	16.920	15.577	15.923	15.383	14.787	14.890	14.937
P7 (μ Sv/h)	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D	N.D
Wind direction	N	NW	N	NNW	NNW	NNW	N	NW	WNW	NNW	WNW	W	W	W	NNW	NW	WSW	WNW	NW	WNW	W	NNW	NNW
Wind speed (m/s)	1.8	1.5	1.3	2.2	2.4	2.4	2.2	2.1	3.6	2.0	2.7	4.7	8.2	5.7	0.3	0.6	0.3	0.1	0.3	0.2	3.6	0.8	0.4

Fukushima Daini NPS

as of 12:30, 22-Mar-2011

MP1 : 15.067 μ Sv/h
(Reference Value: 0.035~)

MP2 : 9.1227 μ Sv/h
(Reference Value: 0.042~)

MP3 : 14.977 μ Sv/h
(Reference Value: 0.036~)

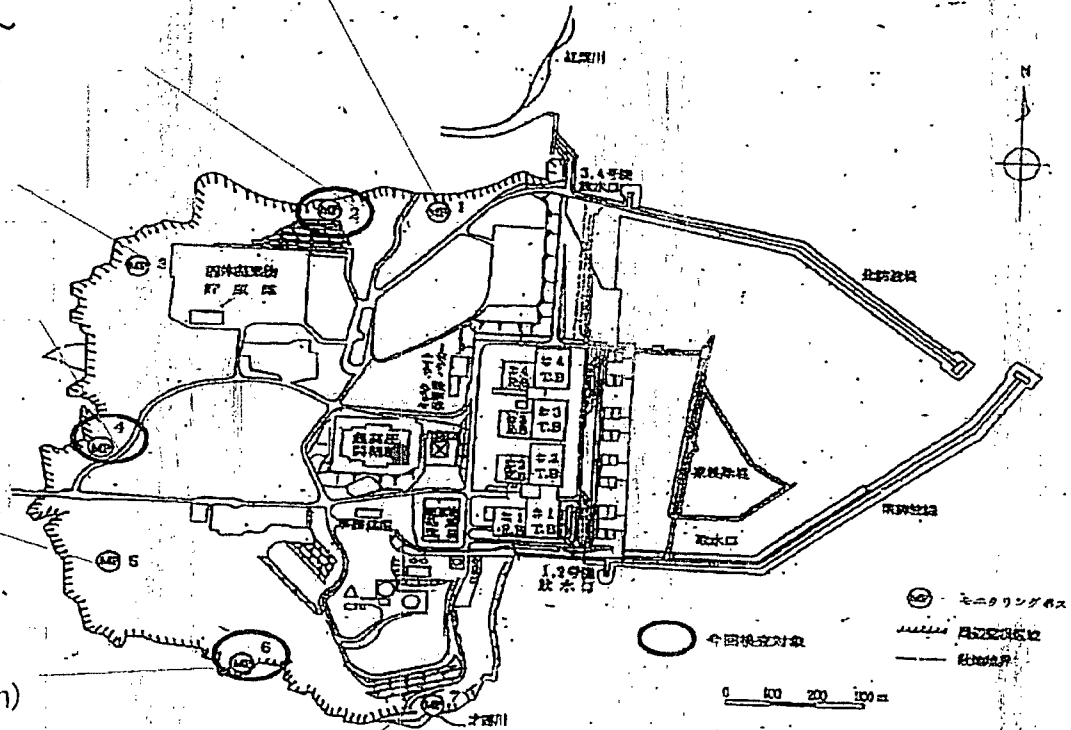
MP4 : 11.970 μ Sv/h
(Reference value: 0.036~)

MP5 : 11.373 μ Sv/h
(Reference Value: 0.041~)

MP6 : 12.617 μ Sv/h
(Reference value: 0.044~0.063 μ Sv/h)

MP7 : N.D
(Reference Value: 0.043~)

Location of Monitoring Post



Results of Nuclide Analysis in TEPCO Fukushima Dai-ichi NPS

Sampling Method: Extraction Of Dust By Monitoring Car

Measuring Method: Analysis Of Samples by Ge-Semiconductor Nuclide Analyzer in Fukushima Dai-ichi NPS

Measuring time: 500 seconds

Nuclide	19 March, 2011			20 March, 2011			21 March, 2011			③ Conc. Limit In Air Breathed By Radiation Worker (Bq/cm ³)※	
	North of Main Building			North of Main Building			North of Main Building				
	Sampling Time(11:53~12:13) * Before Water Spraying			Sampling Time(1:41~2:01)			Sampling Time(10:19~10:39)				
	Measuring duration(14:12~)			Measuring duration(13:28~)			Measuring Duration(13:28~)				
	① Conc. Of Radioactivity (Bq/cm ³)	② Conc. Of Detection Limit (Bq/cm ³)	Ratio Of Conc. Limit In Air (①/③)	① Conc. Of Radioactivity (Bq/cm ³)	② Conc. Of Detection Limit (Bq/cm ³)	Ratio Of Conc. Limit (①/③)	① Conc. Of Radioactivity (Bq/cm ³)	② Conc. Of Detection Limit (Bq/cm ³)	Ratio Of Conc. Limit (①/③)		
Volitile	I-131	5.940E-03	3.374E-05	5.94	2.303E-03	1.256E-05	2.30	1.516E-03	1.134E-05	1.52	1.0E-03
	I-132	2.203E-03	8.816E-05	0.03	N.D			2.539E-04	2.702E-05	0.00	7.0E-02
	I-133	3.773E-05	2.861E-05	0.01	N.D			N.D			5.0E-03
In Particle	Cs-134	2.165E-05	1.692E-05	0.01	2.840E-05	4.755E-06	0.01	3.383E-05	5.364E-06	0.02	2.0E-03
	Cs-136	N.D			5.629E-06	5.447E-06	0.001	4.529E-06	3.321E-06	0.0005	1.0E-02
	Cs-137	2.437E-05	1.771E-05	0.01	2.892E-05	5.003E-06	0.01	3.801E-05	4.671E-06	0.01	3.0E-03

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

Sampling Method: Sampling by Pumping Seawater

Measuring Method: Analysis Of 500 ml Seawater Sample by Ge-Semiconductor Nuclide Analyzer in Fukushima Dai-ichi NPS

Measuring time: 1000 seconds

Nuclide	as of 14:30, 21 Mar 2011			as of 06:30, 22 Mar 2011						③ Conc. Limit In Water
	Near water discharge gate (1-4u 330m from water discharge gate in direction of South)			Near water discharge gate (1-4u 330m from water discharge gate in direction of South)						
	① Conc. Of Radioactivity (Bq/cm ³)	② Conc. Of Detection Limit (Bq/cm ³)	Ratio Of Conc. Limit (①/③)	① Conc. Of Radioactivity (Bq/cm ³)	② Conc. Of Detection Limit (Bq/cm ³)	Ratio Of Conc. Limit (①/③)	① Conc. Of Radioactivity (Bq/cm ³)	② Conc. Of Detection Limit (Bq/cm ³)	Ratio Of Conc. Limit (①/③)	
Co-58	5.955E-02	3.349E-02	0.1	1.668E-02	2.138E-02	0.0				1.0E+00
I-131	5.066E+00	4.245E-02	126.7	1.190E+00	2.293E-02	29.8				4.0E-02
I-132	2.136E+00	1.925E-01	0.7	1.362E+00	7.721E-02	0.5				3.0E+00
Cs-134	1.466E+00	4.030E-02	24.8	1.504E-01	1.769E-02	2.5				6.0E-02
Cs-136	2.132E-01	2.358E-02	0.7	2.350E-02	1.056E-02	0.1				3.0E-01
Cs-137	1.484E+00	4.204E-02	16.5	1.535E-01	1.626E-02	1.7				9.0E-02

3月21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キ口) ②体育館付近(MP-5東側)(2号機より北西約0.9キ口)
 ③西門付近(MP-5付近)(2号機より西約1.1キ口) ④正門付近前(MP-6付近)(2号機より西南西約1.0キ口)

測定場所		①																							
E-タリソグカー		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	4:00
測定値(μSv/h)		2449.0	2444.0	2439.0	2438.0	2433.0	2431.0	2429.0	2426.0	2421.0	2401.0	2398.0	2396.0	2392.0	2389.0	2385.0	2383.0	2380.0	2378.0	2375.0	2372.0	2370.0	2366.0	2364.0	2362.0
性		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
風向		西北西	西	西	西北西	西北西	西北西	西	西	西	北西	北西	北西	北西	北西	北西	北	西	東南東	西北西	西	北西	北西	北西	北西
風速(m/s)		1.3	0.9	0.8	0.9	1.0	1.0	0.8	0.6	0.5	0.7	0.8	0.5	0.9	0.8	1.0	1.0	0.6	0.5	0.8	0.7	0.8	0.7	1.1	0.8

測定場所		①																							
E-タリソグカー		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	8:00
測定値(μSv/h)		2356.0	2351.0	2350.0	2347.0	2345.0	2343.0	2341.0	2339.0	2336.0	2333.0	2330.0	2324.0	2326.0	2325.0	2319.0	2312.0	2293.0	2283.0	2271.0	2251.0	2232.0	2215.0	2200.0	2168.0
性		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
風向		北西	北西	西北西	西北西	西北西	西	東	東	東北東	東	東	北東	南西	南西	北東	東	東	北北東	北北東	西北西	北東	北西	西南西	西
風速(m/s)		0.6	1.1	1.3	1.6	0.9	0.7	0.7	0.8	0.7	1.0	1.4	1.2	1.1	0.9	1.6	1.4	1.2	1.0	0.8	0.7	0.8	0.8	0.9	1.2

測定場所		①																							
E-タリソグカー		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	12:00
測定値(μSv/h)		2161.0	2147.0	2140.0	2128.0	2126.0	2122.0	2120.0	2127.0	2114.0	2111.0	2108.0	2098.0	2100.0	2100.0	2100.0	2102.0	2105.0	2107.0	2107.0	2108.0	2110.0	2112.0	2113.0	2108.0
性		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
風向		北西	北西	北西	西	西	北	北東	西	西	北西	北西	北西	北西	北西	北西	北西	北西	北西	北西	北	南西	北	北東	北東
風速(m/s)		1.0	0.8	0.7	0.7	1.7	4.6	5.0	3.0	2.0	4.4	4.1	2.1	2.6	2.0	1.4	1.5	1.0	0.9	0.8	1.2	1.5	1.7	1.5	1.1

測定場所		①																							
E-タリソグカー		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	16:00
測定値(μSv/h)		2112.0	2107.0	2111.0	2112.0	2110.0	2105.0	2103.0	2098.0	2092.0	2089.0	2068.0	2064.0	2053.0	2043.0	2039.0	2035.0	2029.0	2019.0	2019.0	2013.0	2013.0	2012.0	2013.0	2016.0
性		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
風向		南東	北西	北西	北西	北	南西	東	北東	東	北東	北東	北東	北	北東	北東	北	北東	北	北	北東	北東	北東	北東	北
風速(m/s)		0.9	1.9	1.1	0.9	0.7	0.6	0.8	1.0	0.8	1.5	4.3	4.0	3.7	1.1	1.2	1.3	3.8	2.1	3.8	5.7	6.8	5.8	6.3	4.9

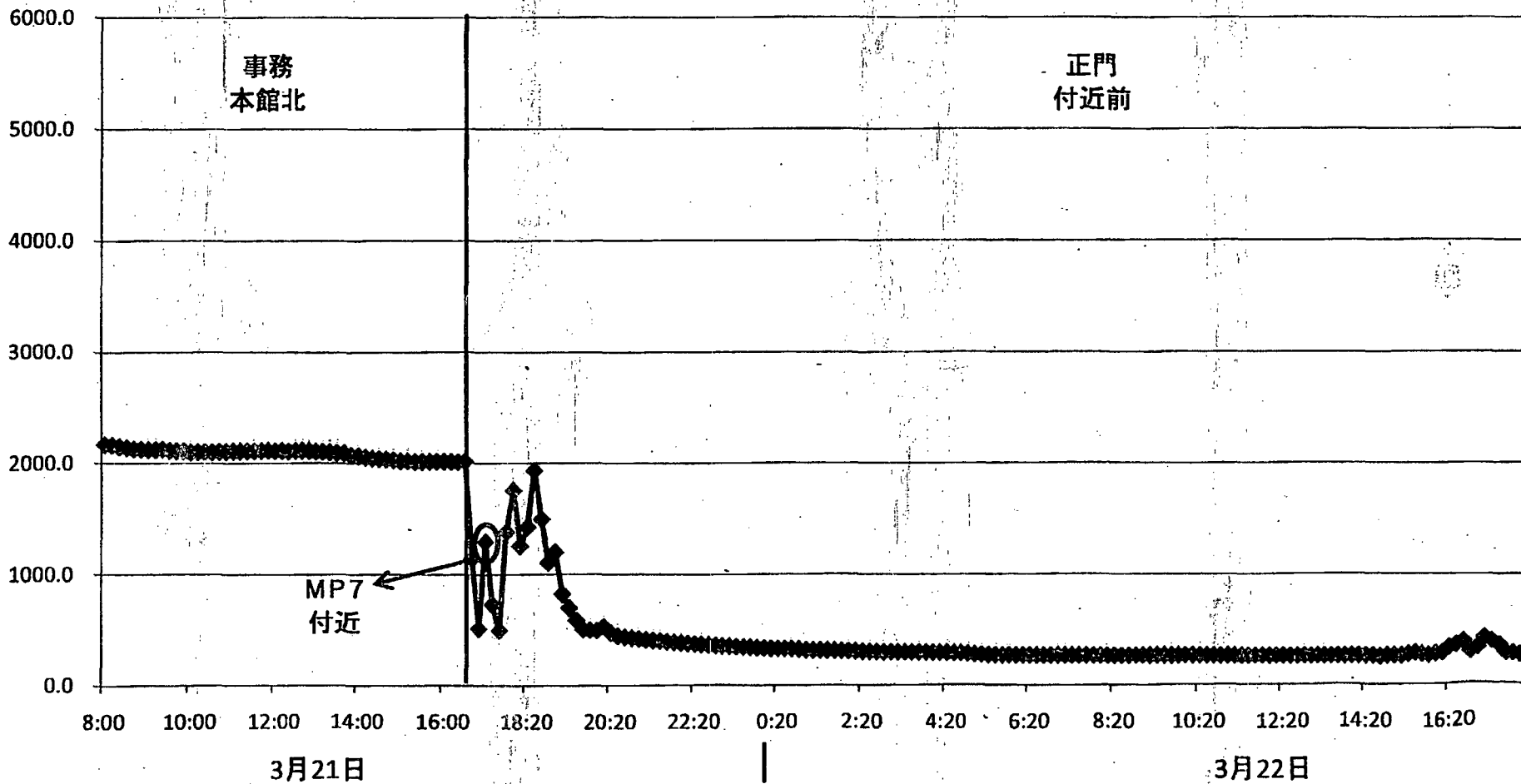
測定場所		①				④				MP-7付近				④											
E-タリソグカー		16:10	16:20	16:30	16:42	16:50	17:06	17:10	17:20	17:30	17:40	17:50	18:00	18:10	18:20	18:30	18:40	18:50	19:00	19:10	19:20	19:30	19:40	19:50	20:00
測定値(μSv/h)		2013.0	2011.0	2015.0	1140.0	508.0	1292.0	-	-	729.0	494.3	1383.0	1757.0	1256.0	1428.0	1932.0	1499.0	1105.0	1201.0	823.6	700.1	587.3	503.9	496.2	493.5
性		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
風向		北東	北	北東	東	南	南西	-	-	東	南東	東南東	東北東	東北東	北北西	南東	南南東	西南西	西	西	西北西	西	西南西	西北西	南西
風速(m/s)		6.9	6.7	4.8	4.9	0.7	2.5	-	-	3.5	0.9	0.7	0.6	0.7	0.5	0.3	0.4	0.3	0.4	0.4	0.2	0.5	0.7	0.7	0.7

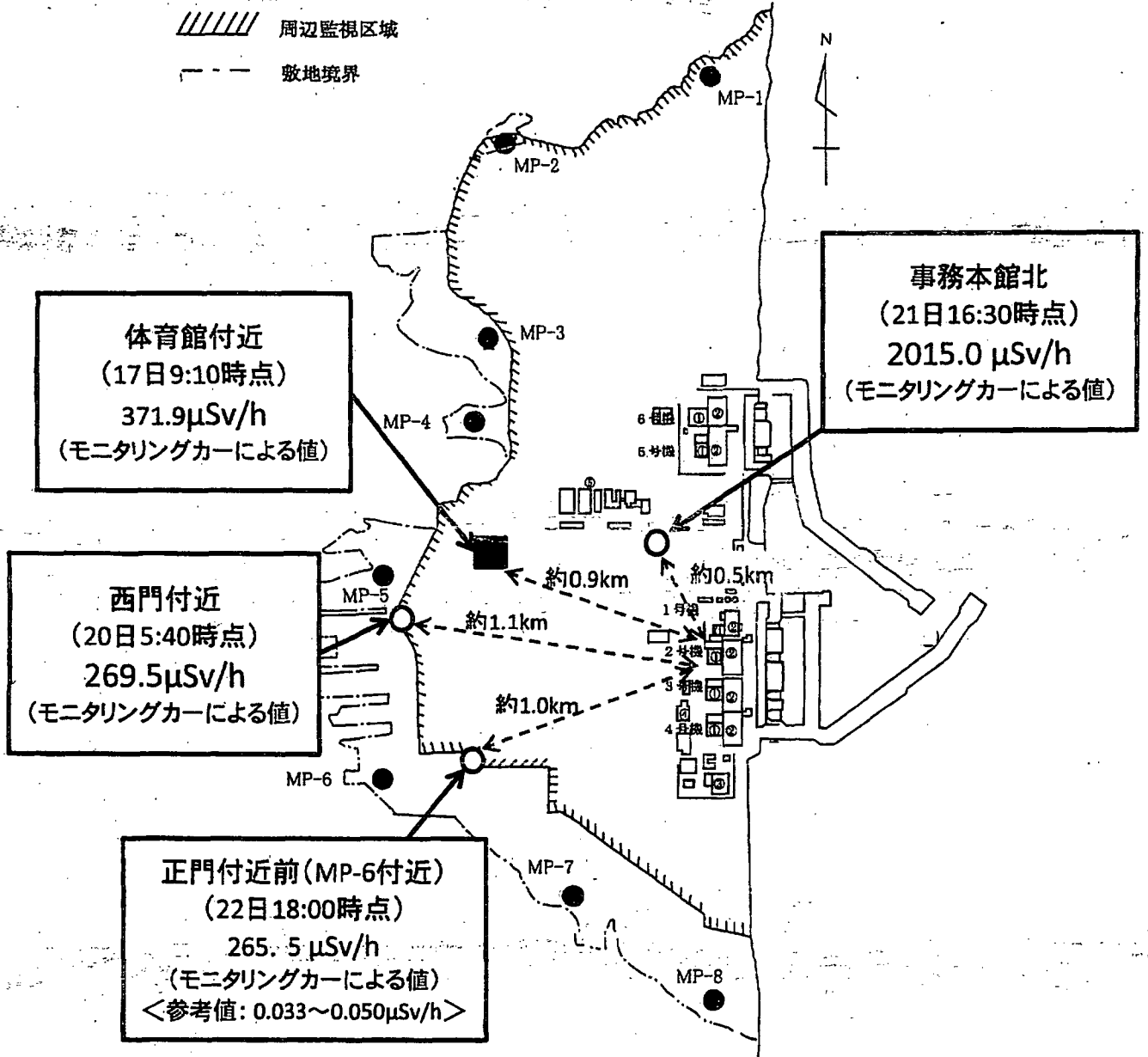
①→④ 正門付近前(MP-6付近)(2号機より西南西約1.0キ口) ※消防の依頼により移動

測定場所		④																							
E-タリソグカー		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	
測定値(μSv/h)		529.3	471.2	442.2	432.4	424.5	417.1	410.4	403.8	398.0	390.6	384.9	380.0	374.5	369.6	365.0	360.9	356.0	352.7	348.5	344.6	341.5	338.5	334.1	
性		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	
風向		南	西南西	西北西	西北西	西北西	西	西南西	西北西	西	西	西	西北西	西	西北西	北西	南南西	南西	南	西	西北西	北西	西南西	西	
風速(m/s)		0.3	0.4	0.4	0.7	0.8	0.7	0.7	0.7	0.7	0.7	0.6	0.6	0.6	0.5	0.6	0.6	0.3	0.2	0.3	0.4	0.5	0.5	0.7	

福島第一原子力発電所敷地内の線量率

μSv/h





島第二(2F) (事業者のモニタリングポスト)

3月22日		※																						
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	
MP1(μSv/h)	15.103	15.147	15.120	15.067	15.027	15.040	14.980	14.947	14.977	14.970	15.043	17.023	27.080	37.954	50.240	49.404	42.264	43.274	49.137	35.667	34.847	33.027	32.030	31.030
MP2(μSv/h)	9.217	9.213	9.197	9.227	9.197	9.213	9.183	9.227	9.173	9.157	9.197	10.097	11.110	35.497	42.387	39.347	30.564	30.410	27.444	20.557	18.973	17.087	16.583	16.083
MP3(μSv/h)	14.963	14.973	15.007	14.977	14.987	14.977	14.900	14.933	14.960	14.917	14.880	14.883	15.180	15.433	33.410	37.620	35.400	35.664	30.900	33.897	26.187	24.477	23.590	23.090
MP4(μSv/h)	12.027	11.980	11.987	11.970	11.970	11.987	11.920	11.937	11.963	11.907	11.910	11.887	12.113	15.360	33.177	35.780	35.740	29.424	26.357	28.927	21.004	19.737	19.027	18.527
MP5(μSv/h)	11.373	11.413	11.407	11.373	11.373	11.367	11.360	11.367	11.373	11.300	11.307	11.307	11.467	17.693	33.207	37.767	38.960	28.980	26.987	28.667	20.473	19.000	18.293	17.793
MP6(μSv/h)	12.657	12.613	12.610	12.617	12.547	12.567	12.520	12.470	12.460	12.473	12.450	12.460	12.770	18.403	28.297	30.274	33.717	27.834	26.014	28.264	21.794	19.733	19.287	18.787
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	22.200	欠測	欠測	欠測	欠測	欠測
風向	北北西	北	北	北	北	北北西	北	北	北	北	北北東	北	北	北北東	北北東	北北東	北北東	北東	北東	北東	北東	北北東	北東	北東
風速(m/s)	3.0	2.5	2.9	2.9	3.3	2.5	2.7	3.4	4.3	3.9	3.5	2.8	2.5	1.9	2.6	3.1	2.9	3.5	2.9	3.0	2.8	2.5	3.7	3.7

※:MP-7については、東電社員が測定結果(1日1回)

3月22日																								
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	
MP1(μSv/h)	30.194	29.330	28.520	27.770	27.084	26.500	25.877	25.320	24.860	24.367	23.884	23.410	23.047											
MP2(μSv/h)	15.743	15.413	15.080	14.743	14.447	14.173	13.870	13.667	13.443	13.183	13.010	12.800	12.597											
MP3(μSv/h)	22.657	22.204	21.840	21.460	21.134	20.777	20.493	20.263	19.883	19.713	19.417	19.180	18.933											
MP4(μSv/h)	18.280	17.893	17.583	17.303	17.030	16.783	16.483	16.317	16.057	15.803	15.623	15.420	15.250											
MP5(μSv/h)	17.500	17.200	16.820	16.520	16.227	15.927	15.680	15.487	15.307	15.053	14.860	14.667	14.467											
MP6(μSv/h)	18.600	18.307	17.973	17.660	17.433	17.183	16.973	16.667	16.460	16.240	16.057	15.850	15.667											
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											
風向	北東	北北東	北東	北東	北東	東北東	北東	北東	北北西	西北西	西	北北西	西											
風速(m/s)	3.3	3.3	2.7	2.7	2.2	1.9	1.8	0.4	0.5	0.5	4.6	1.0	4.8											

3月22日																								
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	
MP1(μSv/h)																								
MP2(μSv/h)																								
MP3(μSv/h)																								
MP4(μSv/h)																								
MP5(μSv/h)																								
MP6(μSv/h)																								
MP7(μSv/h)																								
風向																								
風速(m/s)																								

島第二(2F)(事業者のモニタリングポスト)

3月22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
AP1($\mu\text{Sv/h}$)	18.187	17.870	17.880	17.917	17.953	18.153	18.277	18.007	17.667	17.497	17.463	17.847	17.840	17.403	17.263	16.903	16.943	16.653	16.497	16.440	16.373	16.323	16.243
AP2($\mu\text{Sv/h}$)	11.920	11.683	11.673	11.567	11.743	11.840	12.010	11.733	11.423	11.327	11.247	11.480	11.767	11.397	11.183	10.850	10.817	10.643	10.500	10.420	10.357	10.340	10.233
AP3($\mu\text{Sv/h}$)	17.570	17.423	17.453	17.397	17.437	17.643	17.567	17.437	17.240	17.110	17.057	17.077	17.330	17.393	17.010	16.920	16.670	16.637	16.450	16.380	16.340	16.313	16.247
AP4($\mu\text{Sv/h}$)	14.283	14.293	14.587	14.500	14.577	14.530	14.503	14.527	14.400	14.090	13.870	13.793	13.983	14.387	13.973	13.903	13.507	13.600	13.300	13.250	13.143	13.110	13.090
AP5($\mu\text{Sv/h}$)	14.573	14.367	14.860	14.567	14.667	14.653	14.513	14.473	14.567	14.207	13.920	13.713	13.833	14.367	13.880	13.820	13.293	13.467	13.000	12.900	12.800	12.753	12.700
AP6($\mu\text{Sv/h}$)	14.930	14.730	14.793	14.837	14.793	14.723	14.670	14.740	14.607	14.467	14.173	14.033	14.193	14.560	14.147	14.113	13.717	13.893	13.570	13.460	13.413	13.387	13.333
AP7($\mu\text{Sv/h}$)	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
風向	西	西北西	西	西	西	西	西北西	西	西	西南西	西	西南西	北北西	北	北北西	西	北北西	北北西	北北西	西	北北西	北	北
風速(m/s)	6.3	1.6	2.9	1.5	8.8	8.2	1.8	4.4	4.6	1.1	4.1	2.0	0.9	2.3	0.8	2.6	1.7	2.7	1.1	4.4	1.1	1.9	2.2

3月22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
AP1($\mu\text{Sv/h}$)	16.160	16.140	16.100	16.213	17.327	19.673	18.193	18.620	18.310	17.980	17.803	17.690	17.463	17.250	17.173	17.103	16.910	16.763	16.683	16.490	16.463	16.440	16.380
AP2($\mu\text{Sv/h}$)	10.180	10.147	10.083	10.187	11.027	13.457	11.027	11.367	11.100	10.963	10.833	10.730	10.620	10.477	10.447	10.327	10.263	10.147	10.093	9.977	9.937	9.923	9.913
AP3($\mu\text{Sv/h}$)	16.153	16.177	16.073	16.160	17.037	16.577	16.457	16.650	16.673	16.573	16.483	16.380	16.237	16.157	16.093	15.983	16.017	15.880	15.800	15.710	15.777	15.673	15.667
AP4($\mu\text{Sv/h}$)	12.987	12.930	12.937	12.930	14.000	13.177	13.283	14.240	14.133	13.963	13.860	13.773	13.853	13.507	13.357	13.357	13.180	13.057	13.033	12.907	12.847	12.820	12.780
AP5($\mu\text{Sv/h}$)	12.607	12.527	12.507	12.507	13.433	13.040	12.940	14.160	13.993	13.687	13.580	13.413	13.200	13.087	13.000	12.860	12.700	12.607	12.507	12.373	12.347	12.293	12.247
AP6($\mu\text{Sv/h}$)	13.270	13.193	13.193	13.217	13.743	13.897	14.467	17.233	16.990	16.603	16.287	16.023	15.823	15.470	15.340	15.130	14.967	14.783	14.673	14.397	14.300	14.220	14.150
AP7($\mu\text{Sv/h}$)	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
風向	北	北	北北東	北北東	北	北	北	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西	北北西
風速(m/s)	1.5	0.8	2.2	3.7	4.3	4.6	4.9	6.1	7.1	7.3	6.8	8.0	5.8	5.7	5.5	6.6	7.2	5.9	6.6	7.8	6.8	6.9	6.9

3月22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
AP1($\mu\text{Sv/h}$)	16.220	16.107	16.087	16.007	15.910	15.913	15.847	15.787	15.760	15.737	15.663	15.593	15.550	15.510	15.387	15.413	15.330	15.340	15.300	15.247	15.220	15.183	15.130
AP2($\mu\text{Sv/h}$)	9.823	9.770	9.743	9.730	9.667	9.697	9.633	9.637	9.580	9.580	9.547	9.533	9.520	9.470	9.423	9.403	9.323	9.323	9.317	9.300	9.283	9.283	9.263
AP3($\mu\text{Sv/h}$)	15.567	15.550	15.563	15.440	15.477	15.450	15.447	15.377	15.333	15.350	15.313	15.333	15.323	15.243	15.193	15.117	15.103	15.127	15.107	15.020	15.033	15.080	15.067
AP4($\mu\text{Sv/h}$)	12.700	12.643	12.583	12.587	12.560	12.523	12.497	12.447	12.467	12.423	12.387	12.370	12.370	12.290	12.213	12.160	12.170	12.100	12.137	12.113	12.043	12.053	12.037
AP5($\mu\text{Sv/h}$)	12.153	12.127	12.060	12.047	11.960	11.953	11.953	11.947	11.893	11.907	11.853	11.807	11.760	11.753	11.660	11.660	11.560	11.467	11.467	11.467	11.467	11.433	11.407
AP6($\mu\text{Sv/h}$)	13.970	13.843	13.780	13.707	13.660	13.600	13.537	13.467	13.443	13.350	13.360	13.300	13.230	13.180	13.093	13.003	12.923	12.883	12.813	12.767	12.790	12.737	12.720
AP7($\mu\text{Sv/h}$)	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
風向	北北西	北西	北西	北西	北西	北西	北西	北北西	北北西	北北西	北北西	北	北北西	北北西	北北西	北北西	南西	北	北北西	北	北	北	北北西
風速(m/s)	6.5	6.5	6.8	6.6	5.4	4.9	3.8	4.7	4.2	3.6	3.9	4.0	2.8	2.1	3.3	3.8	1.4	3.0	3.3	2.9	3.0	3.5	2.5

島第二(2F)(事業者のモニタリングポスト)

3月21日																									
ニタリングポスト	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($\mu\text{Sv/h}$)	20.597	20.427	20.260	20.107	19.887	19.500	19.293	19.067	18.887	18.727	18.463	18.307	18.120	17.880	17.740	17.613	17.460	17.373	17.173	17.097	17.033	16.930	16.800	16	
MP2($\mu\text{Sv/h}$)	12.000	11.880	12.197	12.417	12.147	11.630	11.293	11.173	11.097	10.993	10.877	10.727	10.640	10.477	10.413	10.327	10.200	10.153	10.203	10.140	10.080	10.073	9.997	9	
MP3($\mu\text{Sv/h}$)	20.573	20.700	25.507	27.727	25.510	23.097	21.447	21.140	20.860	20.603	20.303	20.023	19.847	19.527	19.310	19.227	18.960	18.827	18.713	18.587	18.427	18.273	18.147	18	
MP4($\mu\text{Sv/h}$)	15.377	15.307	18.253	19.037	17.800	16.210	15.260	15.067	14.917	14.790	14.617	14.453	14.380	14.167	13.990	14.050	13.860	13.870	13.903	13.823	13.720	13.627	13.493	13	
MP5($\mu\text{Sv/h}$)	14.253	14.273	16.920	16.947	16.933	15.013	13.927	13.740	13.613	13.487	13.373	13.193	13.073	12.900	12.720	12.767	12.660	12.607	12.700	12.600	12.533	12.473	12.440	12	
MP6($\mu\text{Sv/h}$)	15.233	15.133	15.383	15.547	15.690	15.347	14.843	14.697	14.603	14.463	14.343	14.210	14.070	13.903	13.827	13.820	13.740	13.700	13.770	13.710	13.600	13.583	13.523	13	
MP7($\mu\text{Sv/h}$)	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	7.290	欠測	欠測	欠測	欠測	欠測	欠測	
風向	北北東	北	北北東	北	北	北北東	北北東	北北東	北北東	北北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	東	
風速(m/s)	7.1	8.5	6.9	6.4	5.5	6.4	4.1	4.3	6.5	5.7	6.5	5.6	5.0	6.4	6.3	7.7	5.7	6.2	6.5	6.2	5.0	4.8	4.8		

3月21日																									
ニタリングポスト	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($\mu\text{Sv/h}$)	17.377	17.697	18.333	18.017	18.213	18.430	18.287	18.137	18.003	17.830	17.723	17.637	17.483	17.393	17.333	17.210	17.177	17.103	16.987	16.927	16.800	16.713	16.683	16	
MP2($\mu\text{Sv/h}$)	10.783	11.360	11.830	11.850	12.063	12.310	12.210	12.063	11.997	11.850	11.700	11.557	11.507	11.430	11.297	11.277	11.120	11.097	10.987	10.953	10.900	10.843	10.727	10	
MP3($\mu\text{Sv/h}$)	18.703	19.340	20.007	19.827	19.797	20.130	19.977	19.667	19.543	19.303	19.233	19.033	18.930	18.763	18.627	18.460	18.390	18.287	18.183	18.033	17.907	17.837	17.790	17	
MP4($\mu\text{Sv/h}$)	14.330	14.980	15.737	15.660	15.770	16.127	15.913	15.760	15.680	15.510	15.337	15.230	15.090	14.977	14.910	14.790	14.710	14.623	14.517	14.413	14.340	14.257	14.157	14	
MP5($\mu\text{Sv/h}$)	13.093	13.640	14.340	14.373	14.440	14.707	14.613	14.513	14.373	14.267	14.127	14.073	13.920	13.787	13.787	13.687	13.587	13.540	13.487	13.433	13.340	13.240	13.193	13	
MP6($\mu\text{Sv/h}$)	14.293	15.097	15.863	16.030	15.977	16.313	16.227	16.023	15.943	15.783	15.593	15.513	15.420	15.303	15.183	15.110	14.997	14.957	14.813	14.763	14.737	14.593	14.577	14	
MP7($\mu\text{Sv/h}$)	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	東北東	東	東	東	東北東	東	東	東	東北東	東北東	東北東	北東	北東	北東	北東	北東	北東	北東	北東	北東	北北東	北北東	北北東	
風速(m/s)	3.1	3.0	2.8	2.9	3.2	3.1	3.3	3.5	3.6	3.3	2.9	2.6	2.6	2.0	1.9	2.2	1.6	1.4	1.1	1.2	2.2	1.8	2.0		

3月21日																									
ニタリングポスト	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($\mu\text{Sv/h}$)	16.570	16.533	16.400	16.363	16.313	16.237	16.617	27.777	24.767	20.427	21.244	25.794	23.964	20.680	21.164	21.477	20.977	21.257	19.533	18.960	18.580	18.350	18.390		
MP2($\mu\text{Sv/h}$)	10.667	10.633	10.537	10.490	10.497	10.443	10.583	20.037	19.770	16.260	15.897	17.097	25.594	15.273	15.000	16.183	15.620	14.590	13.247	12.553	12.583	11.893	12.127		
MP3($\mu\text{Sv/h}$)	17.630	17.493	17.420	17.407	17.273	17.223	17.200	18.900	26.220	25.140	22.697	21.710	26.324	28.017	20.797	21.307	19.370	20.173	18.893	18.000	17.767	17.640	17.610		
MP4($\mu\text{Sv/h}$)	14.043	13.977	13.903	13.833	13.793	13.753	13.693	14.157	19.700	23.404	20.380	17.690	22.524	29.884	20.347	18.333	17.013	16.710	15.357	15.133	14.983	14.757	14.453		
MP5($\mu\text{Sv/h}$)	13.093	13.000	13.000	12.907	12.907	12.867	12.800	13.053	17.740	28.707	25.840	20.240	21.194	33.107	26.247	20.487	19.160	16.613	16.500	15.393	15.053	14.860	14.473		
MP6($\mu\text{Sv/h}$)	14.417	14.387	14.347	14.207	14.173	14.127	14.073	14.170	16.543	21.870	21.790	17.807	18.390	26.530	18.433	16.757	16.920	15.577	15.923	15.383	14.787	14.890	14.937		
MP7($\mu\text{Sv/h}$)	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		
風向	北	北西	北	北北西	北北西	北北西	北	北西	西北西	北北西	西北西	西	西	西	北北西	北西	西南西	西北西	北西	西北西	西	北北西	北北西		
風速(m/s)	1.8	1.5	1.3	2.2	2.4	2.4	2.2	2.1	3.6	2.0	2.7	4.7	8.2	5.7	0.3	0.6	0.3	0.1	0.3	0.2	3.6	0.8	0.4		

第二(2F)(事業者のモニタリングポスト)

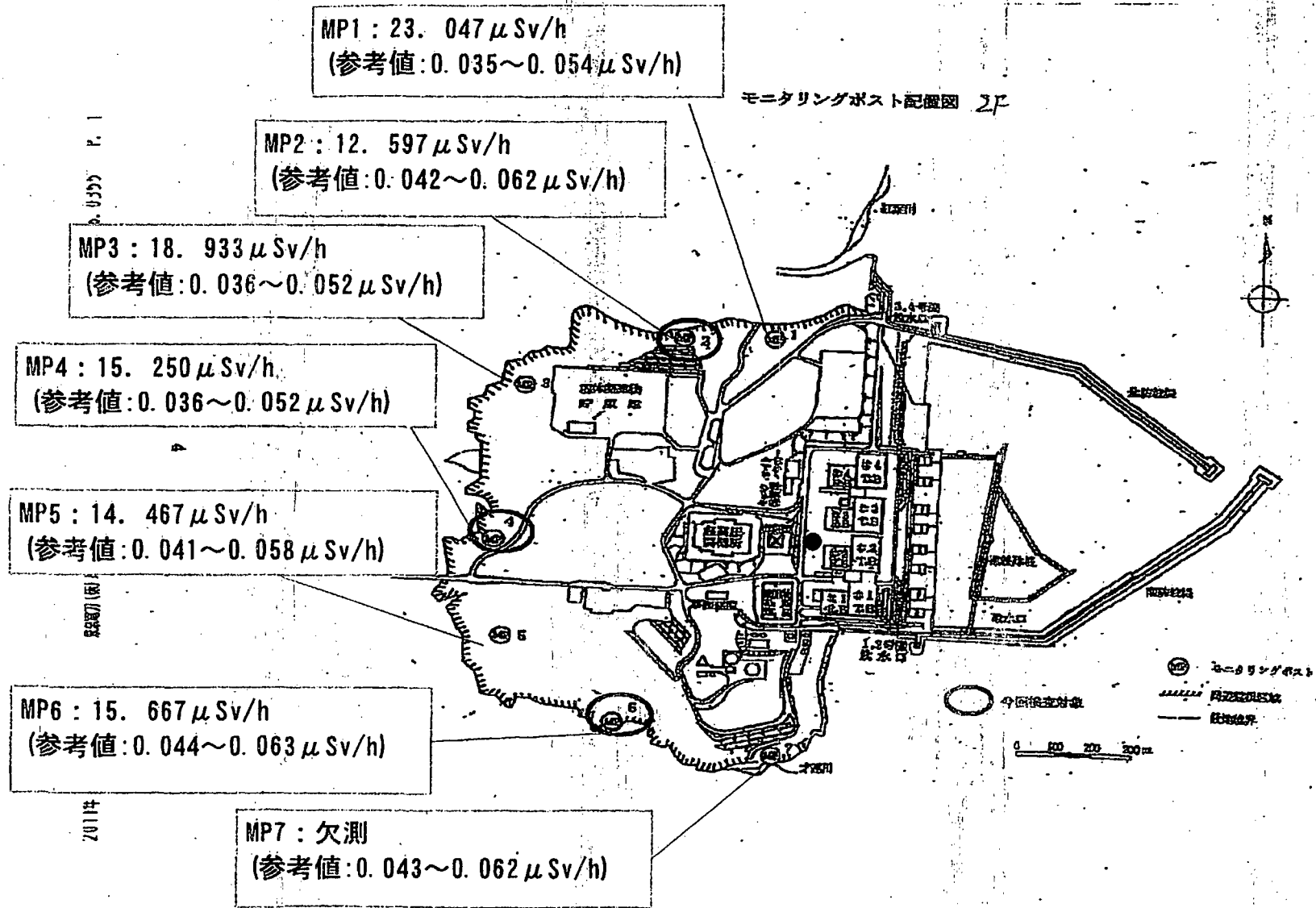
3月21日																								
モニタリングポスト	0:10	0:20	0:30	0:40	0:50	1:00	1:10	1:20	1:30	1:40	1:50	2:00	2:10	2:20	2:30	2:40	2:50	3:00	3:10	3:20	3:30	3:40	3:50	
IP1($\mu\text{Sv/h}$)	15.153	15.113	15.130	15.070	15.060	15.103	15.193	15.243	15.350	15.587	15.420	15.757	15.497	16.813	16.227	15.260	15.037	15.030	15.027	14.950	15.040	14.943	14.973	14
IP2($\mu\text{Sv/h}$)	9.223	9.193	9.137	9.113	9.093	9.110	9.143	9.220	9.293	9.370	9.373	9.513	9.490	10.510	9.877	9.167	9.003	8.997	8.990	8.977	8.957	8.990	8.957	8
IP3($\mu\text{Sv/h}$)	15.273	15.277	15.237	15.213	15.180	15.137	15.160	15.110	15.260	15.317	15.363	15.413	15.247	16.433	15.583	15.030	15.030	14.977	14.993	14.943	14.973	14.953	14.950	14
IP4($\mu\text{Sv/h}$)	10.730	10.673	10.693	10.640	10.637	10.603	10.610	10.623	10.690	10.760	10.800	10.820	10.880	11.757	12.027	10.517	10.467	10.457	10.460	10.430	10.433	10.467	10.450	10
IP5($\mu\text{Sv/h}$)	10.533	10.487	10.487	10.387	10.387	10.387	10.380	10.413	10.433	10.480	10.633	10.640	10.913	11.633	12.513	10.433	10.287	10.287	10.287	10.227	10.287	10.240	10.220	10
IP6($\mu\text{Sv/h}$)	11.733	11.693	11.677	11.633	11.607	11.660	11.613	11.667	11.663	11.697	11.747	11.707	11.923	12.087	13.337	11.780	11.517	11.547	11.513	11.470	11.510	11.507	11.483	11
IP7($\mu\text{Sv/h}$)	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
風向	北西	北北西	北北西	北北西	北	北	北北西	北西	北北西	北西	北	北北西	北西	北西	北西	西北西	西北西	西北西	北西	北北西	西北西	北西	北西	西
風速(m/s)	1.3	1.7	1.6	2.0	3.2	1.9	1.8	1.4	1.1	1.3	1.3	1.4	1.3	1.1	0.9	0.5	0.6	0.5	0.4	1.0	1.0	0.7	1.4	

3月21日																								
モニタリングポスト	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	
IP1($\mu\text{Sv/h}$)	14.883	14.930	14.883	14.840	14.893	15.123	15.580	14.997	14.923	14.917	15.013	14.957	14.823	14.737	14.690	14.633	14.563	14.547	14.473	14.473	14.467	14.487	15.623	15
IP2($\mu\text{Sv/h}$)	8.960	8.920	8.527	8.907	8.917	8.950	9.670	9.027	9.000	8.953	9.260	9.063	8.917	8.837	8.797	8.747	8.633	8.627	8.553	8.617	8.590	9.017	12.857	10
IP3($\mu\text{Sv/h}$)	14.937	14.897	14.870	14.893	14.880	14.853	15.290	14.983	15.007	14.973	15.240	15.193	15.107	14.877	14.757	14.727	14.677	14.567	14.707	15.710	16.007	20.413	24.880	22
IP4($\mu\text{Sv/h}$)	10.450	10.460	10.433	10.380	10.413	10.407	11.043	10.730	10.547	10.540	10.710	10.740	10.740	10.407	10.340	10.237	10.173	10.170	10.113	10.763	10.863	13.090	19.050	17
IP5($\mu\text{Sv/h}$)	10.187	10.193	10.193	10.187	10.100	10.153	10.873	10.667	10.333	10.387	10.533	10.633	10.613	10.193	10.193	10.073	9.947	9.900	9.833	10.387	10.480	11.860	19.647	18
IP6($\mu\text{Sv/h}$)	11.433	11.450	11.417	11.423	11.457	11.433	11.863	11.693	11.440	11.473	11.627	11.547	11.573	11.357	11.333	11.277	11.190	11.183	11.047	11.057	11.167	11.373	13.073	16
IP7($\mu\text{Sv/h}$)	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
風向	北西	北北西	北北西	北	北	北	北東	北北東	北北東	北北東	北東	北東	北北東	北北東	北北東	北	北北東	北	北	北	北	北	北	北
風速(m/s)	0.7	0.5	1.9	1.8	1.3	0.9	2.5	2.9	2.9	3.7	2.9	3.3	3.5	3.0	5.6	6.1	5.4	6.5	5.8	5.0	4.4	4.3	3.3	

3月21日																								
モニタリングポスト	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	
IP1($\mu\text{Sv/h}$)	20.987	36.294	50.254	34.704	33.504	35.174	38.697	24.467	23.794	22.160	21.834	21.374	21.094	20.884	20.760	20.423	20.060	21.597	23.924	27.280	23.367	21.844	21.180	20
IP2($\mu\text{Sv/h}$)	20.380	38.340	42.694	24.630	18.920	24.397	17.813	13.593	12.667	12.127	11.977	11.823	11.683	11.550	11.610	11.437	11.317	11.773	15.060	18.283	15.753	12.980	12.127	12
IP3($\mu\text{Sv/h}$)	28.370	34.600	28.524	20.160	18.797	18.727	17.970	17.653	17.447	17.273	17.263	17.100	17.057	16.997	16.953	16.960	16.940	16.903	18.830	22.074	22.647	20.113	20.163	21
IP4($\mu\text{Sv/h}$)	22.714	28.377	26.327	18.713	15.777	16.687	15.243	13.660	13.500	13.403	13.330	13.263	13.250	13.190	13.187	13.153	13.187	13.167	15.187	17.647	18.713	15.643	15.057	16
IP5($\mu\text{Sv/h}$)	21.687	30.114	28.907	20.053	16.767	17.547	16.427	12.700	12.607	12.507	12.460	12.347	12.347	12.347	12.300	12.347	12.307	12.347	14.913	17.393	19.247	14.920	14.113	15
IP6($\mu\text{Sv/h}$)	16.027	23.500	31.797	26.607	24.197	20.367	21.160	15.370	15.250	14.847	14.723	14.607	14.533	14.463	14.420	14.337	14.310	14.400	16.170	18.193	18.703	16.520	15.413	15
IP7($\mu\text{Sv/h}$)	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
風向	北	北	北	北北東	北北東	北	北北東	北	北	北	北	北	北	北	北	北	北	北	北北東	北	北北東	北北東	北	北
風速(m/s)	5.4	4.2	3.7	6.2	5.3	13.7	6.6	7.4	7.1	6.3	8.0	8.2	8.8	7.9	6.3	5.0	6.4	5.6	5.0	3.5	6.3	7.0	6.5	

福島第二原子力発電所

2011/3/22
18:00現在



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21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	0.025	0.024	0.024	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.025
0.024~0.060	東北電力㈱	女川原子力発電所	1.70	1.70	1.70	1.70	1.60	1.60	1.60	1.60	1.60	1.60	1.60	
0.012~0.060		東通原子力発電所	0.018	0.017	0.018	0.018	0.017	0.017	0.017	0.017	0.018	0.017	0.017	
0.033~0.060	東京電力㈱	福島第一原子力発電所*												
0.036~0.052		福島第二原子力発電所												
0.011~0.159		柏崎刈羽原子力発電所	0.068	0.070	0.072	0.069	0.066	0.066	0.064	0.065	0.065	0.065	0.065	
0.036~0.053	日本原子力発電㈱	東海第二発電所	1.150	1.150	1.150	1.170	1.170	1.160	1.150	1.140	1.130	1.120	1.121	
0.039~0.110		敦賀発電所	0.077	0.075	0.073	0.073	0.072	0.072	0.073	0.073	0.073	0.072	0.072	
0.064~0.108	中部電力㈱	浜岡原子力発電所	0.069	0.069	0.068	0.069	0.069	0.069	0.070	0.080	0.080	0.088	0.100	
0.0207~0.132	北陸電力㈱	志賀原子力発電所	0.032	0.034	0.034	0.033	0.032	0.032	0.033	0.032	0.032	0.032	0.032	
0.028~0.130	中国電力㈱	島根原子力発電所	0.031	0.031	0.031	0.029	0.030	0.029	0.030	0.030	0.030	0.028	0.029	
0.070~0.077		美浜発電所	0.077	0.074	0.072	0.072	0.071	0.070	0.072	0.072	0.072	0.071	0.072	
0.045~0.047	関西電力㈱	高浜発電所	0.051	0.047	0.043	0.042	0.042	0.043	0.042	0.042	0.043	0.042	0.042	
0.036~0.040		大飯発電所	0.044	0.039	0.036	0.035	0.033	0.033	0.034	0.034	0.034	0.034	0.034	
0.011~0.080	四国電力㈱	伊方発電所	0.024	0.021	0.019	0.02	0.021	0.017	0.017	0.017	0.017	0.016	0.015	
0.023~0.087	九州電力㈱	玄海原子力発電所	0.028	0.032	0.032	0.040	0.039	0.034	0.037	0.034	0.039	0.031	0.031	
0.034~0.120		川内原子力発電所	0.036	0.037	0.037	0.046	0.041	0.038	0.038	0.037	0.037	0.037	0.036	
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.015	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
0.009~0.071		六ヶ所 埋設事業所	0.018	0.018	0.018	0.019	0.019	0.019	0.020	0.019	0.019	0.019	0.019	

*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22日										
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00
0.023~0.027	北海道電力㈱	泊発電所	0.026	0.028	0.026	0.025	0.024	0.025	0.025	0.025	0.025	0.025	0.025
0.024~0.060	東北電力㈱	女川原子力発電所	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	1.500	
0.012~0.060		東通原子力発電所	0.017	0.018	0.017	0.017	0.017	0.017	0.018	0.018	0.018	0.018	
0.033~0.050	東京電力㈱	福島第一原子力発電所*											
0.036~0.052		福島第二原子力発電所											
0.011~0.159		柏崎刈羽原子力発電所	0.065	0.064	0.064	0.064	0.065	0.066	0.065	0.065	0.067	0.066	
0.036~0.053	日本原子力発電㈱	東海第二発電所	1.115	1.098	1.090	1.071	1.057	1.052	1.083	1.174	1.277	1.222	
0.039~0.110		敦賀発電所	0.074	0.074	0.073	0.073	0.072	0.073	0.073	0.073	0.072	0.073	
0.064~0.108	中部電力㈱	浜岡原子力発電所	0.097	0.098	0.097	0.101	0.103	0.104	0.102	0.102	0.094	0.094	
0.0207~0.132	北陸電力㈱	志賀原子力発電所	0.032	0.033	0.032	0.033	0.032	0.032	0.033	0.033	0.033	0.033	
0.028~0.130	中国電力㈱	島根原子力発電所	0.030	0.028	0.029	0.029	0.030	0.030	0.029	0.030	0.030	0.029	
0.070~0.077		美浜発電所	0.072	0.075	0.075	0.073	0.073	0.072	0.072	0.073	0.072	0.071	
0.045~0.047	関西電力㈱	高浜発電所	0.042	0.044	0.046	0.045	0.043	0.042	0.042	0.042	0.043	0.043	
0.036~0.040		大飯発電所	0.034	0.034	0.041	0.038	0.038	0.036	0.035	0.035	0.034	0.035	
0.011~0.080	四国電力㈱	伊方発電所	0.017	0.026	0.025	0.027	0.026	0.020	0.016	0.014	0.015	0.014	
0.023~0.087	九州電力㈱	玄海原子力発電所	0.032	0.035	0.035	0.032	0.027	0.027	0.028	0.027	0.028	0.027	
0.034~0.120		川内原子力発電所	0.043	0.047	0.038	0.037	0.038	0.035	0.038	0.034	0.039	0.038	
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
0.009~0.071		六ヶ所 埋設事業所	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	0.019	

*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。

東京電力福島第一原子力発電所敷地内の核種分析結果

採取方法: モニタリングカーにてダスト採取
 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(1日1回測定)
 測定時間: 500秒

核種	3月19日 事務本館北側 採取時間(11:53~12:13)*放水前 測定時間(14:12~)			3月20日 事務本館北側 採取時間(1:41~2:01) 測定時間(13:28~)			3月21日 事務本館北側 採取時間(10:19~10:39) 測定時間(13:28~)			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)	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)	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	5.940E-03	3.374E-05	5.94	2.303E-03	1.256E-05	2.30	1.516E-03		1.134E-05
	I-132	2.203E-03	8.816E-05	0.03	N.D			2.539E-04	2.702E-05	0.00	7.0E-02
	I-133	3.773E-05	2.861E-05	0.01	N.D			N.D			5.0E-03
粒子状	Cs-134	2.165E-05	1.692E-05	0.01	2.840E-05	4.755E-06	0.01	3.383E-05	5.364E-06	0.02	2.0E-03
	Cs-136	N.D			5.629E-06	5.447E-06	0.001	4.529E-06	3.321E-06	0.0005	1.0E-02
	Cs-137	2.437E-05	1.771E-05	0.01	2.892E-05	5.003E-06	0.01	3.801E-05	4.671E-06	0.01	3.0E-03

※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

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 1F南放水口付近(1~4u放水口から南側約330m地点)			3月22日 6:30 1F南放水口付近(1~4u放水口から南側約330m地点)			③周辺監視区 域外の水中の 濃度限度 (Bq/cm ³)			
	①放射能濃度 (Bq/cm ³)	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	1.668E-02	2.138E-02	0.0				1.0E+00
I-131	5.066E+00	4.245E-02	126.7	1.190E+00	2.293E-02	29.8				4.0E-02
I-132	2.136E+00	1.925E-01	0.7	1.362E+00	7.721E-02	0.5				3.0E+00
Cs-134	1.486E+00	4.030E-02	24.8	1.504E-01	1.769E-02	2.5				6.0E-02
Cs-136	2.132E-01	2.358E-02	0.7	2.350E-02	1.056E-02	0.1				3.0E-01
Cs-137	1.484E+00	4.204E-02	16.5	1.535E-01	1.626E-02	1.7				9.0E-02

東京電力福島第二原子力発電所敷地内の核種分析結果

採取方法: モニタリングカーにてダスト採取

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(1日2回測定)

核種	3月16日 情報棟東側			3月16日 免震建屋1階入口			3月17日 MP-1			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)※	
	採取時間(7:56~8:06)			採取時間(10:00~10:10)			採取時間(13:50~14:00)				
	測定時間(8:47~)			測定時間(11:59~)			測定時間(22:01~)				
	500秒			500秒			1000秒				
	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)	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	0.59	9.432E-05	3.351E-06	0.09	1.0E-03
	I-132	1.149E-03	2.812E-05	0.02	7.528E-04	1.986E-05	0.01				7.0E-02
	I-133	3.448E-05	2.687E-05	0.01	4.395E-05	1.497E-05	0.01	3.304E-06	4.478E-06	0.00	5.0E-03
粒子状	Co-58				4.943E-05	2.685E-05	0.00	2.494E-05	2.061E-05	0.00	1.0E-02
	Cs-134	1.237E-04	1.449E-05	0.06	4.163E-04	2.459E-05	0.21	3.314E-04	1.680E-05	0.17	2.0E-03
	Cs-136	2.699E-05	9.412E-06	0.00	7.504E-05	1.495E-05	0.01	6.107E-05	1.296E-05	0.01	1.0E-02
	Cs-137	1.227E-04	1.311E-05	0.04	3.861E-04	2.057E-05	0.13	3.232E-04	1.702E-05	0.11	3.0E-03

核種	3月18日 MP-1			3月18日 MP-1			3月19日 MP-1			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)※	
	採取時間(8:22~8:32)			採取時間(15:09~15:19)			採取時間(9:15~9:25)				
	測定時間(9:40~)			測定時間(17:12~)			測定時間(10:39~)				
	1000秒			1000秒			1000秒				
	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)	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	8.630E-04	3.145E-05	0.86	4.298E-03	4.993E-05	4.30	2.695E-04	5.585E-05	0.27	1.0E-03
	I-132	1.720E-03	3.821E-05	0.02	2.625E-03	9.359E-05	0.04				7.0E-02
	I-133				5.246E-05	4.213E-05	0.01				5.0E-03
粒子状	Co-58	3.080E-05	2.048E-05	0.00	1.578E-04	1.435E-05	0.02				1.0E-02
	Cs-134	3.345E-04	1.666E-05	0.17	4.863E-04	1.538E-05	0.24				2.0E-03
	Cs-136	5.882E-05	1.012E-05	0.01	8.416E-05	1.436E-05	0.01				1.0E-02
	Cs-137	3.147E-04	1.683E-05	0.10	4.306E-04	1.715E-05	0.14				3.0E-03

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

核種		3月19日			3月20日			3月20日			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)※
		MP-1			MP-1			MP-1			
		採取時間(18:18~18:28)			採取時間(11:27~11:37)			採取時間(17:10~17:20)			
		測定時間(19:08~)			測定時間(16:17~)			測定時間(21:11~)			
		1000秒			500秒			500秒			
		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)	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	2.513E-04	5.665E-05	0.25	5.254E-05	1.155E-05	0.05	2.230E-04	4.286E-05	0.22	1.0E-03
	I-132	1.229E-04	1.226E-04	0.00							7.0E-02
	I-133										5.0E-03
粒子状	Co-58										1.0E-02
	Cs-134										2.0E-03
	Cs-136										1.0E-02
	Cs-137										3.0E-03

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

核種		3月21日			3月21日						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)※
		MP-1			MP-1						
		採取時間(10:40~10:50)			採取時間(18:11~18:19)						
		測定時間(12:15~)			測定時間(19:00~)						
		500秒			500秒						
		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	2.250E-04	1.687E-05	0.23	1.580E-04	1.931E-05	0.16				1.0E-03
	I-132	2.420E-04	2.401E-05	0.00	8.097E-04	1.937E-05	0.01				7.0E-02
	I-133										5.0E-03
粒子状	Co-58	1.065E-05	1.138E-05	0.00	1.341E-05	9.886E-06	0.00				1.0E-02
	Cs-134	4.410E-05	9.294E-06	0.02	3.017E-05	1.005E-05	0.02				2.0E-03
	Cs-136										1.0E-02
	Cs-137	4.711E-05	7.959E-06	0.02	3.306E-05	9.703E-06	0.01				3.0E-03

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

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 2F北放水口付近(3,4号放水口付近)			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 0:38 2F富岡川河口付近(3,4号放水口から北側に約2,000m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)	
Co-58	5.704E-03	7.570E-03	0.0	検出限界以下	6.845E-03		1.028E-02	1.253E-02	0.0	1.0E+00
I-131	1.085E+00	1.284E-02	27.1	6.558E-01	1.226E-02	16.4	3.211E+00	1.694E-02	80.3	4.0E-02
I-132	1.597E-01	4.392E-02	0.1	1.205E-01	4.146E-02	0.0	8.761E-01	4.236E-02	0.3	3.0E+00
Cs-134	4.815E-02	9.213E-03	0.8	3.110E-02	8.657E-03	0.5	7.535E-02	1.102E-02	1.3	6.0E-02
Cs-136	6.682E-03	4.722E-03	0.0	5.474E-03	4.840E-03	0.0	1.159E-02	7.718E-02	0.0	3.0E-01
Cs-137	5.283E-02	8.822E-03	0.6	3.292E-02	8.303E-03	0.4	7.760E-02	1.186E-02	0.9	9.0E-02

From: ET02 Hoc
Sent: Tuesday, April 05, 2011 8:45 AM
To: ET07 Hoc
Subject: FW: Cooling Fukushima Daiichi reactors through the steel head of the drywell?

From: ET01 Hoc
Sent: Tuesday, April 05, 2011 8:45:12 AM
To: ET02 Hoc
Subject: FW: Cooling Fukushima Daiichi reactors through the steel head of the drywell?
Auto forwarded by a Rule

From: Sheron, Brian
Sent: Tuesday, April 05, 2011 8:45:11 AM
To: ET01 Hoc; RST01 Hoc
Subject: FW: Cooling Fukushima Daiichi reactors through the steel head of the drywell?
Auto forwarded by a Rule

Another idea from one of DOE's "Science Group".

From: Richard L Garwin [mailto:rlg2@us.ibm.com]
Sent: Monday, April 04, 2011 5:29 PM
To: DL-NITSolutions
Subject: Fw: Cooling Fukushima Daiichi reactors through the steel head of the drywell?

Earlier communications on this point, folks.

Dick Garwin

----- Forwarded by Richard L Garwin/Watson/Contr/IBM on 04/04/2011 05:10 PM -----
From: Richard L Garwin/Watson/Contr/IBM
To: Nam T Dinh <Nam.Dinh@inl.gov>, <phillip.finck@inl.gov>
Cc: "Peterson, Per" <peter@nuc.berkeley.edu>
Date: 04/04/2011 12:26 PM
Subject: Cooling Fukushima Daiichi reactors through the steel head of the drywell?

Dear Nam Dinh and Phillip Finck,

In my 03/31/2011 email to Steve Chu's "science group," I observed that "removal of the refueling plug and flooding of the top of the steel drywell liner is a real possibility. But needs to analyze the heat transfer impedance by a permanent gas bubble in the drywell."

RRR/179

So I am asking you or others at INL to carry out such a preliminary analysis. I have a good deal of experience in this field, because in the 1950s I published some work on "thermal rectifiers" which actually pertained to the temperature range below 2 degrees Kelvin, using superfluid helium. But my analogy in the presentations was to the ordinary pressure cooker, or lidded saucepan, in which heating from below transferred heat very effectively from the water and steam to the lid, but heating from above would simply melt the lid.

In the case of the steel containment liner of the BWR, we certainly have heating to generate steam, but the question is the impedance presented by a hydrogen bubble to the condensation of steam on the inside of the lid of the containment liner.

Evidently one could remove the concrete refueling plugs, and that space is intended to be flooded with water, so that is not, in principle, a problem. Any openings in the rubber seal could be plugged by shredded polyethylene garbage bags, which would then be held in place by the hydrostatic pressure in the refueling well. And the steam from that pool will be clean and could perfectly well be vented to the atmosphere.

But the question is what needs to be done to vent any permanent gas. Is there a valve at the top of the liner dome?

If there is no valve, I can envision boring a hole with a sealed tool, and threading in such a valve that could be controlled mechanically or preferably pneumatically/hydraulically from the outside.

Now that TEPCO really seems to be moving on procuring 10,000 ton tanks and barges, perhaps they would be receptive to an analysis of long-term cooling through the metal containment dome.

I look forward to anything you can provide me/us on this score.

Thanks very much.

Dick Garwin

----- Forwarded by Richard L Garwin/Watson/Contr/IBM on 04/04/2011 11:04 AM -----

From: Richard L Garwin/Watson/Contr/IBM

To: Bob Budnitz <rjbudnitz@lbl.gov>, "Adams, Ian" <Ian.Adams@Hq.Doe.Gov>

Cc: "Brinkman, Bill" <Bill.Brinkman@science.doe.gov>, "Narendra, Blake" <Blake.Narendra@nnsa.doe.gov>, "Hurlbut, Brandon" <Brandon.Hurlbut@Hq.Doe.Gov>, "Sheron, Brian" <Brian.Sheron@nrc.gov>, "Bulnitz, (b)(6)", "Smith, Haley" <Haley.Smith@Hq.Doe.Gov>, "McFarlane, Harold" <harold.mcfarlane@inl.gov>, "Adams, Ian" <Ian.Adams@Hq.Doe.Gov>, "Kelly, John E (NE)" <JohnE.Kelly@Nuclear.Energy.Gov>, "Grossenbacher, John (INL)" <john.grossenbacher@inl.gov>, "(b)(6)", "Chambers, Megan (S4)" <Megan.Chambers@science.doe.gov>, "Owens, Missy" <Missy.Owens@Hq.Doe.Gov>, "Miller, Neile" <Neile.Miller@nnsa.doe.gov>, "Fitzgerald, Paige" <Paige.Fitzgerald@Hq.Doe.Gov>, "Peterson, Per" <peterson@nuc.berkeley.edu>, "Lyons, Peter" <Peter.Lyons@Nuclear.Energy.Gov>, "Finck, Phillip" <phillip.finck@inl.gov>, "Garwin, Dick (EOP)" <(b)(6)>, "Lee, Richard (NRC)" <Richard.Lee@nrc.gov>, "Budnitz, Bob" <RJBudnitz@lbl.gov>, "Szilard, Ronaldo" <ronaldo.szilard@inl.gov>, "(b)(6)", "Aoki, Steven" <Steven.Aoki@nnsa.doe.gov>, "Binkley, Steve" <Steve.Binkley@science.doe.gov>, "Mustin, Tracy" <Tracy.Mustin@nnsa.doe.gov>

Date: 03/31/2011 06:04 PM

Subject: RE: Nuclear science group call - Today at 4:00pm EDT

The Millstone-1 BWR refueling plugs just lie in place, according to this response from Millstone.

So removal of the plug and flooding of the top of the steel drywell liner is a real possibility. But need to analyze the heat transfer impedance by a permanent gas bubble in the drywell.

Dick Garwin

----- Forwarded by Richard L Garwin/Watson/Contr/IBM on 03/31/2011 06:03 PM -----

From: Skip J Jordan <skip.j.jordan@dom.com>

To: Richard L Garwin/Watson/Contr/IBM@IBMUS
Cc: Jeff D Semancik <jeff.d.semancik@dom.com>, "SChu@hq.doe.gov" <SChu@hq.doe.gov>
Date: 03/31/2011 05:42 PM
Subject: RE: Urgent question.

Dick,

The shield plugs above the reactor head were interlocking and stepped out slightly in diameter to fit into place. The Refueling Deck crane on the 108 foot level was capable of removing the shield blocks.

From: Richard L Garwin [<mailto:rlg2@us.ibm.com>]
Sent: Thursday, March 31, 2011 4:51 PM
To: Skip J Jordan (Generation - 6)
Cc: Jeff D Semancik (Generation - 4); SChu@hq.doe.gov
Subject: Urgent question.

Skip, regarding the shield plug above the reactor head. These need to be removed for refueling; are they bolted down or can they just be lifted by the main crane (or a massive construction crane)?

Thanks very much.

Dick Garwin

From: Holahan, Vincent
To: Taylor, Robert
Cc: Blamey, Alan; Collins, Elmo
Subject: RE: PACOM embedded contact
Date: Tuesday, April 05, 2011 1:07:09 AM

Thanks Rob.

Additional information for contact:

Vincent.Holahan@nrc.gov

(b)(6)

(b)(6)

(b)(6) (blackberry)

808-477-9536

808-477-9538 (J9 watch officer)

Let me know how I can be of assistance. Right now it's death by meetings at PACOM, so I am rooming around the PACOM HQs quite a bit. Also note, we are 5 hours ahead of you. My duty day is 0430 to 1800 hrs HST, then I return to quarters to check out emails.

Cheers,

Vince

From: Taylor, Robert
Sent: Tuesday, April 05, 2011 1:00 AM
To: Blamey, Alan
Cc: Holahan, Vincent
Subject: PACOM embedded contact

Alan,

Going forward, Chuck wants us to keep Vince as reasonably well informed as possible so he can keep the military informed and minimize the number of questions they have for us. I have been sending him the Daily Assessment tool and we should consider what other things he might need to be cc'd on.

His contact info is as follows:

808-477-9538

BB (b)(6)

Regards,

Rob

RRR/LSO

From: RST01 Hoc
Sent: Wednesday, April 06, 2011 3:12 AM
To: (b)(6)

(b)(6)

Subject: FW: UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS
Attachments: UPDATED LIST OF CURRENT RST-CONSORTIUM ACTIONS 2300EDT4-4-11.docx

From: Hoc, RST16
Sent: Monday, April 04, 2011 11:20 PM
To: RST01 Hoc
Cc: Hoc, RST16; RST06 Hoc
Subject: RE: UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS

To Consortium Members, NRC Japan Detachment, and RST members, please see the latest update to the document "Updated List of Current RST/Consortium Actions" as of 2300EDT 4/4/2011.

Please review this status document (pasted below and attached).

Please think of other issues and items that should be discussed at the 0300EDT teleconference call between RST, Japan Detachment and the members of the Consortium, and provide your inputs to the meeting agenda back to the RST at RST01.Hoc@nrc.gov as soon as you can.

Thank you.

UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS – 2300 EDT on 4/4/11

1. Provide evaluation of TEPCO differing views on merits of flooding vs. status quo, including hydrogen assumptions.
 - a. Status:
 1. INPO is the Lead: draft document due to consortium/RST by 4/4/11(20:00 am-EDT) (Still awaiting as of 2230 4/4/2011)
 2. Discussion of hydrogen/steam assumptions in original analysis and draft response to occur during status telecom 4/4/11 – **This document was issued to Japan Detachment during Day Shift 4/4/2011.**
2. Respond to site team question on possible additional measures to maximize the success of their current feed-and-bleed strategy.
 - a. Status:
 1. Draft document sent to consortium/site team on 4/4/11 (0240 EDT)

RRR/151

2. Comments from consortium due to RST by 4/4/11 (2000 EDT)
 3. Comments received from GEH and from INPO 2245 EDT 4/4/2011
 4. Level of concurrence discussed with ET and concurrence will stay with the RST
3. SFP for unit 4 white paper. Received Rob Taylor feedback/input on rough draft at 0717 EDT on 4/4/11.
 - a. Status:
 1. BWR Analyst incorporating R. Taylor input into SFP assessment –Still working as of 2230 4/4/2011
 2. NRC line organization working task - response received 1900EDT 4/4/2011
 4. Input on Japan request regarding what a stable reactor condition (no further energetic events or major rad releases) looks like.
 - a. Status:
 1. RST has developed draft document and shared with consortium-expected 4/4/11 (11:00am EDT)
 2. Replies received from NR and DOE evening of 4/4/2011, still awaiting INPO- & INPO reviewed GEH reply
 3. Expected discussion item as working copy for telecom 4/5/11 (3:00 am EDT)
 5. Words from consortium (GE) to close loop on why guidance for flooding impact on containment pressure is not practical or value-added.
 - a. Status:
 1. RST to follow up with consortium during next telecom 4/4/11 (11:00am EDT) – RST sent e-mail to GEH @ 1910 EDT on 4/4/11 requesting 1 paragraph explaining guidance.
 6. Evaluate the consequences of inadvertently adding the organic fixing agent to the spent fuel pools. Due Tuesday Japan time.
 - a. Status:
 1. INPO responded to question 3/31/11 (attached document)
Sent request to Richard Lee for RES analysis on new information including possible impact on SFPs @ 1941 EDT on

UPDATED LIST OF CURRENT RST/CONSORTIUM ACTIONS – 2300 EDT on 4/4/11

1. Provide evaluation of TEPCO differing views on merits of flooding vs. status quo, including hydrogen assumptions.
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Sent request to Richard Lee for RES analysis on new information including possible impact on SFPs @ 1941 EDT on 4/4/11

From: Brandon, Lou
Sent: Wednesday, April 06, 2011 7:38 AM
To: PMT03 Hoc
Subject: FW: 4-5-11 Meeting Minutes and 214 available on FTP site

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

From: Tiburcio.Michelle@epamail.epa.gov [mailto:Tiburcio.Michelle@epamail.epa.gov] On Behalf Of EOC_Environmental_Unit@epamail.epa.gov
Sent: Tuesday, April 05, 2011 4:31 PM

To: EOC_Environmental_Unit@epamail.epa.gov

Cc: albert.wiley@orise.orau.gov; Ansari, (b)(6) Brennan, Inga; Whitcomb, Robert (CDC); Maher, Carmen; Connell, Carol (ATSDR); cmht@nnsa.doe.gov; cmw6@cdc.gov; Miller, Charles W. (CDC); Liles.Darrell@epamail.epa.gov; Dixon, Teri; Tupin.Edward@epamail.epa.gov; Morrison, Ellen F; EOC_Environmental_Unit@epamail.epa.gov; Jablonowski.Eugene@epamail.epa.gov; Hornsby-Myers, Jennifer L. (CDC); Ferris.John@dol.gov; Brozowski.George@epamail.epa.gov; Allen Jr, George T; Evans, Donna L. (CDC); cmw6@cdc.gov; gordon.s.cleveland@aphis.usda.gov; Dixon, John E. (CDC); ira.s.reese@cbp.dhs.gov; Cherniack, James; james.williams@dot.gov; Nemhauser, Jeffrey B. (CDC); john.jensen@dm.usda.gov; john.pavek@wdc.usda.gov;

(b)(6) Anderson, Jeri L. (CDC); Smallwood, Karen R; Keith, Sam (ATSDR);

Veal.Lee@epamail.epa.gov; LIA11 Hoc; Brandon, Lou; Causgrove.Maggie@epamail.epa.gov; Russo, Mark; Matthews, Denise - OSHA; Brooks, Michael D. (ATSDR); menarm@nv.doe.gov; Menon.Ramesh@dol.gov; michael.howe@dhs.gov; Noska, Michael A; Buzzell, Jennifer J. (CDC); Charp, Paul (ATSDR); Hansen, Patricia A; patrick.simmons@dhs.gov; paul.ward@fema.gov; pemberwj@nv.doe.gov; peter.a.petch@aphis.usda.gov; Hoc, PMT12; Evans, Rachel T; Funk, Renee H. (CDC); Goodman.Roger@epamail.epa.gov; ron.graham@fsis.usda.gov; DeCair.Sara@epamail.epa.gov; Hudson.Scott@epamail.epa.gov; Hargrave, Scotty L; Scott.Lough@ams.usda.gov; stephen.chase@dhs.gov; Jones, Terri; Timothy.Greten@dhs.gov; Radke, Vincent J. (CDC); Howard King, Vinetta; Lotz, William G. (CDC); Cunningham, William C
Subject: 4-5-11 Meeting Minutes and 214 available on FTP site

RRR/182

From: ET07 Hoc
Sent: Wednesday, April 06, 2011 4:24 PM
To: Giitter, Joseph
Subject: FW:

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

From: Burnell, Scott
Sent: Wednesday, April 06, 2011 12:46 PM
To: ET07 Hoc
Subject: Fw:

Sent from an NRC Blackberry
Scott Burnell

(b)(6)

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

From: Tracy, Tennille <Tennille.Tracy@dowjones.com>
To: Burnell, Scott
Sent: Wed Apr 06 12:09:45 2011
Subject: RE:

Rep. Markey's office has just released the e-mail they received from NRC on this issue. The e-mail comes from Timothy Riley. The e-mail is dated Tuesday, April 5, and states:

>You had asked if the core of Unit 2 had melted into the torus. Here is
>the view from the NRC Emergency Operations Center:
>
>Based on radiation readings in the drywell and the torus (3340 rem/hour
>and 91 rem/hour, respectively), the NRC staff speculates that part of the
>Unit 2 core may be out of the reactor pressure vessel and may be in the
>lower space of the drywell. Lower radiation readings in the torus
>suggest that there is not core material in the torus.

Is Markey's office interpreting this correctly? The e-mail - "that part of the Unit 2 core may be out of the reactor pressure vessel and may be in the lower space of the drywell" - suggests that NRC does in fact believe the core has melted through the reactor vessel. Was Martin Virgilio wrong when he said NRC had no evidence that the core had melted through the vessel? What is the belief of the NRC? Are there conflicting opinions within NRC? I'm getting a ton of pressure from editors to sort this out.

Thanks, t

RR4/183

From: Burnell, Scott [Scott.Burnell@nrc.gov]
Sent: Wednesday, April 06, 2011 11:49 AM
To: Tracy, Tennille
Subject: RE:

Hi Tennille;

Please refer to the hearing transcript for Marty Virgilio's response to that statement, that speaks for the agency on this issue. Thanks.

Scott

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

From: Tracy, Tennille [mailto:Tennille.Tracy@dowjones.com]
Sent: Wednesday, April 06, 2011 11:44 AM
To: Burnell, Scott
Subject: RE:

Hi ... I'm sure you're getting tons of emails on this now ... But Rep. Ed Markey is saying that the core of at least one unit at Fukushima (Unit Two) has melted through the reactor vessel. Martin Virgilio, who was at the hearing where Markey was speaking, said this is not the case. He said there was no evidence of this in the situation reports from this morning.

Do we have any evidence that the core has breached the reactor vessel?

Did NRC staff tell Markey that this had taken place?

From: Burnell, Scott [Scott.Burnell@nrc.gov]
Sent: Wednesday, April 06, 2011 11:09 AM
To: Burnell, Scott
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject:

Good Morning;

Here is the NRC response to the NY Times article:

The March 26 document represented an interim snapshot of what NRC staff and other experts considered as possible conditions inside the damaged units at Fukushima-Daiichi; the document does not reflect our understanding of the current situation. Based on those possible conditions, the NRC staff's recommendations should be considered prudent

measures; they are not offered as the only possible solutions. We shared those recommendations with the Japanese operator and regulator of the plants. We understand they are pursuing an alternative set of strategies to control the plants and ensure the safety of the people working at the plants and living nearby. We are working with our counterparts to consider these strategies and explore additional steps that could enhance safety.

If the NRC has any further comment, you'll be informed via e-mail. Thank you.

Scott Burnell

From: (b)(6)
Sent: Wednesday, April 06, 2011 10:31 PM
To: Zimmerman, Roy
Cc: Johnson, Michael; Weber, Michael; Virgilio, Martin; Boger, Bruce; ET05 Hoc
Subject: Re: NRC assistance at PACOM

Roy. Thanks.

Vince was again asked to brief all of the Commanders, linked by video across Japan, hawaii and DC, earlier today. His utility here is truly unequaled.

Will look forward to response.

Thanks again.

Dan P

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

From: Zimmerman, Roy <Roy.Zimmerman@nrc.gov>
To: Piccuta, Daniel W SES PACOM J005
Cc: Johnson, Michael <Michael.Johnson@nrc.gov>; Weber, Michael <Michael.Weber@nrc.gov>; Virgilio, Martin <Martin.Virgilio@nrc.gov>; Boger, Bruce <Bruce.Boger@nrc.gov>; ET05 Hoc <ET05.Hoc@nrc.gov>
Sent: Wed Apr 06 16:06:15 2011
Subject: RE: NRC assistance at PACOM

Dan, I am in receipt of your email and someone will respond within a reasonable time, thanks, Roy

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

From: Piccuta, Daniel W SES PACOM J005 (b)(6)
Sent: Wednesday, April 06, 2011 8:20 PM
To: Zimmerman, Roy
Cc: Piccuta, Daniel W SES PACOM J005
Subject: NRC assistance at PACOM

Roy,

ADM Willard and the Command have come to rely on Dr. Holahan's expertise and connectivity to NRC HQ as well as NRC reps in Japan, and we request his stay be extended at least until April 29, by which time (if not before) the transition in our support to the GOJ may be more clear than now.

Obviously if the situation normalizes or becomes less fluid earlier we'll adjust to your needs as well.

Dan Piccuta
Foreign Policy Advisor (FPA-POLAD) and
Launch Director of the Pacific Outreach
Directorate (J9),
U.S. Pacific Command

(b)(6)
Office Tel: 808 477 7603

RFR/184

From: Weber, Michael
Sent: Wednesday, April 06, 2011 6:56 PM
To: Zimmerman, Roy
Cc: ET05 Hoc; ET01 Hoc; OST02 HOC
Subject: FYI - information from video conference on 4/5/11 that may be of interest to the consortium

I did not know whether you received this in turnover.

From: LIA06 Hoc
Sent: Tuesday, April 05, 2011 9:44 PM
To: Weber, Michael
Cc: LIA08 Hoc; ET01 Hoc; ET05 Hoc; LIA01 Hoc; LIA06 Hoc
Subject: RE: information from video conference on 4/5/11 that may be of interest to the consortium

Mike,

The DOD folks did not indicate in the call that they and DOE had the lead to coordinate technical support for Japan, even though that is what was discussed in the Deputy's meeting yesterday. Cyndi brought it up in the consortium call last night in an attempt to allow DOE to clarify its role as the lead for technical support and the reply was that DOE did not understand it exactly in that manner and was supposed to clarify with their folks and get back to us. DOE did not provide any clarification in the consortium call tonight.

It was understood by DOD in the 1600 call that NRC and the embassy are part of the vetting process, but that DOS and NSS were working to put the overall process together. As part of putting the process together, the lead would be solidified. But NSS did not respond, even when I asked specifically, who would lead the process. I believe that asking again at the Deputy's meeting or even at a Principal's meeting, can help formally (hopefully in writing) solidify this assignment.

Mark Lombard
Liaison Team Director
U.S. Nuclear Regulatory Commission
Operations Center

From: Weber, Michael
Sent: Tuesday, April 05, 2011 7:55 PM
To: LIA01 Hoc
Cc: LIA06 Hoc; LIA08 Hoc; ET01 Hoc; ET05 Hoc
Subject: Response - information from video conference on 4/5/11 that may be of interest to the consortium

Thanks, Mark. Now I'm confused - I thought that DOE/DOD has the lead to coordinate technical support for Japan. Has this changed? The summary below states that the Ambassador, Embassy staff, DOE, DOD, and NRC are leading different, but related components. Please advise. If we need to clarify, we can escalate.

From: LIA01 Hoc
To: Al Hochevar <'hochevar@inpo.org'>; Alice Caponiti <Alice.caponiti@hq.doe.gov>; (b)(6)
(b)(6); Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis
(b)(6); DORLAL Resource; Dorman, Dan; DprNrc Resource; Emche, Danielle; ET05 Hoc;
ET07 Hoc; FOIA Response.hoc Resource; Glitter, Joseph; (b)(6); HOO Hoc; INPO

RRR/145

From: OST02 HOC
Sent: Wednesday, April 06, 2011 9:05 AM
To: RST01 Hoc; PMT01 Hoc; PMT02 Hoc; PMT11 Hoc
Subject: FW: Radiation data by MEXT
Attachments: (Japanese)20110406_25.pdf; (Japanese)20110406_26..pdf

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

From: HOO Hoc
Sent: Wednesday, April 06, 2011 9:04 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: Radiation data by MEXT

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

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

From: eda@mext.go.jp [mailto:eda@mext.go.jp]
Sent: Wednesday, April 06, 2011 8:52 AM

To: (b)(6)

(b)(6)

ARR/186 J
rip

Cc: saigai03@mext.go.jp; akasaka@mext.go.jp; senami@mext.go.jp
Subject: Radiation data by MEXT

Dear Sir,

Please see attached the document.

Sincerely yours,
Kei EDA

EOC, Ministry of Education, Culture, Sports, Science & Technology (MEXT), Japan

福島第一原子力発電所周辺の海域モニタリング結果

平成23年4月6日
文部科学省

1. 海中の放射能濃度

測定試料採取点 ^{※1}	採水日時	表層の放射能濃度 (Bq/L)		下層 ^{※2} の放射能濃度 (Bq/L)	
		I-131	Cs-137	I-131	Cs-137
【A】	4月5日7時48分	不検出	不検出	不検出	不検出
【1】	4月5日9時48分	不検出	不検出	不検出	不検出
【3】	4月5日11時00分	10.9	不検出	9.63	不検出
【5】	4月5日12時42分	66.1	38.5	15.0	不検出
【7】	4月5日14時00分	不検出	不検出	11.8	11.3
【9】	4月5日15時18分	不検出	不検出	不検出	不検出

※1 サンプルは、6地点の抽出調査を行った。【 】内の数値は、2ページ目の測点番号に対応する。

※2 下層における採水深については、2ページ目の表に掲載する。

2. 海上の空間線量率

場所 ^{※1}	測定日時	数値 (マイクロシーベルト毎時) ^{※2}	天候
【A】	4月5日7時48分	0.08	降雨無し
【1】	4月5日9時48分	0.07	降雨無し
【3】	4月5日11時00分	0.07	降雨無し
【5】	4月5日12時42分	0.07	降雨無し
【7】	4月5日14時00分	0.07	降雨無し
【9】	4月5日15時18分	0.07	降雨無し

※1 サンプルは、6地点の抽出調査を行った。【 】内の数値は、2ページ目の測点番号に対応する。

※2 検出器型式 CsI(Tl)シンチレーション検出器(PDR-101、アロカ株式会社)

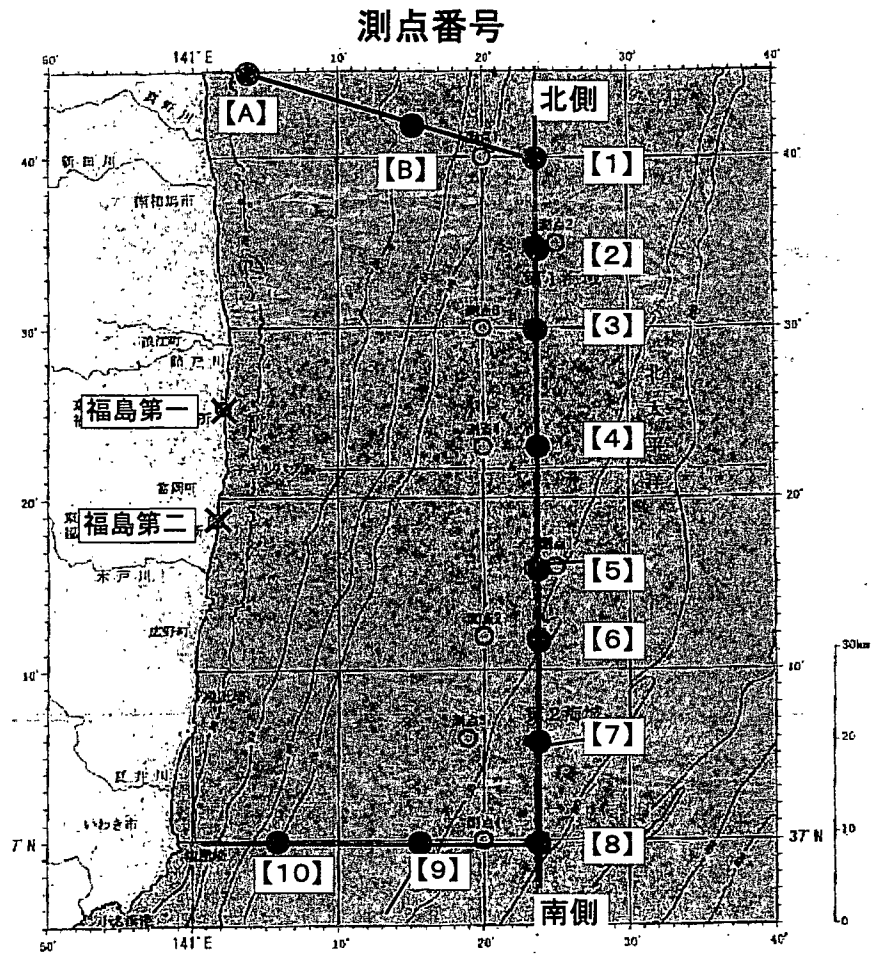
3. 海上の塵中の放射能濃度

測定試料採取点 ^{※1}	採取日時	放射能濃度(Bq/m ³)	
		I-131	Cs-137
【A】	4月5日7時48分	不検出	不検出
【1】	4月5日9時48分	不検出	不検出
【3】	4月5日11時00分	不検出	不検出
【5】	4月5日12時42分	4.03	1.08
【7】	4月5日14時00分	不検出	不検出
【9】	4月5日15時18分	不検出	不検出

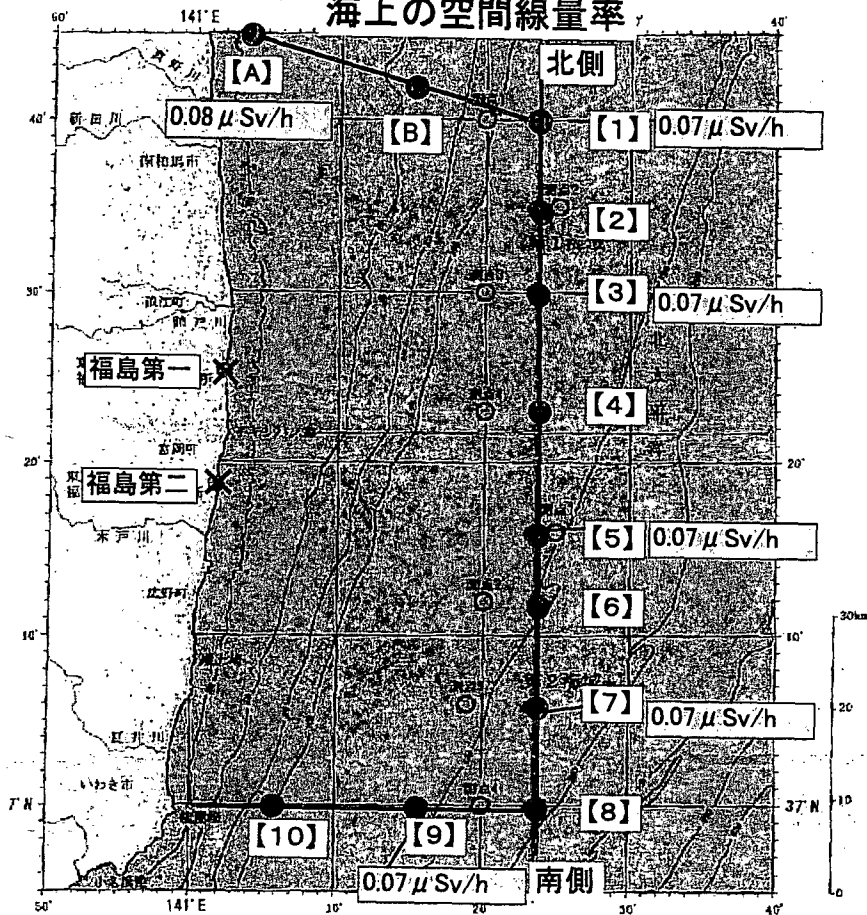
※1 サンプルは、6地点の抽出調査を行った。【 】内の数値は、2ページ目の測点番号に対応する。

各測定点の位置は次のとおり

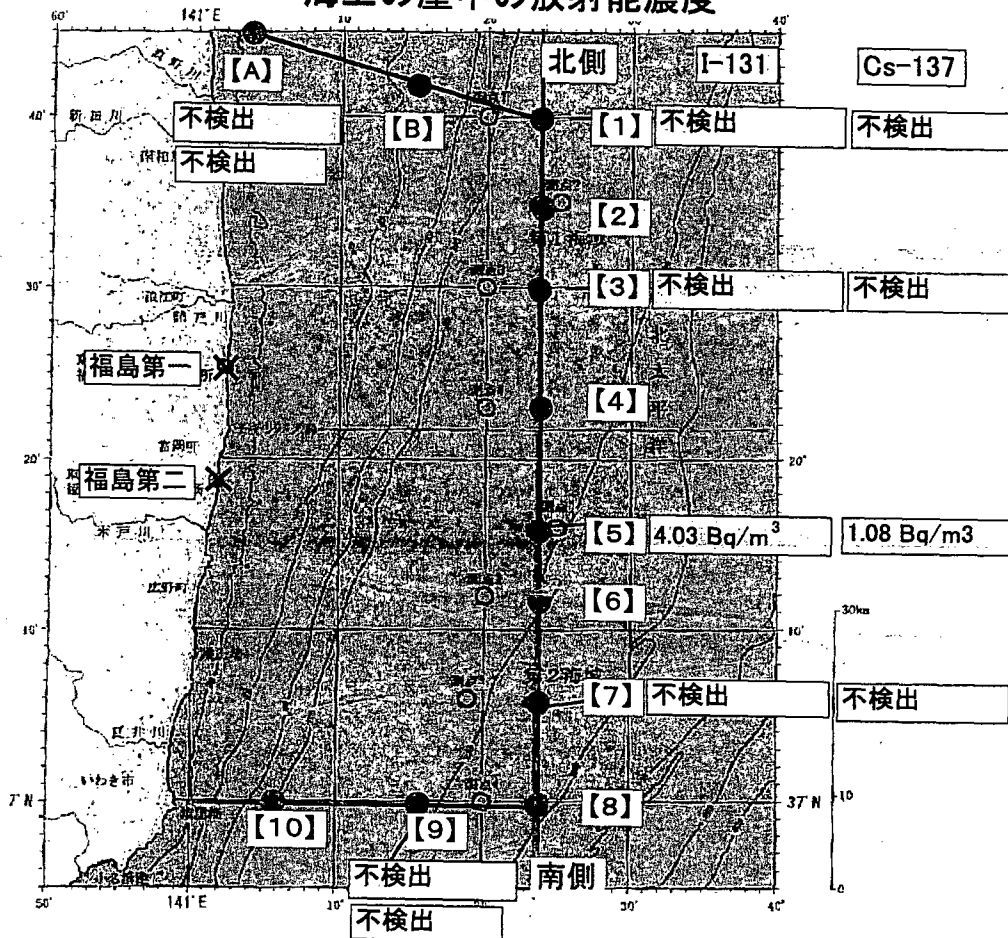
測点番号	緯度, 経度	下層の採水深
【A】	37° 44.9' N, 141° 5.1' E	21 m
【1】	37° 40.0' N, 141° 24.0' E	113 m
【3】	37° 30.0' N, 141° 24.0' E	121 m
【5】	37° 16.0' N, 141° 24.0' E	134 m
【7】	37° 06.0' N, 141° 24.0' E	160 m
【9】	37° 00.0' N, 141° 15.0' E	133 m



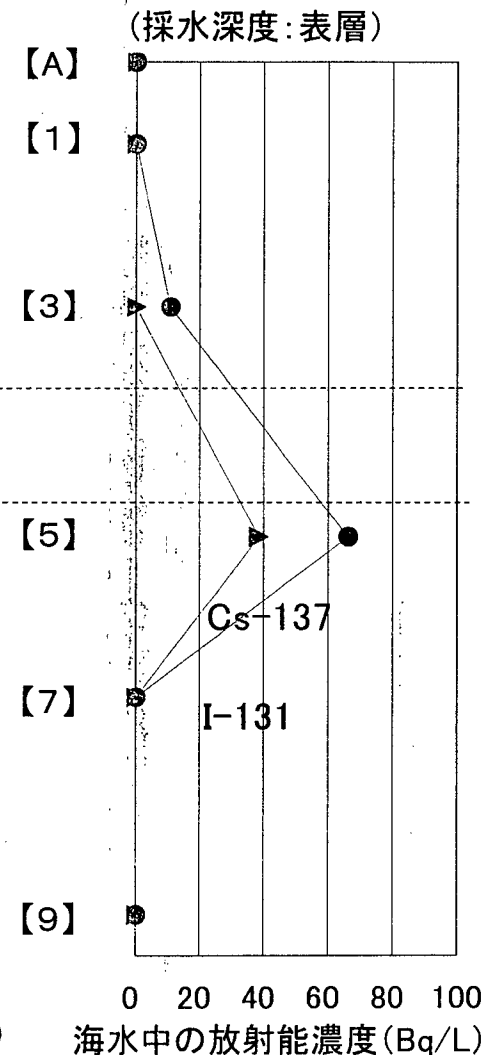
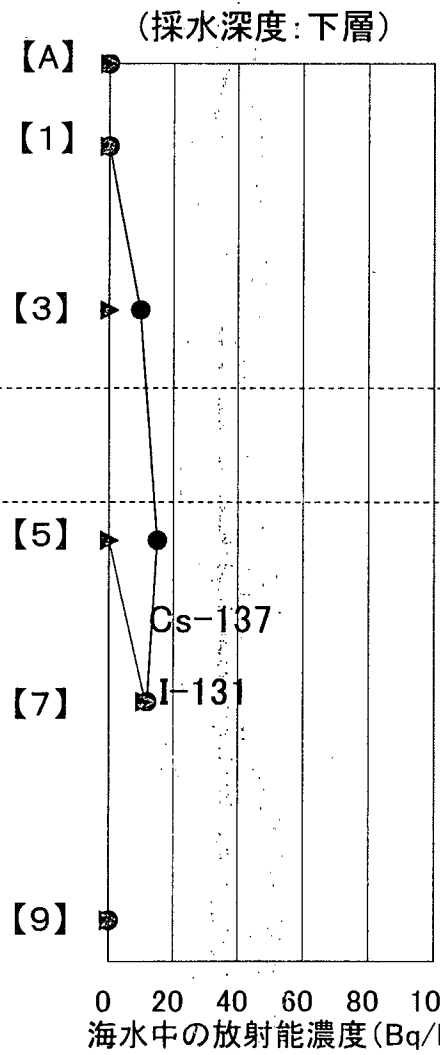
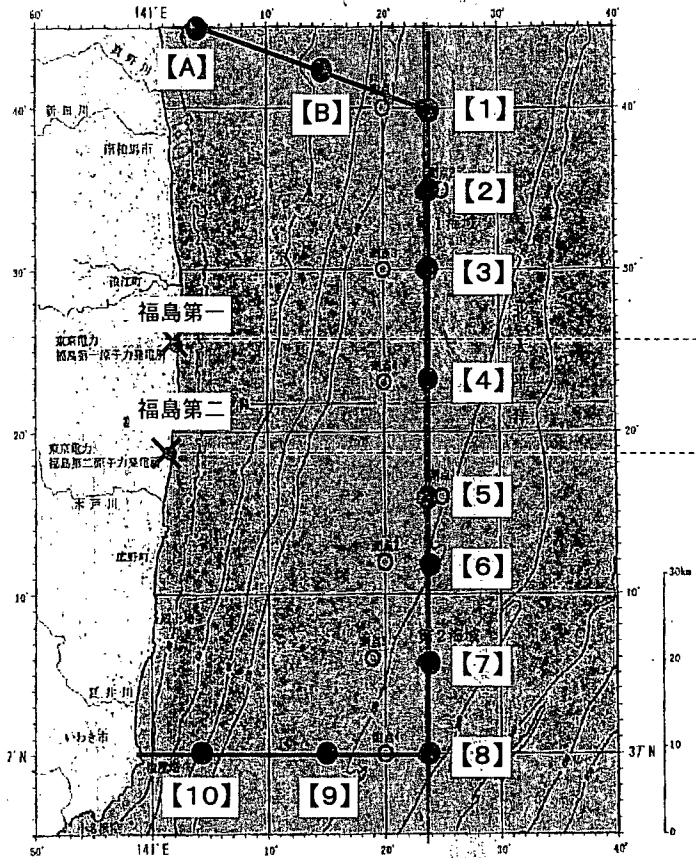
海上の空間線量率



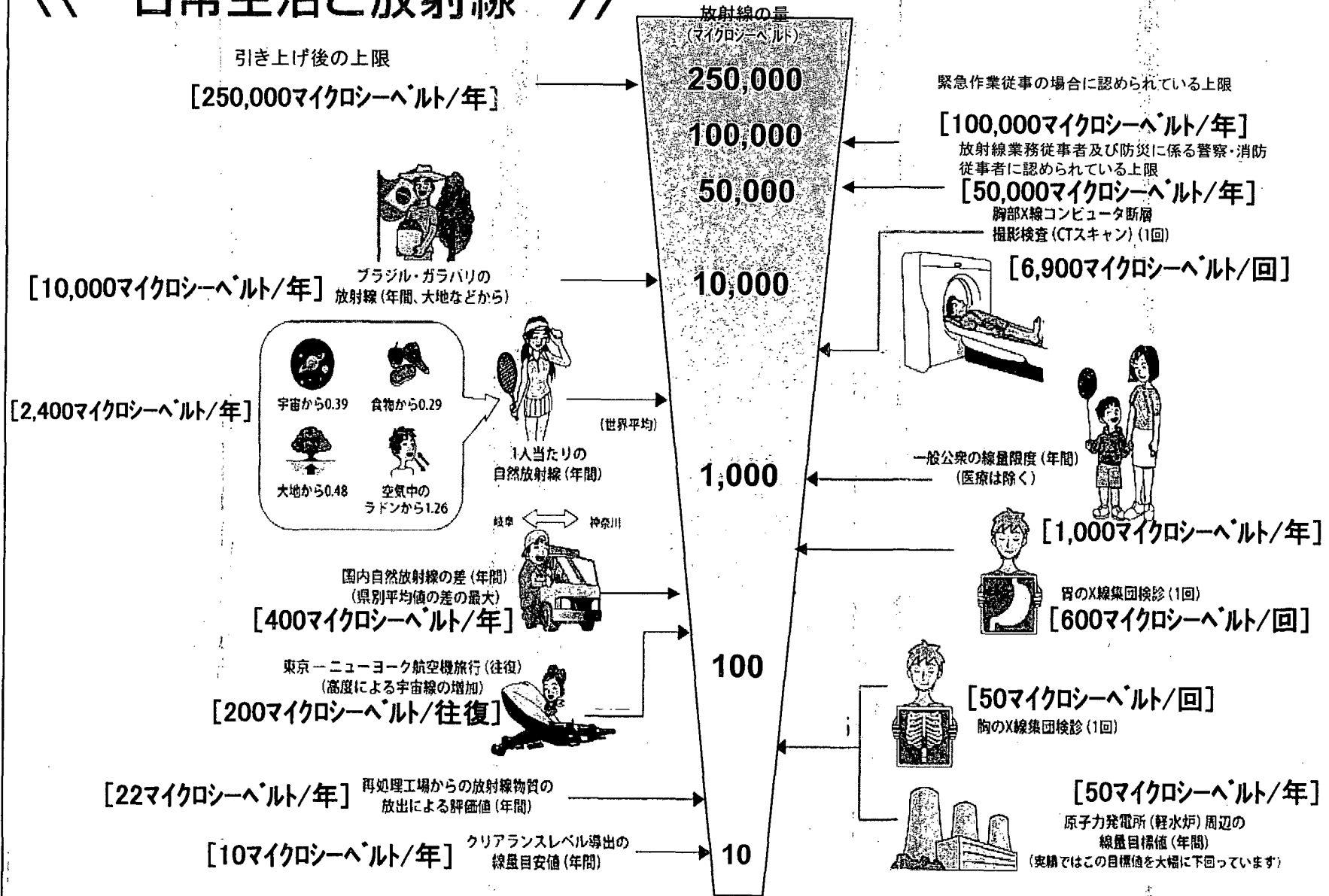
海上の塵中の放射能濃度



海域モニタリング結果(平成23年4月5日採水)



《 日常生活と放射線 》



※ Sv【シーベルト】=放射線の種類による生物効果の定数(※) × Gy【グレイ】 ※ X線、γ線では 1

From:
Sent:
To:

RST01 Hoc
Wednesday, April 06, 2011 5:04 AM

(b)(6)

Subject:

FW: 4-6-11 0300 EDT call with site team

Summary of 0300 EDT call with site team and industry consortium:

Site Team provided updated status

Action Item Review:

1. GeH to provide additional hydrogen/combustible gas analyses (performed after the 4/5/11 industry telecon with TEPCO) to NRC site team and confirm that this new analysis does not impact any of the recommendations the consortium. No action for the RST.
2. Task Record #3582- RST provided final copy of the "Additional Measures.." paper to the site team, still waiting for the GeH comments on the 1 pagers, initial RST assessment is that the paper and the 1 pagers are consistent. Action-Once final GeH comments are in, do a final comparison between the "Additional Measures..." paper and the 1 pagers to assure consistency.
3. Task Record #4131-The overall SFP assessment document was sent to the site team/consortium for comment (4/5/11-0640 EDT)-still waiting for comments.
4. Task Record #4041-During the 0300 EDT call the site team confirmed that the "customer" for the stability document is NISA, who is seeking a common understanding with the US on what types of criteria constitute "stability," near term and long term.
5. Task Record # 4128- Final position on INPO recommendations on possible impacts due to using the use of "Fix it" to minimize loose contamination (the "Goop" paper)-still waiting for DOE comments-expected 4/6/11, 0800 EDT. Once received, issue to site team and close task.
6. Site team indicated that TEPCO is interested in the leak seal methods proposed by Naval Reactors-Site team will contact NR embedded with team and transmit the NR paper to TEPCO.
7. Site team is requesting a "timeline" of the event. Request sent to John Thorp and Don Marksberry to send RST timeline for review and RST will forward timeline to site team.

RRE/187

Subject: 2011 Japan Response State Coordination Conference Call
Location: Call Information: US: (866) 844-9416 / Intl: (203) 369-5026; passcode: (b)(6)
Start: Thu 4/7/2011 5:00 PM
End: Thu 4/7/2011 6:00 PM
Show Time As: Tentative
Recurrence: (none)
Meeting Status: Not yet responded
Organizer: CDC IMS State Coordination Task Force

2011 Japan Response State Coordination Conference Call

When: Thursday, April 07, 2011 5:00 PM-6:00 PM (GMT-05:00) Eastern Time (US & Canada)
Where: Bldg 21, Executive Conference Room

Call Information: US: (866) 844-9416 / Intl: (203) 369-5026; passcode: (b)(6)

Note: The GMT offset above does not reflect daylight saving time adjustments

You are invited to a conference call meeting to update state and local partners while encouraging **discussion of tactical issues** and information sharing with state public health preparedness directors. Federal partners, please include in your response to this email the name of the point of contact who will participate and represent your agency. The POC should call in 15 minutes early for pre-conference discussions; please identify yourself to the Operator as a speaker.

Major topic areas:

1. Customs and Border Protection: Update on guidance for screening of cargo and passengers — Randy Howe, CBP - 5 minutes
2. Population Monitoring: Processing, reporting and shipping of urine samples — Robert Jones, CDC - 10 minutes

Agenda

- Welcome – Steve Boedigheimer, CDC
- ASTHO – Jim Blumenstock
- ASPR Update, Including Public Affairs
- CDC Update
- Major Topic Areas: CBP and CDC
- Comments from federal partners (2 minutes each, including 2-3 priority updates)
- EPA
- FDA
- NRC
- DOE (TBD)
- NOAA (TBD)

RRE/168

- HHS-IGA
- ACF
- SAMHSA
- Q&A

This call will be Operator Assisted

All callers can begin dialing in 30 minutes prior to the meeting start

All callers will be greeted by an Operator; please have the Passcode available when requested

"Speakers" should call in 15 minutes early and identify themselves as such to the Operator at initial dial-in

Participants will hear music until the meeting starts

The Operator will ask for: First Name, Last Name, Organization and City/State

A Participant List will be provided to the POCs

Federal partners will have open lines; other participants will be muted

During the Question & Answer period, participants can press [*1] to ask a question

For technical questions or problems, please contact: eocaudiovisual@cdc.gov

From: OST05 Hoc
Sent: Monday, March 21, 2011 6:33 PM
To: LIA04 Hoc
Subject: FW: Japan Listserv: Tonight's Briefing Call, Additional Resources

From: LIA04 Hoc
Sent: Monday, March 21, 2011 2:52 PM
To: OST05 Hoc
Subject: FW: Japan Listserv: Tonight's Briefing Call, Additional Resources

From: Rothman, Mika L. [mailto:(b)(6)]
Sent: Friday, March 18, 2011 4:17 PM
To: Rothman, Mika L.
Subject: RE: Japan Listserv: Tonight's Briefing Call, Additional Resources

Folks,
Below is the updated agenda for tonight's call at 7PM. Secretary Vilsack will be speaking.

EPA wanted to flag that they have just revised their website, which includes a new address:
<http://www.epa.gov/japan2011/>. Please be sure to update all external communications to reflect this new web address.

3.18.2011 AGENDA

Introductions.....IGA
Brief Update of the Situation.....IGA/NSS
Update on Food/Agriculture Issues.....USDA/FDA
Weather Update & Forecast.....DOS
Humanitarian Relief/Search & Rescue Update.....USAID
Immigration and Port-of-Entry Concerns.....DHS/CBP
Open Discussion/Questions.....ALL
Summary.....IGA

From: Rothman, Mika L. *ml*
Sent: Friday, March 18, 2011 1:10 PM
To: Rothman, Mika L. *ml*
Cc: Munoz, Cecilia; Rathod, Nicholas S.; Block, Michael R.; Baggetto, Maude L.; Galbraith, Charlie
Subject: Japan Listserv: Tonight's Briefing Call, Additional Resources

Friends,

Please find attached notes from last night's Briefing Call as well as today's USAID fact sheet. We are hosting an additional briefing call tonight for west coast states and the territories with senior officials from NOAA, USAID, DHS, and FDA. Below is the call-in information for those who would like to listen in. We will also be distributing notes from tonight's call to this listserv.

RRR/189

CALL INFORMATION:

March 18, 2011

7:00 PM EST

Dial in: (b)(6)

In lieu of a passcode, please provide title of call (b)(6)

Please let me know if you have any questions or if you have additional resources to share with this group. Thanks,

Mika

Mika Rothman

Office of Intergovernmental Affairs | The White House

(o) 202.456.4759 | (c) (b)(6)

From: [NRC Announcement](#)
To: [NRC Announcement](#)
Subject: Employee News: NRC Viewing of the NRC All-Hands Meeting to Address the Nuclear Crisis in Japan
Date: Friday, March 18, 2011 8:50:15 AM

NRC Daily Announcements

Highlighted Information and Messages



Friday March 18, 2011 -- Headquarters Edition

[Employee News: NRC Viewing of the NRC All-Hands Meeting to Address the Nuclear Crisis in Japan](#)

Employee News: NRC Viewing of the NRC All-Hands Meeting to Address the Nuclear Crisis in Japan

On Friday, March 18, 2011, at 2:00 p.m., there will be an All-Hands Meeting in the Two White Flint North (TWFN) Auditorium to address the ongoing nuclear crisis at the Fukushima Nuclear Reactor site in Japan. Staff is encouraged to view the proceedings at one of the following video teleconferencing (VTC) locations:

- One White Flint Commission Hearing Room
- TWFN Exhibit Area
- TWFN Building 2B5
- One White Flint North Building 3B4
- Executive Boulevard Building 1B15
- Twinbrook Building 5E01
- Church Street Building 2C19
- Gateway Building 4B02
- Region I*
- Region II*
- Region III*
- Region IV*
- Technical Training Center*

*Regional and TTC staff will be notified of the VTC viewing location by their VTC coordinator.

The meeting will also be broadcast throughout the White Flint Complex on cable channels 46 and 47. Staff without access to VTC facilities may access the audio portion of the proceedings by utilizing the NRC telephone bridge line by calling 888-820-8960; pass code:

For more information about event viewing locations, contact [Jason Wright](#) at 415-5446 or [Christine Kundrat](#) at 415-6130.



(2011-03-18 00:00:00.0)

[View item in a new window](#)

The latest Announcements are always on the [NRC@WORK Home Page](#).

RRR/190

[Frequently Asked Questions About the NRC Daily Announcements Email](#)

[Search Announcements:](#)

[Announcements by Date](#) | [Announcements by Category](#)

From: Grant, Jeffery
Sent: Friday, April 08, 2011 2:12 AM
To: ET07 Hoc
Subject: Fw: DOE AMS update from 4/7

Jeffery D. Grant

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

From: Morris, Scott
To: Grant, Jeffery
Sent: Fri Apr 08 02:09:35 2011
Subject: FW: DOE AMS update from 4/7

FYI

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

From: Morris, Scott
Sent: Friday, April 08, 2011 2:07 AM
To: McDermott, Brian
Cc: Hoc, PMT12
Subject: RE: DOE AMS update from 4/7

I will pass to the PMT ... not sure if we need a task opened up ...

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

From: McDermott, Brian
Sent: Friday, April 08, 2011 1:41 AM
To: Morris, Scott
Subject: DOE AMS update from 4/7

We need to get a better understanding of the AMS data from DOE. Light blue map areas indicate up to 0.25 mR/hr which would, I believe, exceed the relocation value, however DOE analysis slide indicates that outside 25 miles values would not require relocation. This indicates to me that they have finer data granularity available on other maps. Would be good for us to see this, perhaps the PMT can engage DOE counterparts.

Brian

Brian J. McDermott
(b)(6) (mobile)

RRR/191

From: RST06 Hoc
Sent: Friday, April 08, 2011 2:30 AM
To: j3temp6@jso.mod.go.jp
Cc: Holahan, Vincent;(b)(6) Casto, Chuck;
Collins; Elmo; ET07 Hoc; ET01 Hoc; RST01 Hoc; LIA08 Hoc
Subject: FW: TEPCO Daily Update Thursday 7 April
Importance: High

CDR Kondo,

I am replying to the request that you received from Mr. Nason. The information below is draft.

We understand that a copy of your request has also been forwarded to the NRC Japan site team via the Tokyo Embassy. Communication between NISA and the NRC site team located at the Embassy is the normal path for communication on matters such as this, and we would suggest that you mention this to Mr. Nason. Notwithstanding that, we are providing you this draft information because of the significance that you have placed in the multiple requests that you have received.

Conceptual information on early (phase 1) stability for plants that have experienced severe accidents [I would caution that early stability may have different meanings for different applications. Reasonable Confidence of stability may be different for those on plant-site, or in the immediate surroundings than for those located at a considerable distance from the plant]:

Principle; Plant conditions provide reasonable confidence that time is available to implement contingency actions or re-evaluate protective actions before an unanticipated condition could cause a major radioactive release.

Goals:

Establish a reliable means to:

- Remove decay heat
- Preclude detonation in primary containment atmosphere
- Maintain reactors and spent fuel pools subcritical with fuel adequately cooled and shielded
- Minimize radioactive releases
- Ensure structural integrity for all units (e.g. containment and spent fuel pools)

Approach:

Establish:

1. Containment water level to cover the reactor pressure vessel (RPV) lower head (if possible)
2. Inert containment atmosphere (if possible)
3. Functional and reliable power source equipment and controls for each reactor
4. Functional and reliable pumping equipment in-service to ensure adequate cooling
5. Functional and clean water source of sufficient capacity to ensure continuous core cooling
6. Reliable means to determine key parameters (e.g., RPV/DW level, RPV/DW pressure, etc.)
7. The means for identification and containment of significant external leakage (e.g. primary containment leakage)

RFR/192

8. The ability to routinely fill and measure level and temperature in SFP
9. Reasonable expectation of SFP structural integrity
10. A functional sample system for primary containment atmosphere
11. Measures to minimize further spread of contamination (e.g., covers or resin spray)

Fred Brown
On-shift Reactor Safety Team Director

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

From: Holahan, Vincent

Sent: Thursday, April 07, 2011 10:03 PM

To: RST01 Hoc

Cc: (b)(6)

Subject: FW: TEPCO Daily Update Thursday 7 April

Importance: High

Per our conversation this afternoon, I am forwarding to you the email that I received from RADM Haley from US Forces Japan (USFJ). His liaison/representative to the daily TEPCO meeting, CDR Kondo, has been approached each of the last two days by the senior NISA representative (Mr. Nason) inquiring about our (US) definition of what conditions are required before we would consider the Fukushima reactors stable. Mr. Nason understands that NRC, other federal agencies, and industry are working to develop a working definition. However, USFJ would like to provide CDR Kondo some information that he can share with NISA as soon as possible.

After speaking with the RST team, I provided an update on the stability paper to the PACOM staff. Admirals Rowden and Haley are participants in this daily Update Briefing as well. I explained what was on-going, the drafting of another paper on reactor stability by Naval Reactors, and the Principals meeting that is scheduled for next Monday.

Although the document you are working to complete, to include the incorporation of comments from Naval Reactors, might be sufficient to satisfy the NISA request, USFJ suggested that an email from NRC to CDR Kondo might be sufficient. This email might include a brief description of what issues and end states we are considering (e.g., stable and reliable off site power was a good example). It should be a 50,000 foot overview with the understanding that the final version would be shared with the US Embassy and others early next week.

It is USFJ view that NISA may be trying to develop and articulate their own definition of what needs to be accomplished before near term and long term stability can be achieved. Hence, they are looking to see what the NRC and industry views and opinions might be. If this could be provided to CDR Kondo before his next meeting with TEPCO and NISA, I believe it would be greatly appreciated.

I will call the RST in a couple of minutes to discuss this further and answer any questions or provide clarification if needed.

CDR Kondo's email address and phone number is included in the message below. You might also appreciate the comments he provided regarding his TEPCO meeting today.

cheers,

Vince
NRC Liaison to PACOM
808-477-9536

From: (b)(6)
Sent: Thursday, April 07, 2011 7:58 PM
To: Holahan, Vincent
Cc: Price, Erik N LTC PACOM, J91
Subject: FW: TEPCO Daily Update Thursday 7 April

Sir:

Relay from our J3.

V/R

Steve Greco

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

From: Swift, Scott H RADM PACOM, J3
Sent: Thursday, April 07, 2011 3:43
To: (b)(6) Greco, Stephen B. GS-15 CIV
Cc: 'tdywhitejr@state.gov'; 'TDYKnollWS@state.gov'; 'Richard.Kondo@crbard.com'; (b)(6)
(b)(6) Alles, Randolph D MajGen PACOM, J5; Hooper, Charles W BG PACOM J50; Osserman, Stanley J
Jr. Brig Gen PACOM, J5; Sohaney, Mark D LCDR PACOM, J5 EA; 'tmo23@hoyamail.georgetown.edu'
Subject: Re: TEPCO Daily Update Thursday 7 April

Steve,

Please pass to Dr. Holohan. Thanks.

V/R,

SHS

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

From: (b)(6)
To: (b)(6) Crowe, (b)(6)
(b)(6)
Cc: tdywhitejr@state.gov <tdywhitejr@state.gov>; Knoll, William S (TDYKnollWS) <TDYKnollWS@state.gov>; Kondo, Richard <Richard.Kondo@crbard.com>; Bell, Charles F LT USN (b)(6) Corbett, Eric M Capt USMC USFJ
(b)(6) TDYWhiteJR@state.gov <TDYWhiteJR@state.gov>; Swift, Scott H RADM PACOM, J3
Sent: Wed Apr 06 22:09:21 2011
Subject: RE: TEPCO Daily Update Thursday 7 April

RADM Swift, please pass to Dr. Holohan (NRC Rep at PACOM) CAPT White, please pass to NRC/DOE team at embassy

All,

In our discussions today, CDR Kondo told me of encounters he had with the senior NISA representative (Nason-san). After the meeting yesterday Nason asked CDR Kondo what our (US) definitions for / requirements for having the reactors considered "stable." Nason approached CDR Kondo again today to ask the same question. For that to happen in Japanese culture (repeat request the next day) is very exceptional. I submit that we need to consider providing an answer beyond the correct answer that CDR Kondo provided (We are developing that).

Understand fully that NRC and DOE are working quickly to define this and get the definition approved. In the interim we may consider providing non-quantitative (qualitative) considerations that we are looking at as we determine stability. Allowing our reps (Kondo in this case) to answer the question "a little bit" will make a difference in the long

run. I'm sure that someone from the embassy could help with understanding the significance of what CDR Kondo explained if there are questions.

Sincerely, JR

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

From: j3temp6 [mailto:j3temp6@jso.mod.go.jp]

Sent: Thursday, April 07, 2011 3:32 PM

To: Rowden, Thomas RDML USN USFJ J2; Crowe, Blake BGen USMC USFJ J01; Haley, John R RDML USN

Cc: tdywhitejr@state.gov; 'Knoll, William S (TDYKnollWS)'; j3temp5@jso.mod.go.jp; 'Kondo, Richard'; Bell, Charles F LT USN; Corbett, Eric M Capt USMC USFJ J01A; 'j3temp6'; =?iso-2022-

jp?B?JxskQiEoGyhCVERZRG9vZHIKrkBzdGF0ZS5nb3Yn?=@oaoml001c.coa.jso.mod.go.jp

Subject: TEPCO Daily Update Thursday 7 April

Importance: High

Admirals Rowden, Haley, and General Crowe:

In follow up to my verbal report, here are the top discussion items from today's TEPCO meeting :

1) Nitrogen inerting operations commenced at 01:31 hours on 4/7/2011.

Although initial plans were to inject using three pumps at 14 cu meters each, TEPCO decided to pressurize using only 2 pumps due to Dry Well pressure rise from 22 to 23 PSIG. TEPCO originally planned to keep the N2 float for 6 days but is now planning for 4 days at a Dry Well pressure of 15 PSIG. TEPCO also intends to do N2 inerting of plants #2 and #3 but did not disclose whether this will be in series or parallel. TEPCO confirmed that there was no vent line set up during the N2 operations.

2) TEPCO provided an overview on the automated giraffe concept to permit long-term spray and visual observation capabilities using remote cameras mounted on the giraffe arm. NRC inquired if NISA/TEPCO had accounted for redundancy in the event of a subsequent explosion or a secondary earthquake.

TEPCO responded that they will have a backup giraffe in the event the 1st one is out of commission.

3) Mr. Nason (NISA Lead) asked for the 2nd day in a row about NRC's/Nuclear Consortium's definition of a stable plant. It appears that there is great interest in this definition as the Japanese side is interested in creating their own tripwire for a relaxation of the evacuation order.

4) Except for the increase in #1 Dry Well pressure, there were no other significant changes in plant parameters across plants #1 through #6.

Should you have any further questions, I can be reached at 224-9720 or 090 6548-5981.

v/r,
CDR Rich Kondo

From: Droggitis, Spiros
Sent: Friday, March 25, 2011 6:49 AM
To: [REDACTED] (b)(6)
Cc: Schmidt, Rebecca; Powell, Amy; Riley (OCA), Timothy; Dacus, Eugene; Shane, Raeann; Weil, Jenny; Decker, David
Subject: Daily Plant Status Report 3/25/2011
Attachments: USNRC Japan Plant Condition Update March25 0430EDT.PDF

Reel 193

From: [Wittick, Brian](#)
To: [Leeds, Eric](#); [Grobe, Jack](#); [Boger, Bruce](#); [Ruland, William](#); [Nguyen, Quynh](#); [Meighan, Sean](#)
Subject: FW: SRM - COMGBJ-11-0002 - NRC Actions Following the Events in Japan
Date: Wednesday, March 23, 2011 4:49:06 PM
Attachments: [SRM-ComGBJ11-0002.docx](#)

Attached please find the subject SRM.

VR

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) (c)

From: RidsEdoDraftSrmVote Resource
Sent: Wednesday, March 23, 2011 4:41 PM
To: Ash, Darren; Borchardt, Bill; Boyd, Lena; Buckley, Patricia; Clarke, Deanna; Cohen, Miriam; EDO_Staff_Assistants; Flory, Shirley; Fry, Jeannie; Garland, Stephanie; Johnson, Michael; Mamish, Nader; Matakas, Gina; Miles, Patricia; Miller, Charles; Owen, Lucy; Riddick, Nicole; RidsAdmMailCenter Resource; RidsCsoMailCenter Resource; RidsFsmeOd Resource; RidsHrMailCenter Resource; RidsNmssOd Resource; RidsNroMailCenter Resource; RidsNrrOd Resource; RidsNsirMailCenter Resource; RidsOeMailCenter Resource; RidsOiMailCenter Resource; RidsOIS Resource; RidsResOd Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsSbcrMailCenter Resource; Thomas, Loretta; Virgilio, Martin; Walker, Dwight; Weber, Michael
Subject: FW: SRM - COMGBJ-11-0002 - NRC Actions Following the Events in Japan

From: Lewis, Antoinette
Sent: Wednesday, March 23, 2011 4:34 PM
To: Vietti-Cook, Annette; Baggett, Steven; Bates, Andrew; Batkin, Joshua; Blake, Kathleen; Bollwerk, Paul; Bozin, Sunny; Bradford, Anna; Brown, Theron; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Cutchin, James; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Hawkens, Roy; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; KLS Temp; Kock, Andrea; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Mitchell, Reggie; Monninger, John; Moore, Scott; OCA Distribution; OPA Resource; Orders, William; Pace, Patti; Poole, Brooke; Rabideau, Peter; Reddick, Darani; Laufer, Richard; RidsEdoDraftSrmVote Resource; RidsOcaaMailCenter Resource; RidsOcofoMailCenter Resource; RidsOgcMailCenter Resource; RidsOigMailCenter Resource; RidsOipMailCenter Resource; Baval, Rochelle; Rothschild, Trip; Joosten, Sandy; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, WCO; Temp, WDM; Thoma, John; Warren, Roberta; Zorn, Jason; Temp, GEA; Apostolakis, George; Tadesse, Rebecca; Butler, Gail; Perry, Jamila; Doane, Margaret; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth
Cc: Wright, Darlene; Lewis, Antoinette
Subject: SRM - COMGBJ-11-0002 - NRC Actions Following the Events in Japan

(ML110820875)

In an effort to keep the NRC staff informed of Commission decisions in a timely manner, attached for your information are the Staff Requirements Memoranda (SRMs) signed by the Secretary on March 23, 2011. Please make additional distribution to interested staff members in your office.

RL/194

If you have any questions, please give me a call on 415-1969.

March 23, 2011

MEMORANDUM TO: Chairman Jaczko

FROM: Annette Vietti-Cook, Secretary **/RA/**

SUBJECT: COMGBJ-11-0002 – NRC ACTIONS FOLLOWING THE EVENTS
IN JAPAN

This memorandum is to inform you that all Commissioners have concurred in your proposal regarding NRC actions following the events in Japan. The attached tasking memorandum provides staff direction on this issue.

This completes action on COMGBJ-11-0002.

Attachment:
As stated

cc: Commissioner Svinicki
Commissioner Apostolakis
Commissioner Magwood
Commissioner Ostendorff
EDO
OGC
OPA
OCA

March 23, 2011

MEMORANDUM TO: R. W. Borchardt
Executive Director for Operations

FROM: Chairman Jaczko **/RA/**

SUBJECT: TASKING MEMORANDUM – COMGBJ-11-0002 – NRC
ACTIONS FOLLOWING THE EVENTS IN JAPAN

The staff should establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system and make recommendations to the Commission for its policy direction. The review should address the following near term and then longer term objectives.

Near Term Review

- This task force should evaluate currently available technical and operational information from the events that have occurred at the Fukushima Daiichi nuclear complex in Japan to identify potential or preliminary near term/immediate operational or regulatory issues affecting domestic operating reactors of all designs, including their spent fuel pools, in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control.
- The task force should develop recommendations, as appropriate, for potential changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.
- The task force efforts should be informed by some stakeholder input but should be independent of industry efforts.
- The report would be released to the public per normal Commission processes (including its transmission to the Commission as a Notation Vote Paper).

To ensure the Commission is both kept informed of these efforts and called upon to resolve any policy recommendations that surface, the task force should, at a minimum, be prepared to brief the Commission on a 30 day quick look report; on the status of the ongoing near term review at approximately the 60 day point; and then on the 90 day culmination of the near term efforts. Additional specific subject matter briefings and additional voting items that request Commission policy direction may also be added during the Commission's agenda planning meetings.

(EDO)

(SECY Suspense: 30, 60, & 90 days)

From: (b)(6)
Sent: Saturday, April 09, 2011 2:19 PM
To: RST03 Hoc
Subject: FW: Purpose: Request for Re-review of the attached document

From: RST08 Hoc [mailto:RST08.Hoc@nrc.gov]
Sent: Sat 4/9/2011 8:43 AM
To: Roberts, Thomas E CIV SEA 08 NR
Subject: RE: Purpose: Request for Re-review of the attached document

Tom,

Mike Brown here. I would agree with your assessment. I'm not sure why Night shift did what they did.

I will look into it and see if we can go back to the 1200 version we discussed yesterday and I'll just remove the status section.

Here is the revised Approach section from the 1200 document

Approach:

Establish:

1. Reactor Pressure Vessel (RPV) water level is above top of active fuel (TAF).
2. Containment water level to cover the reactor pressure vessel (RPV) lower head.
3. Non-combustible containment atmosphere
4. Functional and reliable power source equipment and controls for each reactor

RRR/195

5. Functional and reliable pumping equipment in-service to ensure adequate cooling
6. Functional and clean borated water source of sufficient capacity to ensure continuous core cooling and subcriticality
7. Reliable means to determine key parameters (e.g., RPV/DW level, RPV/DW pressure, etc.)
8. The means for identification and containment of significant external leakage (e.g. primary containment leakage)
9. The ability to routinely fill and measure level and temperature in SFP
10. Reasonable expectation of SFP structural integrity
11. A functional sample system for primary containment atmosphere
12. Measures to minimize further spread of contamination (e.g., covers or resin spray)

I added something to ensure that the core is covered with water and we changed the water source to borated water source to ensure cooling and subcriticality.

Let me know if this is ok.

Thanks,

Mike

Mike Brown

Reactor Safety Team

From: Roberts, (b)(6)

Sent: Saturday, April 09, 2011 7:36 AM

To: RST01 Hoc; Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Giessner, John; Jackson, Todd; Monninger, John; RMTFACTSÜ_ELNRC@ofda.gov; Bernhard, Rudolph; Salay, Michael; Scott, Michael; Sheikh, Abdul; Stahl, Eric; Taylor, Robert; Way, Ralph; RST09 Hoc; Kepple, Alan C CIV NAVSEA, 08; BMPC_ECC.Contractor@unnpp.gov; Bingman, Bruce M CIV SEA 08 NR; RST08 Hoc; alice.caponiti@nuclear.energy.gov; Herman, David R CIV NAVSEA, 08; Dei, Donald E CIV SEA 08 NR; dmodeen@epri.com; EventResponse@epri.com;

GE.HitachiNuclearResponseTeam@ge.com; Szeto, Gordon CIV SEA 08 NR; Holahan, Vincent; inpoerc@inpo.org;
inpoerc@inpo.org
Cc: FOIA Response.hoc Resource
Subject: Re: Purpose: Request for Re-review of the attached document

Based on a quick read on a blackberry, the version you sent out for re-review does not include resolution of NR comments that were incorporated previously as documented in an email issued by rst01 Thursday 10:22pm, nor does it resolve the open comment on criticality forwarded to rst01 by email Friday 12:46pm. Therefore, NR does not agree with this version. Suggest using the Friday 1200 version, delete the "current status" section from it, and add explanation of what actions are required to meet the "maintain subcriticality" goal.

Thanks,
Tom Roberts

From: RST01 Hoc <RST01.Hoc@nrc.gov>
To: Ali, Syed <Syed.Ali@nrc.gov>; Blamey, Alan <Alan.Blamey@nrc.gov>; Call, Michel <Michel.Call@nrc.gov>; Casto, Chuck <Chuck.Casto@nrc.gov>; Collins, Elmo <Elmo.Collins@nrc.gov>; Emche, Danielle <Danielle.Emche@nrc.gov>; Giessner, John <John.Giessner@nrc.gov>; Jackson, Todd <Todd.Jackson@nrc.gov>; Monninger, John <John.Monninger@nrc.gov>; NRC Team at USAID <RMTFACTSU_ELNRC@ofda.gov>; Bernhard, Rudolph <Rudolph.Bernhard@nrc.gov>; Salay, Michael <Michael.Salay@nrc.gov>; Scott, Michael <Michael.Scott@nrc.gov>; Sheikh, Abdul <Abdul.Sheikh@nrc.gov>; Stahl, Eric <Eric.Stahl@nrc.gov>; Taylor, Robert <Robert.Taylor@nrc.gov>; Way, Ralph <Ralph.Way@nrc.gov>; RST09 Hoc <RST09.Hoc@nrc.gov>; Kepple, Alan C CIV NAVSEA, 08; Bettis Contacts <BMPC_ECC.Contractor@unnpp.gov>; Bingman, Bruce M CIV SEA 08 NR; RST08 Hoc <RST08.Hoc@nrc.gov>; Caponiti DOE <alice.caponiti@nuclear.energy.gov>; Herman, David R CIV NAVSEA, 08; Dei, Donald E CIV SEA 08 NR; EPRI Dave Modeen <dmodeen@epri.com>; EPRI Event Response Center <EventResponse@epri.com>; GE Hitachi NuclearResponseTeam <GE.HitachiNuclearResponseTeam@ge.com>; Szeto, Gordon CIV SEA 08 NR; Holahan, Vincent <Vincent.Holahan@nrc.gov>; INPO ERC <inpoerc@inpo.org>; INPOERCTECH <inpoerc@inpo.org>;
(b)(6) Joel Pero (Bettis) <joel.pero.contractor@unnpp.gov>; Johnne Kelly <johnne.kelly@nuclear.energy.gov>; Steinhurst, Laurel A CIV SEA 08 NR; Lela Doyle (KAPL) <lela.doyle.contractor@unnpp.gov>; Richard Stark <Richard.Stark@nuclear.energy.gov>; Rob Versluis <ROB.VERSLUIS@nuclear.energy.gov>; Hoc, RST16 <RST16.Hoc@nrc.gov>; RST01B Hoc <RST01B.Hoc@nrc.gov>; RST03 Hoc <RST03.Hoc@nrc.gov>; RST07 Hoc <RST07.Hoc@nrc.gov>; Russell Morales <MoralesRA@state.gov>; Sal Golub <sal.golub@nuclear.energy.gov>; Bell, Stephen T CIV SEA 08 NR; Roberts, Thomas E CIV SEA 08 NR; Vavoso, Thomas G CIV NAVSEA, 08
Cc: FOIA Response.hoc Resource <FOIAResponse.hoc.Resource@nrc.gov>
Sent: Sat Apr 09 06:23:48 2011
Subject: FW: Purpose: Request for Re-review of the attached document

From: RST06 Hoc
Sent: Saturday, April 09, 2011 6:03 AM
To: RST01 Hoc
Subject: Purpose: Request for Re-review of the attached document

Frank, please forward this e-mail to the Industry e-mail group and the site team (including Chuck and Elmo).

Purpose: Request for Re-review of the attached document (previously reviewed earlier this week).

Request that all involved entities confirm that any comments that they have made on this document have been satisfactorily incorporated so that it can be shared by the site team with NISA.

This is a high priority request because of the priority that NISA has placed on it in their discussions with the US.

Background:

NISA has made several requests for NRC thoughts on conditions for "stability." The RST had worked with its peers on a stability document over the last week. As of 4/9/11, it has been decided to merge the "stability" paper with a paper on PAG to create a broader scope "Composite" paper for use in getting US Govt alignment on reentry recommendations.

This new composite paper will involve some very challenging coordination with other agencies because of the policy issues associated with post-accident dose standards.

The site team has requested that the stand-alone "stability" document be made available for sharing with NISA; however, one partner indicated that the most recent version of the stand alone "stability" paper is unacceptable to them, in part because of the "current status" section.

The RST has gone back to an earlier version of the "compatibility" document that does not include the "current status" section, and is forwarding it to the site team for their review. We will also forward to our peers for review, with an understanding that the new "simplified stability" document is not associated with the policy setting "composite" document.

Thanks,

Fred Brown

On-shift RST Director

From: [Johnson, Michael](#)
To: [Leeds, Eric](#)
Subject: FW: NEXT STC-MEETING - 27 - 29 April 2011
Date: Wednesday, March 23, 2011 11:32:26 AM

Here is some more on this. Sorry to have gotten out in front of you on this. We should ensure we are aligned.

Mike

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

From: Holahan, Gary
Sent: Wednesday, March 23, 2011 11:26 AM
To: Dudes, Laura
Cc: Johnson, Michael; Williams, Donna; Rosales-Cooper, Cindy
Subject: RE: NEXT STC MEETING - 27 - 29 April 2011

Laura,

Mike, Donna and I spoke to Javier this morning. Mike and I both pushed Javier for near-term and active coordination of lessons learned activities through MDEP for new reactors and perhaps CNRA for operating reactors. They will consider alternatives including MDEP near-term and WGRNR long term.

We informed that the Commission will be tasking staff to do a 30-60-90 day lessons learned effort ... to be largely completed before CNRA even meets in June. We are looking for coordination mechanisms in the very near-term.

I will be on the task force for the 90 days ... taskforce lead by Charlie Miller ... reporting to Marty.

Also not that WENRA announced this morning that they are starting a coordinated Western European lessons learned effort ... to be implemented by individual national regulators.

Gary

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

From: Dudes, Laura
Sent: Wednesday, March 23, 2011 11:09 AM
To: Holahan, Gary
Subject: Fw: NEXT STC MEETING - 27 - 29 April 2011

We should discuss-perhaps a focused set of Q's to the design specific WGs-CNRA is already tasking WGs to consider what generic activities could be considered as a result of the event-a separate WG in MDEP may dilute the mission and be a redundant resource expenditure for many members.

Laura Dudes
Sent via Blackberry
(b)(6)

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

From: Javier.REIG@oecd.org <Javier.REIG@oecd.org>
To: Dudes, Laura
Sent: Wed Mar 23 05:35:06 2011
Subject: Fw: NEXT STC MEETING - 27 - 29 April 2011

RRR/194

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

From: Williams, Donna [<mailto:Donna.Williams@nrc.gov>]
Sent: Tuesday, March 22, 2011 07:44 PM
To: BURKHART Lawrence, NEA/SURN; GRESS Philippe, NEA/SURN; REIG Javier, NEA/SURN
Cc: Rosales-Cooper, Cindy <Cindy.Rosales-Cooper@nrc.gov>; Holahan, Gary <Gary.Holahan@nrc.gov>
Subject: RE: NEXT STC MEETING - 27 - 29 April 2011

Thanks. In preparation for our discussion, below is an email that Gary drafted that could be used to inform the STC members of the proposed MDEP discussion topic:

The tragic events in Japan this month raise numerous issues about the safety of operating and new reactors. Many, perhaps all, of these issues have been or are already being addressed in the on-going new reactor design reviews. I expect that each regulator will need to re-confirm that enhancements to seismic, flooding and severe accident protections for new reactor designs have been addressed.

Each regulatory authority will need to study and learn from the experience at Fukushima. I believe that it would be beneficial for the major regulatory authorities dealing with new reactors (i.e. the MDEP members) to coordinate their efforts to understand the events, determine their significance for new reactor designs, evaluate the effectiveness of enhanced new reactor features, determine if any further activities are warranted, and communicate the results of such an evaluation to all interested parties.

I therefore propose that the MDEP STC begin a discussion of these matters at the April STC meeting. The STC should discuss available mechanisms for coordinating national efforts on this topic, including the possible formation of a working group or an STC sub-committee, or the development of guidance to each existing design-specific working group. MDEP cannot become the organization responsible for the Fukushima lessons learned effort, but it can serve as the forum for coordinating efforts as they relate to new reactor designs. I therefore ask that each STC member come to the April meeting prepared to share information on how it's organization plans to address lessons learned from the event, and some thoughts on the benefits of MDEP cooperation going forward.

If we begin STC discussions in April, we could discuss progress on this topic at the June PG meeting, include the fact that this effort was started in the annual report (perhaps in Mr. Lacoste's foreword to the report), and present preliminary findings at the September MDEP conference.

Attached are some preliminary thoughts on how new reactor designs are addressing what now appear to be important considerations effecting the Fukushima event. I believe that the final studies will need to go into much more detail to understand the event and to understand how each new reactor design is enhancing safety. I am providing these thoughts to begin to develop an agreement on how MDEP can be used to address the tragic events in a productive and effective manner. Your thoughts would be much welcomed.

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

From: Lawrence.BURKHART@oecd.org [<mailto:Lawrence.BURKHART@oecd.org>]
Sent: Tuesday, March 22, 2011 1:55 PM
To: Williams, Donna; Philippe.GRESS@oecd.org
Cc: Javier.REIG@oecd.org; Rosales-Cooper, Cindy; Holahan, Gary
Subject: RE: NEXT STC MEETING - 27 - 29 April 2011

Donna,

Let me check with Javier on his availability....I know that he will probably be at the start of the WGRNR meeting but perhaps has some time during our afternoon.

Larry

From: Williams, Donna [Donna.Williams@nrc.gov]
Sent: Tuesday, March 22, 2011 6:31 PM
To: BURKHART Lawrence, NEA/SURN; GRESS Philippe, NEA/SURN
Cc: REIG Javier, NEA/SURN; Rosales-Cooper, Cindy; Holahan, Gary
Subject: RE: NEXT STC MEETING - 27 - 29 April 2011

Larry/Philippe

Is NEA available sometime this week for a conference call? In particular, we would like to talk about some ideas on how MDEP may be useful in coordinating lessons learned efforts from the Japanese events for new reactor reviews .

We are available Wednesday (9-10) or Thursday (9:30- 11:30)

Thanks
Donna

From: Lawrence.BURKHART@oecd.org [mailto:Lawrence.BURKHART@oecd.org]
Sent: Tuesday, March 22, 2011 12:04 PM
To: petteri.tiippana@stuk.fi; gclapiss@nnr.co.za; k210kig@kins.re.kr; Dave.Watson@hse.gsi.gov.uk; slee@kins.re.kr; Douglass.Miller@cncs-ccsn.gc.ca; abe-kiyoharu@jnes.go.jp; Lawrence.Burkhart@oecd.org; Rosales-Cooper, Cindy; yuichi.onoda@cao.go.jp; Holahan, Gary; Philippe.Gress@oecd.org; javier.reig@oecd.org; ohmura-tetsuo@meti.go.jp; jiangwei@mep.gov.cn; j.lyons@iaea.org; David.Newland@cncs-ccsn.gc.ca; i.sokolova@gosnadzor.ru; len.creswell@hse.gsi.gov.uk; M.Lipar@iaea.org; Guillaume.WACK@asn.fr; M.El-Shanawany@iaea.org; alejandro.huerta@oecd.org; Williams, Donna; bvs@gan.ru
Cc: adeline.clos@asn.fr; Geoffrey.Vaughan@hse.gsi.gov.uk; EuropaM@nnr.co.za; diane.jackson@oecd.org; yindejian@tsinghua.org.cn; byung-soon.kim@oecd.org; oshima-toshiyuki@meti.go.jp; Doane, Margaret; PBester@nnr.co.za; fujiensc@163.com; bogdan@secNRS.RU; Rosales-Cooper, Cindy; k076kbs@kins.re.kr; huliguang@tom.com; bannai-toshihiro@meti.go.jp; v.kolobov@gan.ru; olivier.gupta@asn.fr; Marcel.deVos@cncs-ccsn.gc.ca; akane.kawasue@cao.go.jp; akihide.hidaka@cao.go.jp; SRokita@nnr.co.za; sebastien.crombez@asn.fr
Subject: NEXT STC MEETING - 27 - 29 April 2011

Dear MDEP STC members,

Please find attached the proposed agenda for the 14th MDEP Steering Technical Committee meeting at NEA Headquarters (Room D as last time) scheduled for 27 - 29 April 2011. If you have not already confirmed your attendance, please do so.

Also attached are:

-the record summary from the last meeting (January 2011) -the current agenda for the 2nd MDEP Conference to be held 15 - 16 September 2011 in Paris (this is the first cut and based largely on the last Conference's agenda - the STC will discuss, revise, and after the April meeting will send to the Policy Group for their input and approval)

Shortly the Common Positions that were approved at the last STC meeting, the STC Position Paper on Safety Goals, and the VICWG Inspection Protocol document will be placed on the MDEP public website - www.oecd-nea.org/mdep <<http://www.oecd-nea.org/mdep>> .

We will also forward to you in the near future a proposed agenda for the PG Meeting scheduled for 7 June 2011 in Paris.

Best Regards.

Larry Burkhart
Project Officer
OECD Nuclear Energy Agency
www.oecd-nea.org <<http://www.oecd-nea.org>>

From: [Wittick, Brian](#)
To: [McNamara, Nancy](#)
Cc: [Ellmers, Glenn](#); [Andersen, James](#); [OST05 Hoc](#); [Grobe, Jack](#); [Leeds, Eric](#); [Meighan, Sean](#); [Nguyen, Ouyvh](#); [Sheron, Brian](#); [Coe, Doug](#)
Subject: FW: Request from MA for RI to Meet w/Governor
Date: Tuesday, March 22, 2011 5:25:24 PM

Hi Nancy,

We would be happy to assist RI with discussions similar to what we just did for NYS for Massachusetts. Let's talk tomorrow about plans.

Thanks,
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) (c)

From: OST05 Hoc
To: Wittick, Brian; Andersen, James
Cc: McNamara, Nancy; Sanfilippo, Nathan
Sent: Tue Mar 22 16:56:04 2011
Subject: FW: Request from MA for RI to Meet w/Governor

Brian,

Please see request below from Region I requesting assistance with coordination of a meeting with the Governor of Massachusetts.

Nathan suggested that in light of the NY meeting today Region I coordinate this through you.

Will you be able to assist Region I/ Nancy McNamara with this?

Thanks
Michelle

Michelle Ryan
State Liaison – Liaison Team
Incident Response Center

From: McNamara, Nancy
Sent: Tuesday, March 22, 2011 4:40 PM
To: LIA04 Hoc; OST05 Hoc
Subject: Request from MA for RI to Meet w/Governor
Importance: High

This afternoon, the Governor of Massachusetts has requested a meeting with him and his staff and the NRC to discuss the event in Japan, seismic study (GI-199) and spent fuel pools. The Governor stated that the level of participation could be at the Regional level

RRR/19.7

with experts to support the information sharing session.

The RI Regional Administrator is available to support such a meeting with assistance from subject matter experts from our HQ staff.

Would you like us to coordinate this request through the EDO's office or through the Liaison Team?

Nancy

From: RST01 Hoc
Sent: Sunday, April 10, 2011 9:32 AM
To: RST06 Hoc
Subject: FW: Purpose: Request for Re-review of the attached document

From: Roberts, Thomas E CIV SEA 08 NR (b)(6)
Sent: Saturday, April 09, 2011 7:36 AM
To: RST01 Hoc; Ali, Syed; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Emche, Danielle; Giessner, John; Jackson, Todd; Monninger, John; RMTFACTSU_ELNRC@ofda.gov; Bernhard, Rudolph; Salay, Michael; Scott, Michael; Sheikh, Abdul; Stahl, Eric; Taylor, Robert; Way, Ralph; RST09 Hoc; Kepple, Alan C CIV NAVSEA, 08; BMPC_ECC.Contractor@unnpp.gov; Bingman, Bruce M CIV SEA 08 NR; RST08 Hoc; alice.caponiti@nuclear.energy.gov; Herman, David R CIV NAVSEA, 08; Dei, Donald E CIV SEA 08 NR; dmodeen@epri.com; EventResponse@epri.com; GE.HitachiNuclearResponseTeam@ge.com; Szeto, Gordon CIV SEA 08 NR; Holahan, Vincent; inpoerc@inpo.org; inpoerctech@inpo.org
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Thanks,
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Cc: FOIA Response.hoc Resource <FOIAResponse.hoc.Resource@nrc.gov>
Sent: Sat Apr 09 06:23:48 2011
Subject: FW: Purpose: Request for Re-review of the attached document

R R R / K G

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Thanks,

Fred Brown
On-shift RST Director

From: OST01 HOC
Sent: Sunday, April 10, 2011 3:10 AM
To: PMT02 Hoc; PMT11 Hoc; Hoc, PMT12; RST01 Hoc
Subject: FW: IAEA distributed documents
Attachments: Plant_Parameter(0600).pdf; No.79E-Monitoring_Data.pdf; No79E-ConditionsF1NPS.pdf; No_79_E-Parameter.pdf; No79_info1530_April7.pdf; Letter_-_Summary_of_reactor_unit_status_at_10-April_0000_UTC.pdf

From: HOO Hoc [mailto:HOO.Hoc@nrc.gov]
Sent: Sunday, April 10, 2011 3:06 AM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: IAEA distributed documents

From: Kenagy, W David[SMTP:KENAGYWD@STATE.GOV]
Sent: Sunday, April 10, 2011 2:50:21 AM
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); dbehgeoc@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; 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; (b)(6); Jih, Rongsong; (b)(6); Cutler, Kirsten B
Subject: RE: IAEA distributed documents
Auto forwarded by a Rule

RRR/199

Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (As of 12:00, April 7th)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 6 m ³ /h (As of 17:30, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water : 8 m ³ /h (As of 12:12, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 7 m ³ /h (As of 17:32, April 3rd) temporary measuring instrument	Under shutdown	Under shutdown	Under shutdown
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 12:00, April 7th)	Fuel range A : -1,500mm (As of 12:00, April 7th)	Fuel range A:-1,900mm Fuel range B:-2,250mm (As of 12:00, April 7th)	#2	Shutdown range measurement 1,801mm (As of 12:00, April 7th)	Shutdown range measurement 1,816mm (As of 12:00, April 7th)
Reactor pressure	0.375MPa g(A) 0.758MPa g(B) (As of 12:00, April 7th)	-0.009MPa g (A) -0.016MPa g (D) (As of 12:00, April 7th)	0.000MPa g (A) -0.081MPa g (C) (As of 12:00, April 7th)	#2	0.002MPa g (As of 12:00, April 7th)	0.008MPa g (As of 12:00, April 7th)
Reactor water temperature	(Impossible collection due to low system flow rate)			#2	39.1°C (As of 12:00, April 7th)	37.1°C (As of 12:00, April 7th)
Reactor Pressure Vessel (RPV) temperature	Feedwater nozzle temperature: 223.8°C Temperature at the bottom head of RPV: 116.9°C (As of 12:00, April 7th)	Feedwater nozzle temperature: 143.6°C Temperature at the bottom head of RPV: #1 (As of 12:00, April 7th)	Feedwater nozzle temperature: 88.3°C (under survey) Temperature at the bottom head of RPV: 112.3°C (As of 12:00, April 7th)	Unit 4 No heating element (fuel) inside the reactor Unit 5,6 Monitoring by the reactor water temperature		
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.165MPa abs S/C: 0.150MPa abs (As of 12:00, April 7th)	D/W: 0.100MPa abs S/C: Down scale (under survey) (As of 12:00, April 7th)	D/W: 0.1059MPa abs S/C: 0.1720MPa abs (As of 12:00, April 7th)	#2		
CAMS*3	D/W: 3.17 × 10 ¹ Sv/h S/C: 1.29 × 10 ¹ Sv/h (As of 12:00, April 7th)	D/W: 3.05 × 10 ¹ Sv/h S/C: 7.94 × 10 ¹ Sv/h (As of 12:00, April 7th)	D/W: 1.93 × 10 ¹ Sv/h S/C: 7.68 × 10 ¹ Sv/h (As of 12:00, April 7th)	#2		
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	#2		
D/W*1 maximum operating pressure	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	0.427MPa g(0.528MPa abs)	#2		
Spent Fuel Pool water	#1	51.0°C (As of 12:00, April 7th)	#1	#1	36.0°C (As of 12:00, April 7th)	21.0°C (As of 12:00, April 7th)
FPC skimmer level	4,500mm (As of 12:00, April 7th)	5,500mm (As of 12:00, April 7th)	#1	4,900mm (As of 12:00, April 7th)	#2	
Power supply	Receiving external power supply (P/C*4 2C)		Receiving external power supply (P/C4D)		Receiving external power supply	

Other information	Unit3: Collecting the data of RPV temperature and continuing survey for transitional situation Unit2: Confirmed the indicated value of S/C Pressure but continuing to survey the transition of condition	Common pool: about 28 °C (As of 7:45, April 7th)	Unit5: Supplemental Fuel Pool Cooling mode (From 9:51 April 7th)	Unit6: SHC*5 mode (From 10:16 April 7th)
-------------------	---	--	--	--

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

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

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

Cheok, Michael

From: Givvines, Mary
Sent: Tuesday, April 12, 2011 5:31 PM
To: Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Galloway, Melanie; Glitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David; Westreich, Barry
Subject: FW: FWD FYI: NEI Talking Points Comparing Chernobyl and Fukushima

Fyi

From: Leeds, Eric
Sent: Tuesday, April 12, 2011 4:02 PM
To: Schwarz, Sherry
Cc: Ruland, William; Boger, Bruce; Givvines, Mary
Subject: Fw: FWD FYI: NEI Talking Points Comparing Chernobyl and Fukushima

Sherry - please print a copy for me. Mary please distribute to the LT

From: Sam Collins (b)(6)
To: Virgilio, Martin; Leeds, Eric; jim.wigging@nrc.gov <jim.wigging@nrc.gov>
Cc: nucfed@aol.com <nucfed@aol.com>
Sent: Tue Apr 12 15:37:38 2011
Subject: FWD FYI: NEI Talking Points Comparing Chernobyl and Fukushima

Sam Collins
Samuel J. Collins Consulting, LLC
Nuclear Safety + Governance + Outreach Services

Cell (b)(6)

Home: (b)(6)

(b)(6)

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

From: Neely, Christine T. [mailto:Christine.Neely@pseg.com]
Sent: Tuesday, April 12, 2011 3:25 PM
To: Booth, Brian C.; Bouknight Jr., J. A. (Lon); Braun, Robert; Carr, Eric; Davison, Paul J.; Delmar Sr, Joseph; Dorsa, Caroline; Eilola Jr, Edwin; Fricker, Carl J.; Garecht, John F.; Garry Randolph (glandolph@mchsi.com); Hoskins, Anne E.; Izzo, Ralph; Joyce, Thomas P.; Keenan, Jeffrie J.; Lally, Kathleen A.; LaRossa, Ralph A.; Levis, William; Lewis, David P. (Nuc Dev); Leyden, Shawn P.; Linde, Tamara L.; Lopriore, Richard P.; Ludecke, Kristen M.; McCloskey, Donald M.; McKoy, Vaughn L.; Mehrberg, Randall E.; Perry, John F. (HC VP); Rosengren, Paul L.; Rostiac, Sheila; 'Sam Collins'; Sindoni, Joseph M.; Smith, Brian; Sosson, Gregory J.; Thigpen, Rick T.; Wagner, Lawrence M.; wtoconnor@buckeye-express.com
Subject: NEI Talking Points Comparing Chernobyl and Fukushima

NEI has issued talking points about the raised crisis level scale for the Fukushima Daiichi nuclear plant event. I thought they would be of interest. Christine

From: NEI Response Center [mailto:NEIresponsecenter@nei.org]
Sent: Tuesday, April 12, 2011 3:11 PM
To: Neely, Christine T.
Subject: NEI Talking Points Comparing Chernobyl and Fukushima

RRR/200

Talking Points

Comparing Chernobyl and Fukushima

As the situation at the Fukushima Daiichi nuclear power plant continues, some are comparing events there to the 1986 accident at the Chernobyl reactor in the Soviet-era Ukraine. The Japanese government raised the crisis level from 5 to 7 on the International Nuclear and Radiological Event Scale, the same rating as the Chernobyl accident. Yet the accidents at the Chernobyl and Fukushima reactors are starkly different. Notably, the reactor designs are completely different; and to date, the public health consequences at Fukushima are much less severe.

Accident Conditions

- The Fukushima event has been rated 7 on the International Nuclear and Radiological Event Scale, the same level as the 1986 Chernobyl accident. Even so, Japanese authorities estimate that radiation released at Fukushima is only 10 percent of the amount released from the Ukrainian plant. A level 7 event, the highest on the rating scale, is considered a “major accident.” It applies to an event with “a major release of radioactive material with widespread health and environmental effects requiring implementation of planned and extended countermeasures,” according to the International Atomic Energy Agency, which sponsors the ratings. The Japanese government set the rating, which it considers “provisional” and subject to change.
- Chernobyl was an old Soviet-design reactor, with less stable characteristics and no robust containment structures like most power reactors worldwide. Unconventional reactor operations at Chernobyl resulted in a runaway power surge followed by steam and hydrogen explosions and a sustained fire in the reactor. Absent a containment structure, the explosions propelled radioactive material from the reactor core high into the atmosphere and across eastern and western Europe for at least 10 days.
- The magnitude 9.0 earthquake and tsunami that struck the Fukushima Daiichi reactors were much stronger than the reactors were built to withstand. The resulting loss of on- and off-site electricity temporarily halted cooling of the fuel in the reactor cores and in the used fuel pools. There have been explosions at three of the reactors as a result of hydrogen buildup, but the reactor fuel remains inside the primary containment structures. Although some damage to the uranium fuel is expected, there have not been releases of radiation into the atmosphere at the levels seen during the Chernobyl accident.

Emergency Response

- The uncontrolled release of Chernobyl reactor’s fission products was exacerbated by the failure of Soviet authorities to take immediate action to protect surrounding populations. The most discernible health effect from Chernobyl—thyroid cancer in children—could have been

mitigated by the early and widespread use of radiation protection procedures such as distribution of potassium iodide and control of the food supply in affected areas.

- By contrast, the Japanese authorities took early steps to evacuate people from a 12.5-mile zone around the Fukushima plant. Authorities also distributed potassium iodide to residents near the plant and restricted the transport and sale of milk (the main source of radioactive iodine intake), leafy vegetables and other food from the region. The Japanese government is monitoring and reporting radiation levels to citizens on an ongoing basis and is providing information and health protection instructions to the public.
- Besides child thyroid cancer, no other health effects have been detected in the populations around Chernobyl, according to a 2008 report of the United Nations Scientific Committee on the Effects of Atomic Radiation.
- Based on all information to date, no health effects are expected among the Japanese people as a result of the events at Fukushima.

Long-Term Health Effects

- The unique nature of the Chernobyl accident resulted in widespread airborne dispersion of radioactive cesium as fallout, which has a half-life of 30 years. The incident left the area in a 30 kilometer radius around the facility as a long-term restricted zone.
- Although measurements of radioactivity in the air and water near the Fukushima plant have been evident at varying levels, wide dispersion of radioactive materials has not occurred at the facility. While there may be localized spots that will require monitoring and remediation, it is unlikely that any significant areas of land in Japan will have long-term restrictions.

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E: NEIResponseCenter@nei.org
Twitter: <http://twitter.com/neiupdates>

Click [here](#) to unsubscribe

From: LIA10 Hoc
Sent: Tuesday, April 12, 2011 11:26 AM
To: LIA08 Hoc; LIA02 Hoc; LIA03 Hoc
Subject: FW: Deployment to Japan

From: LIA03 Hoc
Sent: Tuesday, April 12, 2011 11:26 AM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: Deployment to Japan

From: Evans, Michele
Sent: Tuesday, April 12, 2011 11:26 AM
To: Lupold, Timothy; Meighan, Sean; Norwood, Donald; LIA03 Hoc; LIA06 Hoc
Cc: Linnerooth, Sarah; Kerben, Valerie; Buchholz, Jeri; Lubinski, John; Glitter, Joseph; Morris, Scott; Tracy, Glenn
Subject: Deployment to Japan

Thank you for volunteering for deployment to Japan. This work is of highest priority for the agency and your efforts are enormously appreciated.

I've identified the remaining three staff to deploy to Japan to complete the 4th wave. **The plan is for Tim Lupold (NRR) and Sean Meighan (NRR) to leave the USA on Thursday, April 14, and Don Norwood (NSIR) April 14 or 15. The intent is that your stay will be about three weeks.**

The Operations Center Liaison Team (LT) has contacted you already to handle the logistic for your trip. This includes items such as flights, passports, country clearances, health immunizations, international blackberry service, dosimetry and KI tablets.

In addition, HR has requested that I provide you the information below:

-Please contact NRC Health Services at your earliest convenience on 301-415-8400 to schedule an appointment with Dr. Cadoux for health screening and counseling. If at all possible, it is important that you meet with Dr. Cadoux face-to-face. However, if you are located in the Region or if you are notified and deployed in a very short time frame so that medical screening is not possible, this screening will be conducted by phone. Please be aware that medical services available in Tokyo may be limited at this time. Additionally, working conditions are such that controlling diet, sleep, exercise, and routine may be impossible. All of these factors can impact your health. Please review any medical conditions that you may have with Dr. Cadoux so that he can provide you with advice and counseling on managing you medical condition while deployed.

-Before you deploy we recommend that you speak briefly with the NRC Employee Assistance Program counselor, Sarah Linnerooth. Sarah can be reached on 301-415-7113. While you are deployed, EAP services are available to both you and your family, including extended family members such as Grandparents. The telephone number is for EAP service is 1-800-896-0276. More information is available on the EAP on the web at www.eapconsultants.com. To learn more about the EAP and the services provided click on the member services tab. The NRC passcode is "nuclear". Please be sure to share this information with your family.

Thank you.

RRR/201

Michele Evans
Acting Deputy OD, NSIR
Michele.evans@nrc.gov
BB: (b)(6)

From: [Virgilio, Rosetta](#)
To: [Leeds, Eric](#)
Cc: [Meighan, Sean](#); [Schwarz, Sherry](#); [Turtill, Richard](#); [Ryan, Michelle](#); [Rivera, Alison](#)
Subject: Fw: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN
Date: Monday, March 21, 2011 5:28:44 PM
Attachments: [Governors Energy Advisors PI with speakers-March17.doc](#)

Eric - Please see below and attached relative to the National Governors' Association invitation to NRC to participate in an April 4, panel presentation before Governor Energy Advisors in Crystal City from 1:45-4:15 pm. The panel session is entitled Energy Technology 101; NGA is interested in hearing about the event in Japan and the implications for US plants.

Sherry Schwarz has put this appointment on your calendar.

I will be happy to work with you and your staff on this.

Rosetta

Sent from an NRC Blackberry
Rosetta O. Virgilio

(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Sent: Mon Mar 21 16:14:15 2011
Subject: RE: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Thank you Rosetta. Attached is the agenda for the April 4th meeting. We would look for a technical expert to join us on a panel at 1:45pm to 4:15pm on April 4th in Crystal City.

Please let me know if I can be of further assistance.

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org

From: Virgilio, Rosetta [<mailto:Rosetta.Virgilio@nrc.gov>]
Sent: Monday, March 21, 2011 4:07 PM
To: Dierkers, Gregory
Subject: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Hi, Greg: I apologize for the late notice, but our staff indicate they are unable to support a meeting this week, but would make time available for the April 4 meeting. Please do keep me posted about those

RRR/2.02

details.

I am not currently in the office (headed to NC for a funeral) but am monitoring my email.

Rosetta Virgilio

Sent from an NRC Blackberry

Rosetta O. Virgilio

(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Sent: Mon Mar 21 12:22:27 2011
Subject: RE: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Let me check but I think we are flexible pending your availability.

Greg

From: Virgilio, Rosetta [mailto:Rosetta.Virgilio@nrc.gov]
Sent: Sunday, March 20, 2011 12:43 PM
To: Dierkers, Gregory
Subject: Re: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Hello, Greg - Do you have any more detail regarding 3/22 or 3/23 meeting , i.e., date/ time of day?

Sent from an NRC Blackberry.

Rosetta O. Virgilio

(b)(6)

From: Virgilio, Rosetta
To: gdierkers@nga.org <gdierkers@nga.org>
Sent: Fri Mar 18 15:13:22 2011
Subject: NRC PUBLIC MEETING 9:00 AM MONDAY, MARCH 21, 2011: NRC's RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN

Hello, Greg – Just wanted to touch base and let you know that things are not looking good for NRC participation in next week's NGA webinar; however, I am pursuing the April 4 date, which may be more doable.

As I indicated yesterday, the NRC staff will brief the Commission Monday, March 21, 2011, at 9:00 a.m. regarding NRC's response to recent nuclear events in Japan. The meeting is public and will be held at NRC Headquarters at 11555 Rockville Pike, Commissioners' Conference Room, in Rockville, Maryland.

The meeting can also be viewed via Webcast at: <http://www.nrc.gov/public-involve/public-meetings/webcast-live.html>

Please feel free to share this information with your contacts.

Rosetta O. Virgilio
Senior Liaison Project Manager
Intergovernmental Liaison Branch
U.S. Nuclear Regulatory Commission
11545 Rockville Pike - T-8F42
Rockville, MD 20852-2738
301-415-2367
Rosetta.Virgilio@nrc.gov

From: Virgilio, Rosetta
To: 'gdierkers@NGA.ORG' <gdierkers@NGA.ORG>
Sent: Thu Mar 17 17:03:28 2011
Subject: Re: NGA Center NRC expert speaker requests

Thank you, Greg; I will followup and get back to you.

Sent from an NRC Blackberry
Rosetta O. Virgilio

(b)(6)

From: Dierkers, Gregory <gdierkers@NGA.ORG>
To: Virgilio, Rosetta
Cc: Gander, Sue <sgander@NGA.ORG>; MacLellan, Thomas <TMaclellan@NGA.ORG>;
Ferro, Carmen <CFerro@NGA.ORG>
Sent: Thu Mar 17 16:36:04 2011
Subject: NGA Center NRC expert speaker requests

Hi Rosetta,

Thanks for your time today. We appreciate you identifying someone from the NRC to support the NGA Center's outreach to states during this busy time.

As we discussed we would like to invite the NRC to join us for **two upcoming events -- a webinar next week and a conference in early April -- to brief governors' advisors on the Japanese situation and the implications for US plants.** The events are:

1) **A webinar with governors' security and energy advisors.** NGA Center staff is planning to host a conference call next week (Tuesday 3/21 or Wednesday 3/22) to provide senior state officials with an update on the Japan situation and to answer questions as to the operations of US plants, including regulations, plant security/safety, and the emergency preparedness efforts at the US nuclear fleet. We would ask that an NRC expert join the webinar remotely; the webinar would last for 1 hour.

2) **An in-person speaker at a governors' energy advisors meeting.** NGA Center's *Governors' Energy Advisors Policy Institute* on April 4th in Arlington, Virginia. The focus of the April 4th Institute is to provide a 'Technology 101' briefing for governors senior energy advisors. We would invite the NRC to attend in-person on April 4th from 1:45pm to 4:15pm. We would ask for a 10-15 minute presentation on the situation in Japan, the state of nuclear technology and regulations in the US, and the implications for states from the Japanese crisis. Attached is a draft agenda.

Thanks for considering both of these requests.

Sincerely,

Greg Dierkers
Program Director – Energy and Transportation
NGA Center for Best Practices
Environment, Energy and Transportation Division
202-624-7789
gdierkers@nga.org



NGA Center for
BEST PRACTICES

Governors' Energy Advisors Policy Institute

April 5-6, 2011

Renaissance Arlington Capital View

2800 South Potomac Avenue, Arlington, VA 22202, Phone: 703.413.1400

DRAFT AGENDA

This Policy Institute will provide participants the opportunity to meet with national experts and state peers to learn about a diverse set of energy policy best practices. The meeting is a key opportunity for governors' staff to network in a small group setting and hear about concrete energy strategies that can reduce costs, promote economic development and address environmental goals.

In addition to the main program, there will be an optional half-day Energy Technology 101 session on the previous afternoon that will provide an overview of technologies related to a range of energy resources (e.g., energy efficiency, renewable energy, advanced nuclear power, natural gas, carbon capture and storage, alternative vehicles and the "smart" grid) and introduce participants to key federal players.

Contact: Sue Gander, Director, Environment, Energy & Transportation Division, 202-624-7740, sgander@nga.org

Monday, April 4, 2011

PRE-POLICY INSTITUTE WORKSHOP - ENERGY TECHNOLOGIES 101

1:00 p.m. - **Registration and Coffee**
1:30 p.m.

1:30 p.m. - **Opening Session**
1:45 p.m. ***Welcome, Introductions & Overview of Meeting Goals***

1:45 p.m. - **Energy Technology 101**
4:15 p.m. This session will include panels of experts who will discuss the status of key energy technologies or applications including: renewable energy, alternative fuel vehicles, carbon capture and storage, natural gas and the smart grid.
Moderator: Marty Toomajian, Battelle

- *Julio Friedmann, PhD., Lawrence Livermore National Laboratory*
- *Ron Edelstein, Director, Gas Technology Institute*
- *Bob Hawsey, National Renewable Energy Lab*

Given the recent events at the Japanese nuclear reactors, we will dedicate a portion of this session to learning more about what happened in Japan and the implications for US plants.

- *TBD, Nuclear Regulatory Commission (invited)*

4:15 p.m. - **Break**
4:30 p.m.

4:30 p.m. –
5:30 p.m.

Introduction to Federal Energy Partners: Part I

This session will introduce participants to key federal energy experts. After brief presentations, senior officials from the Department of Energy (technology, finance, infrastructure, policy) will be available for informal discussions.

Moderator: Sue Gander, NGA Center

- *Pat Hoffman, Assistant Secretary for the Office of Electricity Delivery and Energy Reliability (invited)*
- *Dr. Victor K. Der, Acting Assistant Secretary for Fossil Energy (invited)*
- *TBD, Deputy Assistant Secretary Office of Nuclear Energy (invited)*

5:30 p.m.

Wrap-Up and Preview of Policy Institute

Tuesday, April 5, 2011
POLICY INSTITUTE - DAY 1

**7:30 a.m. -
8:00 a.m.**

Registration and Breakfast

**8:00 a.m. -
9:00 a.m.**

Welcome and Introductions

- NGA Center staff will review the goals of the meeting and introduce the topics to be discussed.
 - State participants will introduce themselves and identify the top 1-2 energy challenges facing their state.
-

**9:00 a.m. -
9:45 a.m.**

Keynote: The New Energy Reality

This speaker will discuss the current context of U.S. energy resources, prices and energy markets and suggest ways states can craft complementary policies that address their energy challenges and bolster state economic development, environmental and fiscal goals.

Dickon Pinner, Principal, McKinsey & Company

**9:45 a.m. -
10:00 a.m.**

Break

**10:00 a.m. -
11:15 a.m.**

Energy & Economic Development: Supporting State Growth

A panel of experts will share examples of successful state approaches to advancing economic development through both energy development and efficiency initiatives. These will include efforts to promote increased deployment as well as research and development and innovation and how to create robust partnerships with different state agencies and offices and the private sector.

Moderator: Mary Jo Waits, NGA Center

- *Dr. Marilyn Brown, Professor, School of Public Policy, Georgia Institute of Technology*
 - *Patrick Cloney, Executive Director of the Massachusetts Clean Energy Center*
 - *Eric Shreffler, Sector Development Director, Advanced Energy Storage, Michigan Economic Development Corporation*
-

**11:15 a.m. -
12:45 p.m.**

Energy Funding and Financing: Leveraging Scarce Resources

A panel of experts will discuss key energy funding sources and financial partnership arrangements that can use scarce state resources to leverage private sector investments. Examples will include the use of new federal bonding authority, on-utility-bill financing, energy performance contracting, power purchase agreements, linked deposit programs and credit enhancement mechanisms.

Moderator: Sue Gander, NGA Center

- *Skip Grow, Managing Director of Clean Tech Business, Morgan Stanley*
 - *Matthew H. Brown, Principal, Harcourt Brown & Carey*
 - *Don Gilligan, President, National Association Energy Services Companies*
-

12:45 p.m. -
2:15 p.m.

Lunch: Energy Innovation and the States

A lunch discussion will explore leading approaches to fostering energy innovation and the role states can play, vis a vis their own initiatives including efforts with their universities, targeted use of incentives and partnerships with industry.

William B. Bonvillian, Director, MIT Washington Office, Author of "Structuring an Energy Technology Revolution"

2:15 p.m. -
3:45 p.m.

Lead by Example Programs: Showing the Way

Lead by example (LBE) measures are one set of tools to help states pursue energy and cost savings in their operations, while demonstrating leadership, testing new technology applications and encouraging market development. This session will cover best practices in state facilities and fleets and look at the impact on cost savings, energy savings and supporting developing industries.

Moderator: Greg Dierkers, NGA Center

- *Dr. Carolyn Snyder, Director, Clean Energy and Climate Policy, Delaware Department of Natural Resources and Environmental Control*
 - *Jill Stuckey, Director, Center of Innovation for Energy, Georgia Environmental Finance Authority*
 - *Daniel Malarkey, Deputy Director, Washington State Department of Commerce*
-

3:45 pm-
4:00 pm

Break

4:00 p.m. -
5:00 p.m.

Introduction to Federal Energy Partners: Part 2

This session will introduce participants to key federal energy experts. After brief presentations, senior officials from the Department of Energy (technology, finance, infrastructure, policy) and the Federal Energy Regulatory Commission will be available for informal discussions.

Moderator: Sue Gander, NGA Center

- *Kathleen Hogan, Deputy Assistant Secretary for Energy Efficiency, Office of Energy Efficiency and Renewable Energy, US Department of Energy (invited)*
 - *Steven Chalk, Deputy Assistant Secretary for Renewable Energy, Office of Energy Efficiency and Renewable Energy, US Department of Energy*
 - *Jon Wellinghoff, FERC Chairman*
-

5:00 pm

CONCLUDE DAY 1

Wednesday, April 6, 2011
POLICY INSTITUTE - DAY 2

7:30 a.m. -
8:00 a.m. **Registration**

8:00 a.m. -
8:15 a.m. **Welcome and Recap of Day 1**

8:15 a.m. -
10:00 a.m. **Energy Planning and Policy: Mapping the Future and Advancing on the Path**
Developing a statewide energy plan is an important part of building a secure, reliable and affordable state energy program that is integrated with state policy implementation. A panel of state experts will describe initiatives to develop statewide energy plans for meeting a variety of energy-related goals and explore how plans can link to specific policy measures.
Moderator: Sue Gander, NGA Center

- *Dr. Leonard Peters, Secretary, Kentucky Energy and Environment Cabinet*
- *Joshua Goldman, New York State Washington Office of Governor Cuomo*
- *Amanda Smith, Energy Policy Advisor to Utah Governor Gary Herbert and Executive Director, Utah Department of Environmental Quality*
- *Manal Yamout, Special Advisor to California Governor Jerry Brown*

10:00 a.m. -
11:30 a.m. **Electricity Infrastructure, Smart Grids and EVs**
New infrastructure and technologies in the electricity sector are currently being developed and deployed that can help achieve energy savings and more efficiently bring electricity into the marketplace. This session will cover strategies for building out and upgrading the transmission grid, technical and policy issues around smart grid deployment, and the increased interest in electric vehicles (EVs) and the role they play in state energy policy discussions.
Moderator: Andrew Kambour, NGA Center

- *Commissioner Paul Centolella, Commissioner, Ohio PUC*
- *Naveen Lamba, Senior Managing Consultant, IBM*
- *Val Jensen, VP, Marketing and Environmental Programs, ComEd*

11:30 a.m. -
12:00 p.m. **Break and Hotel Check Out**

12:00 p.m. -
12:45 p.m. **What We've Learned, Where We're Headed**
During the final session each state official will share their key 'take home messages' along with new ideas they plan to explore and any collaborations they expect to pursue. NGA Center staff will discuss follow up activities, including upcoming webinars, technical assistance and regional workshops on clean energy economic development.

12:45 p.m. -
1:00 p.m. **CONCLUDE POLICY INSTITUTE**

From: HOO Hoc <HOO.Hoc@nrc.gov>
Sent: Friday, April 22, 2011 2:20 PM
To: LIA07 Hoc; OST01 HOC
Subject: FW: IAEA distributed documents
Attachments: METI_NISA_108_(Jap)_press_release.pdf; METI_NISA_108_(Jap)_seismic_fault_lines_considered_in_site_evaluation.pdf; METI_NISA_108_(Jap)_Unit_4_spent_fuel_pool_sampling.pdf; METI_NISA_108_(Jap)_plant_status_0422_1300.pdf; METI_NISA_108_(Jap)_monitoring_data_0422_1500.pdf; METI_NISA_107_(Eng)_Parameters.pdf; METI_NISA_107_(Eng)_Monitoring_Data.pdf; METI_NISA_107_(Eng)_extracts.pdf; METI_NISA_107_(Eng)_plant_conditions_1.pdf; METI_NISA_107_(Eng)_plant_conditions.pdf; METI_NISA_107_(Jap)_plant_conditions.pdf; METI_NISA_107_(Jap)_press_release.pdf; METI_NISA_107_(Jap)_monitoring_results.pdf; METI_NISA_104_(Jap)_plant_status_(0420_1300).pdf

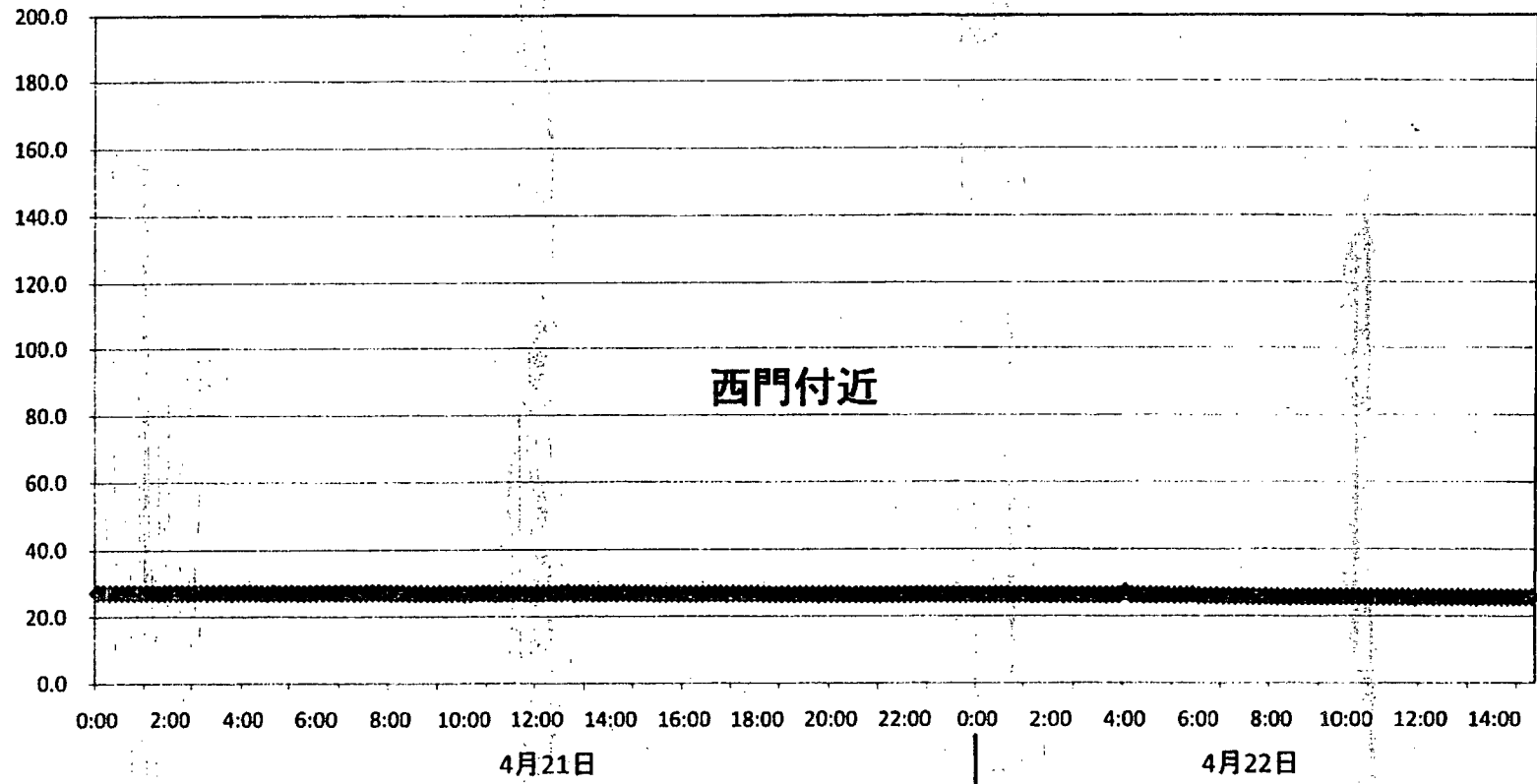
From: Kenagy, W David [SMTP:KENAGYWD@STATE.GOV]
Sent: Friday, April 22, 2011 2:17:22 PM
To: Kenagy, W David; vince.mcclelland@nnsa.doe.gov; Rodriguez, Veronica; ann.heinrich@nnsa.doe.gov; HOO Hoc; HOO2 Hoc; Huffman, William; decair.sara@epamail.epa.gov; timothy.greten@dhs.gov; maria.marinissen@hhs.gov; (b)(6) doehqec@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; 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; (b)(6) Jih, Rongsong; (b)(6) Cutler, Kirsten B; Klug, Odin J
Subject: RE: IAEA distributed documents
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RRR/203

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)

$\mu\text{Sv/h}$



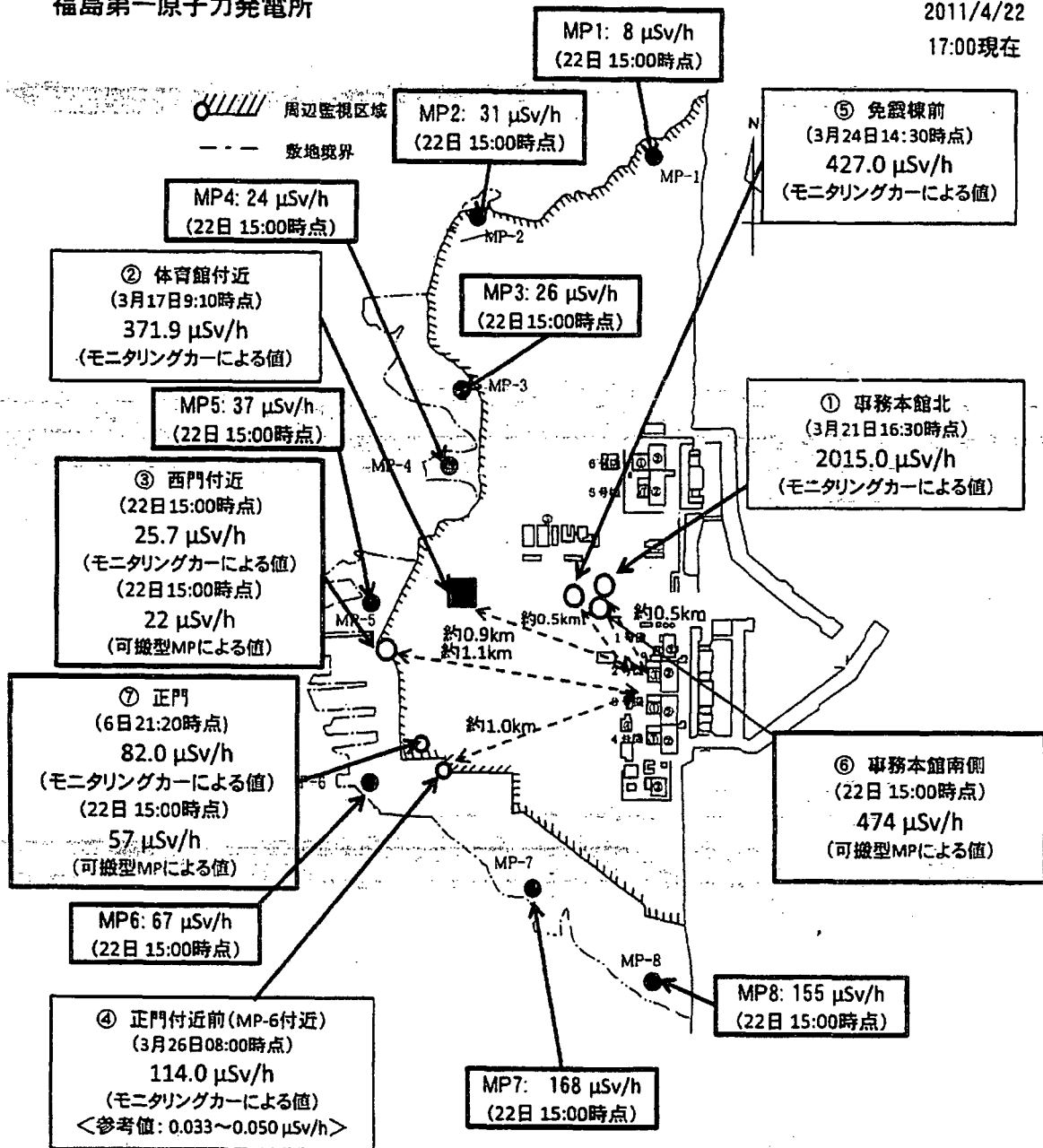
福島第一原子力発電所 モニタリングポスト空間線量率(μ Sv/h)

日時	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
2011/4/22 7:00	8	31	26	24	38	68	170	156
2011/4/22 7:10	8	31	26	24	38	68	170	156
2011/4/22 7:20	8	31	26	24	38	68	170	156
2011/4/22 7:30	8	31	26	24	38	68	170	156
2011/4/22 7:40	8	31	26	24	38	68	169	156
2011/4/22 7:50	8	31	26	24	38	68	169	155
2011/4/22 8:00	8	31	26	24	38	68	169	155
2011/4/22 8:10	8	31	26	24	38	68	169	156
2011/4/22 8:20	8	31	26	24	38	68	169	155
2011/4/22 8:30	8	31	26	24	38	68	169	155
2011/4/22 8:40	8	31	26	24	38	68	169	155
2011/4/22 8:50	8	31	26	24	38	68	169	155
2011/4/22 9:00	8	31	26	24	38	68	169	155
2011/4/22 9:10	8	31	26	24	38	68	169	155
2011/4/22 9:20	8	31	26	24	38	68	169	155
2011/4/22 9:30	8	31	26	24	38	68	169	155
2011/4/22 9:40	8	31	26	24	38	68	169	155
2011/4/22 9:50	8	31	26	24	38	68	169	155
2011/4/22 10:00	8	31	26	24	38	68	169	155
2011/4/22 10:10	8	31	26	24	38	68	169	155
2011/4/22 10:20	8	31	26	24	38	68	169	155
2011/4/22 10:30	8	31	26	24	38	68	169	155
2011/4/22 10:40	8	31	26	24	38	68	169	155
2011/4/22 10:50	8	31	26	24	38	68	169	155
2011/4/22 11:00	8	31	26	24	38	68	169	155
2011/4/22 11:10	8	31	26	24	38	68	169	155
2011/4/22 11:20	8	31	26	24	38	67	168	155
2011/4/22 11:30	8	31	26	24	38	67	168	155
2011/4/22 11:40	8	31	26	24	38	67	168	155
2011/4/22 11:50	8	31	26	24	38	67	168	155
2011/4/22 12:00	8	31	26	24	38	67	168	154
2011/4/22 12:10	8	31	26	24	38	67	168	155
2011/4/22 12:20	8	31	26	24	38	67	168	155
2011/4/22 12:30	8	31	25	24	38	67	168	155
2011/4/22 12:40	8	31	26	24	38	67	168	155
2011/4/22 12:50	8	31	26	24	38	67	168	155
2011/4/22 13:00	8	31	26	24	38	67	168	155
2011/4/22 13:10	8	31	26	24	38	67	168	155
2011/4/22 13:20	8	31	26	24	37	67	168	155
2011/4/22 13:30	8	31	26	24	37	67	168	155
2011/4/22 13:40	8	31	26	24	37	67	168	155
2011/4/22 13:50	8	31	26	24	37	67	168	155
2011/4/22 14:00	8	31	26	24	37	67	168	155

福島第一原子力発電所

2011/4/22

17:00現在



福島第二MP情報

単位m/s

日時	単位: $\mu\text{Sv/h}$							スタック		天候
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	風向	風速	
2011/4/22 7:00	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	4.1	雨
2011/4/22 7:10	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.5	-
2011/4/22 7:20	2.4	1.8	2.5	2.0	2.1	2.0	-	北	3.0	-
2011/4/22 7:30	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.3	雨
2011/4/22 7:40	2.4	1.8	2.5	2.1	2.1	2.0	-	北	2.7	-
2011/4/22 7:50	2.4	1.8	2.5	2.0	2.1	2.0	-	北	1.9	-
2011/4/22 8:00	2.4	1.8	2.5	2.0	2.1	2.0	-	北	1.6	雨
2011/4/22 8:10	2.4	1.8	2.5	2.1	2.1	2.0	-	北	2.2	-
2011/4/22 8:20	2.4	1.8	2.5	2.1	2.1	2.0	-	北北東	2.7	-
2011/4/22 8:30	2.4	1.8	2.5	2.0	2.1	2.0	-	北北西	1.9	雨
2011/4/22 8:40	2.4	1.8	2.5	2.0	2.1	2.0	-	北北西	2.6	-
2011/4/22 8:50	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	4.0	-
2011/4/22 9:00	2.4	1.8	2.5	2.1	2.1	2.0	1.5	北北西	3.5	晴
2011/4/22 9:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北	3.0	-
2011/4/22 9:20	2.4	1.8	2.5	2.0	2.1	2.0	-	北	4.1	-
2011/4/22 9:30	2.4	1.8	2.5	2.1	2.1	2.0	-	北	4.4	雨
2011/4/22 9:40	2.4	1.8	2.5	2.0	2.1	2.0	-	北	4.7	-
2011/4/22 9:50	2.4	1.8	2.5	2.0	2.1	2.0	-	北	4.7	-
2011/4/22 10:00	2.4	1.8	2.5	2.1	2.1	2.0	-	北	5.9	雨
2011/4/22 10:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北北西	5.1	-
2011/4/22 10:20	2.4	1.8	2.5	2.0	2.1	2.0	-	北	5.5	-
2011/4/22 10:30	2.4	1.8	2.5	2.1	2.1	2.0	-	北	4.7	晴
2011/4/22 10:40	2.4	1.8	2.5	2.1	2.1	2.0	-	北	4.1	-
2011/4/22 10:50	2.4	1.8	2.5	2.1	2.1	2.0	-	北	4.1	-
2011/4/22 11:00	2.4	1.8	2.5	2.0	2.1	2.0	-	北	4.7	晴
2011/4/22 11:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北	5.2	-
2011/4/22 11:20	2.4	1.8	2.5	2.0	2.1	2.0	-	北	6.2	-
2011/4/22 11:30	2.4	1.8	2.5	2.0	2.1	2.0	-	北	5.8	くもり
2011/4/22 11:40	2.4	1.8	2.5	2.0	2.1	2.0	-	北北西	6.1	-
2011/4/22 11:50	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	6.0	-
2011/4/22 12:00	2.4	1.8	2.5	2.0	2.1	2.0	-	北	5.7	くもり
2011/4/22 12:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北	5.7	-
2011/4/22 12:20	2.4	1.8	2.5	2.1	2.1	2.0	-	北	6.6	-
2011/4/22 12:30	2.4	1.8	2.5	2.1	2.1	2.0	-	北	5.9	くもり
2011/4/22 12:40	2.4	1.8	2.5	2.0	2.1	2.0	-	北	6.3	-
2011/4/22 12:50	2.4	1.8	2.5	2.0	2.1	2.0	-	北	5.6	-
2011/4/22 13:00	2.4	1.8	2.5	2.0	2.1	2.0	-	北	7.3	くもり
2011/4/22 13:10	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	6.4	-
2011/4/22 13:20	2.4	1.8	2.5	2.0	2.0	2.0	-	北北西	7.7	-
2011/4/22 13:30	2.4	1.8	2.5	2.0	2.1	2.0	-	北	6.9	くもり
2011/4/22 13:40	2.4	1.8	2.5	2.1	2.1	2.0	-	北	8.1	-
2011/4/22 13:50	2.4	1.8	2.5	2.1	2.1	2.0	-	北	7.7	-
2011/4/22 14:00	2.4	1.8	2.5	2.0	2.1	2.0	-	北	7.7	くもり

福島第二原子力発電所

2011/4/22
17:00現在

MP1: $2.3 \mu\text{Sv/h}$ (22日 15:00時点)
(参考値: $0.035 \sim 0.054 \mu\text{Sv/h}$)

MP2: $1.8 \mu\text{Sv/h}$ (22日 15:00時点)
(参考値: $0.042 \sim 0.062 \mu\text{Sv/h}$)

MP3: $2.5 \mu\text{Sv/h}$ (22日 15:00時点)
(参考値: $0.036 \sim 0.052 \mu\text{Sv/h}$)

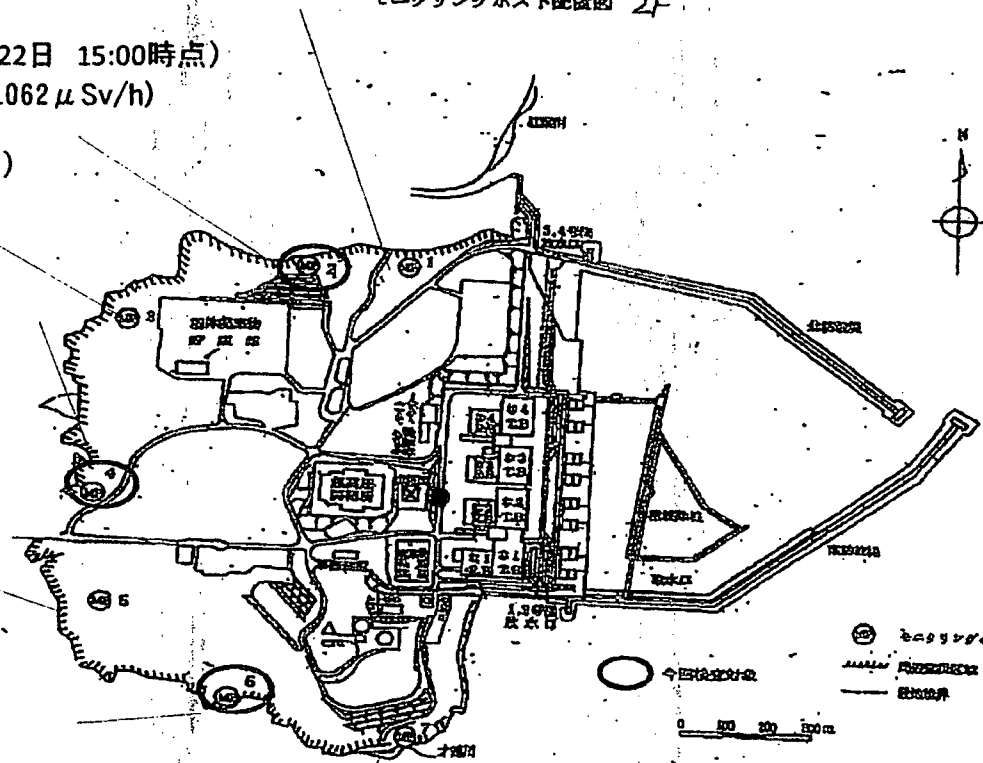
MP4: $2.1 \mu\text{Sv/h}$ (22日 15:00時点)
(参考値: $0.036 \sim 0.052 \mu\text{Sv/h}$)

MP5: $2.1 \mu\text{Sv/h}$ (22日 15:00時点)
(参考値: $0.041 \sim 0.058 \mu\text{Sv/h}$)

MP6: $2.0 \mu\text{Sv/h}$ (22日 15:00時点)
(参考値: $0.044 \sim 0.063 \mu\text{Sv/h}$)

MP7: $1.5 \mu\text{Sv/h}$ (22日 9:00時点)
(参考値: $0.043 \sim 0.062 \mu\text{Sv/h}$)

モニタリングポスト配置図 2F



添付資料 (2)

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	4月21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	点検中	点検中	点検中	点検中	0.031	0.031	0.032	0.032	0.031	0.032	0.031	0.032
0.024~0.080	東北電力㈱	女川原子力発電所	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
0.012~0.080		東通原子力発電所	0.016	0.016	0.017	0.017	0.017	0.016	0.016	0.017	0.017	0.016	0.016	0.016
0.033~0.050	東京電力㈱	福島第一原子力発電所 ^注	※ 別途公表済											
0.036~0.052		福島第二原子力発電所	※ 別途公表済											
0.011~0.159		柏崎刈羽原子力発電所	0.085	0.085	0.085	0.085	0.085	0.084	0.085	0.085	0.085	0.085	0.086	0.085
0.036~0.053	日本原子力発電㈱	東海第二発電所	0.336	0.339	0.336	0.335	0.334	0.333	0.335	0.332	0.331	0.334	0.335	0.333
0.039~0.110		敦賀発電所	0.072	0.073	0.073	0.074	0.073	0.073	0.075	0.073	0.073	0.074	0.073	0.073
0.064~0.108	中部電力㈱	浜岡原子力発電所	0.042	0.043	0.043	0.042	0.042	0.043	0.043	0.042	0.043	0.043	0.042	0.043
0.0207~0.132	北陸電力㈱	志賀原子力発電所	0.033	0.033	0.032	0.033	0.033	0.032	0.033	0.033	0.033	0.033	0.033	0.033
0.028~0.130	中国電力㈱	島根原子力発電所	0.030	0.030	0.029	0.030	0.029	0.030	0.030	0.029	0.030	0.030	0.030	0.030
0.070~0.077	関西電力㈱	美浜発電所	0.072	0.074	0.075	0.074	0.072	0.072	0.074	0.073	0.073	0.075	0.074	0.074
0.045~0.047		高浜発電所	0.044	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043
0.036~0.040		大飯発電所	0.035	0.034	0.035	0.035	0.034	0.035	0.036	0.035	0.034	0.034	0.036	0.035
0.011~0.080	四国電力㈱	伊方発電所	0.013	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	0.025	0.026	0.026	0.026	0.026	0.026	0.026	0.027	0.026	0.026	0.027	0.027
0.034~0.120		川内原子力発電所	0.037	0.037	0.037	0.036	0.036	0.036	0.035	0.036	0.035	0.037	0.039	0.039
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.016	0.015	0.016	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016
0.009~0.071		六ヶ所 埋設事業所	0.022	0.022	0.021	0.022	0.022	0.023	0.022	0.022	0.022	0.022	0.022	0.022

注) 中部電力(株)からの4月1日12時データより、宇宙線寄与分を加算しない値で報告を受けています。

通常の平常値の範囲	会社名	発電所名	4月22日											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.023~0.027	北海道電力㈱	泊発電所	0.032	0.032	0.031	0.032	0.032	0.033	0.032	0.032	0.032	0.032	0.032	0.032
0.024~0.080	東北電力㈱	女川原子力発電所	0.28	0.28	0.28	0.28	0.28	0.27	0.28	0.27	0.28	0.28	0.28	
0.012~0.080		東通原子力発電所	0.016	0.016	0.017	0.016	0.017	0.017	0.017	0.018	0.018	0.019	0.018	
0.033~0.050	東京電力㈱	福島第一原子力発電所 ^注	※ 別途公表済											
0.036~0.052		福島第二原子力発電所	※ 別途公表済											
0.011~0.159		柏崎刈羽原子力発電所	0.066	0.065	0.065	0.066	0.066	0.066	0.066	0.065	0.066	0.067	0.067	
0.036~0.053	日本原子力発電㈱	東海第二発電所	0.331	0.328	0.328	0.328	0.328	0.327	0.329	0.327	0.331	0.328	0.328	
0.039~0.110		敦賀発電所	0.073	0.073	0.073	0.074	0.073	0.073	0.074	0.073	0.073	0.073	0.073	
0.064~0.108	中部電力㈱	浜岡原子力発電所	0.043	0.042	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.042	
0.0207~0.132	北陸電力㈱	志賀原子力発電所	0.033	0.034	0.033	0.034	0.034	0.034	0.034	0.034	0.033	0.034	0.034	
0.028~0.130	中国電力㈱	島根原子力発電所	0.030	0.030	0.030	0.030	0.030	0.030	0.031	0.030	0.030	0.031	0.031	
0.070~0.077	関西電力㈱	美浜発電所	0.074	0.074	0.074	0.074	0.072	0.072	0.074	0.074	0.072	0.074	0.074	
0.045~0.047		高浜発電所	0.044	0.043	0.042	0.043	0.043	0.043	0.043	0.043	0.043	0.044	0.043	
0.036~0.040		大飯発電所	0.036	0.037	0.036	0.037	0.036	0.037	0.036	0.037	0.034	0.034	0.035	
0.011~0.080	四国電力㈱	伊方発電所	0.013	0.013	0.014	0.013	0.014	0.014	0.014	0.016	0.016	0.016	0.016	
0.023~0.087	九州電力㈱	玄海原子力発電所	0.026	0.027	0.027	0.026	0.026	0.027	0.030	0.030	0.031	0.032	0.032	
0.034~0.120		川内原子力発電所	0.037	0.037	0.036	0.036	0.037	0.036	0.036	0.037	0.041	0.036	0.036	
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.016	0.016	0.016	0.016	0.019	0.018	0.017	0.018	0.017	0.017	
0.009~0.071		六ヶ所 埋設事業所	0.022	0.022	0.022	0.023	0.024	0.024	0.025	0.025	0.024	0.024	0.024	

注) 中部電力(株)からの4月1日12時データより、宇宙線寄与分を加算しない値で報告を受けています。

Fukushima Dai-ichi Nuclear Power Station Major Parameters of the Plant (Data such as water level, pressure, temperature, etc.) (As of 7:00, April 22nd)

Unit No.	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
Situation of water injection to reactor	Injecting fresh water via the Water Supply Line. Flow rate of injected water : 6 m ³ /h (As of 17:30, April 3rd) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water : 7m ³ /h (As of 17:00, April 15th) temporary measuring instrument	Injecting fresh water via the Fire Extinguish Line. Flow rate of injected water: 6.8m ³ /h (As of 11:25, April 21st) temporary measuring instrument	#2 (Out of monitoring scope as all fuels discharged from the core.)	#2 (Water injection is unnecessary as cooling function of the reactor cores are in normal operation.)	
Reactor water level	Fuel range A : -1,650mm Fuel range B : -1,650mm (As of 6:00, April 22nd)	Fuel range A : -1,500mm Fuel range B : -2,100mm (As of 6:00, April 22nd)	Fuel range A: -1,850mm Fuel range B: -2,250mm (As of 6:00, April 22nd)		Shutdown range measurement 1,730mm (As of 7:00, April 22nd)	Shutdown range measurement 2,323mm (As of 7:00, April 22nd)
Reactor pressure	0.435MPa g(A) 1,113MPa g(B) #3 (As of 6:00, April 22nd)	-0.023MPa g (A) #3 -0.027MPa g (D) #3 (As of 6:00, April 22nd)	-0.047MPa g (A) #3 -0.087MPa g (C) #3 (As of 6:00, April 22nd)		0.004MPa g (As of 7:00, April 22nd)	0.013MPa g (As of 7:00, April 22nd)
Reactor water temperature	(Collection Impossible due to low system flow rate)				35.4°C (As of 7:00, April 22nd)	23.5°C (As of 7:00, April 22nd)
Temperature related to Reactor Pressure Vessel (RPV)	Feedwater nozzle temperature: 137.4°C #3 Temperature at the bottom head of RPV: 113.0°C (As of 6:00, April 22nd)	Feedwater nozzle temperature: 131.2°C Temperature at the bottom head of RPV: #1 (As of 6:00, April 22nd)	Feedwater nozzle temperature: 93.3°C #3 Temperature at the bottom head of RPV: 110.4°C (As of 6:00, April 22nd)		#2 (Monitoring water temperature in the reactor.)	
D/W*1 Pressure, S/C*2 Pressure	D/W: 0.160MPa abs S/C: 0.160MPa abs (As of 6:00, April 22nd)	D/W: 0.085MPa abs S/C: #1 (As of 6:00, April 22nd)	D/W: 0.1055MPa abs S/C: 0.1780MPa abs (As of 6:00, April 22nd)			
D/W*1 atmosphere temperature	RPV bellows seal: 116.8°C Return line to HVH*6: 96.4°C (As of 6:00, April 22nd)	RPV bellows seal: #1 Return line to HVH*6: 122°C (As of 6:00, April 22nd)	RPV bellows seal: 138.6°C #3 Return line to HVH*6: 63.7°C (As of 6:00, April 22nd)		#2 (Out of monitoring scope as cooling function of the reactor is maintained.)	
CAMS*3 radiation monitors	D/W (A) #1 (B) #1 S/C (A) 9.94 × 10 ⁻¹ Sv/h #3 (B) 1.85 × 10 ⁰ Sv/h #3 (As of 6:00, April 22nd)	D/W (A) 2.43 × 10 ¹ Sv/h (B) 2.76 × 10 ¹ Sv/h S/C (A) 5.22 × 10 ⁻¹ Sv/h #3 (B) 1.37 × 10 ² Sv/h #3 (As of 6:00, April 22nd)	D/W (A) 1.52 × 10 ¹ Sv/h (B) 1.14 × 10 ¹ Sv/h S/C (A) 5.70 × 10 ⁻¹ Sv/h #3 (B) 5.32 × 10 ⁻¹ Sv/h #3 (As of 6:00, April 22nd)			
S/C temperature	A: 52.8°C B: 52.7°C (As of 6:00, April 22nd)	A: 72.5°C B: 72.8°C (As of 6:00, April 22nd)	A: 42.3°C B: 42.3°C (As of 6:00, April 22nd)			
D/W*1 design operating pressure	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)	0.384MPa g(0.485MPa abs)			
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	46.0°C (As of 6:00, April 22nd)	#1	#1	37.5°C (As of 7:00, April 22nd)	32.5°C (As of 7:00, April 22nd)
FPC skimmer level	4,500mm (As of 6:00, April 22nd)	4,300mm (As of 6:00, April 22nd)	#1	4,200mm (As of 6:00, April 22nd)	#2	
Power supply	Receiving external power supply (P/C*4 2C)		Receiving external power supply (P/ C*4 4D)		Receiving external power supply	
Other information				Common pool: about 29 °C (As of 7:10, April 21st)	Unit5: SHC*5 mode (From 19:14 April 21st)	Unit6: SHC*5 mode (From 9:45 April 21st)

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

- *1 D/W : Dry Well
- *2 S/C : Suppression Chamber
- *3 CAMS : Containment Atmospheric Monitoring System
- *4 P/C : Power Center
- *5 SHC : Shutdown Cooling
- *6 HVH : Heating and Ventilating Handling Unit

- #1 : Measuring instrument malfunction
- #2 : Except from data collection
- #3 : Under monitoring of the change of the situation

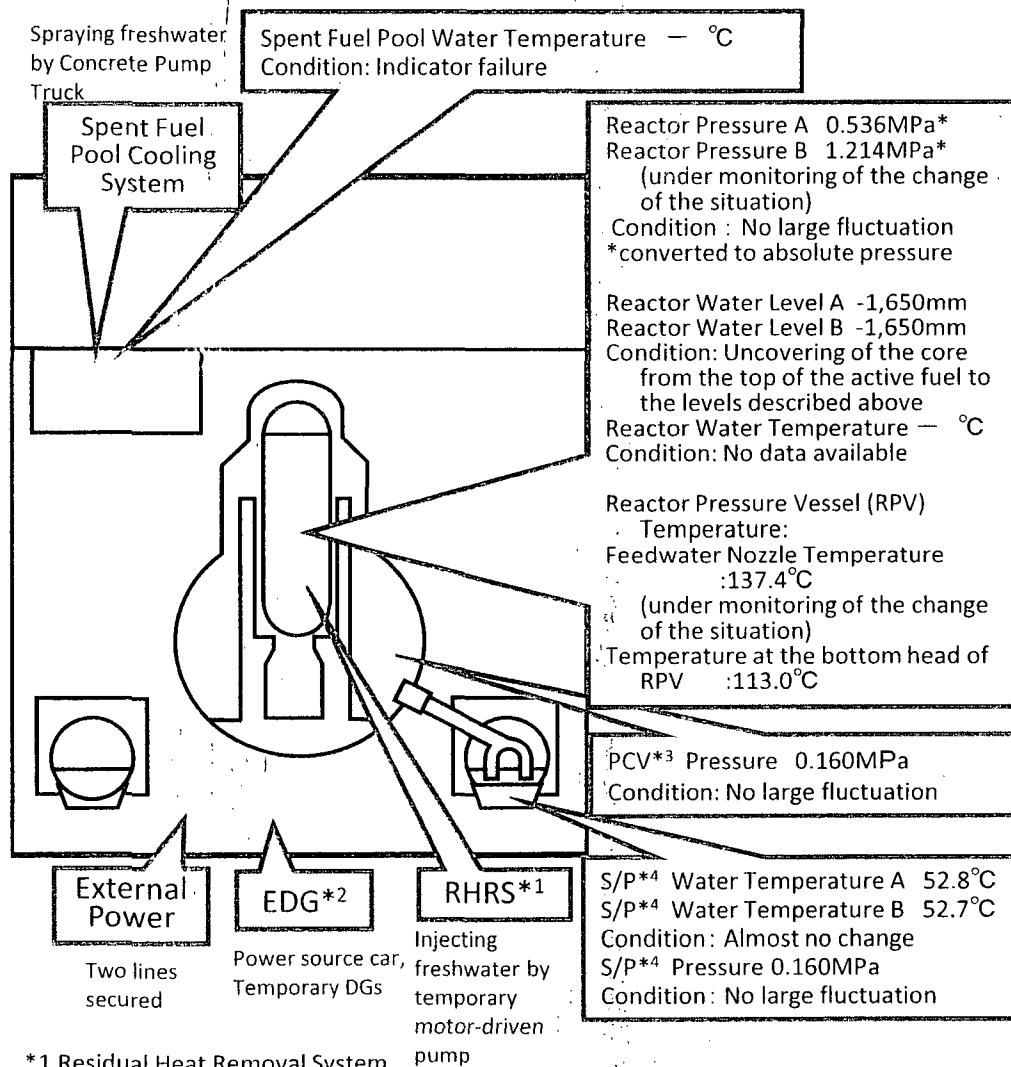
[Note]

There is a possibility that some instruments may not indicate correct values as they have been exposed to the conditions beyond the usual atmospheric ones due to the earthquake and the developments of the event. Taking into account the uncertainty of those instruments, the plants' conditions are judged in an integrated manner paying attention to the trends of the change, using the information obtained through multiple instruments.

(Open to Public)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 7:00 April 22nd, 2011)

Major Events after the Earthquake



- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 12th 01:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 12th 10:17 Started to vent.
- March 12th 15:36 Sound of explosion
- March 12th 20:20 Started to inject seawater and borated water to the Reactor Core.
- March 23rd 02:33 The amount of injected water to the Reactor Core was increased utilizing the Feedwater Line in addition to the Fire Extinguish Line. (2m³/h →18m³/h)
- 09:00 Switched to the Feedwater Line only.(18m³/h →11m³/h)
- March 24th 11:30 Lighting in the Central Control Room was recovered.
- March 25th 15:37 Started to inject fresh water.
- March 29th 08:32 Switched to the water injection to the Reactor Core using the temporary motor-driven pump.
- March 31st 12:00 ~2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge-Tank of Suppression Pool Water (SPT)
- March 31st 13:03 ~16:04 Water spray by Concrete Pump Truck (Fresh water)
- April 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:55 Started to transfer the water from the Condenser to CST.
- April 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- April 7th 01:31 Confirmed starting the injection of nitrogen to PCV.
- April 9th 04:10 Started using highly pure nitrogen generator in the injection of nitrogen to PCV.
- April 10th 09:30 Completed transferring the water from the Condenser to CST.
- April 11th around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core and nitrogen injection to PCV were suspended.
- April 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.
- April 11th 23:19 Restarted operation for injecting nitrogen to PCV.
- April 11th 23:34 Confirmed starting injection of nitrogen to PCV.
- April 17th 16:00~17:30 Confirmed the situation in the reactor building using an unmanned robot.
- April 18th 11:50~12:12 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

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

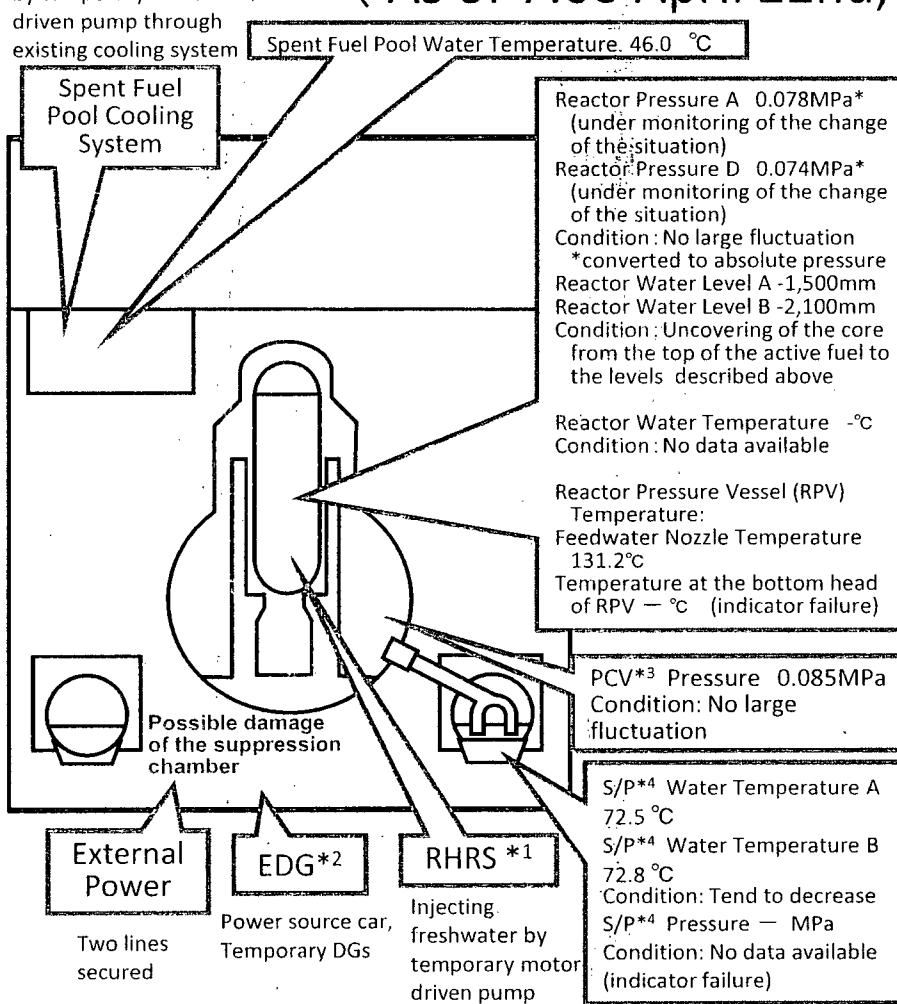
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

(As of 7:00 April 22nd, 2011)

Spraying freshwater by temporary motor-driven pump through existing cooling system



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

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

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

Major Events after the Earthquake 1/2

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 13th 11:00 Started to vent.
- March 14th 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- March 14th 16:34 Started to inject seawater to the Reactor Core.
- March 14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 15th 00:02 Started to vent.
- March 15th 06:10 Sound of explosion
- March 15th around 06:20 Possible damage of the suppression chamber
- March 20th 15:05~17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 20th 15:46 Power Center received electricity.
- March 21st 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22nd.
- March 22nd 16:07 Injection of around 18 tons of seawater to SFP
- March 25th 10:30~12:19 Sea water injection to SFP via FPC
- March 26th 10:10 Started to inject fresh water to the Reactor Core.
- March 26th 16:46 Lighting in the Central Control Room was recovered.
- March 27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
- March 29th 16:30~18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
- March 29th 16:45~1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 30th 9:25~23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
- April 1st 14:56~17:05 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 2nd around 9:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.
- April 2nd 17:10 Started to transfer the water from the Condenser to the CST.
- April 3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:47~14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.
- April 4th 7:08~7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
- April 4th 11:05~13:37 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea. 15:07 Started to inject coagulant.
- April 6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
- April 7th 13:29~14:34 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 9th 13:10 Completed transferring the water from the Condenser to CST.
- April 10th 10:37~12:38 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 11th around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture). Water injection to the Reactor Core was suspended.
- April 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.

Major Events after the Earthquake 2/2

April 12th 19:35~April 13th 17:04 Transfer from the trench of the turbine building to the Condenser.

April 13th 11:00 Suspended the transfer for checking leaks, etc.

April 13th 13:15~14:55 Freshwater injection to SFP via FPC using the temporary motor-driven pump.

April 16th 10:13~11:54 Freshwater injection to SFP via FPC using the temporary motor-driven pump. (The temporary motor-driven pump stopped at 11:39 due to an earthquake that occurred at around 11:19. SFP was confirmed to be filled to capacity through observing a rise of the water level in the Skimmer Tank.)

April 16th around 11:19 An earthquake occurred (in the southern part of Ibaraki Prefecture).

April 18th 13:42~ Confirmed the situation in the reactor building using an unmanned robot.

April 18th 12:13~12:37 Stopped the water injection into the reactor core to replace the current hose with a new one.

April 18th 09:30~17:40 Injected coagulant (soluble glass) into the power cable trench.

April 19th 08:00~15:30 Injected coagulant (soluble glass) into the power cable trench.

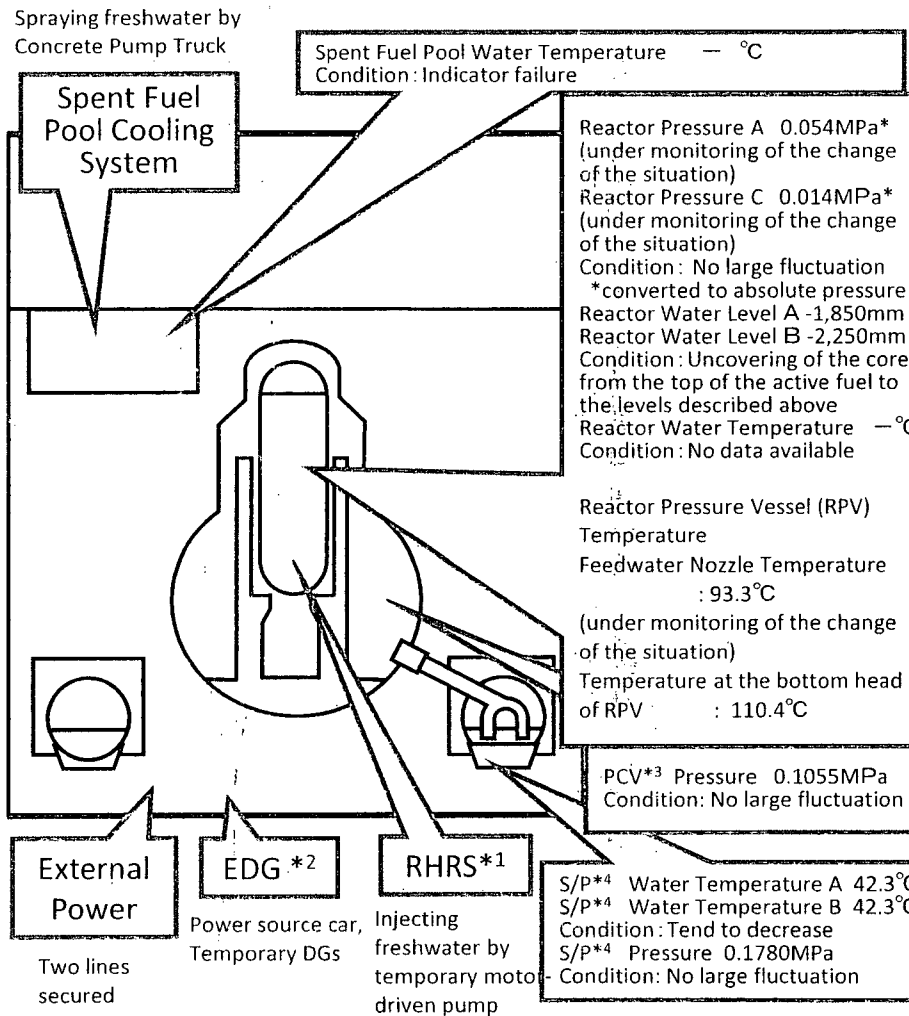
April 19th 10:08~ Started to transfer the stagnant water with high-level radioactivity from the trench of the turbine building to the buildings of radioactive waste treatment facilities.

April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

April 19th 16:08~17:28 Injected freshwater to SFP via FPC using the temporary motor-driven pump .

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3 (As of 7:00 April 22nd, 2011)

Major Events after the Earthquake



Reactor Pressure A 0.054MPa*
(under monitoring of the change of the situation)
Reactor Pressure C 0.014MPa*
(under monitoring of the change of the situation)
Condition: No large fluctuation
*converted to absolute pressure
Reactor Water Level A -1,850mm
Reactor Water Level B -2,250mm
Condition: Uncovering of the core from the top of the active fuel to the levels described above
Reactor Water Temperature — °C
Condition: No data available

Reactor Pressure Vessel (RPV) Temperature
Feedwater Nozzle Temperature : 93.3°C
(under monitoring of the change of the situation)
Temperature at the bottom head of RPV : 110.4°C

PCV*3 Pressure 0.1055MPa
Condition: No large fluctuation

S/p*4 Water Temperature A 42.3°C
S/p*4 Water Temperature B 42.3°C
Condition: Tend to decrease
S/p*4 Pressure 0.1780MPa
Condition: No large fluctuation

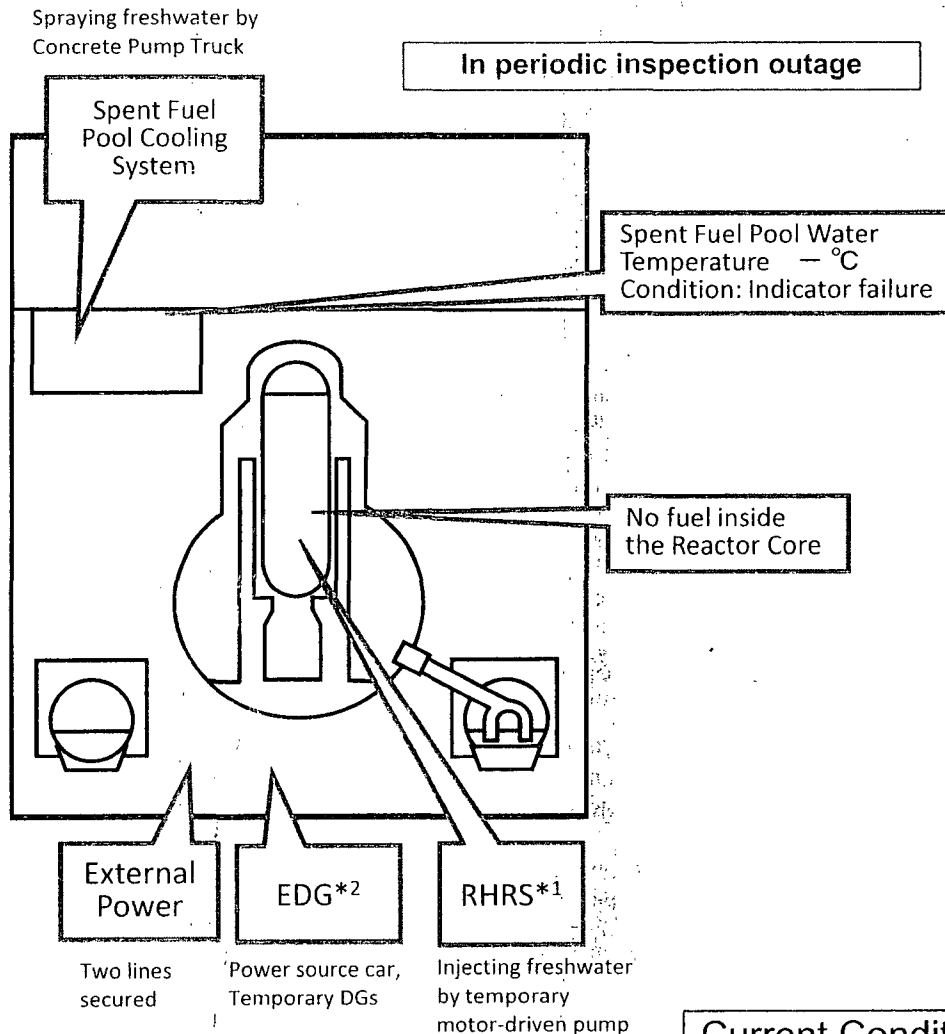
Current Conditions: Fresh water is being injected to the Spent Fuel Pool and the Reactor Core

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

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

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 13th 08:41 Started to vent.
- March 13th 13:12 Started to inject seawater and borated water to the Reactor Core.
- March 14th 05:20 Started to vent.
- March 14th 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 14th 11:01 Sound of explosion
- March 16th around 08:30 White smoke generated.
- March 17th 09:48 ~ 10:01 Water discharge by the helicopters of Self-Defense Force
- March 17th 19:05 ~ 19:15 Water spray from the ground by High pressure water-cannon trucks of Police
- March 17th 19:35 ~ 20:09 Water spray from the ground by fire engines of Self-Defense Force
- March 18th before 14:00 ~ 14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
- March 18th ~ 14:45 Water spray from the ground by a fire engine of the US Military
- March 19th 00:30 ~ 01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 19th 14:10 ~ 20th 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
- March 20th 21:36 ~ 21st 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 21st around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
- March 22nd 15:10 ~ 16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
- March 22nd 22:46 Lighting in the Central Control Room was recovered.
- March 23rd 11:03 ~ 13:20 Injection of about 35 ton of sea water to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 23rd around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24th 04:50.
- March 24th 05:35 ~ 16:05 Injection of around 120 ton of sea water to SFP via FPC
- March 25th 13:28 ~ 16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
- March 25th 18:02 Started fresh water injection to the core.
- March 27th 12:34 ~ 14:36 Water spray by Concrete Pump Truck
- March 28th 17:40 ~ 31st around 8:40 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 28th 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
- April 3rd 12:18 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 11th around 17:16 Loss of external power supply of Unit 1 and 2 due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core was suspended.
- April 11th 18:04 External power supply of Units 1 and 2 recovered (April 11th 17:56). Resumed injecting water to the Reactor Core.
- April 17th 11:30 ~ 14:00 Confirmed the situation in the reactor building using unmanned robot.
- April 18th 12:38 ~ 13:05 Stopped the water injection into the reactor core to replace the current hose with a new one
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
- <Water spray by Concrete Pump Truck (Fresh water)>
March 29th 14:17 ~ 18:18, March 31st 16:30 ~ 19:33, April 2nd 09:52 ~ 12:54, April 4th 17:03 ~ 19:19, April 7th 06:53 ~ 08:53, April 8th 17:06 ~ 20:00, April 10th 17:15 ~ 19:15, April 12th 16:26 ~ 17:16, April 14th 15:56 ~ 16:32, April 18th 14:17 ~ 15:02

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4 (As of 7:00 April 22nd, 2011)



Major Events after the Earthquake

In periodic inspection outage when the earthquake occurred

March 14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C

March 15th 06:14 Confirmed the partial damage of wall in the 4th floor.

March 15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)

March 16th 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)

March 20th 08:21~09:40 Water spray over SFP by Self-Defense Force

March 20th around 18:30~19:46 Water spray over SFP by Self-Defense Force

March 21st 06:37~08:41 Water spray over SFP by Self-Defense Force

March 21st around 15:00 Work for laying cable to Power Center was completed.

March 22nd 10:35 Power Center received electricity.

<Water spray by Concrete Pump Truck (Seawater)>
 March 22nd 17:17~20:32, March 23rd 10:00~13:02, March 24th 14:36~17:30, March 25th 19:05~22:07, March 27th 16:55~19:25

March 25th 06:05~10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)

March 29th 11:50 Lighting in the Central Control Room was recovered.

April 11th around 17:16 An earthquake occurred (at Hamadori in Fukushima Prefecture).

April 12th 12:00~13:04 Sampled the water in SFP.

April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

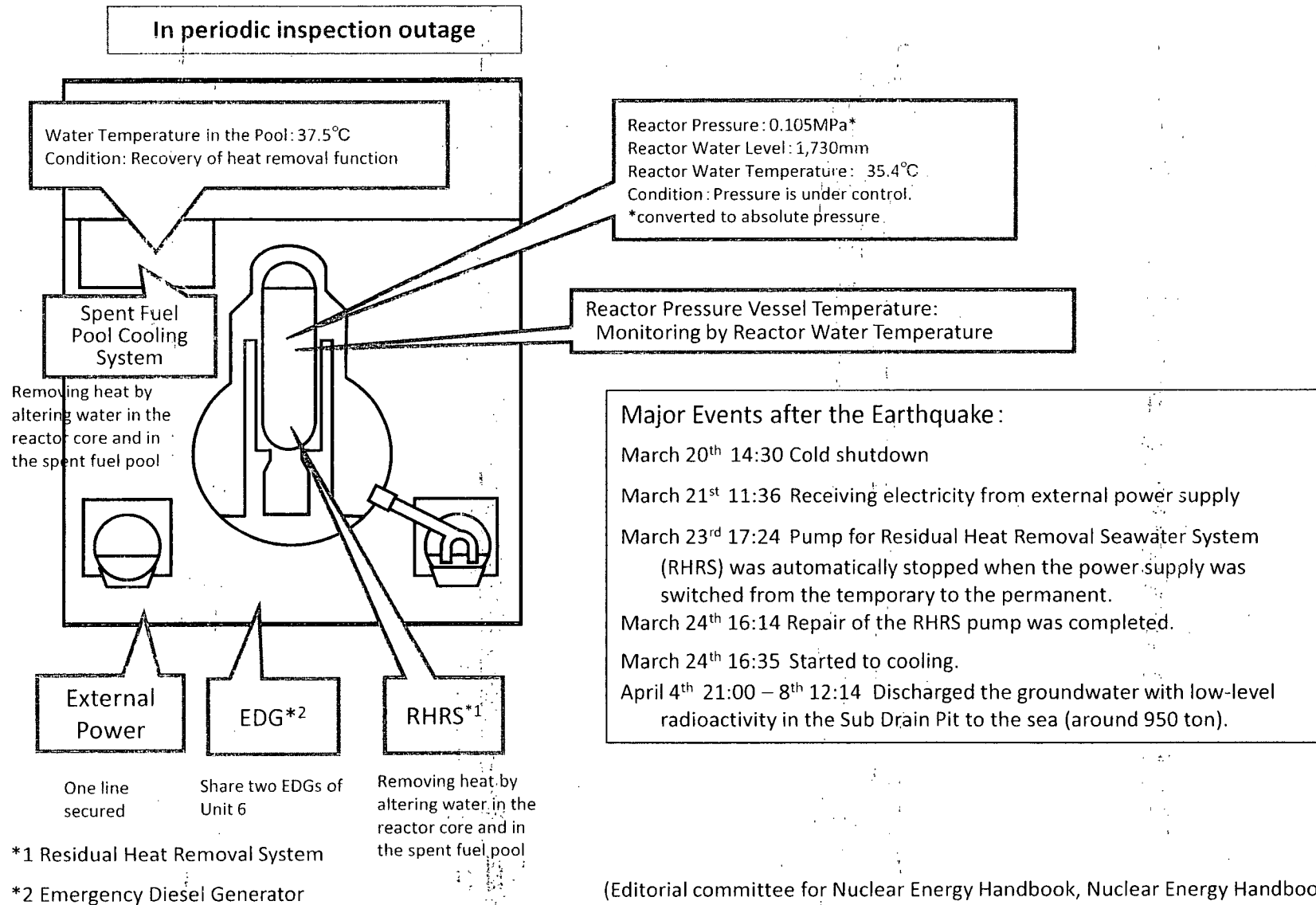
< Water spray by Concrete Pump Truck (Fresh water)> March 30th 14:04~18:33, April 1st 08:28~14:14, April 3rd 17:14~22:16, April 5th 17:35~18:22, April 7th 18:23~19:40, April 9th 17:07~19:24, April 13th 0:30~6:57, April 15th 14:30~18:29, April 17th 17:39~21:22, April 19th 10:17~11:35, April 20th 17:08~20:31, April 21st 17:14~21:20

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

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

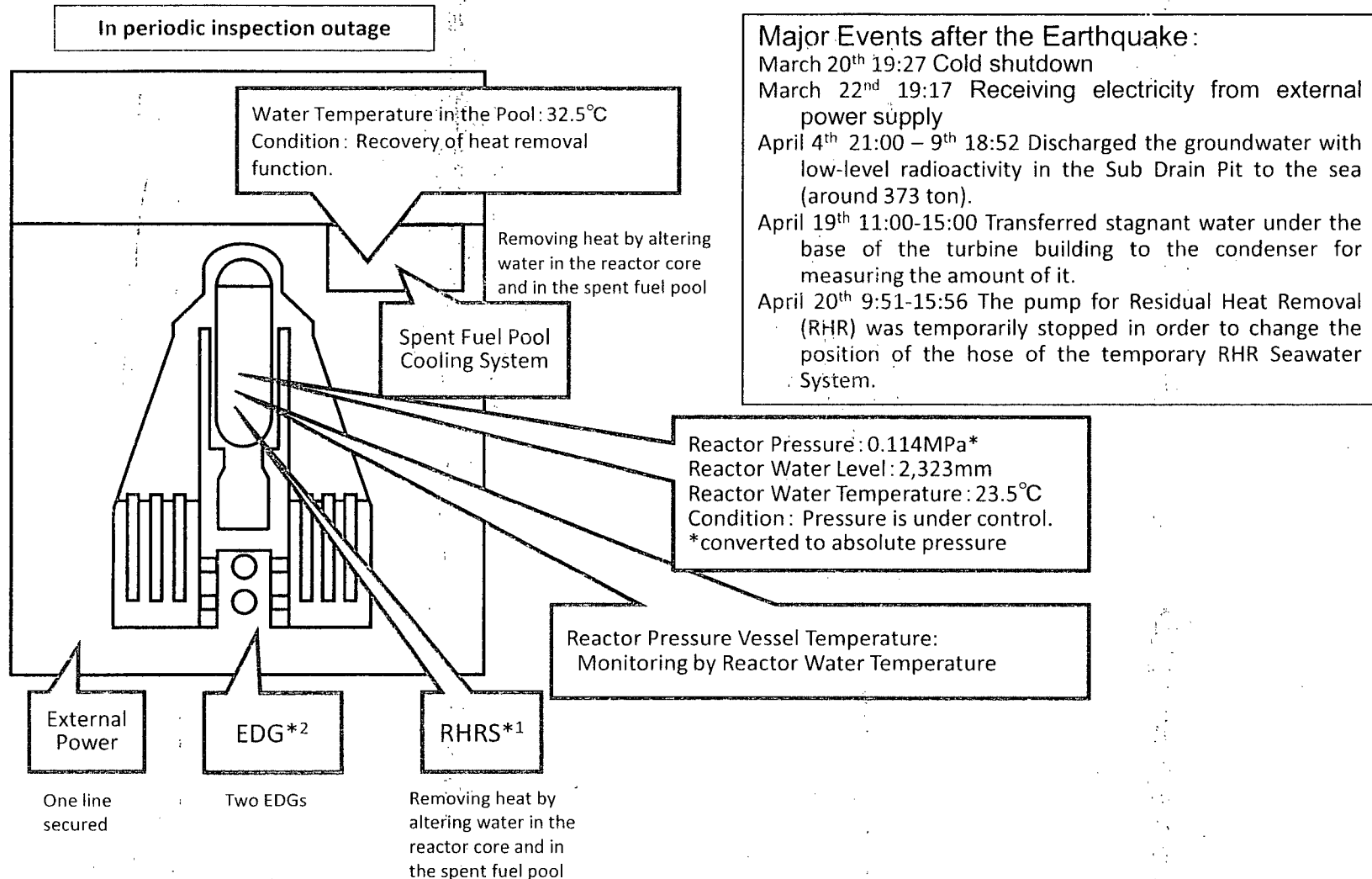
- *1 Residual Heat Removal System
- *2 Emergency Diesel Generator
- *3 Reactor Pressure Vessel

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 7:00 April 22nd, 2011)



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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 7:00 April 22nd, 2011)

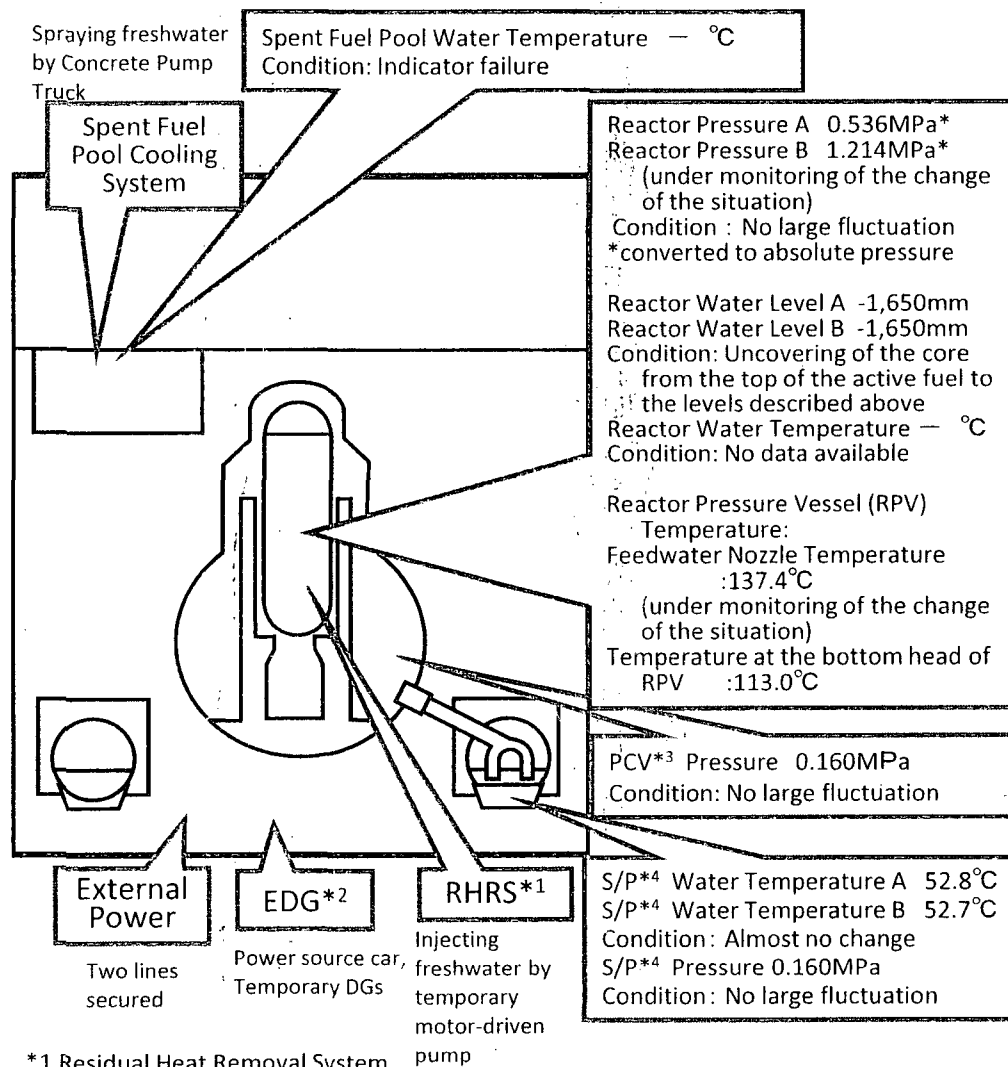


Major Events after the Earthquake:
 March 20th 19:27 Cold shutdown
 March 22nd 19:17 Receiving electricity from external power supply
 April 4th 21:00 – 9th 18:52 Discharged the groundwater with low-level radioactivity in the Sub Drain Pit to the sea (around 373 ton).
 April 19th 11:00-15:00 Transferred stagnant water under the base of the turbine building to the condenser for measuring the amount of it.
 April 20th 9:51-15:56 The pump for Residual Heat Removal (RHR) was temporarily stopped in order to change the position of the hose of the temporary RHR Seawater System.

*1 Residual Heat Removal System

*2 Emergency Diesel Generator

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 7:00 April 22nd, 2011)



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

Major Events after the Earthquake

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 12th 01:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 12th 10:17 Started to vent.
- March 12th 15:36 Sound of explosion
- March 12th 20:20 Started to inject seawater and borated water to the Reactor Core.
- March 23rd 02:33 The amount of injected water to the Reactor Core was increased utilizing the Feedwater Line in addition to the Fire Extinguish Line. (2m³/h →18m³/h)
09:00 Switched to the Feedwater Line only.(18m³/h →11m³/h)
- March 24th 11:30 Lighting in the Central Control Room was recovered.
- March 25th 15:37 Started to inject fresh water.
- March 29th 08:32 Switched to the water injection to the Reactor Core using the temporary motor-driven pump.
- March 31st 12:00 ~ 2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 31st 13:03~16:04 Water spray by Concrete Pump Truck (Fresh water)
- April 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:55 Started to transfer the water from the Condenser to CST.
- April 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- April 7th 01:31 Confirmed starting the injection of nitrogen to PCV.
- April 9th 04:10 Started using highly pure nitrogen generator in the injection of nitrogen to PCV.
- April 10th 09:30 Completed transferring the water from the Condenser to CST.
- April 11th around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core and nitrogen injection to PCV were suspended.
- April 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.
- April 11th 23:19 Restarted operation for injecting nitrogen to PCV.
- April 11th 23:34 Confirmed starting injection of nitrogen to PCV.
- April 17th 16:00~17:30 Confirmed the situation in the reactor building using an unmanned robot.
- April 18th 11:50~12:12 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

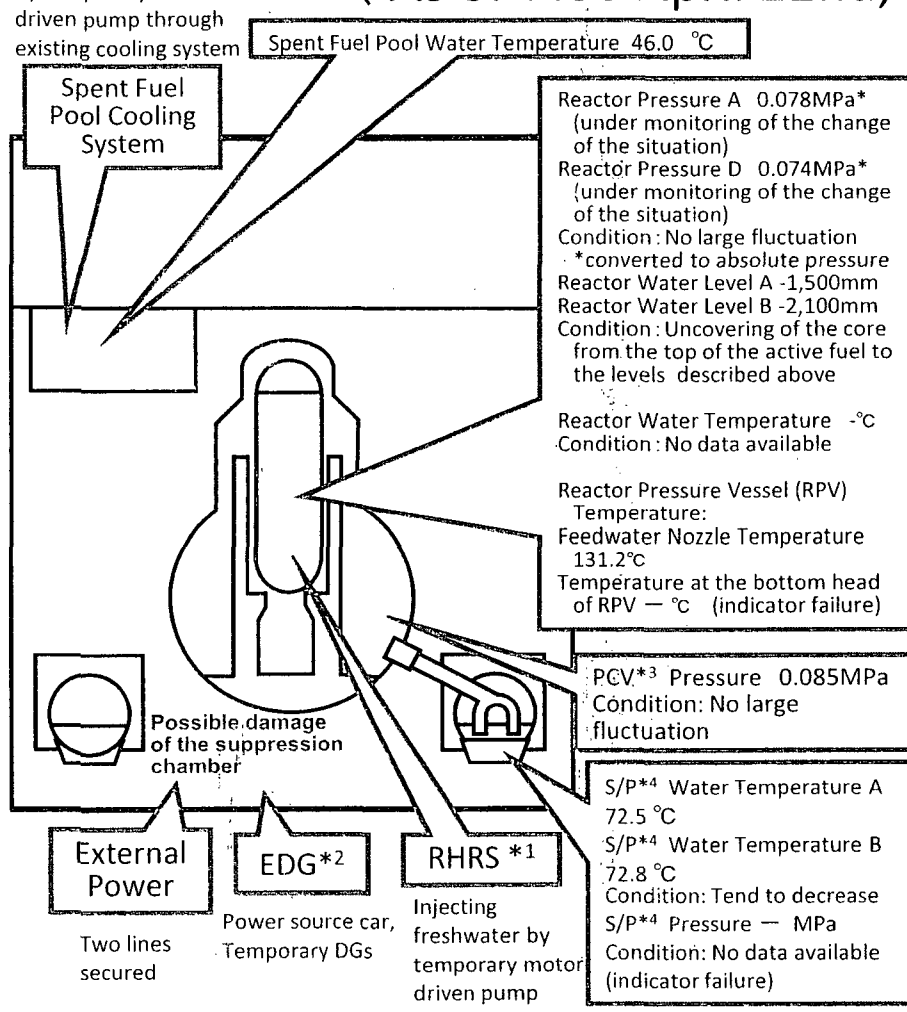
Current Conditions : Fresh water is being injected to the Spent Fuel Pool and the Reactor Core

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

(As of 7:00 April 22nd, 2011)

Spraying freshwater by temporary motor-driven pump through existing cooling system



Major Events after the Earthquake 1/2

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System);
- March 13th 11:00 Started to vent.
- March 14th 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- March 14th 16:34 Started to inject seawater to the Reactor Core.
- March 14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 15th 00:02 Started to vent.
- March 15th 06:10 Sound of explosion
- March 15th around 06:20 Possible damage of the suppression chamber
- March 20th 15:05 ~ 17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 20th 15:46 Power Center received electricity.
- March 21st 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22nd.
- March 22nd 16:07 Injection of around 18 tons of seawater to SFP
- March 25th 10:30 ~ 12:19 Sea water injection to SFP via FPC
- March 26th 10:10 Started to inject fresh water to the Reactor Core.
- March 26th 16:46 Lighting in the Central Control Room was recovered.
- March 27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
- March 29th 16:30 ~ 18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
- March 29th 16:45 ~ 1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 30th 9:25 ~ 23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
- April 1st 14:56 ~ 17:05 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 2nd around 9:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.
- April 2nd 17:10 Started to transfer the water from the Condenser to the CST.
- April 3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:47 ~ 14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.
- April 4th 7:08 ~ 7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
- April 4th 11:05 ~ 13:37 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea. 15:07 Started to inject coagulant.
- April 6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
- April 7th 13:29 ~ 14:34 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 9th 13:10 Completed transferring the water from the Condenser to CST.
- April 10th 10:37 ~ 12:38 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 11th around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture). Water injection to the Reactor Core was suspended.
- April 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.

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

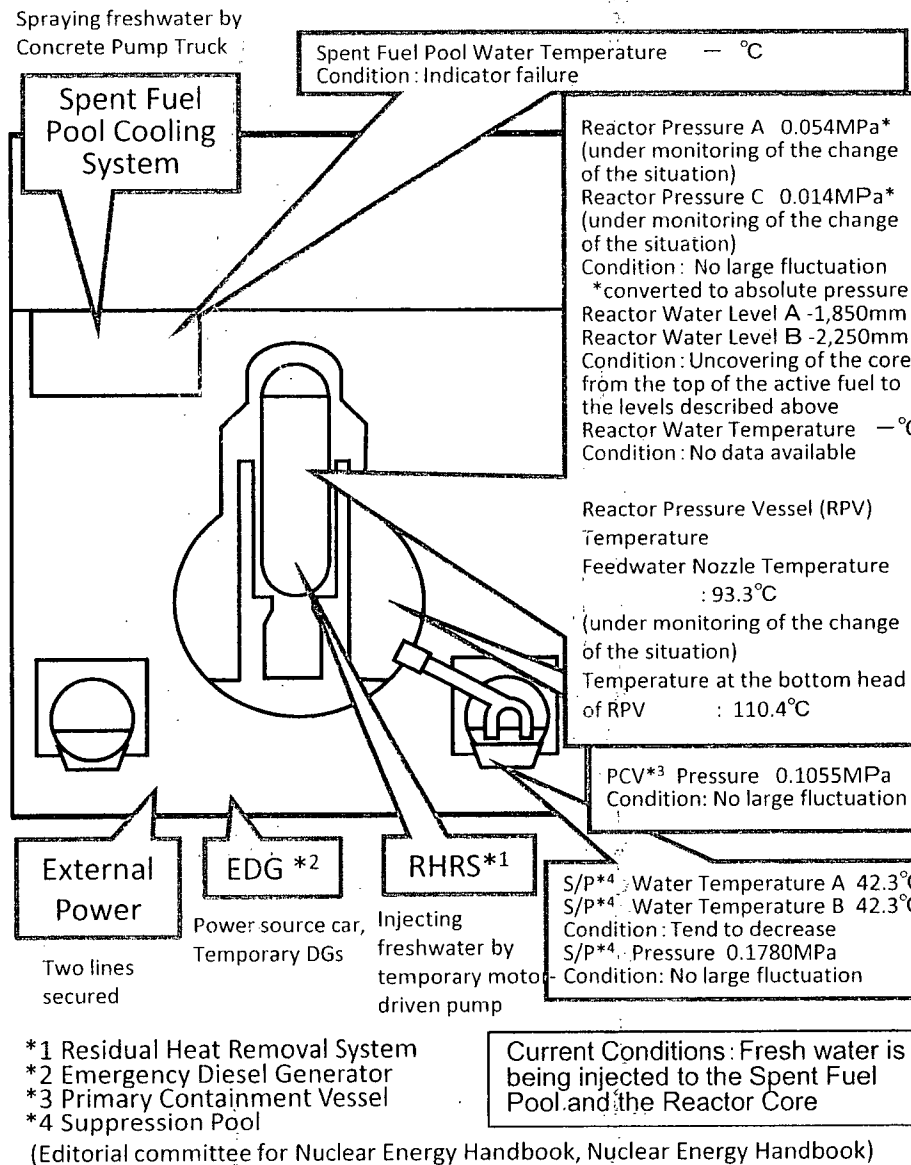
Current Conditions: Fresh water is being injected to the Spent Fuel Pool and the Reactor Core

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

Major Events after the Earthquake 2/2

- April 12th 19:35~April 13th 17:04 Transfer from the trench of the turbine building to the Condenser.
- April 13th 11:00 Suspended the transfer for checking leaks, etc.
- April 13th 13:15~14:55 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 16th 10:13~11:54 Freshwater injection to SFP via FPC using the temporary motor-driven pump. (The temporary motor-driven pump stopped at 11:39 due to an earthquake that occurred at around 11:19. SFP was confirmed to be filled to capacity through observing a rise of the water level in the Skimmer Tank.)
- April 16th around 11:19 An earthquake occurred (in the southern part of Ibaraki Prefecture).
- April 18th 13:42~ Confirmed the situation in the reactor building using an unmanned robot.
- April 18th 12:13~12:37 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 18th 09:30~17:40 Injected coagulant (soluble glass) into the power cable trench.
- April 19th 08:00~15:30 Injected coagulant (soluble glass) into the power cable trench.
- April 19th 10:08~ Started to transfer the stagnant water with high-level radioactivity from the trench of the turbine building to the buildings of radioactive waste treatment facilities.
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
- April 19th 16:08~17:28 Injected freshwater to SFP via FPC using the temporary motor-driven pump .

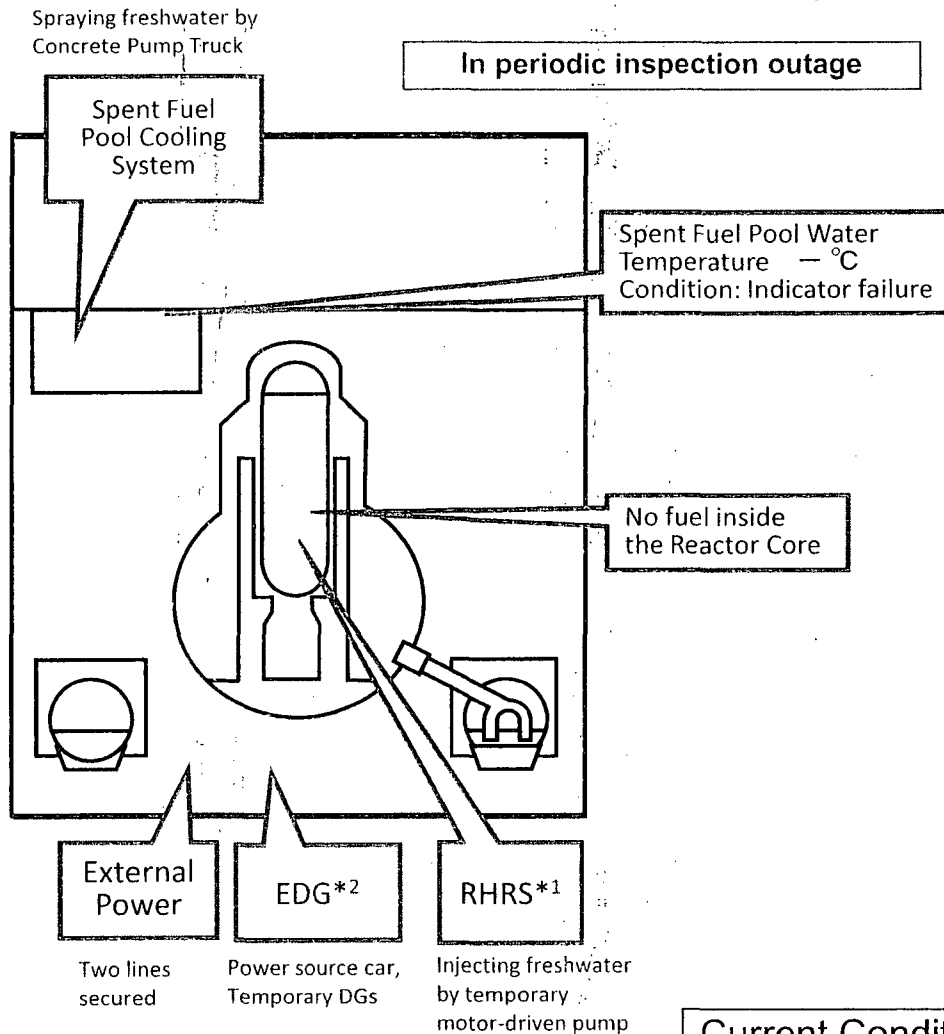
Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3 (As of 7:00 April 22nd, 2011)



Major Events after the Earthquake

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 13th 05:10 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 13th 08:41 Started to vent.
- March 13th 13:12 Started to inject seawater and borated water to the Reactor Core.
- March 14th 05:20 Started to vent.
- March 14th 07:44 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 14th 11:01 Sound of explosion
- March 16th around 08:30 White smoke generated.
- March 17th 09:48 ~ 10:01 Water discharge by the helicopters of Self-Defense Force
- March 17th 19:05 ~ 19:15 Water spray from the ground by High pressure water-cannon trucks of Police
- March 17th 19:35 ~ 20:09 Water spray from the ground by fire engines of Self-Defense Force
- March 18th before 14:00 ~ 14:38 Water spray from the ground by 6 fire engines of Self-Defense Force
- March 18th ~ 14:45 Water spray from the ground by a fire engine of the US Military
- March 19th 00:30 ~ 01:10 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 19th 14:10 ~ 20th 03:40 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 20th 11:00 Pressure of PCV rose(320kPa).Afterward fell.
- March 20th 21:36 ~ 21st 03:58 Water spray by Hyper Rescue Unit of Tokyo Fire Department
- March 21st around 15:55 Grayish smoke generated and was confirmed to be died down at 17:55.
- March 22nd 15:10 ~ 16:00 Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
- March 22nd 22:46 Lighting in the Central Control Room was recovered.
- March 23rd 11:03 ~ 13:20 Injection of about 35 ton of sea water to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 23rd around 16:20 Black smoke generated and was confirmed to died down at around 23:30 and 24th 04:50.
- March 24th 05:35 ~ 16:05 Injection of around 120 ton of sea water to SFP via FPC
- March 25th 13:28 ~ 16:00 Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
- March 25th 18:02 Started fresh water injection to the core.
- March 27th 12:34 ~ 14:36 Water spray by Concrete Pump Truck
- March 28th 17:40 ~ 31st around 8:40 Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 28th 20:30 Switched to the water injection to the core using a temporary motor-driven pump.
- April 3rd 12:18 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 11th around 17:16 Loss of external power supply of Unit 1 and 2 due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core was suspended.
- April 11th 18:04 External power supply of Units 1 and 2 recovered (April 11th 17:56). Resumed injecting water to the Reactor Core.
- April 17th 11:30 ~ 14:00 Confirmed the situation in the reactor building using unmanned robot.
- April 18th 12:38 ~ 13:05 Stopped the water injection into the reactor core to replace the current hose with a new one
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
- <Water spray by Concrete Pump Truck (Fresh water)>
- March 29th 14:17 ~ 18:18, March 31st 16:30 ~ 19:33, April 2nd 09:52 ~ 12:54, April 4th 17:03 ~ 19:19, April 7th 06:53 ~ 08:53, April 8th 17:06 ~ 20:00, April 10th 17:15 ~ 19:15, April 12th 16:26 ~ 17:16, April 14th 15:56 ~ 16:32, April 18th 14:17 ~ 15:02

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4 (As of 7:00 April 22nd, 2011)



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

Major Events after the Earthquake

In periodic inspection outage when the earthquake occurred

March 14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C

March 15th 06:14 Confirmed the partial damage of wall in the 4th floor.

March 15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)

March 16th 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)

March 20th 08:21~09:40 Water spray over SFP by Self-Defense Force

March 20th around 18:30~19:46 Water spray over SFP by Self-Defense Force

March 21st 06:37~08:41 Water spray over SFP by Self-Defense Force

March 21st around 15:00 Work for laying cable to Power Center was completed.

March 22nd 10:35 Power Center received electricity.

<Water spray by Concrete Pump Truck (Seawater)>
 March 22nd 17:17~20:32, March 23rd 10:00~13:02, March 24th 14:36~17:30, March 25th 19:05~22:07, March 27th 16:55~19:25

March 25th 06:05~10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)

March 29th 11:50 Lighting in the Central Control Room was recovered.

April 11th around 17:16 An earthquake occurred (at Hamadori in Fukushima Prefecture).

April 12th 12:00~13:04 Sampled the water in SFP.

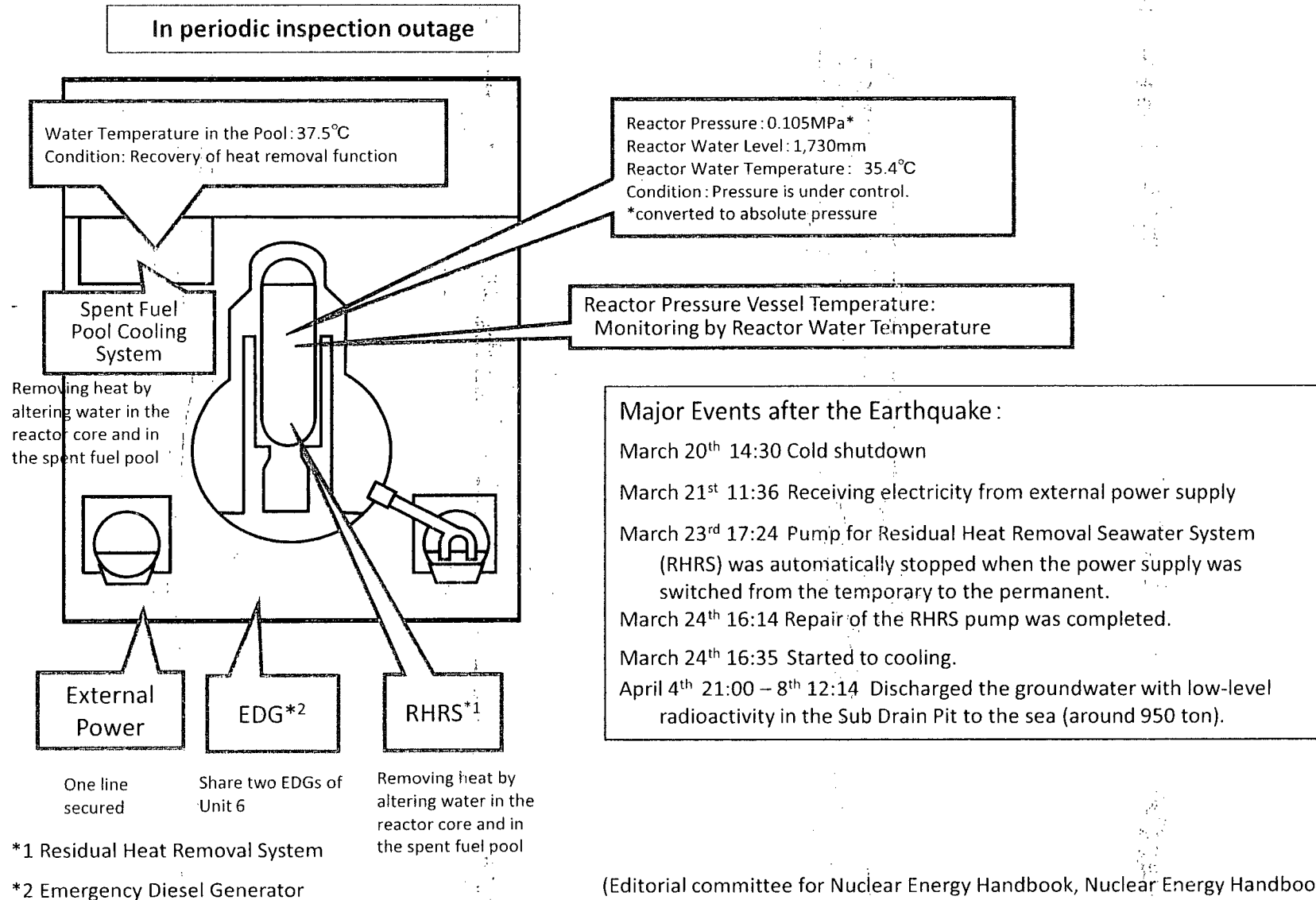
April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

< Water spray by Concrete Pump Truck (Fresh water)> March 30th 14:04~18:33, April 1st 08:28~14:14, April 3rd 17:14~22:16, April 5th 17:35~18:22, April 7th 18:23~19:40, April 9th 17:07~19:24, April 13th 0:30~6:57, April 15th 14:30~18:29, April 17th 17:39~21:22, April 19th 10:17~11:35, April 20th 17:08~20:31, April 21st 17:14~21:20

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

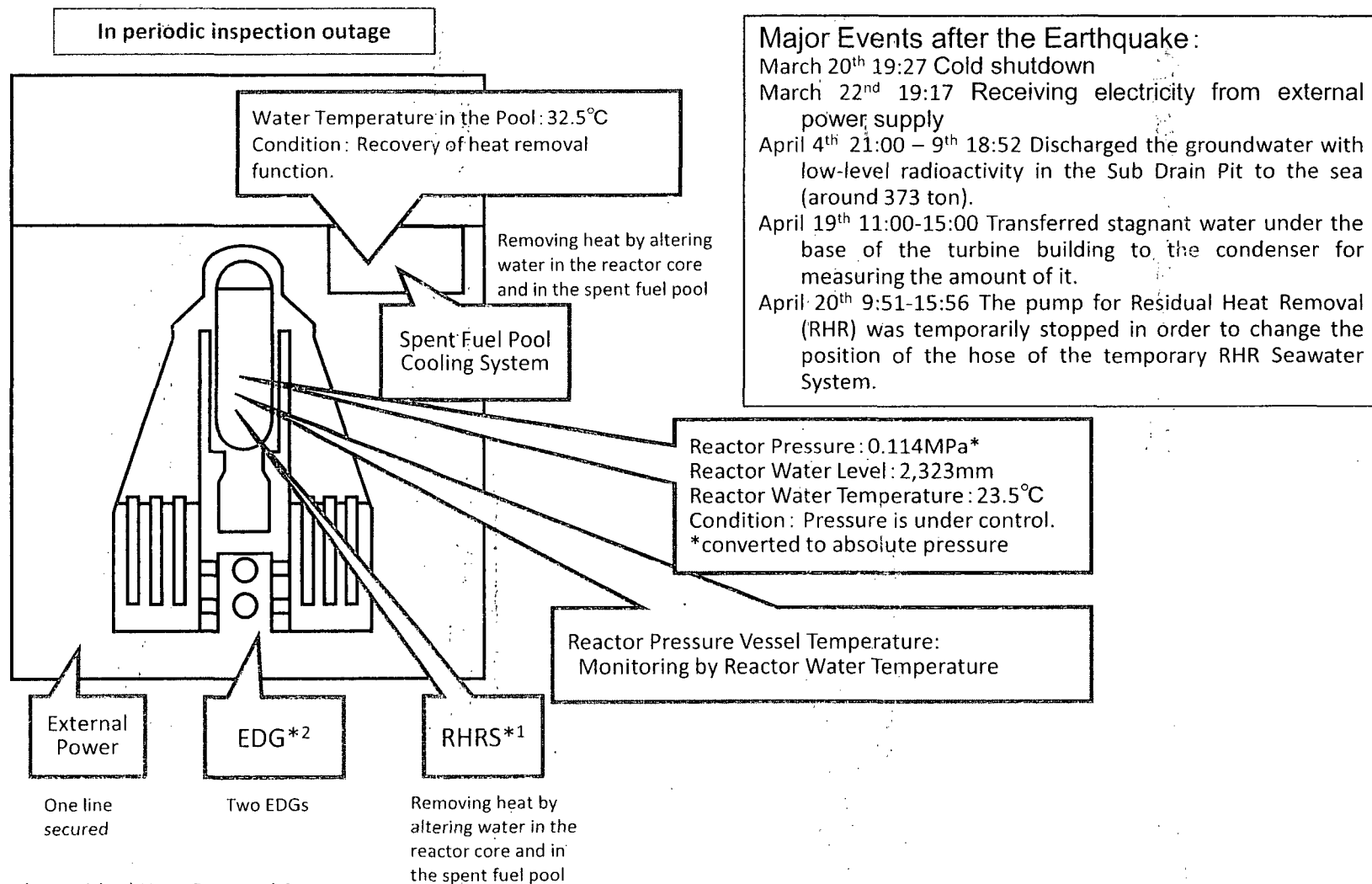
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 7:00 April 22nd, 2011)



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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 7:00 April 22nd, 2011)



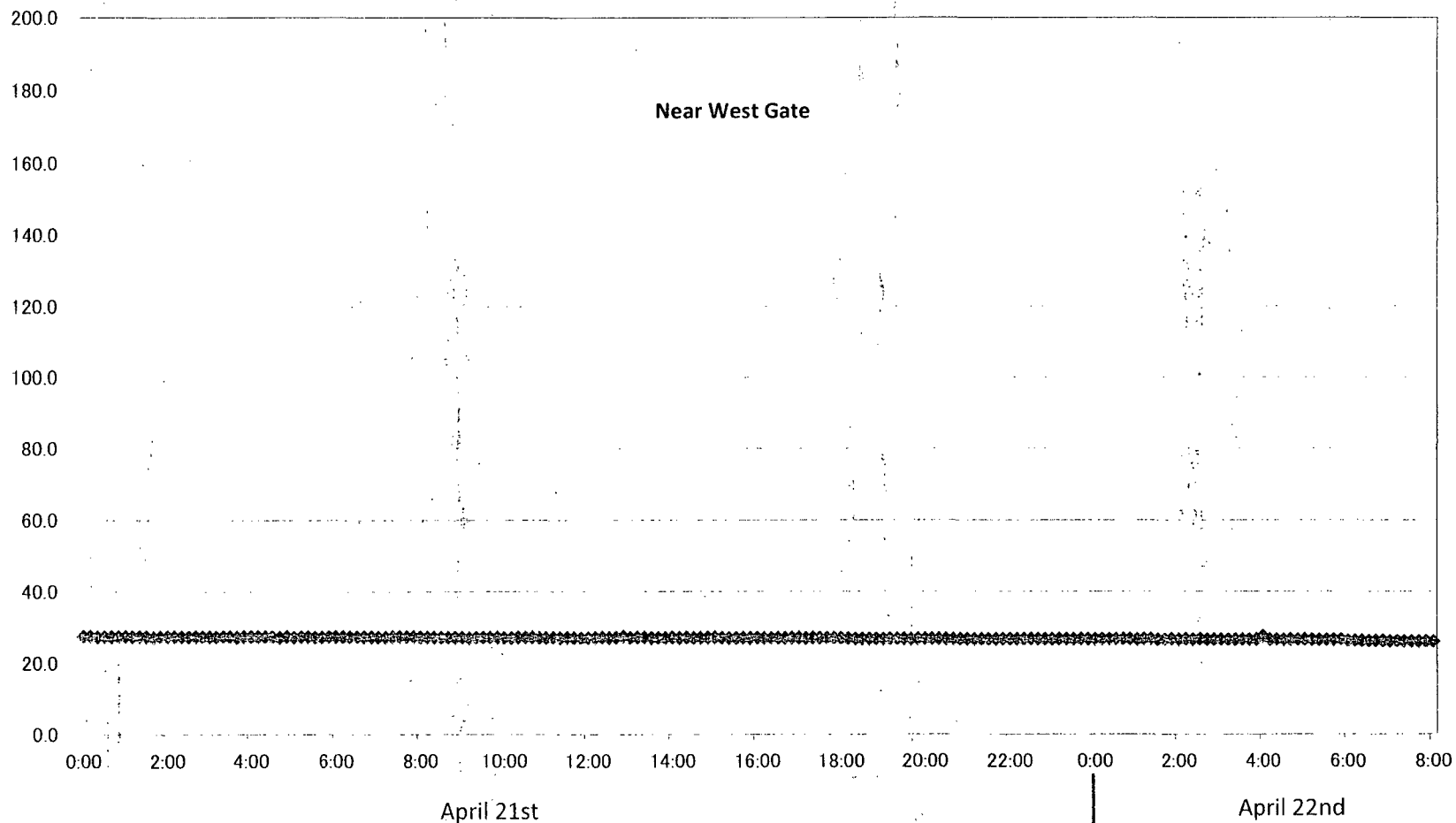
Major Events after the Earthquake:
 March 20th 19:27 Cold shutdown
 March 22nd 19:17 Receiving electricity from external power supply
 April 4th 21:00 – 9th 18:52 Discharged the groundwater with low-level radioactivity in the Sub Drain Pit to the sea (around 373 ton).
 April 19th 11:00-15:00 Transferred stagnant water under the base of the turbine building to the condenser for measuring the amount of it.
 April 20th 9:51-15:56 The pump for Residual Heat Removal (RHR) was temporarily stopped in order to change the position of the hose of the temporary RHR Seawater System.

*1 Residual Heat Removal System
 *2 Emergency Diesel Generator

Dose Rate in the Fukushima Dai-ichi NPS

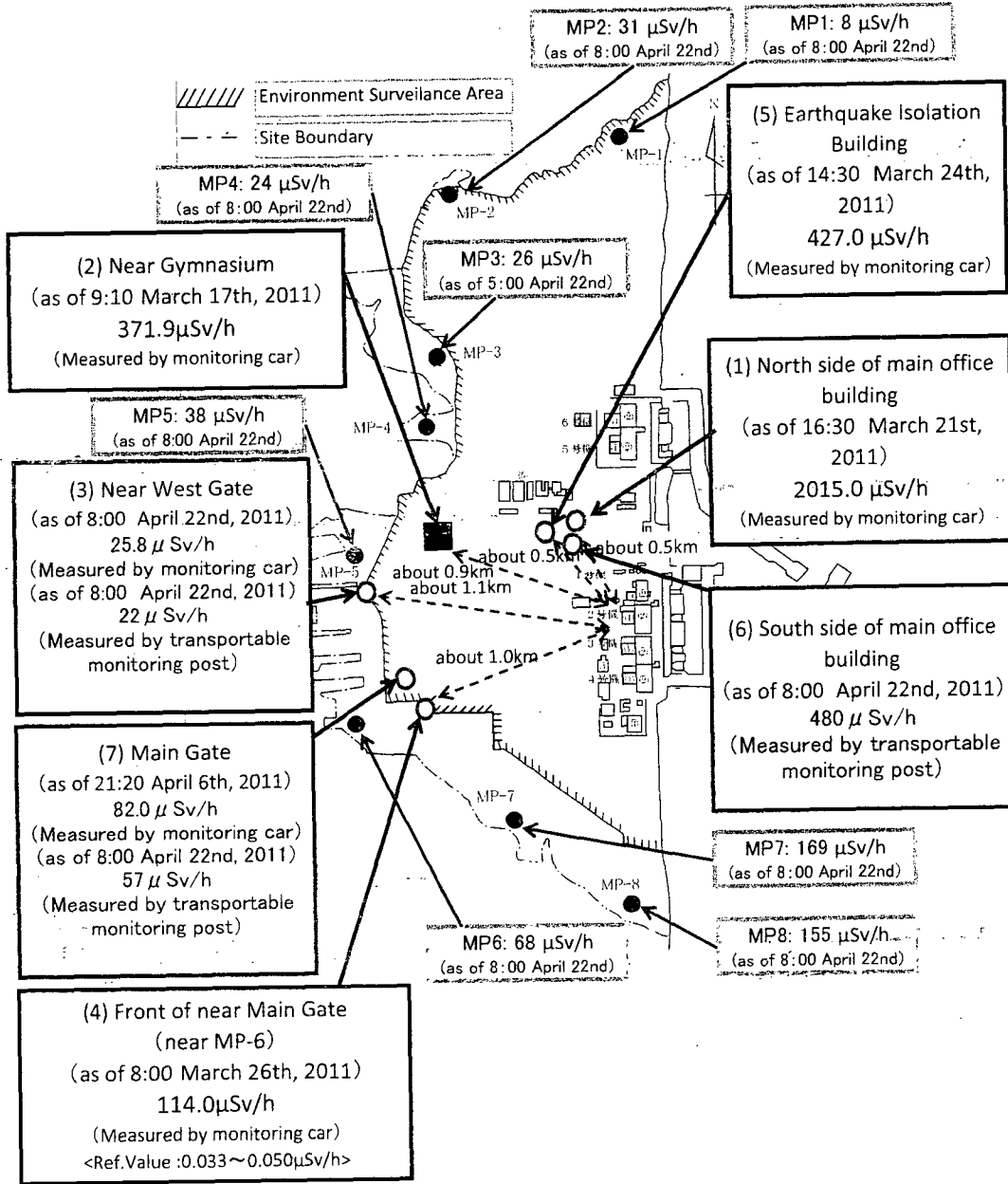
(Measured by monitoring car)

$\mu\text{Sv/h}$



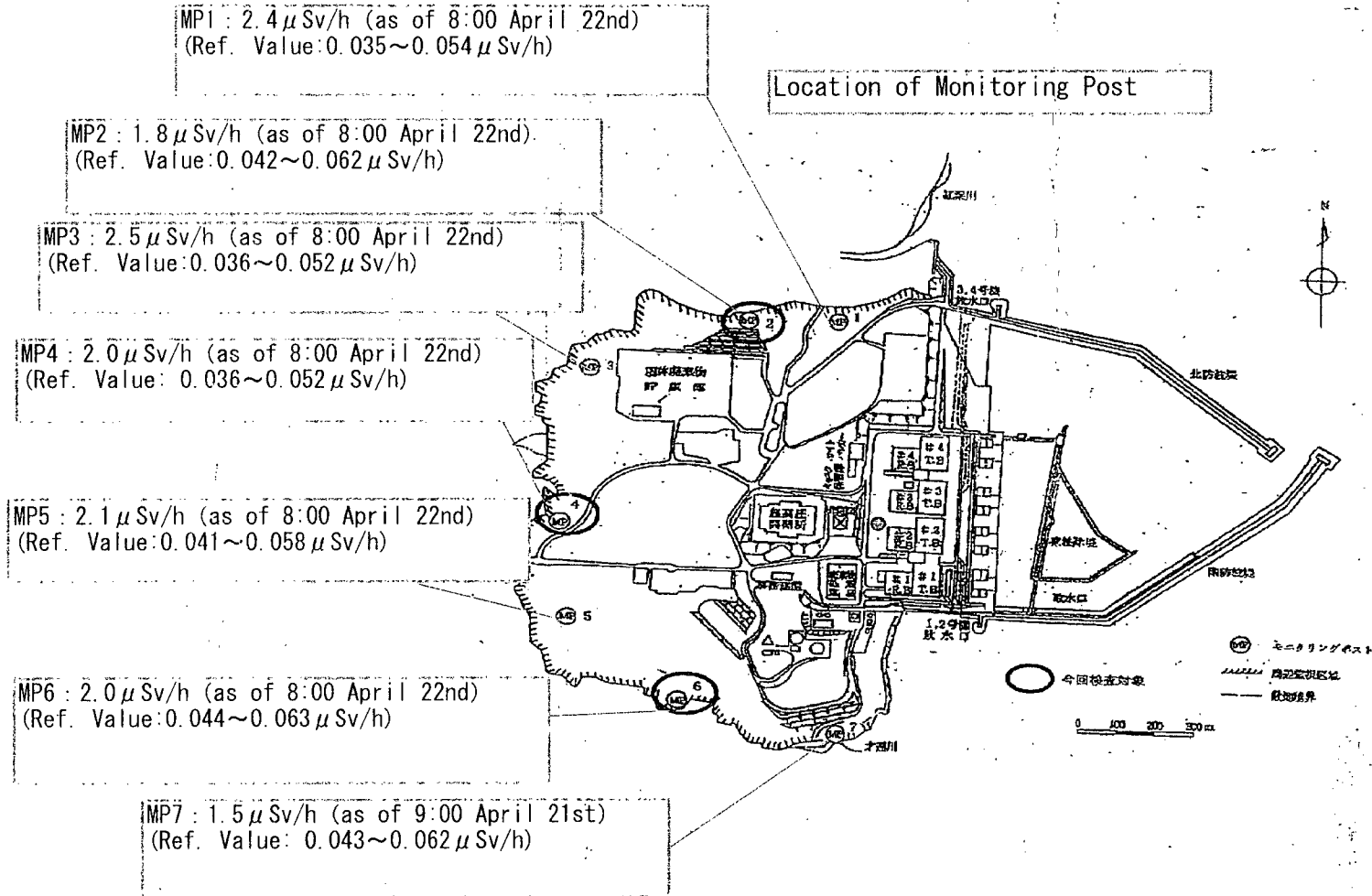
Fukushima Dai-ichi NPS

as of 10:00, April 22nd, 2011



Fukushima Dai-ri NPS

as of 10:00, April 22nd, 2011



2011/4/2218:22

Results of environmental monitoring at each NPSs etc. (as of 9:00PM, April 21st)

unit: μ Sv/h

Range of normal average value	Company	NPS	April 21, 2011											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.023~0.027	Hokkaido Electric Power Co.	Tomari NPS	0.033	0.033	0.033	0.034	0.035	0.035	0.034	0.033	0.033	0.033	NM *1	NM *1
0.024~0.060	Tohoku Electric Power Co.	Onagawa NPS	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
0.012~0.060		Higashidori NPS	0.016	0.016	0.017	0.016	0.016	0.017	0.016	0.016	0.016	0.016	0.016	0.016
0.033~0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi [※]	(publicized in another place.)											
0.036~0.052		Fukushima Dai-ri	(publicized in another place.)											
0.011~0.159	Japan Atomic Power Co.	Kashiwazaki kariwa NPS	0.065	0.064	0.065	0.066	0.065	0.065	0.065	0.065	0.065	0.065	0.064	0.065
0.036~0.053		Tokai Dai-ri NPS	0.337	0.337	0.334	0.335	0.336	0.333	0.334	0.334	0.336	0.337	0.331	0.332
0.039~0.110	Chubu Electric Power Co.	Tsuruga NPS	0.074	0.072	0.073	0.073	0.072	0.072	0.072	0.073	0.072	0.072	0.073	0.073
0.064~0.108		Hamaoka NPS	0.043	0.042	0.042	0.043	0.042	0.042	0.043	0.043	0.043	0.043	0.043	0.042
0.0207~0.132	Hokuriku Electric Power Co.	Shika NPS	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.032	0.033	0.032
0.028~0.130	Chugoku Electric Power Co.	Shimane NPS	0.029	0.031	0.029	0.030	0.031	0.030	0.029	0.030	0.031	0.030	0.030	0.029
0.070~0.077		Mihama NPS	0.071	0.073	0.072	0.072	0.073	0.072	0.072	0.072	0.073	0.072	0.075	0.073
0.045~0.047	Kansai Electric Power Co.	Takahama NPS	0.042	0.042	0.042	0.042	0.041	0.042	0.042	0.043	0.044	0.044	0.044	0.044
0.036~0.040		Ooi NPS	0.035	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.036	0.036	0.036
0.011~0.080	Shikoku Electric Power Co.	Ikata NPS	0.014	0.014	0.014	0.013	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.013
0.023~0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.027	0.025	0.027	0.026	0.026	0.026	0.026	0.026	0.028	0.026	0.026
0.034~0.120		Sendai NPS	0.038	0.038	0.040	0.038	0.039	0.038	0.035	0.034	0.040	0.042	0.036	0.039
0.009~0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.016	0.015	0.016	0.015	0.016
0.009~0.071		Japan Nuclear Fuel Plant Disposal	0.022	0.022	0.022	0.023	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022

※ Chubu Electric Power Co. reported that from 12:00, April 1st, the data did not include the contribution of cosmic rays.

Range of normal average value	Company	NPS	April 21, 2011											
			12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0.023~0.027	Hokkaido Electric Power Co.	Tomari NPS	NM *1	NM *1	NM *1	NM *1	0.031	0.031	0.032	0.032	0.031	0.032		
0.024~0.060	Tohoku Electric Power Co.	Onagawa NPS	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28		
0.012~0.060		Higashidori NPS	0.016	0.016	0.017	0.017	0.017	0.016	0.016	0.017	0.017	0.016		
0.033~0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi [※]	(publicized in another place.)											
0.036~0.052		Fukushima Dai-ri	(publicized in another place.)											
0.011~0.159	Japan Atomic Power Co.	Kashiwazaki kariwa NPS	0.065	0.065	0.065	0.065	0.065	0.064	0.065	0.065	0.065	0.065		
0.036~0.053		Tokai Dai-ri NPS	0.336	0.339	0.336	0.335	0.334	0.333	0.335	0.332	0.331	0.334		
0.039~0.110	Chubu Electric Power Co.	Tsuruga NPS	0.072	0.073	0.073	0.074	0.073	0.073	0.075	0.073	0.073	0.074		
0.064~0.108		Hamaoka NPS	0.042	0.043	0.043	0.042	0.042	0.043	0.043	0.042	0.043	0.043		
0.0207~0.132	Hokuriku Electric Power Co.	Shika NPS	0.033	0.033	0.032	0.033	0.033	0.032	0.033	0.033	0.033	0.033		
0.028~0.130	Chugoku Electric Power Co.	Shimane NPS	0.030	0.030	0.029	0.030	0.029	0.030	0.030	0.029	0.030	0.030		
0.070~0.077		Mihama NPS	0.072	0.074	0.075	0.074	0.072	0.072	0.074	0.073	0.073	0.075		
0.045~0.047	Kansai Electric Power Co.	Takahama NPS	0.044	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043		
0.036~0.040		Ooi NPS	0.035	0.034	0.035	0.035	0.034	0.035	0.036	0.035	0.034	0.034		
0.011~0.080	Shikoku Electric Power Co.	Ikata NPS	0.013	0.013	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.014		
0.023~0.087	Kyushu Electric Power Co.	Genkai NPS	0.025	0.026	0.026	0.026	0.026	0.026	0.027	0.027	0.026	0.026		
0.034~0.120		Sendai NPS	0.037	0.037	0.037	0.036	0.038	0.038	0.035	0.038	0.035	0.037		
0.009~0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.015	0.016	0.017	0.016	0.016	0.016	0.016	0.016		
0.009~0.071		Japan Nuclear Fuel Plant Disposal	0.022	0.022	0.021	0.022	0.022	0.023	0.022	0.022	0.022	0.022		

※ Chubu Electric Power Co. reported that from 12:00, April 1st, the data did not include the contribution of cosmic rays.

*1: NM: Not measured due to the inspection

福島第一原子力発電所 モニタリング結果(モニタリングカー)
 注)モニタリングカーでの測定は放射能変動する可能性があり、データが欠ける場合もある。

場所	日時	総量率 ($\mu\text{Sv/h}$)	中性子線量率 ($\mu\text{Sv/h}$)	天候	風向	風速 (m/s)
西門	2011/4/22 0:00	28.5	<0.01	晴れ	SSW	0.3
西門	2011/4/22 0:10	28.5	<0.01	晴れ	SSW	0.3
西門	2011/4/22 0:20	28.5	<0.01	晴れ	W	0.4
西門	2011/4/22 0:30	28.5	<0.01	晴れ	NNE	0.3
西門	2011/4/22 0:40	28.5	<0.01	晴れ	W	0.3
西門	2011/4/22 0:50	28.5	<0.01	晴れ	W	0.3
西門	2011/4/22 1:00	28.4	<0.01	晴れ	SW	0.3
西門	2011/4/22 1:10	28.5	<0.01	晴れ	SSW	0.3
西門	2011/4/22 1:20	28.5	<0.01	晴れ	WNW	0.3
西門	2011/4/22 1:30	28.4	<0.01	晴れ	SW	0.3
西門	2011/4/22 1:40	28.4	<0.01	晴れ	WSW	0.4
西門	2011/4/22 1:50	28.5	<0.01	晴れ	SSW	0.3
西門	2011/4/22 2:00	28.4	<0.01	晴れ	SSE	0.3
西門	2011/4/22 2:10	28.5	<0.01	晴れ	W	0.3
西門	2011/4/22 2:20	28.4	<0.01	晴れ	SW	0.4
西門	2011/4/22 2:30	28.5	<0.01	晴れ	NE	0.4
西門	2011/4/22 2:40	28.4	<0.01	晴れ	NNW	0.3
西門	2011/4/22 2:50	28.4	<0.01	晴れ	SW	0.2
西門	2011/4/22 3:00	28.4	<0.01	晴れ	SW	0.3
西門	2011/4/22 3:10	28.4	<0.01	晴れ	SSW	0.3
西門	2011/4/22 3:20	28.4	<0.01	晴れ	N	0.2
西門	2011/4/22 3:30	28.4	<0.01	晴れ	NE	0.2
西門	2011/4/22 3:40	28.4	<0.01	晴れ	NNE	0.2
西門	2011/4/22 3:50	28.4	<0.01	晴れ	N	0.2
西門	2011/4/22 4:00	27.3	<0.01	晴れ	NW	0.2
西門	2011/4/22 4:10	28.4	<0.01	晴れ	WNW	0.4
西門	2011/4/22 4:20	28.4	<0.01	晴れ	NE	0.4
西門	2011/4/22 4:30	28.3	<0.01	晴れ	WNW	0.4
西門	2011/4/22 4:40	28.4	<0.01	晴れ	SW	0.4
西門	2011/4/22 4:50	28.3	<0.01	晴れ	N	0.3
西門	2011/4/22 5:00	28.4	<0.01	曇り	NE	0.3
西門	2011/4/22 5:10	28.3	<0.01	曇り	NNW	0.2
西門	2011/4/22 5:20	28.2	<0.01	曇り	NNW	0.4
西門	2011/4/22 5:30	28.3	<0.01	曇り	NW	0.5
西門	2011/4/22 5:40	28.3	<0.01	曇り	NNW	0.3
西門	2011/4/22 5:50	28.4	<0.01	曇り	W	0.4
西門	2011/4/22 6:00	28.0	<0.01	雨	NNE	0.3
西門	2011/4/22 6:10	28.0	<0.01	雨	NNW	0.3
西門	2011/4/22 6:20	28.1	<0.01	雨	N	0.3
西門	2011/4/22 6:30	28.0	<0.01	雨	W	0.5
西門	2011/4/22 6:40	28.0	<0.01	雨	NW	0.5
西門	2011/4/22 6:50	28.0	<0.01	雨	WSW	0.6
西門	2011/4/22 7:00	28.9	<0.01	雨	WNW	0.5

福島第一原子力発電所 モニタリング結果(モニタリングカー)
 (注)モニタリングカーでの測定は場所を移動する可能性があり、データが欠ける場合もある。

場所	日時	線量率 ($\mu\text{Sv/h}$)	中性子線量率 ($\mu\text{Sv/h}$)	天候	風向	風速 (m/s)
西門	2011/4/21 22:30	26.6	<0.01	晴れ	W	0.3
西門	2011/4/21 22:40	26.5	<0.01	晴れ	NW	0.3
西門	2011/4/21 22:50	26.5	<0.01	晴れ	SE	0.3
西門	2011/4/21 23:00	26.5	<0.01	晴れ	W	0.5
西門	2011/4/21 23:10	26.5	<0.01	晴れ	SW	0.5
西門	2011/4/21 23:20	26.5	<0.01	晴れ	SW	0.5
西門	2011/4/21 23:30	26.5	<0.01	晴れ	WSW	0.7
西門	2011/4/21 23:40	26.5	<0.01	晴れ	W	0.5
西門	2011/4/21 23:50	26.5	<0.01	晴れ	NNW	0.5

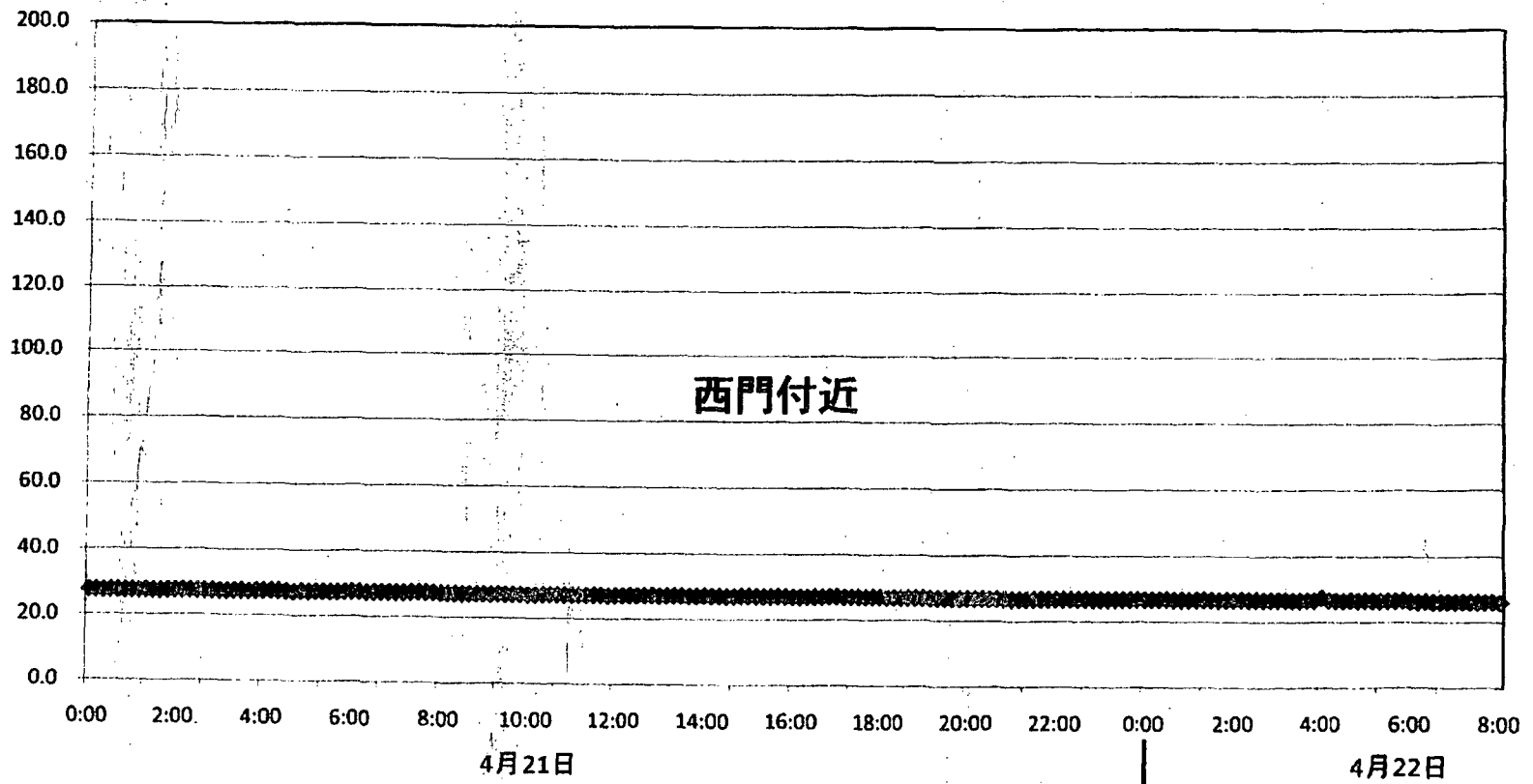
福島第一原子力発電所 モニタリング結果(モニタリングカー)
 注)モニタリングカーでの測定は場所を移動する可能性があり、データが欠ける場合もある。

場所	日時	総線量率 ($\mu\text{Sv/h}$)	中性子線量率 ($\mu\text{Sv/h}$)	天候	風向	風速 (m/s)
西門	2011/4/21 15:00	27.0	<0.01	晴れ	E	2.1
西門	2011/4/21 15:10	26.9	<0.01	晴れ	ESE	2.1
西門	2011/4/21 15:20	26.8	<0.01	晴れ	E	2.0
西門	2011/4/21 15:30	26.8	<0.01	晴れ	SSE	1.9
西門	2011/4/21 15:40	26.9	<0.01	曇り	E	1.4
西門	2011/4/21 15:50	26.8	<0.01	曇り	E	1.8
西門	2011/4/21 16:00	26.9	<0.01	曇り	S	1.5
西門	2011/4/21 16:10	26.8	<0.01	曇り	E	1.9
西門	2011/4/21 16:20	26.8	<0.01	曇り	NNE	2.1
西門	2011/4/21 16:30	26.8	<0.01	曇り	E	1.8
西門	2011/4/21 16:40	26.8	<0.01	曇り	W	2.0
西門	2011/4/21 16:50	26.9	<0.01	曇り	SE	1.8
西門	2011/4/21 17:00	26.9	<0.01	曇り	S	1.5
西門	2011/4/21 17:10	26.7	<0.01	曇り	E	1.3
西門	2011/4/21 17:20	26.9	<0.01	曇り	E	1.3
西門	2011/4/21 17:30	26.8	<0.01	曇り	NE	1.5
西門	2011/4/21 17:40	26.8	<0.01	曇り	E	1.5
西門	2011/4/21 17:50	26.8	<0.01	曇り	S	1.9
西門	2011/4/21 18:00	26.8	<0.01	曇り	N	1.1
西門	2011/4/21 18:10	26.7	<0.01	曇り	SE	1.2
西門	2011/4/21 18:20	26.6	<0.01	曇り	SE	1.2
西門	2011/4/21 18:30	26.6	<0.01	曇り	E	1.2
西門	2011/4/21 18:40	26.6	<0.01	曇り	S	1.2
西門	2011/4/21 18:50	26.6	<0.01	曇り	N	1.4
西門	2011/4/21 19:00	26.5	<0.01	曇り	ESE	1.4
西門	2011/4/21 19:10	26.6	<0.01	曇り	E	1.6
西門	2011/4/21 19:20	26.6	<0.01	曇り	E	1.3
西門	2011/4/21 19:30	26.6	<0.01	曇り	E	1.4
西門	2011/4/21 19:40	26.5	<0.01	曇り	SE	1.3
西門	2011/4/21 19:50	26.6	<0.01	曇り	E	1.3
西門	2011/4/21 20:00	26.6	<0.01	曇り	E	1.2
西門	2011/4/21 20:10	26.6	<0.01	曇り	E	0.9
西門	2011/4/21 20:20	26.6	<0.01	曇り	SE	1.1
西門	2011/4/21 20:30	26.5	<0.01	曇り	E	1.0
西門	2011/4/21 20:40	26.5	<0.01	曇り	E	1.2
西門	2011/4/21 20:50	26.5	<0.01	曇り	SE	1.0
西門	2011/4/21 21:00	26.5	<0.01	曇り	ESE	0.8
西門	2011/4/21 21:10	26.5	<0.01	晴れ	SE	0.7
西門	2011/4/21 21:20	26.5	<0.01	晴れ	NE	0.3
西門	2011/4/21 21:30	26.5	<0.01	晴れ	SW	0.2
西門	2011/4/21 21:40	26.5	<0.01	晴れ	SW	0.3
西門	2011/4/21 21:50	26.5	<0.01	晴れ	WSW	0.3
西門	2011/4/21 22:00	26.5	<0.01	晴れ	SW	0.2
西門	2011/4/21 22:10	26.5	<0.01	晴れ	SSW	0.3
西門	2011/4/21 22:20	26.5	<0.01	晴れ	W	0.3

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)

$\mu\text{Sv/h}$



福島第一原子力発電所 モニタリングポスト空間線量率(μ Sv/h)

日時	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
2011/4/22 0:00	8	31	26	24	39	69	172	158
2011/4/22 0:10	8	31	26	24	39	69	172	158
2011/4/22 0:20	8	31	26	24	39	69	172	158
2011/4/22 0:30	8	31	26	24	38	69	172	158
2011/4/22 0:40	8	31	26	24	39	69	172	158
2011/4/22 0:50	8	31	26	24	39	69	172	158
2011/4/22 1:00	8	31	26	24	39	69	172	158
2011/4/22 1:10	8	31	26	24	39	69	172	158
2011/4/22 1:20	8	31	26	24	39	69	172	158
2011/4/22 1:30	8	31	26	24	39	69	172	158
2011/4/22 1:40	8	31	26	24	39	69	172	158
2011/4/22 1:50	8	31	26	24	39	69	172	158
2011/4/22 2:00	8	31	26	24	39	69	172	158
2011/4/22 2:10	8	31	26	24	39	69	172	158
2011/4/22 2:20	8	31	26	24	39	69	172	158
2011/4/22 2:30	8	31	26	24	39	69	172	158
2011/4/22 2:40	8	31	26	24	39	69	172	158
2011/4/22 2:50	8	31	26	24	39	69	172	158
2011/4/22 3:00	8	31	26	24	39	69	172	158
2011/4/22 3:10	8	31	26	24	39	69	172	158
2011/4/22 3:20	8	31	26	24	39	69	172	158
2011/4/22 3:30	8	31	26	24	39	69	172	158
2011/4/22 3:40	8	31	26	24	39	69	172	158
2011/4/22 3:50	8	31	26	24	39	69	172	158
2011/4/22 4:00	8	31	26	24	38	69	172	158
2011/4/22 4:10	8	31	26	24	38	69	172	157
2011/4/22 4:20	8	31	26	24	38	69	171	158
2011/4/22 4:30	8	31	26	24	38	69	171	157
2011/4/22 4:40	8	31	26	24	38	69	171	157
2011/4/22 4:50	8	31	26	24	38	69	171	157
2011/4/22 5:00	8	31	26	24	38	69	170	157
2011/4/22 5:10	8	31	26	24	38	69	170	157
2011/4/22 5:20	8	31	26	24	38	69	171	157
2011/4/22 5:30	8	31	26	24	38	69	170	157
2011/4/22 5:40	8	31	26	24	38	69	170	157
2011/4/22 5:50	8	31	26	24	38	69	170	157
2011/4/22 6:00	8	31	26	24	38	68	170	157
2011/4/22 6:10	8	31	26	24	38	68	170	157
2011/4/22 6:20	8	31	26	24	38	68	170	157
2011/4/22 6:30	8	31	26	24	38	68	170	157
2011/4/22 6:40	8	31	26	24	38	68	170	157
2011/4/22 6:50	8	31	26	24	38	68	170	158
2011/4/22 7:00	8	31	26	24	38	68	170	158

福島第一原子力発電所 モニタリングポスト空間線量率($\mu\text{Sv/h}$)

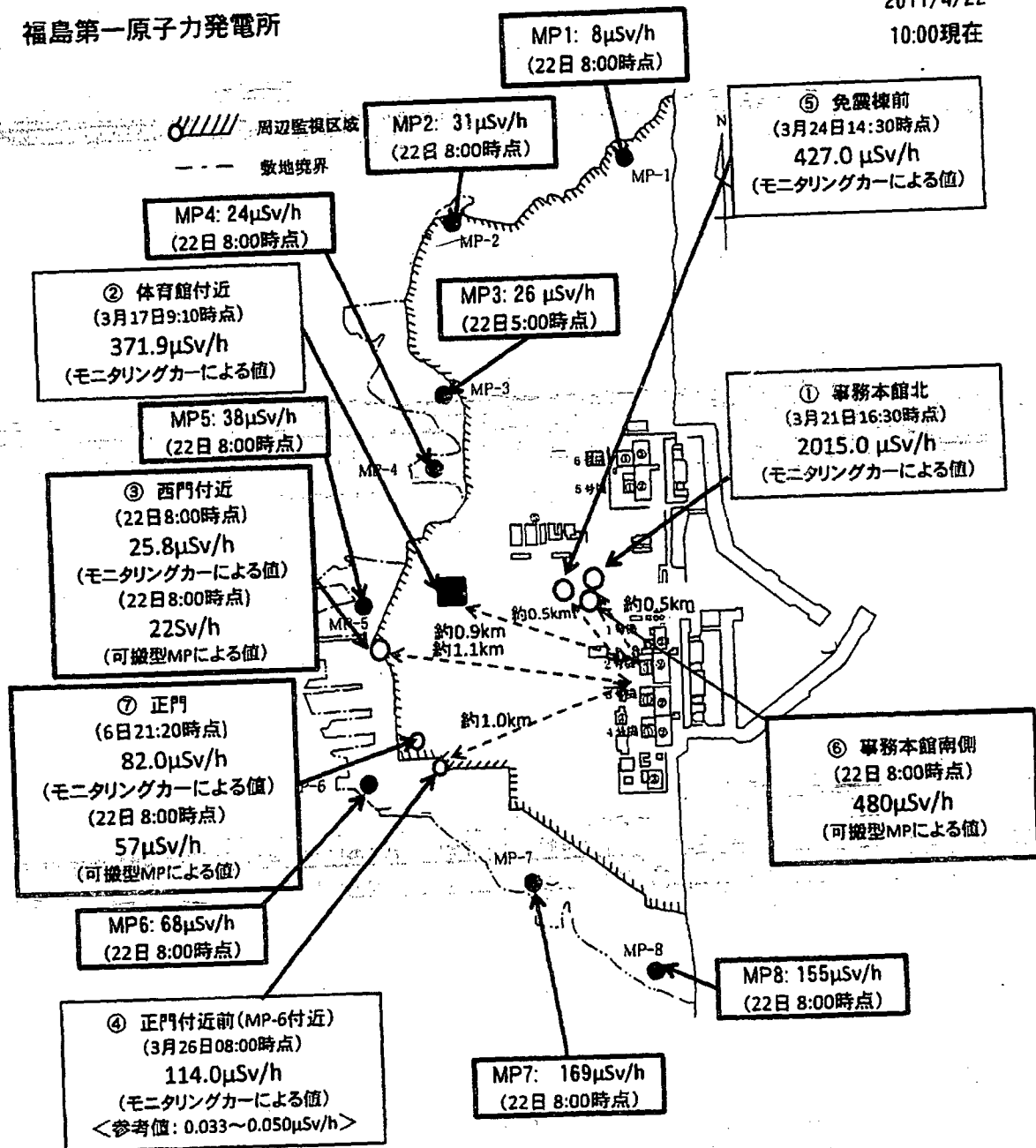
測定日時	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
2011/4/21 22:20	8	31	26	24	39	69	172	158
2011/4/21 22:30	8	31	26	24	39	69	172	158
2011/4/21 22:40	8	31	26	24	39	69	172	158
2011/4/21 22:50	8	31	26	24	39	69	172	158
2011/4/21 23:00	8	31	26	24	39	69	172	158
2011/4/21 23:10	8	31	26	24	39	69	172	158
2011/4/21 23:20	8	31	26	24	39	69	172	158
2011/4/21 23:30	8	31	26	24	39	69	172	158
2011/4/21 23:40	8	31	26	24	39	69	172	158
2011/4/21 23:50	8	31	26	24	39	69	172	158

福島第一原子力発電所 モニタリングポスト空間線量率($\mu\text{Sv/h}$)

測定日時	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
2011/4/21 15:00	8	31	26	25	40	70	173	159
2011/4/21 15:10	8	31	26	25	40	70	173	160
2011/4/21 15:20	8	31	26	25	39	70	173	160
2011/4/21 15:30	8	31	26	25	39	70	173	160
2011/4/21 15:40	8	31	26	25	39	70	173	160
2011/4/21 15:50	8	31	26	25	39	70	173	160
2011/4/21 16:00	8	31	27	25	39	70	173	160
2011/4/21 16:10	8	31	27	25	39	70	173	160
2011/4/21 16:20	8	31	26	25	39	70	173	160
2011/4/21 16:30	8	31	26	25	39	70	173	160
2011/4/21 16:40	8	31	26	25	39	70	173	160
2011/4/21 16:50	8	31	26	25	39	70	173	160
2011/4/21 17:00	8	31	26	25	39	70	173	160
2011/4/21 17:10	8	31	26	25	39	70	173	160
2011/4/21 17:20	8	31	26	25	39	70	173	160
2011/4/21 17:30	8	31	26	25	39	70	173	160
2011/4/21 17:40	8	31	26	25	39	70	173	160
2011/4/21 17:50	8	31	26	25	39	70	173	159
2011/4/21 18:00	8	31	26	25	39	70	173	159
2011/4/21 18:10	8	31	26	25	39	70	173	159
2011/4/21 18:20	8	31	26	25	39	70	173	159
2011/4/21 18:30	8	31	26	25	39	70	173	159
2011/4/21 18:40	8	31	26	25	39	70	173	159
2011/4/21 18:50	8	31	26	25	39	70	173	159
2011/4/21 19:00	8	31	26	25	39	70	173	159
2011/4/21 19:10	8	31	26	25	39	70	173	159
2011/4/21 19:20	8	31	26	25	39	70	173	159
2011/4/21 19:30	8	31	26	25	39	70	173	159
2011/4/21 19:40	8	31	26	25	39	70	173	159
2011/4/21 19:50	8	31	26	25	39	70	173	159
2011/4/21 20:00	8	31	26	25	39	70	173	159
2011/4/21 20:10	8	31	26	25	39	70	173	159
2011/4/21 20:20	8	31	26	25	39	70	173	159
2011/4/21 20:30	8	31	26	25	39	70	173	159
2011/4/21 20:40	8	31	26	25	39	70	172	159
2011/4/21 20:50	8	31	26	25	39	70	172	159
2011/4/21 21:00	8	31	26	25	39	70	172	159
2011/4/21 21:10	8	31	26	25	39	70	172	158
2011/4/21 21:20	8	31	26	25	39	70	172	158
2011/4/21 21:30	8	31	26	25	39	70	172	158
2011/4/21 21:40	8	31	26	24	39	70	172	158
2011/4/21 21:50	8	31	26	24	39	69	172	158
2011/4/21 22:00	8	31	26	24	39	69	172	158
2011/4/21 22:10	8	31	26	24	39	69	172	158

福島第一原子力発電所

2011/4/22
10:00現在



福島第二MP情報及α・MS情報

単位m/s

単位：μSv/h

日時	No.1	No.2	No.3	No.4	No.5	No.6	No.7	スタック		天候
								風向	風速	
2011/4/22 7:00	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	4.1	雨
2011/4/22 7:10	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.5	-
2011/4/22 7:20	2.4	1.8	2.5	2.0	2.1	2.0	-	北	3.0	-
2011/4/22 7:30	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.3	雨
2011/4/22 7:40	2.4	1.8	2.5	2.1	2.1	2.0	-	北	2.7	-
2011/4/22 7:50	2.4	1.8	2.5	2.0	2.1	2.0	-	北	1.9	-
2011/4/22 8:00	2.4	1.8	2.5	2.0	2.1	2.0	-	北	1.6	雨

福島第二MP情報及αMS情報

単位: $\mu\text{Sv/h}$

単位 m/s

日時	No.1	No.2	No.3	No.4	No.5	No.6	No.7	スタック		天候
								風向	風速	
2011/4/22 0:00	2.4	1.9	2.5	2.1	2.1	2.1	-	南南東	1.6	晴れ
2011/4/22 0:10	2.4	1.9	2.5	2.1	2.1	2.1	-	南南東	2.5	-
2011/4/22 0:20	2.4	1.9	2.5	2.1	2.1	2.1	-	南南東	1.4	-
2011/4/22 0:30	2.4	1.8	2.5	2.1	2.1	2.1	-	南東	1.4	晴れ
2011/4/22 0:40	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	2.3	-
2011/4/22 0:50	2.4	1.8	2.6	2.1	2.1	2.0	-	南	2.5	-
2011/4/22 1:00	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	2.4	晴れ
2011/4/22 1:10	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	3.1	-
2011/4/22 1:20	2.4	1.8	2.5	2.1	2.1	2.1	-	南	2.9	-
2011/4/22 1:30	2.4	1.9	2.6	2.1	2.1	2.1	-	南	3.6	晴れ
2011/4/22 1:40	2.4	1.8	2.6	2.1	2.1	2.1	-	南	3.4	-
2011/4/22 1:50	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.7	-
2011/4/22 2:00	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	2.7	晴れ
2011/4/22 2:10	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	2.5	-
2011/4/22 2:20	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	2.7	-
2011/4/22 2:30	2.4	1.8	2.5	2.1	2.1	2.1	-	南	2.7	晴れ
2011/4/22 2:40	2.4	1.8	2.5	2.1	2.1	2.1	-	南	2.4	-
2011/4/22 2:50	2.4	1.8	2.5	2.1	2.1	2.1	-	南	1.5	-
2011/4/22 3:00	2.4	1.8	2.5	2.1	2.1	2.1	-	南	1.3	晴れ
2011/4/22 3:10	2.4	1.8	2.5	2.1	2.1	2.1	-	南	1.8	-
2011/4/22 3:20	2.4	1.9	2.5	2.1	2.1	2.1	-	南	1.6	-
2011/4/22 3:30	2.4	1.8	2.5	2.1	2.1	2.1	-	南	1.6	晴れ
2011/4/22 3:40	2.4	1.8	2.5	2.1	2.1	2.0	-	南	1.4	-
2011/4/22 3:50	2.4	1.9	2.5	2.1	2.1	2.1	-	南	1.4	-
2011/4/22 4:00	2.4	1.8	2.5	2.1	2.1	2.1	-	東	0.4	晴れ
2011/4/22 4:10	2.4	1.8	2.5	2.1	2.1	2.1	-	南東	0.3	-
2011/4/22 4:20	2.4	1.8	2.5	2.1	2.1	2.1	-	南南西	0.4	-
2011/4/22 4:30	2.4	1.8	2.5	2.1	2.1	2.0	-	西北西	0.0	雨
2011/4/22 4:40	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	0.3	-
2011/4/22 4:50	2.4	1.8	2.5	2.1	2.1	2.1	-	北	1.6	-
2011/4/22 5:00	2.4	1.8	2.6	2.1	2.1	2.1	-	北北東	1.9	雨
2011/4/22 5:10	2.4	1.8	2.5	2.1	2.1	2.1	-	北北東	2.1	-
2011/4/22 5:20	2.4	1.8	2.5	2.1	2.1	2.0	-	北	2.7	-
2011/4/22 5:30	2.4	1.8	2.5	2.1	2.1	2.1	-	北	2.5	晴れ
2011/4/22 5:40	2.4	1.8	2.5	2.1	2.1	2.1	-	北北西	2.7	-
2011/4/22 5:50	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.3	-
2011/4/22 6:00	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.0	雨
2011/4/22 6:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北	3.2	-
2011/4/22 6:20	2.4	1.8	2.5	2.1	2.1	2.1	-	北	3.0	-
2011/4/22 6:30	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.9	雨
2011/4/22 6:40	2.4	1.8	2.5	2.0	2.1	2.0	-	北北西	3.2	-
2011/4/22 6:50	2.4	1.8	2.5	2.1	2.1	2.0	-	北	3.7	-
2011/4/22 7:00	2.4	1.8	2.5	2.1	2.1	2.0	-	北北西	4.1	雨

福島第二MP情報及びMS情報

単位m/s

単位: μ Sv/h

日時	No.1	No.2	No.3	No.4	No.5	No.6	No.7	スタック		天候
								風向	風速	
2011/4/21 22:50	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.5	-
2011/4/21 23:00	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	4.5	晴れ
2011/4/21 23:10	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	3.4	-
2011/4/21 23:20	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	3.0	-
2011/4/21 23:30	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	2.9	晴れ
2011/4/21 23:40	2.4	1.8	2.5	2.1	2.1	2.1	-	南	2.2	-
2011/4/21 23:50	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	1.9	-

福島第二MP情報及びMS情報

単位m/s

単位: $\mu\text{Sv/h}$

日時	No.1	No.2	No.3	No.4	No.5	No.6	No.7	スタック		天候
								風向	風速	
2011/4/21 15:00	2.4	1.9	2.6	2.1	2.1	2.1	-	南東	5.1	晴れ
2011/4/21 15:10	2.4	1.9	2.6	2.1	2.1	2.1	-	南東	5.0	-
2011/4/21 15:20	2.4	1.9	2.6	2.1	2.1	2.1	-	南東	6.0	-
2011/4/21 15:30	2.4	1.9	2.6	2.1	2.1	2.1	-	東南東	5.6	晴れ
2011/4/21 15:40	2.4	1.9	2.6	2.1	2.1	2.1	-	東南東	5.3	-
2011/4/21 15:50	2.4	1.8	2.6	2.1	2.1	2.1	-	東南東	5.2	-
2011/4/21 16:00	2.4	1.9	2.6	2.1	2.1	2.1	-	南東	4.0	晴れ
2011/4/21 16:10	2.4	1.9	2.6	2.1	2.1	2.1	-	東	4.2	-
2011/4/21 16:20	2.4	1.9	2.6	2.1	2.1	2.1	-	東南東	3.9	-
2011/4/21 16:30	2.4	1.9	2.6	2.1	2.1	2.1	-	南東	4.1	晴れ
2011/4/21 16:40	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.6	-
2011/4/21 16:50	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	4.9	-
2011/4/21 17:00	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.6	晴れ
2011/4/21 17:10	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.3	-
2011/4/21 17:20	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	3.9	-
2011/4/21 17:30	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	3.6	晴れ
2011/4/21 17:40	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	3.5	-
2011/4/21 17:50	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	3.7	-
2011/4/21 18:00	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	3.7	晴れ
2011/4/21 18:10	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.0	-
2011/4/21 18:20	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.5	-
2011/4/21 18:30	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	3.8	晴れ
2011/4/21 18:40	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	4.0	-
2011/4/21 18:50	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	4.1	-
2011/4/21 19:00	2.4	1.8	2.5	2.1	2.1	2.1	-	南南東	3.2	晴れ
2011/4/21 19:10	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	3.1	-
2011/4/21 19:20	2.4	1.8	2.6	2.1	2.1	2.1	-	南	1.9	-
2011/4/21 19:30	2.4	1.9	2.6	2.1	2.1	2.1	-	南	1.1	晴れ
2011/4/21 19:40	2.4	1.9	2.6	2.1	2.1	2.1	-	南	3.2	-
2011/4/21 19:50	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	2.5	-
2011/4/21 20:00	2.4	1.8	2.6	2.1	2.1	2.1	-	南	3.3	晴れ
2011/4/21 20:10	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	2.9	-
2011/4/21 20:20	2.4	1.9	2.6	2.1	2.1	2.1	-	南	3.2	-
2011/4/21 20:30	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	2.6	晴れ
2011/4/21 20:40	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	1.7	-
2011/4/21 20:50	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.9	-
2011/4/21 21:00	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.8	晴れ
2011/4/21 21:10	2.4	1.8	2.6	2.1	2.1	2.1	-	南	1.9	-
2011/4/21 21:20	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.6	-
2011/4/21 21:30	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.8	晴れ
2011/4/21 21:40	2.4	1.8	2.6	2.1	2.1	2.1	-	南	3.0	-
2011/4/21 21:50	2.4	1.9	2.6	2.1	2.1	2.1	-	南	3.1	-
2011/4/21 22:00	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.9	晴れ
2011/4/21 22:10	2.4	1.8	2.6	2.1	2.1	2.1	-	南	2.8	-
2011/4/21 22:20	2.4	1.9	2.6	2.1	2.1	2.1	-	南南東	1.9	-
2011/4/21 22:30	2.4	1.9	2.5	2.1	2.1	2.1	-	南南東	3.7	晴れ
2011/4/21 22:40	2.4	1.8	2.6	2.1	2.1	2.1	-	南南東	4.1	-

福島第二原子力発電所

2011/4/22
10:00現在

MP1: $2.4 \mu\text{Sv/h}$ (22日 8:00時点)
(参考値: $0.035 \sim 0.054 \mu\text{Sv/h}$)

MP2: $1.8 \mu\text{Sv/h}$ (22日 8:00時点)
(参考値: $0.042 \sim 0.062 \mu\text{Sv/h}$)

MP3: $2.5 \mu\text{Sv/h}$ (22日 8:00時点)
(参考値: $0.036 \sim 0.052 \mu\text{Sv/h}$)

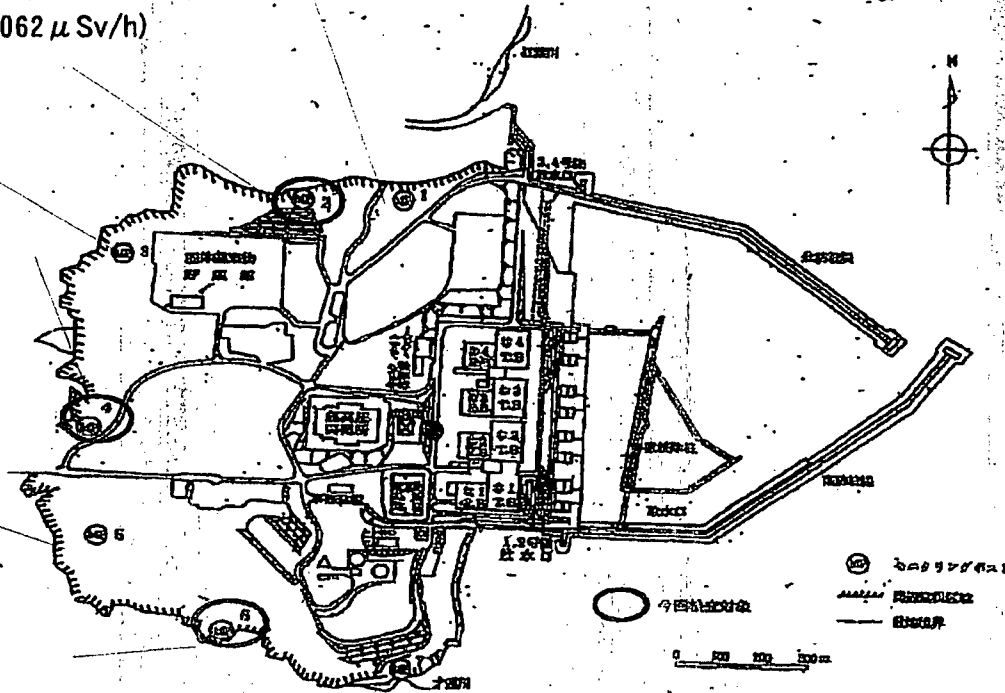
MP4: $2.0 \mu\text{Sv/h}$ (22日 8:00時点)
(参考値: $0.036 \sim 0.052 \mu\text{Sv/h}$)

MP5: $2.1 \mu\text{Sv/h}$ (22日 8:00時点)
(参考値: $0.041 \sim 0.058 \mu\text{Sv/h}$)

MP6: $2.0 \mu\text{Sv/h}$ (22日 8:00時点)
(参考値: $0.044 \sim 0.063 \mu\text{Sv/h}$)

MP7: $1.5 \mu\text{Sv/h}$ (21日 9:00時点)
(参考値: $0.043 \sim 0.062 \mu\text{Sv/h}$)

モニタリングポスト配設図 2F



添付資料 (2)

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	4月21日											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.023~0.027	北海道電力	泊発電所	0.033	0.033	0.033	0.034	0.035	0.035	0.034	0.033	0.033	0.033	点検中	点検中
0.024~0.060	東北電力	女川原子力発電所	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28
0.012~0.080		東通原子力発電所	0.016	0.016	0.017	0.016	0.016	0.017	0.016	0.016	0.016	0.016	0.016	0.016
0.033~0.050	東京電力	福島第一原子力発電所	※ 別途公表済											
0.036~0.052		福島第二原子力発電所	※ 別途公表済											
0.011~0.159		柏崎刈羽原子力発電所	0.085	0.084	0.085	0.086	0.085	0.085	0.085	0.085	0.085	0.085	0.084	0.085
0.036~0.053	日本原子力発電	東海第二発電所	0.337	0.337	0.334	0.335	0.336	0.333	0.334	0.334	0.336	0.337	0.331	0.332
0.039~0.110		敦賀発電所	0.074	0.072	0.073	0.073	0.072	0.072	0.072	0.073	0.072	0.072	0.073	0.073
0.084~0.108	中部電力	浜岡原子力発電所	0.043	0.042	0.042	0.043	0.042	0.042	0.043	0.043	0.043	0.043	0.042	0.042
0.0207~0.132	北陸電力	志賀原子力発電所	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.033	0.032	0.033	0.032
0.028~0.130	中国電力	島根原子力発電所	0.029	0.031	0.029	0.030	0.031	0.030	0.029	0.030	0.031	0.030	0.030	0.029
0.070~0.077	関西電力	美浜発電所	0.071	0.073	0.072	0.072	0.073	0.072	0.072	0.072	0.072	0.073	0.072	0.075
0.045~0.047		高浜発電所	0.042	0.042	0.042	0.042	0.041	0.042	0.042	0.043	0.044	0.044	0.044	0.044
0.036~0.040		大飯発電所	0.035	0.036	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.036	0.036	0.036
0.011~0.080	四国電力	伊方発電所	0.014	0.014	0.014	0.013	0.014	0.014	0.014	0.014	0.014	0.014	0.014	0.013
0.023~0.087	九州電力	玄海原子力発電所	0.026	0.027	0.025	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026
0.034~0.120		川内原子力発電所	0.038	0.038	0.040	0.038	0.039	0.038	0.035	0.034	0.040	0.042	0.038	0.039
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.016	0.015	0.016	0.015	0.016
0.009~0.071		六ヶ所 埋設事業所	0.022	0.022	0.022	0.023	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022

注) 中部電力(株)からの4月1日12時データより、宇宙線寄与分を加算しない値で報告を受けています。

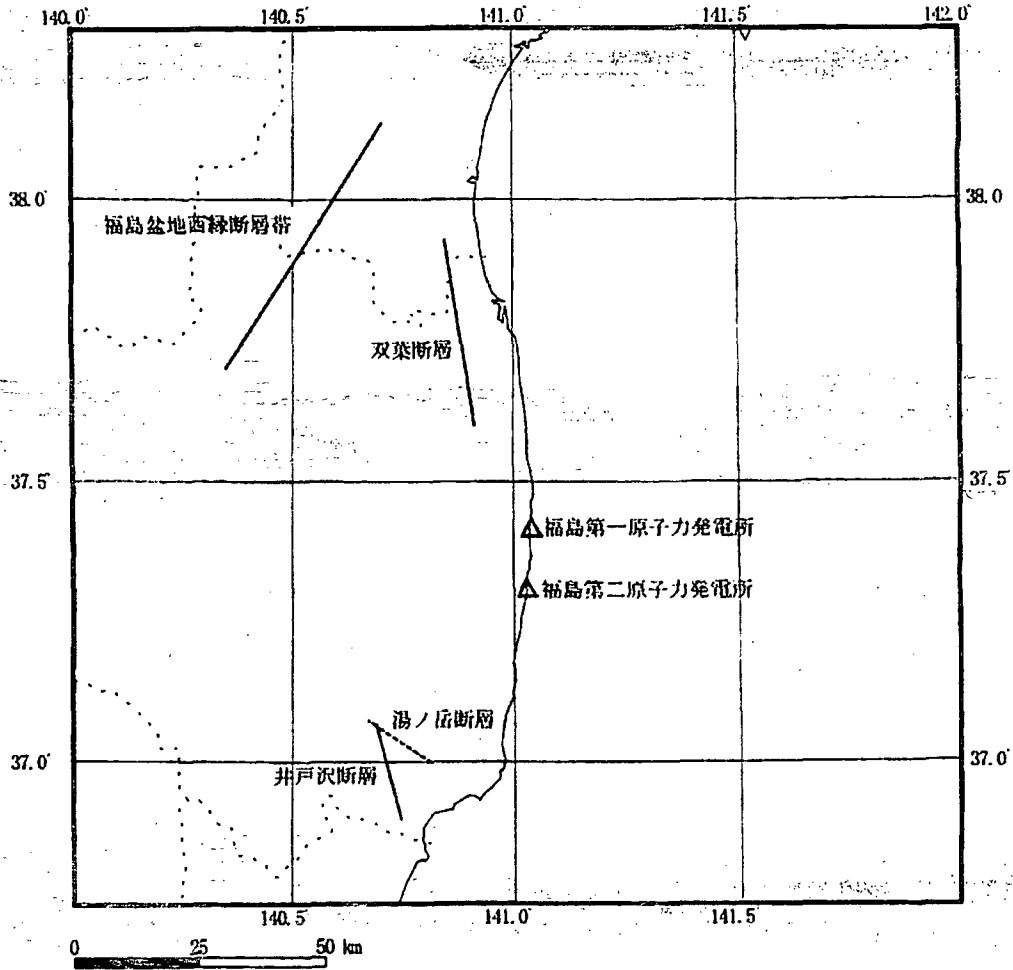
通常の平常値の範囲	会社名	発電所名	4月21日											
			12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0.023~0.027	北海道電力	泊発電所	点検中	点検中	点検中	点検中	0.031	0.031	0.032	0.032	0.031	0.032		
0.024~0.060	東北電力	女川原子力発電所	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28	0.28		
0.012~0.080		東通原子力発電所	0.016	0.016	0.017	0.017	0.017	0.016	0.016	0.017	0.017	0.016		
0.033~0.050	東京電力	福島第一原子力発電所	※ 別途公表済											
0.036~0.052		福島第二原子力発電所	※ 別途公表済											
0.011~0.159		柏崎刈羽原子力発電所	0.085	0.085	0.085	0.085	0.085	0.084	0.085	0.085	0.085	0.085	0.085	
0.036~0.053	日本原子力発電	東海第二発電所	0.336	0.339	0.336	0.335	0.334	0.333	0.335	0.332	0.331	0.334		
0.039~0.110		敦賀発電所	0.072	0.073	0.073	0.074	0.073	0.073	0.075	0.073	0.073	0.074		
0.084~0.108	中部電力	浜岡原子力発電所	0.042	0.043	0.043	0.042	0.042	0.043	0.043	0.042	0.043	0.043		
0.0207~0.132	北陸電力	志賀原子力発電所	0.033	0.033	0.032	0.033	0.033	0.032	0.033	0.033	0.033	0.033		
0.028~0.130	中国電力	島根原子力発電所	0.030	0.030	0.029	0.030	0.029	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	0.074	0.075	0.074	0.072	0.072	0.074	0.073	0.073	0.075		
0.045~0.047		高浜発電所	0.044	0.044	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043		
0.036~0.040		大飯発電所	0.035	0.034	0.035	0.035	0.034	0.035	0.036	0.035	0.034	0.034		
0.011~0.080	四国電力	伊方発電所	0.013	0.013	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	0.025	0.026	0.026	0.026	0.026	0.026	0.027	0.027	0.026	0.026		
0.034~0.120		川内原子力発電所	0.037	0.037	0.037	0.036	0.038	0.038	0.038	0.038	0.035	0.037		
0.009~0.069	日本原燃(株)	六ヶ所 再処理事業所	0.016	0.016	0.015	0.016	0.017	0.016	0.016	0.016	0.016	0.016		
0.009~0.071		六ヶ所 埋設事業所	0.022	0.022	0.021	0.022	0.022	0.023	0.022	0.022	0.022	0.022		

注) 中部電力(株)からの4月1日12時データより、宇宙線寄与分を加算しない値で報告を受けています。

4月21日(木) 21時迄

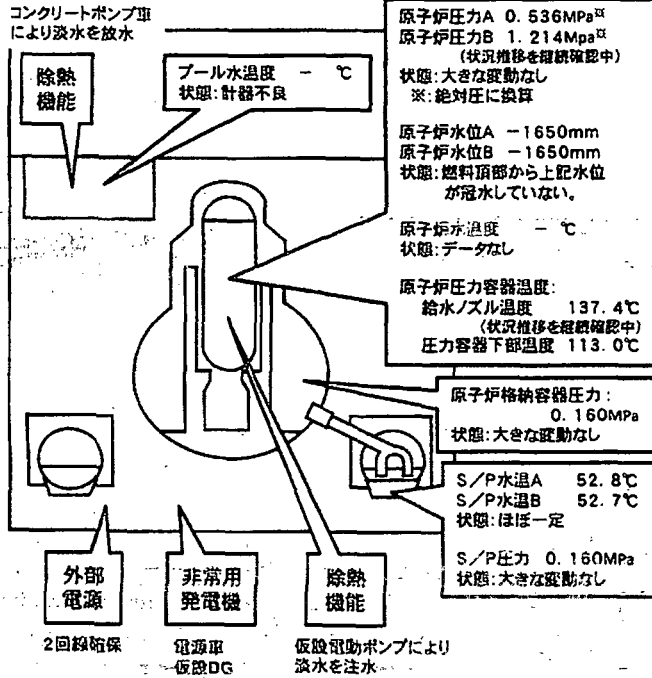
耐震設計上考慮している各断層の位置

(湯ノ岳断層については、耐震設計上考慮する断層としていないため波線で表示)



※各断層の位置は、福島第一原子炉設置変更許可申請書（6号原子炉施設の変更、平成 22 年 8 月一部補正）による。

福島第一原子力発電所1号機の状況 (4月22日 7:00現在)



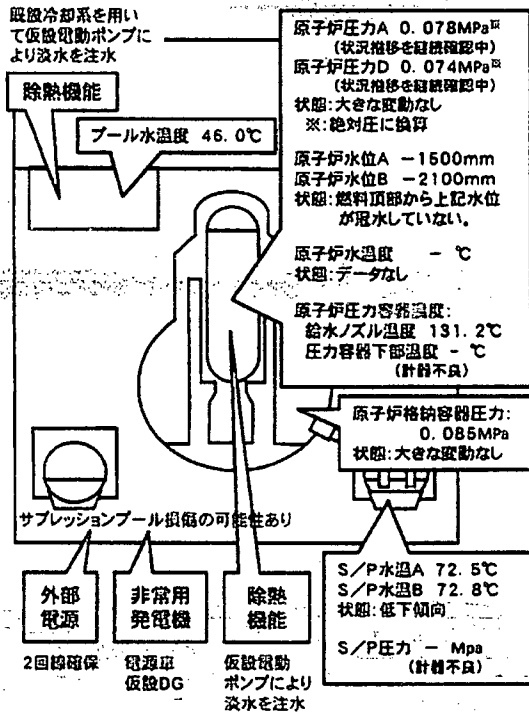
主要な出来事

- 3/11 14:46 運転中、地震により自動停止
- 3/11 15:42 10条通報(全交流電源喪失)
- 3/11 16:36 15条事象の発生(非常用炉心冷却装置注水不能)
- 3/12 01:20 15条事象の発生(格納容器圧力異常上昇)
- 3/12 10:17 ベント開始
- 3/12 15:36 爆発音
- 3/12 20:20 海水及びホウ酸の炉心注水開始
- 3/23 02:33 消火系に加え、給水系を使うことにより炉心への注水量増量(2m³/h → 18m³/h)。9:00に給水系のみに切替(18m³/h → 11m³/h)
- 3/24 11:30 中央制御室の照明復帰
- 3/25 15:37 淡水の炉心注水開始
- 3/29 08:32 仮設電動ポンプでの炉心注水に切替
- 3/31 12:00~4/2 15:26 復水貯蔵タンク(CST)からサブプレッションプール水サージタンク(SPT)へ移送開始
- 3/31 13:03~16:04 コンクリートポンプ車による放水(淡水)
- 4/3 12:02 仮設電動ポンプの電源を仮設電源から外部電源に切替
- 4/3 13:55 復水器からCSTへ移送開始
- 4/6 22:30 原子炉格納容器への密塞封入操作開始
- 4/7 01:31 原子炉格納容器への密塞封入開始を確認
- 4/9 04:30 原子炉格納容器への密塞封入を高純度密塞発生装置に切替
- 4/10 09:30 復水器からCSTへの移送完了
- 4/11 17:16頃 地震発生(福島県浜通り)により外部電源が喪失するとともに炉心注水及び原子炉格納容器への密塞封入停止
- 4/11 17:56 外部電源復帰
- 4/11 18:04 炉心注水再開
- 4/11 23:19 原子炉格納容器への密塞封入操作開始
- 4/11 23:34 原子炉格納容器への密塞封入開始を確認
- 4/17 16:00~17:30 原子炉建屋において、無人ロボットによる状況確認等を実施
- 4/18 11:50~12:12 炉心注水に使用しているホースを新品に交換するため注水ポンプを停止
- 4/19 10:23 1,2号機と3,4号機間の電源連携強化作業が完了

現状: プール及び炉心への淡水注入を継続

福島第一原子力発電所2号機の状況 (4月22日 7:00現在)

主要な出来事1/2



- 3/11 14:46 運転中、地震により自動停止
- 3/11 15:42 10歳通報(全交流電源喪失)
- 3/11 16:36 15歳事象の発生(非常用炉心冷却装置注水不能)
- 3/13 11:00 ベント開始
- 3/14 13:25 15歳事象の発生(原子炉冷却機能喪失)
- 3/14 16:34 海水の炉心注水開始
- 3/14 22:50 15歳事象の発生(格納容器圧力異常上昇)
- 3/15 00:02 ベント開始
- 3/15 06:10 爆発音発生
- 3/15 06:20頃 サブプレッションプール(圧力抑制室)損傷の可能性あり
- 3/20 15:05~17:20 使用済燃料プール冷却系(FPC)から使用済燃料プール(SFP)に海水を注水
- 3/20 15:46 パワーセンター受電
- 3/21 18:22 白煙が発生。22日7:11にほとんど見えない程度に減少
- 3/22 16:07 SFPに海水を注水
- 3/25 10:30~12:19 FPCからSFPに海水を注水
- 3/26 10:10 淡水の炉心注水開始
- 3/26 16:46 中央制御室の照明復旧
- 3/27 18:31 仮設電動ポンプでの炉心注水に切替
- 3/29 16:30~18:25 仮設電動ポンプでの淡水のSFP注水に切替
- 3/29 16:45~4/1 11:50 復水貯蔵タンク(CST)からサブプレッションプール水サーンタンク(SPT)へ移送
- 3/30 09:25~23:50 SFPへ注水していたところ、仮設電動ポンプの不調を確認(9:45)。消防ポンプに切替えて注水するが、ホース破損が確認(12:47,13:10)されたため、注水中断。19:05に淡水注水を再開
- 4/1 14:56~17:05 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/2 09:30頃 取水口付近のピットに1000m³/hを超える水が溜まっていること及びピット側面から、水が流出していることを確認
- 4/2 17:10 復水器からCSTへ移送開始
- 4/3 12:12 仮設電動ポンプの電源を仮設電源から外部電源に切替
- 4/3 13:47~14:30 ピット内に、おがくず20袋、高分子吸収材80袋、殺菌処理した新聞紙3袋を投入
- 4/4 07:08~07:11 トレーサー(入浴剤)約13gを海水配管トレンチ立坑から投入
- 4/4 11:05~13:37 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/5 14:15 トレーサーが立坑周辺の隙間から海へ流出していることを確認。15:07から凝固剤の注入開始
- 4/6 05:39頃 ピット側面からの水の流出が止まったことを確認
- 4/7 13:29~14:34 FPCからSFPに仮設電動ポンプにより淡水注水
- 4/9 13:10 復水器からCSTへの移送完了
- 4/10 10:37~12:38 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/11 17:16頃 地震発生(福島県浜通り)により外部電源が喪失するとともに炉心注水停止
- 4/11 17:56 外部電源復旧
- 4/11 18:04 炉心注水再開

現状: プール及び炉心への淡水注入を継続

主要な出来事2/2

- 4/12 19:35~4/13 17:04 タービン建屋トレンチから復水器への移送
- 4/13 11:00 漏えい確認等のため一時停止
- 4/13 13:15~14:55 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/16 10:13~11:54 FPCからSFPへ仮設電動ポンプにより淡水注水(11:19頃発生した地震の影響で、11:39に仮設電動ポンプ停止。11:54にスキマーレベルの上昇の確認により淡水を確認。)
- 4/16 11:19頃 地震発生(茨城県南部)
- 4/18 13:42~ 原子炉建屋において、無人ロボットによる状況確認等を実施
- 4/18 ~12:13~12:37 炉心注水に使用しているホースを新品に交換するため注水ポンプを停止
- 4/18 9:30~17:40 電源トレンチ内に止水剤(水ガラス)を注入
- 4/19 8:00~15:30 電源トレンチ内に止水剤(水ガラス)を注入
- 4/19 10:08 タービン建屋トレンチから集中腐食処理施設へ高線量滞留水の移送開始
- 4/19 10:23 1,2号機と3,4号機間の電源運搬強化作業が完了
- 4/19 16:08~17:28 FPCからSFPへ仮設電動ポンプにより淡水注水

福島第一原子力発電所3号機の状況 (4月22日 7:00現在)

主要な出来事

3/11 14:46 運転中、地震により自動停止
 3/11 15:42 10条通報(全交流電源喪失)
 3/13 05:10 15条事故の発生(非常用炉心冷却装置注水不能)
 3/13 08:41 ベント開始
 3/13 13:12 海水及びボウロ酸の炉心注水開始
 3/14 05:20 ベント開始
 3/14 07:44 15条事故の発生(格納容器圧力異常上昇)
 3/14 11:01 爆発音
 3/16 08:30頃 白煙が発生
 3/17 09:48~10:01 自衛隊ヘリによる放水
 3/17 19:05~19:15 警報の高圧放水車による放水
 3/17 19:35~20:09 自衛隊の消防車により放水
 3/18 14時前~14:38 自衛隊消防車6台による地上放水~14:45 米軍消防車1台による地上放水
 3/19 0:30~01:10 東京消防庁ハイパーレスキュー隊放水
 3/19 14:10~3/20 03:40 東京消防庁ハイパーレスキュー隊放水
 3/20 11:00 格納容器内圧力が上昇(320kPa)。その後、低下
 3/20 21:36~3/21 03:58 東京消防庁ハイパーレスキュー隊放水
 3/21 15:55頃 灰色がかった煙が発生。17:55に煙が収まっていることを確認
 3/22 15:10~16:00 東京消防庁ハイパーレスキュー隊及び大阪市消防局放水
 3/22 22:46 中央制御室の照明復旧
 3/23 11:03-13:20 使用済燃料プール冷却系(FPC)から使用済燃料プール(SFP)に海水を注水
 3/23 16:20頃 黒煙が発生。23:30頃及び3/24 04:50に煙の発生が止まっていることを確認
 3/24 05:35~16:05 FPCからSFPに海水を注水
 3/25 13:28~16:00 東京消防庁の支援を受けた川崎市消防局による放水
 3/25 18:02 淡水の炉心注水開始
 3/27 12:34~14:36 コンクリートポンプ車による放水(海水)
 3/28 17:40~3/31 08:40頃 海水貯留タンク(CST)からサブプレッションプール水サージタンク(SPT)へ移送
 3/28 20:30 仮設電動ポンプでの炉心注水に切替
 4/3 12:18 仮設電動ポンプの電源を仮設電源から外部電源に切替
 4/11 17:16頃 地震発生(福島県浜通り)による1,2号機の外部電源喪失に伴い炉心注水停止
 4/11 18:04 1,2号機の外部電源復旧(4/11 17:56)により、炉心注水再開
 4/17 11:30~14:00 原子炉建屋において、無人ロボットによる状況確認等を実施
 4/18 12:38~13:05 炉心注水に使用しているホースを新品に交換するため注水ポンプを停止
 4/19 10:23 1,2号機と3,4号機間の電源連携強化作業が完了

現状: プール及び炉心への淡水注入を継続

<コンクリートポンプ車による放水(淡水)>
 3/29 14:17~18:18, 3/31 16:30~19:33, 4/2 09:52~12:54, 4/4 17:03~19:19, 4/7 06:53~8:53
 4/8 17:06~20:00, 4/10 17:15~19:15, 4/12 16:26~17:16, 4/14 15:56~16:32, 4/18 14:17~15:02

福島第一原子力発電所4号機の状況 (4月22日 7:00現在)

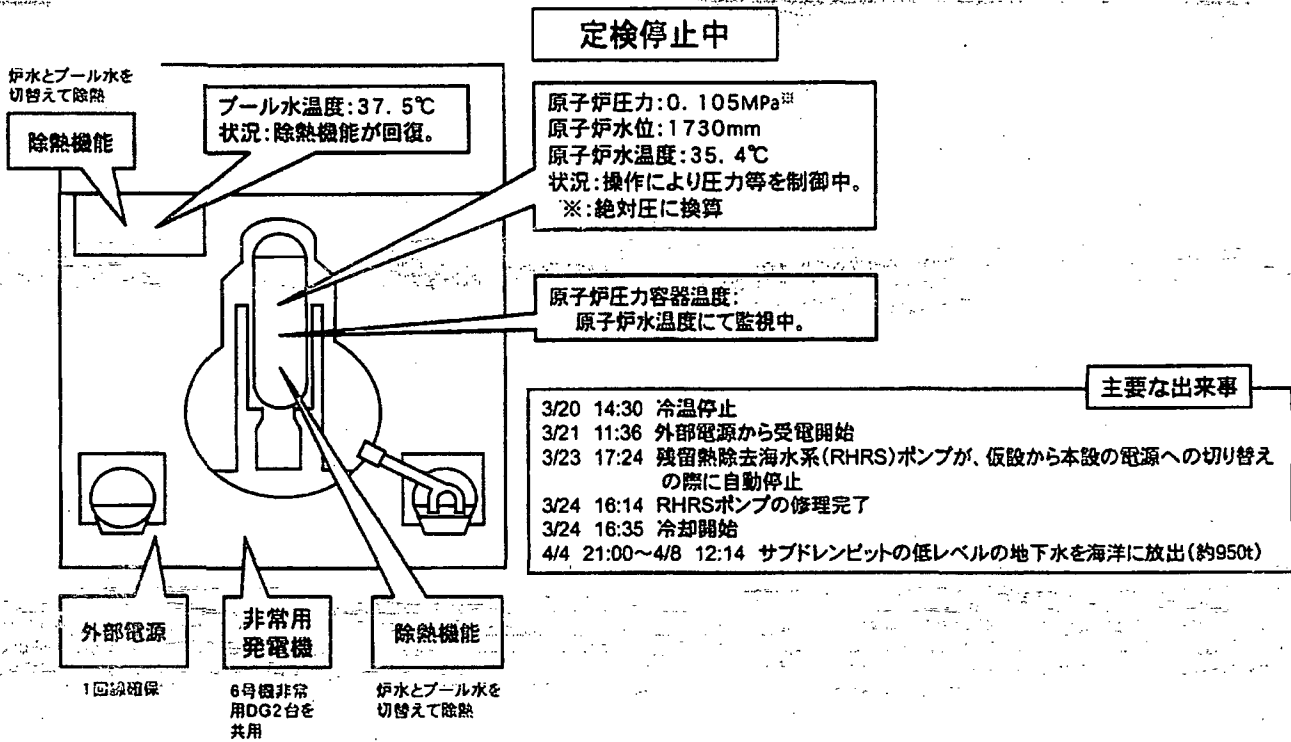
主要な出来事

地震発生時、定期検査により停止中
 3/14 04:08 使用済燃料プール温度84℃
 3/15 06:14 4Fの壁が一部破損の確認
 3/15 09:38 3階部分で火災(12:25鎮火)
 3/16 05:45 4号機で火災。事業者によると現場での火は確認できず(06:15)
 3/20 08:21~09:40 自衛隊による使用済燃料プール(SFP)への放水
 3/20 18:30頃 ~ 19:46 自衛隊によるSFPへの放水
 3/21 06:37~08:41 自衛隊によるSFPへの放水
 3/21 15:00頃 パワーセンターまでのケーブル敷設完了
 3/22 10:35 パワーセンター受電
<コンクリートポンプ車による放水(海水)>
 3/22 17:17~20:32, 3/23 10:00~13:02, 3/24 14:36~17:30, 3/25 19:05~22:07,
 3/27 16:55~19:25
 3/25 06:05~10:20 使用済燃料プール冷却系(FPC)からSFPに海水を注入
 3/29 11:50 中央制御室の照明復旧
 4/12 12:00~13:04 SFP内の水のサンプリング作業を実施
 4/19 10:23 1,2号機と3,4号機間の電源連携強化作業が完了

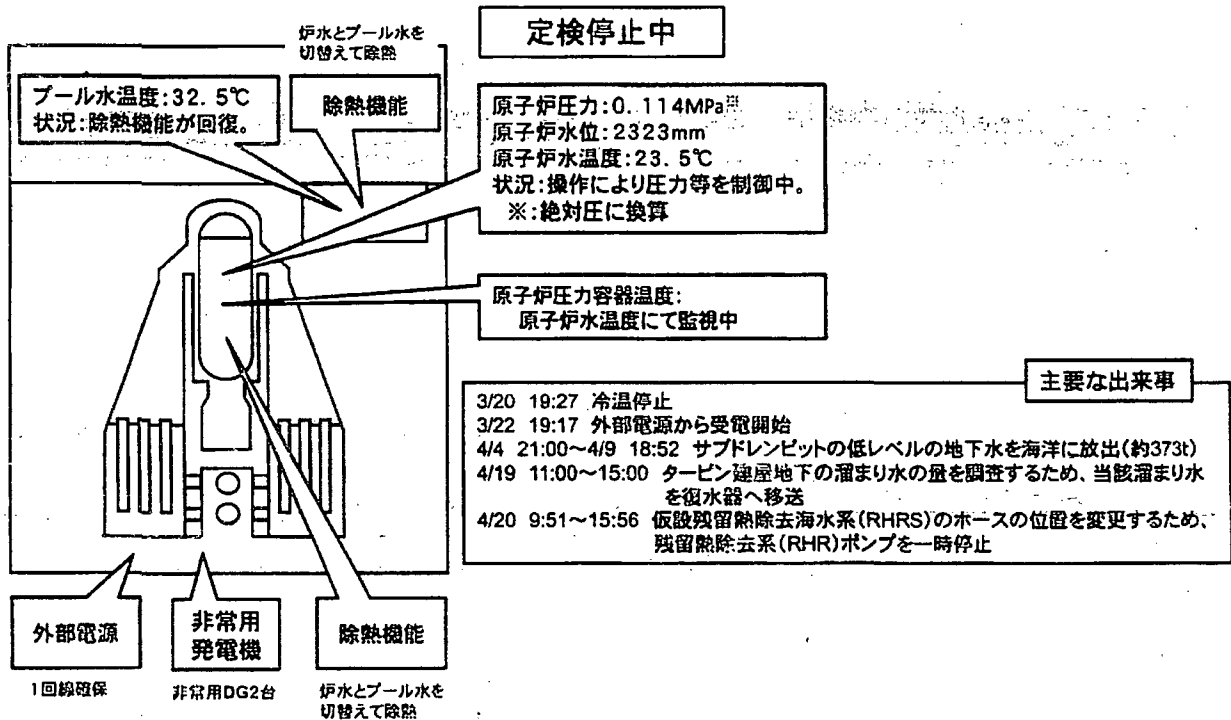
現状: 原子炉圧力容器に燃料体が存在しない プールへの淡水注入を継続

<コンクリートポンプ車による放水(淡水)>
 3/30 14:04~18:33, 4/1 08:28~14:14, 4/3 17:14~22:16, 4/5 17:35~18:22,
 4/7 18:23~19:40, 4/9 17:07~19:24, 4/13 0:30~6:57, 4/15 14:30~18:29,
 4/17 17:39~21:22, 4/19 10:17~11:35, 4/20 17:08~20:31, 4/21 17:14~21:20

福島第一原子力発電所5号機の状況 (4月22日 7:00現在)



福島第一原子力発電所6号機の状況 (4月22日 7:00現在)



福島第一原子力発電所 プラント関連パラメータ (水位・圧力・温度などのデータ)

4月22日 7:00 現在

【注記事項】
各計測器については、地震やその他の事故進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮したうえで、複数の計測器から得られる情報を使用して変化の傾向にも留意して総合的に判断している。

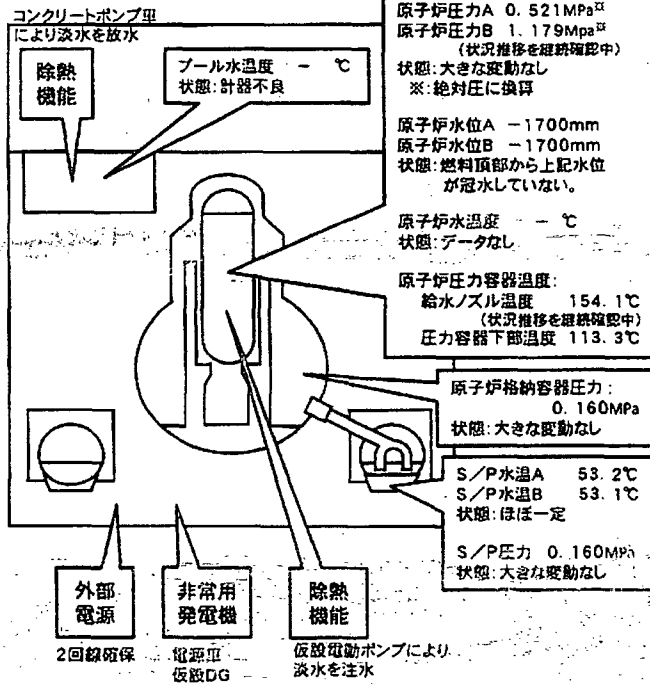
号機	1号機	2号機	3号機	4号機	5号機	6号機
原子炉注水状況	給水ポンプを用いた汲水注入中。 流量 6m³/h (4/3 17:30) 仮設計器	消火系ポンプを用いた汲水注入中。 流量 7m³/h (4/21 17:00) 仮設計器	消火系ポンプを用いた汲水注入中。 流量 6.8m³/h (4/21 11:25) 仮設計器	※2 (全燃料取出中につき監視対象外)	※2 (原子炉の除熱機能が維持されており、注水不要)	
原子炉水位	燃料域A: -1650mm 燃料域B: -1650mm (4/22 6:00 現在)	燃料域A: -1500mm 燃料域B: -2100mm (4/22 6:00 現在)	燃料域A: -1350mm 燃料域B: -2250mm (4/22 6:00 現在)		停止域 1730mm (4/22 7:00 現在)	停止域 2323mm (4/22 7:00 現在)
原子炉圧力	A系 0.435MPa g (A) ※3 B系 1.113MPa g (B) ※3 (4/22 6:00 現在)	A系 0.023MPa g (A) ※3 B系 0.027MPa g (D) ※3 (4/22 6:00 現在)	A系 0.047MPa g (A) ※3 B系 0.057MPa g (C) ※3 (4/22 6:00 現在)		0.004MPa g (4/22 7:00 現在)	0.013MPa g (4/22 7:00 現在)
原子炉水温度	(系統流量がないため採取不可)				35.4℃ (4/22 7:00 現在)	23.5℃ (4/22 7:00 現在)
原子炉圧力容器まわりの温度	給水入口温度: 137.4℃ ※3 圧力容器下部温度: 113.0℃ (4/22 6:00 現在)	給水入口温度: 131.2℃ 圧力容器下部温度: ※1 (4/22 6:00 現在)	給水入口温度: 93.3℃ ※3 圧力容器下部温度: 110.4℃ (4/22 6:00 現在)		※2 (原子炉水温度にて監視中)	
D/W・S/C 圧力	D/W 0.160MPa abs S/C 0.160MPa abs (4/22 6:00 現在)	D/W 0.085MPa abs S/C ※1 (4/22 6:00 現在)	D/W 0.1055MPa abs S/C 0.1780MPa abs (4/22 6:00 現在)			
D/W 秀団気温度	RPVペロ-シール: 116.8℃ HVH戻り: 96.4℃ (4/22 6:00 現在)	RPVペロ-シール: ※1 HVH戻り: 122℃ (4/22 6:00 現在)	RPVペロ-シール: 138.6℃ ※3 HVH戻り: 63.7℃ (4/22 6:00 現在)			
CAMS放射線モニタ	D/W (A) ※1 (B) ※1 S/C (A) 9.94×10 ⁻¹ Sv/h ※3 (B) 1.85×10 ⁰ Sv/h ※3 (4/22 6:00 現在)	D/W (A) 2.43×10 ⁻¹ Sv/h (B) 2.76×10 ⁻¹ Sv/h S/C (A) 5.22×10 ⁻¹ Sv/h ※3 (B) 1.37×10 ⁰ Sv/h ※3 (4/22 6:00 現在)	D/W (A) 1.52×10 ⁻¹ Sv/h (B) 1.14×10 ⁻¹ Sv/h S/C (A) 5.70×10 ⁻¹ Sv/h ※3 (B) 5.32×10 ⁻¹ Sv/h ※3 (4/22 6:00 現在)		※2 (原子炉の除熱機能が維持されているため監視対象外)	
S/C 温度	A系: 52.8℃ B系: 52.7℃ (4/22 6:00 現在)	A系: 72.5℃ B系: 72.8℃ (4/22 6:00 現在)	A系: 42.3℃ B系: 42.3℃ (4/22 6:00 現在)			
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)			
D/W 実際使用圧力	0.427MPa g (0.528MPa abs)	0.427MPa g (0.528MPa abs)	0.427MPa g (0.528MPa abs)			
使用済燃料プール温度	※1	46.0℃ (4/22 6:00 現在)	※1	※1	37.5℃ (4/22 7:00 現在)	32.5℃ (4/22 7:00 現在)
FPC 貯蔵タンク水位	4500mm (4/22 6:00 現在)	4300mm (4/22 6:00 現在)	※1	4200mm (4/22 6:00 現在)	※2	
電源	外部電源受電中 (P/C2C)		外部電源受電中 (P/C4D)		外部電源受電中	
その他情報				共用プール: 29℃程度 (4/21 7:10)	5u: SHCモード (4/21 19:14~)	6u: SHCモード (4/21 9:45~)

圧力換算 ゲージ圧(MPa g) = 絶対圧(MPa abs) - 大気圧(標準大気圧 0.1013 MPa)
絶対圧(MPa abs) = ゲージ圧(MPa g) + 大気圧(標準大気圧 0.1013 MPa)

※1: 計器不良
※2: データ採取対象外
※3: 状況推移を継続確認中

福島第一原子力発電所1号機の状況 (4月20日 13:00現在)

主要な出来事

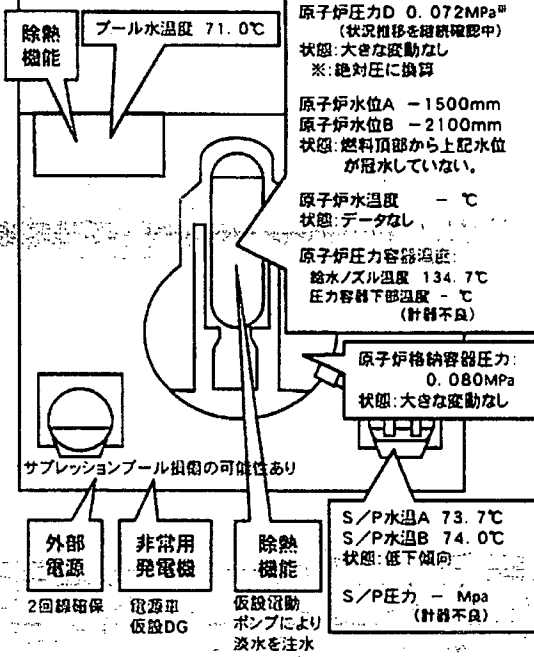


- 3/11 14:46 運転中、地震により自動停止
- 3/11 15:42 10条通報(全交流電源喪失)
- 3/11 16:36 15条事象の発生(非常用炉心冷却装置注水不能)
- 3/12 01:20 15条事象の発生(格納容器圧力異常上昇)
- 3/12 10:17 ベント開始
- 3/12 15:36 爆発音
- 3/12 20:20 海水及びホウ酸の炉心注水開始
- 3/23 02:33 消火系に加え、給水系を使うことにより炉心への注水量増量
(2m³/h → 18m³/h)。9:00に給水系のみに切替(18m³/h → 11m³/h)
- 3/24 11:30 中央制御室の照明復帰
- 3/25 15:37 淡水の炉心注水開始
- 3/29 08:32 仮設電動ポンプでの炉心注水に切替
- 3/31 12:00~4/2 15:26 復水貯蔵タンク(CST)からサブプレッションプール水サージタンク(SPT)へ移送開始
- 3/31 13:03 ~16:04 コンクリートポンプ車による放水(淡水)
- 4/3 12:02 仮設電動ポンプの電源を仮設電源から外部電源に切替
- 4/3 13:55 復水器からCSTへ移送開始
- 4/6 22:30 原子炉格納容器への窒素封入操作開始
- 4/7 01:31 原子炉格納容器への窒素封入開始を確認
- 4/9 04:10 原子炉格納容器への窒素封入を高純度窒素発生装置に切替
- 4/10 09:30 復水器からCSTへの移送完了
- 4/11 17:16頃 地震発生(福島県浜通り)により外部電源が喪失するとともに炉心注水及び原子炉格納容器への窒素封入停止
- 4/11 17:56 外部電源復旧
- 4/11 18:04 炉心注水再開
- 4/11 23:19 原子炉格納容器への窒素封入操作開始
- 4/11 23:34 原子炉格納容器への窒素封入開始を確認
- 4/17 16:00~17:30 原子炉建屋において、無人ロボットによる状況確認等を実施
- 4/18 11:50~12:12 炉心注水に使用しているホースを新品に交換するため注水ポンプを停止
- 4/19~10:23 12号機と3,4号機間の電源連携強化作業が完了

現状: プール及び炉心への淡水注入を継続

福島第一原子力発電所2号機の状況 (4月20日 13:00現在)

母線冷却系を用いて
仮設電動ポンプにより
淡水注水



主要な出来事1/2

- 3/11 14:46 運転中、地震により自動停止
- 3/11 15:42 10条過程(全交流電源喪失)
- 3/11 16:36 15条事故の発生(非常用炉心冷却装置注水不能)
- 3/13 11:00 ベント開始
- 3/14 13:25 15条事故の発生(原子炉冷却機能喪失)
- 3/14 16:34 海水の炉心注水開始
- 3/14 22:50 15条事故の発生(格納容器圧力異常上昇)
- 3/15 00:02 ベント開始
- 3/15 06:10 爆発音発生
- 3/15 06:20頃 サプレッションプール(圧力抑制室)損傷の可能性あり
- 3/20 15:05~17:50 使用済燃料プール冷却系(FPC)から使用済燃料プール(SFP)に海水を注水
- 3/20 15:46 パワーセンター受電
- 3/21 18:22 白煙が発生。22日7:11にほとんど見えない程度に減少
- 3/22 16:07 SFPに海水を注水
- 3/25 10:30~12:19 FPCからSFPに海水を注水
- 3/26 10:10 淡水の炉心注水開始
- 3/26 16:46 中央制御室の照明復旧
- 3/27 18:31 仮設電動ポンプでの炉心注水に切替
- 3/29 16:30~18:25 仮設電動ポンプでの淡水のSFP注水に切替
- 3/29 16:45~4/1 11:50 復水貯蔵タンク(CST)からサブプレッションプール水サージタンク(SPT)へ移送
- 3/30 09:25~23:50 SFPへ注水していたところ、仮設電動ポンプの不調を確認(9:45)。消防ポンプに切替えて注水するが、ホース破損が確認(12:47,13:10)されたため、注水中断、19:05に淡水注水を再開
- 4/1 14:56~17:05 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/2 09:30頃 取水口付近のピットに1000m³/hを超える水が溜まっていること及びピット側面から、水が流出していることを確認
- 4/2 17:10 復水器からCSTへ移送開始
- 4/3 12:12 仮設電動ポンプの電源を仮設電源から外部電源に切替
- 4/3 13:47~14:30 ピット内に、おがくず20袋、高分子吸収材80袋、遮断処理した新聞紙3袋を投入
- 4/4 07:08~07:11 トレーサー(入溶剤)約13kgを海水配管トレンチ立坑から投入
- 4/4 11:05~13:37 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/5 14:15 トレーサーが立坑周辺の隙間から海へ流出していることを確認。15:07から凝固剤の注入開始
- 4/6 05:38頃 ピット側面からの水の流出が止まったことを確認
- 4/7 13:29~14:34 FPCからSFPに仮設電動ポンプにより淡水注水
- 4/9 13:10 復水器からCSTへの移送完了
- 4/10 10:37~12:38 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/11 17:16頃 地震発生(福島県浜通り)により外部電源が喪失するとともに炉心注水停止
- 4/11 17:56 外部電源復旧
- 4/11 18:04 炉心注水再開

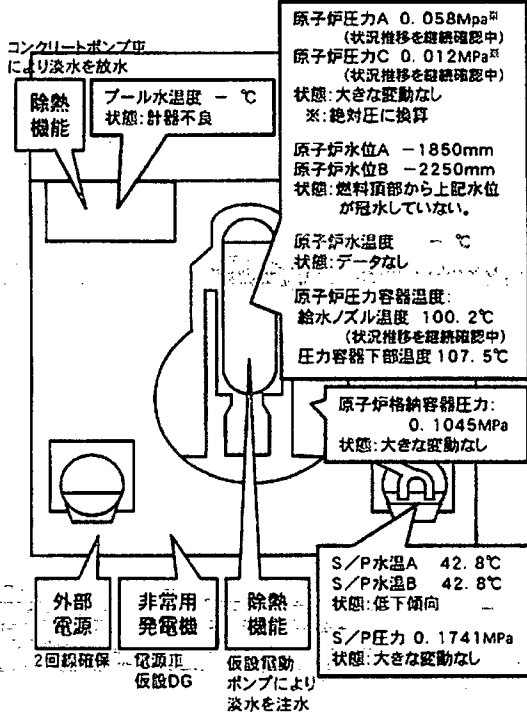
現状: プール及び炉心への淡水注入を継続

主要な出来事2/2

- 4/12 19:35~4/13 17:04 タービン建屋トレンチから復水器への移送
- 4/13 11:00 漏えい確認等のため一時停止
- 4/13 13:15~14:55 FPCからSFPへ仮設電動ポンプにより淡水注水
- 4/16 10:13~11:54 FPCからSFPへ仮設電動ポンプにより淡水注水(11:19頃発生した地震の影響で、11:39に仮設電動ポンプ停止、11:54にスキマーレベルの上昇の確認により満水を確認。)
- 4/16 11:19頃 地震発生(茨城県南部)
- 4/18 13:42~ 原子炉建屋において、無人ロボットによる状況確認等を実施
- 4/18 12:13~12:37 炉心注水に使用しているホースを新品に交換するため注水ポンプを停止
- 4/18 9:30~17:40 電源トレンチ内に止水剤(水ガラス)を注入
- 4/19 8:00~15:30 電源トレンチ内に止水剤(水ガラス)を注入
- 4/19 10:08 タービン建屋トレンチから集中廃棄物処理施設へ高濃度滞留水の移送開始
- 4/19 10:23 1,2号機と3,4号機間の電源連携強化作業が完了
- 4/19 16:08~17:28 FPCからSFPへ仮設電動ポンプにより淡水注水

福島第一原子力発電所3号機の状況 (4月20日 13:00現在)

主要な出来事



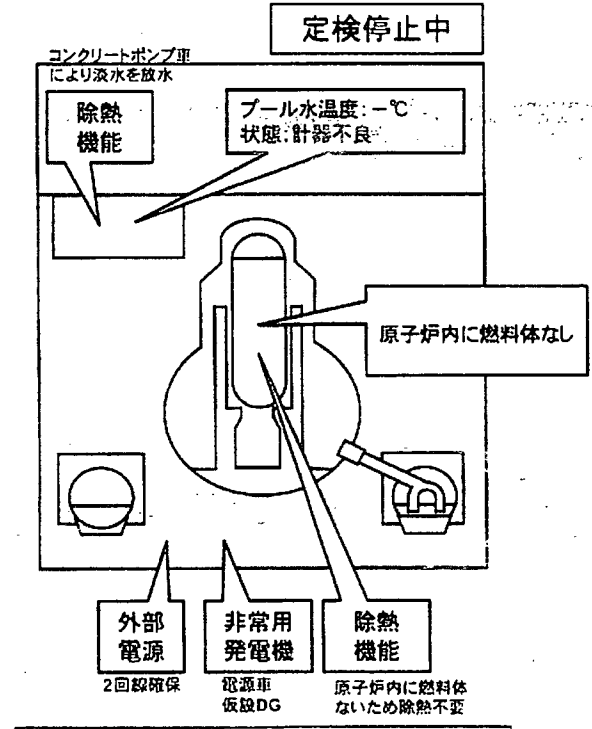
- 3/11 14:46 運転中、地震により自動停止
- 3/11 15:42 10号通報(全交流電源喪失)
- 3/13 05:10 15号事象の発生(非常用炉心冷却装置注水不能)
- 3/13 08:41 ベント開始
- 3/13 13:12 海水及びホウ酸の炉心注水開始
- 3/14 05:20 ベント開始
- 3/14 07:44 15号事象の発生(格納容器圧力異常上昇)
- 3/14 11:01 爆発音
- 3/16 08:30頃 白煙が発生
- 3/17 09:48~10:01 自衛隊ヘリによる放水
- 3/17 19:05~19:15 警察の高圧放水車による放水
- 3/17 19:35~20:09 自衛隊の消防車により放水
- 3/18、14時前~14:38 自衛隊消防車6台による地上放水~14:45 米軍消防車1台による地上放水
- 3/19 0:30~01:10 東京消防庁ハイパーレスキュー隊放水
- 3/19 14:10~3/20 03:40 東京消防庁ハイパーレスキュー隊放水
- 3/20 11:00 格納容器内圧力が上昇(320kPa)。その後、低下
- 3/20 21:36~3/21 03:58 東京消防庁ハイパーレスキュー隊放水
- 3/21 15:55頃 灰色がかつた煙が発生。17:55に煙が収まっていることを確認
- 3/22 15:10~16:00 東京消防庁ハイパーレスキュー隊及び大阪市消防局放水
- 3/22 22:46 中央制御室の照明復帰
- 3/23 11:03-13:20 使用済燃料プール冷却系(FPC)から使用済燃料プール(SFP)に海水を注水
- 3/23 16:20頃 火花が発生。23:30頃及び3/24 04:50に煙の発生が止まっていることを確認
- 3/24 05:35~16:05 FPCからSFPに海水を注水
- 3/25 13:28~16:00 東京消防庁の支援を受けた川崎市消防局による放水
- 3/25 18:02 淡水の炉心注水開始
- 3/27 12:34~14:36 コンクリートポンプ車による放水(海水)
- 3/28 17:40~3/31 08:40頃 復水貯蔵タンク(CST)からサブプレッションプール水サージタンク(SPT)へ移送
- 3/28 20:30 仮設電動ポンプでの炉心注水に切替
- 4/3 12:18 仮設電動ポンプの電源を仮設電源から外部電源に切替
- 4/11 17:16頃 地震発生(福島県浜通り)による1,2号機の外部電源喪失に伴い炉心注水停止
- 4/11 18:04 1,2号機の外部電源復帰(4/11 17:56)により、炉心注水再開
- 4/17 11:30~14:00 原子炉建屋において、無人ロボットによる状況確認等を実施
- 4/18 12:38~13:05 炉心注水に使用しているホースを新品に交換するため注水ポンプを停止
- 4/19 10:23 1,2号機と3,4号機間の電源連携強化作業が完了

現状: プール及び炉心への淡水注入を継続

<コンクリートポンプ車による放水(淡水)>
 3/29 14:17~18:18、3/31 16:30~19:33、4/2 09:52~12:54、4/4 17:03~19:19、4/7 06:53~8:53
 4/8 17:06~20:00、4/10 17:15~19:15、4/12 16:26~17:16、4/14 15:56~16:32、4/18 14:17~15:02

福島第一原子力発電所4号機の状況 (4月20日 13:00現在)

主要な出来事

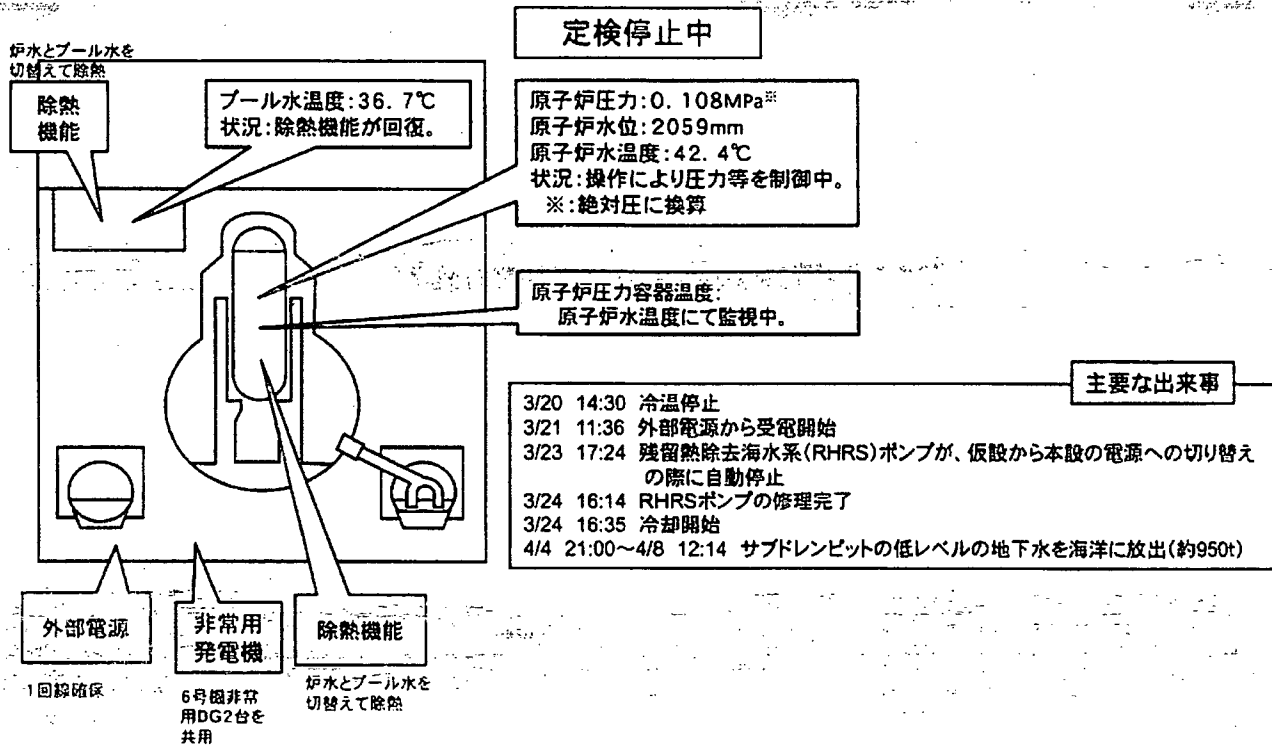


- 地震発生時、定期検査により停止中
- 3/14 04:08 使用済燃料プール温度84℃
- 3/15 06:14 4Fの壁が一部破損の確認
- 3/15 09:38 3階部分で火災(12:25鎮火)
- 3/16 05:45 4号機で火災。事業者によると現場での火は確認できず(06:15)
- 3/20 08:21~09:40 自衛隊による使用済燃料プール(SFP)への放水
- 3/20 18:30頃 ~ 19:46 自衛隊によるSFPへの放水
- 3/21 06:37~08:41 自衛隊によるSFPへの放水
- 3/21 15:00頃 パワーセンターまでのケーブル敷設完了
- 3/22 10:35 パワーセンター受電
- <コンクリートポンプ車による放水(海水)>
 3/22 17:17~20:32、3/23 10:00~13:02、3/24 14:36~17:30、3/25 19:05~22:07、
 3/27 16:55~19:25
- 3/25 06:05~10:20 使用済燃料プール冷却系(FPC)からSFPに海水を注入
- 3/29 11:50 中央制御室の照明復帰
- 4/12 12:00~13:04 SFP内の水のサンプリング作業を実施
- 4/19 10:23 1,2号機と3,4号機間の電源連携強化作業が完了

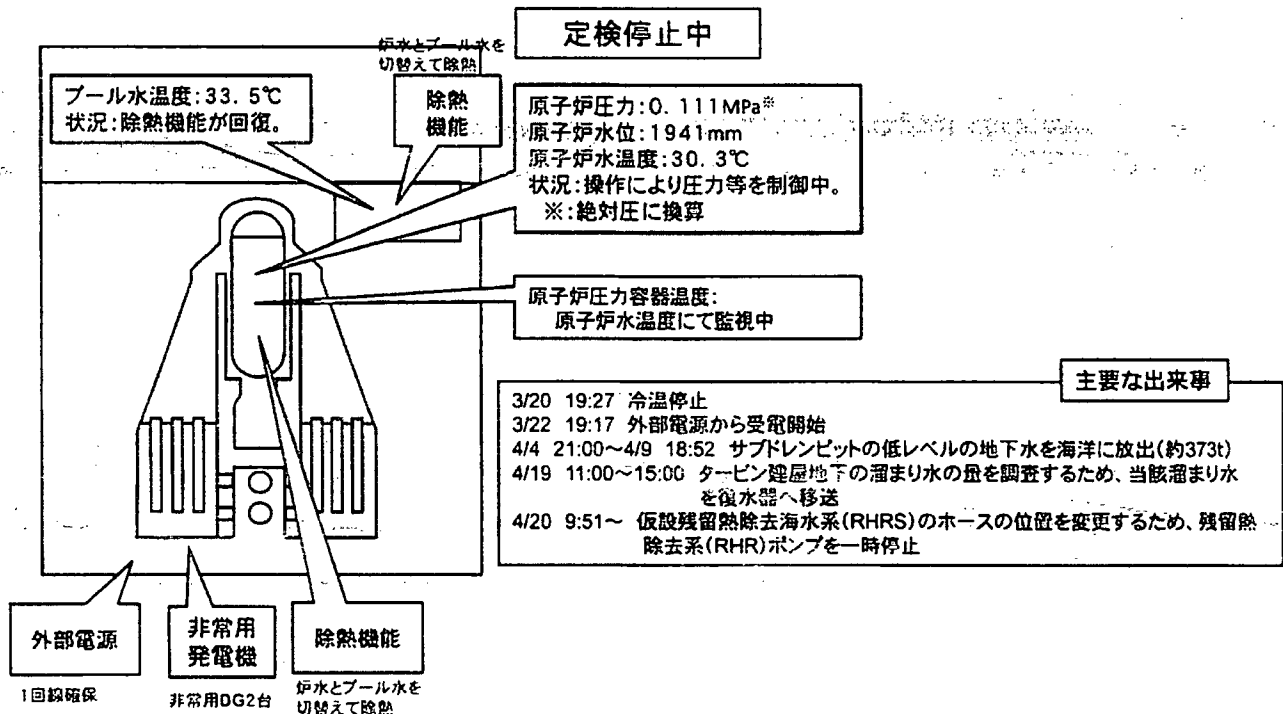
現状: 原子炉圧力容器に燃料体が存在しない
 プールへの淡水注入を継続

<コンクリートポンプ車による放水(淡水)>
 3/30 14:04~18:33、4/1 08:28~14:14、4/3 17:14~22:16、4/5 17:35~18:22、
 4/7 18:23~19:40、4/9 17:07~19:24、4/13 0:30~6:57、4/15 14:30~18:29、
 4/17 17:39~21:22、4/19 10:17~11:35

福島第一原子力発電所5号機の状況 (4月20日 13:00現在)



福島第一原子力発電所6号機の状況 (4月20日 13:00現在)



福島第一原子力発電所 プラント関連パラメータ (水位・圧力・温度などのデータ)

4月20日 13:00 現在

【留意事項】
各計測器については、地震やその他の事故進展の影響を受けて、通常の使用環境条件を超えているものもあり、正しく測定されていない可能性のある計測器も存在している。プラントの状況を把握するために、このような計測器の不確かさも考慮し、推察の計測器から得られる情報を活用して変化の傾向にも留意して総合的に判断している。

号機	1号機	2号機	3号機	4号機	5号機	6号機
原子炉注水状況	給水ポンプを用いた給水注入中。 流量 6m³/h (4/3 17:30) 仮設計器	消火系ポンプを用いた給水注入中。 流量 7m³/h (4/15 17:00) 仮設計器	消火系ポンプを用いた給水注入中。 流量 7m³/h (4/3 17:32) 仮設計器	※2 (全盤判取出中につき監視対象外)	※2 (原子炉の除熱機能が維持されており、注水不要)	
原子炉水位	燃料域A: -1700mm 燃料域B: -1700mm (4/20 12:00 現在)	燃料域A: -1600mm 燃料域B: -2100mm (4/20 12:00 現在)	燃料域A: -1850mm 燃料域B: -2250mm (4/20 12:00 現在)		停止域 2059mm (4/20 13:00 現在)	停止域 1941mm (4/20 13:00 現在)
原子炉圧力	A系 0.420MPa g (A) ※3 B系 1.078MPa g (B) ※3 (4/20 12:00 現在)	A系 0.029MPa g (A) ※3 B系 0.029MPa g (D) ※3 (4/20 12:00 現在)	A系 0.043MPa g (A) ※3 B系 0.069MPa g (C) ※3 (4/20 12:00 現在)		0.007MPa g (4/20 13:00 現在)	0.010MPa g (4/20 13:00 現在)
原子炉水温度	(系統流量がないため採取不可)				42.4℃ (4/20 13:00 現在)	30.3℃ (4/20 13:00 現在)
原子炉圧力容器 まわり温度	給水/戻り温度: 154.1℃ ※3 圧力容器下部温度: 113.3℃ (4/20 12:00 現在)	給水/戻り温度: 134.7℃ 圧力容器下部温度: ※1 (4/20 12:00 現在)	給水/戻り温度: 100.2℃ ※3 圧力容器下部温度: 107.5℃ (4/20 12:00 現在)		※2 (原子炉水温度にて監視中)	
D/W・S/C圧力	D/W 0.160MPa abs S/C 0.160MPa abs (4/20 12:00 現在)	D/W 0.080MPa abs S/C ※1 (4/20 12:00 現在)	D/W 0.1045MPa abs S/C 0.1741MPa abs (4/20 12:00 現在)			
D/W 雰囲気温度	RPVペロシール: 117.2℃ HVH戻り: 96.2℃ (4/20 12:00 現在)	RPVペロシール: ※1 HVH戻り: 123℃ (4/20 12:00 現在)	RPVペロシール: 210.7℃ ※3 HVH戻り: 71.5℃ (4/20 12:00 現在)			
CAMS放射線 モニタ	D/W (A) ※1 (B) ※1 S/C (A) 9.91×10⁻¹ Sv/h ※3 (B) 2.05×10⁻¹ Sv/h ※3 (4/20 12:00 現在)	D/W (A) 2.49×10⁻¹ Sv/h (B) 2.83×10⁻¹ Sv/h S/C (A) 5.51×10⁻¹ Sv/h ※3 (B) 1.03×10⁻¹ Sv/h ※3 (4/20 12:00 現在)	D/W (A) 1.55×10⁻¹ Sv/h (B) 1.16×10⁻¹ Sv/h S/C (A) 5.85×10⁻¹ Sv/h ※3 (B) 5.41×10⁻¹ Sv/h ※3 (4/20 12:00 現在)		※2 (原子炉の除熱機能が維持されているため監視対象外)	
S/C温度	A系: 53.2℃ B系: 53.1℃ (4/20 12:00 現在)	A系: 73.7℃ B系: 74.0℃ (4/20 12:00 現在)	A系: 42.8℃ B系: 42.8℃ (4/20 12:00 現在)			
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)			
D/W 最高使用圧力	0.427MPa g (0.528MPa abs)	0.427MPa g (0.528MPa abs)	0.427MPa g (0.528MPa abs)			
使用済燃料プール 温度	※1	71.0℃ (4/20 12:00 現在)	※1	※1	36.7℃ (4/20 13:00 現在)	33.5℃ (4/20 13:00 現在)
FPC 貯蔵タンク 水位	4500mm (4/20 12:00 現在)	5000mm (4/20 12:00 現在)	※1	4200mm (4/20 12:00 現在)	※2	
電源	外部電源受電中 (P/C2C)		外部電源受電中 (P/C4D)		外部電源受電中	
その他情報				共用プール: 30℃程度 (4/20 8:00)	5u: 非稼モード (4/20 9:41~)	6u: 点検作業に伴い S/C停止中

圧力換算 ゲージ圧(MPa g) = 絶対圧(MPa abs) - 大気圧(標準大気圧 0.1013 MPa)
絶対圧(MPa abs) = ゲージ圧(MPa g) + 大気圧(標準大気圧 0.1013 MPa)

- ※1: 計器不良
- ※2: データ採取対象外
- ※3: 状況推移を監視装置中

平成23年4月22日

原子力安全・保安院

地震被害情報（第107報）

（4月22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。

前回からの主な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

- ・4号機について、コンクリートポンプ車（62m級）が淡水約140t放水（4月21日17:14～21:20）
- ・共用プール山側の約1,300㎡及び5,6号機高圧開閉所山側の約5,100㎡の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月21日12:00～15:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ1個分）を実施（4月21日9:00～16:00）

2. 産業保安関係

別紙参照

<飲食物への指示>

- ・出荷制限の解除（4月21日）

福島県相馬市、新地町において産出された原乳。

栃木県那須塩原市、塩谷町において産出されたホウレンソウ。

(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、3月20日14:30冷温停止)
- 6号機(110万kW)(定検により停止中、3月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(4月22日7:00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]	0.536(A) 1.214(B)	0.078(A) 0.074(D)	0.054(A) 0.014(C)	—	0.105	0.114
原子炉格納容器圧力 (D/W) [kPa]	160	85	105.5	—	—	—
原子炉水位*2 [mm]	-1650(A) -1650(B)	-1500(A) -2100(B)	-1850(A) -2250(B)	—	1730	2323
原子炉格納容器内 S/C水温 [°C]	52.8(A) 52.7(B)	72.5(A) 72.8(B)	42.3(A) 42.3(B)	—	—	—
原子炉格納容器内 S/C圧力 [kPa]	160	計器不良	178.0	—	—	—
使用済燃料プール 水温度 [°C]	計器不良	46.0	計器不良	計器不良	37.5	32.5
備考	4/22 6:00 現在の値	4/22 6:00 現在の値	4/22 6:00 現在の値	4/22 現在	4/22 7:00 現在の値	4/22 7:00 現在の値

*1: 絶対圧に換算

*2: 燃料頂部からの数値

(4) 各プラント等の状況

<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(3月11日16:36)
- ・ベント開始(3月12日10:17)
- ・原子炉圧力容器内に消火系ラインを用いて海水を注水開始(3月12日20:20)

- 一時中断 (3月14日 1:10)
- ・ 1号機で爆発音 (3月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 ($2\text{m}^3/\text{h} \rightarrow 18\text{m}^3/\text{h}$) (3月23日 2:33)。その後、給水系のみに切替 (約 $11\text{m}^3/\text{h}$) (3月23日 9:00)
- ・ 中央制御室の照明復帰 (3月24日 11:30)
- ・ 原子炉圧力容器へ淡水を注水開始。 (3月25日 15:37)
- ・ 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 $2.1 \times 10^5 \text{Bq}/\text{cm}^3$ 、 ^{137}Cs (セシウム) が $1.8 \times 10^6 \text{Bq}/\text{cm}^3$ 、検出
- ・ 消防ポンプによる淡水の原子炉圧力容器への注水を仮設電動ポンプに切り替え (3月29日 8:32)
- ・ タービン建屋地下の溜まり水を、3月24日 17時頃から復水器へ移送開始。復水器の水位が満水に近いことが確認されたため、復水器への排水を停止 (3月29日 7:30)。タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水を、サプレッションプール水サージタンク (A) へ移送開始 (3月31日 12:00) し、移送先をサプレッションプール水タンクへ (B) に切り替えた後 (3月31日 15:25)、移送を再開し、終了した (4月2日 15:26)
- ・ 使用済燃料プールについて、コンクリートポンプ車 (62m 級) が約 90t 放水 (淡水) (3月31日 13:03~16:04)。コンクリートポンプ車 (62m 級) による放水位置の確認のため、試験放水 (4月2日 17:16~17:19)
- ・ タービン建屋の一部の照明が点灯 (4月2日)
- ・ 原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施 (4月3日 10:42~11:52)
- ・ 原子炉圧力容器への淡水の注水を外部電源に切り替え (4月3日 12:02)
- ・ タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水器の水を復水貯蔵タンクへ移送開始 (4月3日 13:55)
- ・ 原子炉格納容器内での水素燃焼の可能性を下げることを目的として、原子炉格納容器への窒素封入操作開始 (4月6日 22:30)
- ・ 原子炉格納容器への窒素封入開始を確認 (4月7日 1:31)
- ・ 原子炉格納容器への窒素封入を高純度窒素発生装置に切替 (4月9日 4:10)
- ・ 復水器から復水貯蔵タンクへの移送完了 (4月10日 09:30)
- ・ 地震発生 (4月11日 17:16 頃福島県浜通り) により外部電源が喪失するとともに原子炉圧力容器への淡水の注水及び原子炉格納容器への窒素封入が停止 (4月11日 17:16 頃)
- ・ 外部電源復旧 (4月11日 17:56)
- ・ 原子炉圧力容器への淡水の注水再開 (4月11日 18:04)
- ・ 原子炉格納容器への窒素封入を開始 (4月11日 23:34)
- ・ 原子炉建屋において、無人ロボットによる状況確認等を実施 (4月17日 16:00)

～17:30)

- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止（4月18日11:50～12:12）
- ・白煙の吐出確認できず（4月22日6:30現在）
- ・原子炉圧力容器へ淡水を注水中（4月22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（3月11日16:36）
- ・ベント開始（3月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（3月14日11:00過ぎ）
- ・原子炉圧力容器の水位が低下傾向（3月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（3月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の注水作業開始（3月14日16:34）
- ・原子炉圧力容器の水位が低下傾向（3月14日22:50）
- ・ベント開始（3月15日0:02）
- ・2号機で爆発音するとともに、サプレッションプール（圧力抑制室）の圧力低下（3月15日6:10）。同室に異常が発生したおそれ（3月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（3月19日13:30）
- ・使用済燃料プールに海水を40t注水（冷却系配管に消防車のポンプを接続）（3月20日15:05～17:20）
- ・パワーセンター受電（3月20日15:46）
- ・白煙が発生（3月21日18:22）
- ・白煙はほとんど見えない程度に減少（3月22日7:11現在）
- ・使用済燃料プールに海水を18t注水（3月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水（3月25日10:30～12:19）
- ・原子炉圧力容器への淡水の注水開始（3月26日10:10）
- ・中央制御室の照明復帰（3月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水を仮設電動ポンプに切り替え（3月27日18:31）
- ・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、 ^{134}I （ヨウ素）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、 ^{134}I （ヨウ素）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（3月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水を仮設電動ポンプによる淡水に切り替え注水（3月29日16:30～18:25）
- ・30日9:25より使用済燃料プールへの注水をしていたところ、仮設電動ポンプの不調が同日9:45に確認されたため、消防ポンプによる切り替えを行ったが、ホースの亀裂が確認（3月30日12:47、13:10）されたため、注水を中断。淡水の注水を再開（3月30日19:05～23:50）
- ・使用済燃料プールに、使用済燃料冷却系を用いて仮設電動ポンプにより淡水を約70t注水（4月1日14:56～17:05）
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水をサプレッションプール水サージタンクへ移送（3月29日16:45～4月1日11:50）
- ・取水口付近にある電源ケーブルを収めているピット内に、1,000mSv/hを超える水が溜まっていること及びピット側面のコンクリート部分に長さ約20cmの亀裂があり、当該部分より、水が海に流出していることを確認（4月2日9:30頃）。止水処置のため、コンクリートを注入（4月2日16:25、19:02）
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水器の水を復水貯蔵タンクへ移送開始（4月2日17:10）
- ・トレンチ立坑及びタービン建屋地下1階の水位を監視するためのカメラを設置（4月2日）
- ・タービン建屋の一部の照明が点灯（4月2日）
- ・原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施（4月3日10:22～12:06）
- ・原子炉圧力容器への淡水の注水を外部電源に切り替え（4月3日12:12）
- ・2号機バースクリーン近傍にあるピット内に溜まっている水の海水への流出を防止する措置として、取水電源トレンチの天端を破碎し、おがくず（3kg/袋）20袋、高分子吸収材（100g/袋）80袋、裁断処理した新聞紙（大きいゴミ袋）3袋を投入（4月3日13:47～14:30）
- ・トレーサー（乳白色の入浴剤）約13kgを海水配管トレンチ立坑から投入（4月4日7:08～7:11）
- ・使用済燃料プールに、使用済燃料冷却系を用いて仮設電動ポンプによる淡水（約70t）を注水（4月4日11:05～13:37）
- ・2号機バースクリーン近傍のピット周辺に2箇所の穴を開け、トレーサーを注入し、亀裂部から海に流出していることを確認（4月5日14:15）。ピット周辺に開けた穴に水流出防止のための凝固剤（水ガラス）注入開始（4月5日15:07）。水の流出が止まったことを確認（4月6日5:38頃）また、タービン建屋の水位については、上昇してないことを確認。さらに、流出していた箇所について、ゴム板と治具（つかえ棒）により止水の対策を実施（4月6日13:15完了）

- ・復水器の水を復水貯蔵タンクに移送するポンプを1台増設(計2台 30m³/h)
(4月5日 15:40頃)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約36t)(4月7日 13:39~14:34)
- ・復水器から復水貯蔵タンクへの移送完了(4月9日 13:10)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約60t)(4月10日 10:37~12:38)
- ・地震発生(4月11日 17:16頃)により外部電源が喪失するとともに原子炉圧力容器への淡水の注水が停止(4月11日 17:16頃)
- ・外部電源復旧(4月11日 17:56)
- ・原子炉圧力容器への淡水の注水を再開(4月11日 18:04)
- ・タービン建屋トレンチの滞留水を水中ポンプにより、復水器のホットウェルへ移送を開始(4月12日 19:35)。漏えい確認等のため、一時停止(4月13日 11:00)。その後、漏えいが無いことが確認されたことから、4月13日 15:02に移送を再開し、4月13日 17:04に滞留水の移送を停止。移送実績は約660t
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約60t)(4月13日 13:15~14:55)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約45t)(4月16日 10:13~11:54 ※11:19頃に発生した地震の影響で11:39に仮設電動ポンプ停止。11:54にスキマーレベルの上昇の確認により、満水を確認。)
- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止(4月18日 12:13~12:37)
- ・原子炉建屋において、無人ロボットによる状況確認等を実施(4月18日 13:42~14:33)
- ・電源トレンチ内に止水剤(水ガラス)を約17,000L注入(4月18日 9:30~17:40)
- ・使用済燃料プール水の状況把握のため、使用済燃料プールからスキマーサージタンクに流出した水のサンプリング作業を実施(4月16日)。採取したプール水について、放射線物質の核種分析を行ったその結果、¹³¹I(ヨウ素)が $4.1 \times 10^3 \text{Bq/cm}^3$ 、¹³⁴Cs(セシウム)が $1.6 \times 10^5 \text{Bq/cm}^3$ 、¹³⁷Cs(セシウム)が $1.5 \times 10^5 \text{Bq/cm}^3$ を検出(4月17日)
- ・タービン建屋トレンチにある滞留水(高線量の滞留水)を集中廃棄物処理施設へ移送開始(4月19日 10:08~)
- ・電源トレンチ内に止水剤(水ガラス)を約7,000L注入(4月19日 8:00~15:30)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約47t)(4月19日 16:08~17:28)
- ・引き続き白煙の吐出確認(4月22日 6:30現在)
- ・原子炉圧力容器へ淡水を注水中(4月22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（3月13日5:10）
- ・ベント開始（3月13日8:41）
- ・原子炉圧力容器内に消火系ラインから真水を注水開始（3月13日11:55）
- ・原子炉圧力容器内に消火系ラインから海水を注水開始（3月13日13:12）
- ・3号機及び1号機の注水をくみ上げ箇所の海水が少なくなったため停止（3月14日1:10）
- ・3号機の海水の注水を再開（3月14日3:20）
- ・ベント開始（3月14日5:20）
- ・格納容器圧力が異常上昇（3月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（3月14日7:52）
- ・1号機と同様に原子炉建屋付近で爆発（3月14日11:01）
- ・白い湯気のような煙が発生（3月16日8:30頃）
- ・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（3月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（3月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（3月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（3月17日16:10）
- ・自衛隊消防車により放水（3月17日19:35）
- ・警察庁機動隊による放水（3月17日19:05～19:13）
- ・自衛隊消防車5台が放水（3月17日19:35、19:45、19:53、20:00、20:07）
- ・自衛隊消防車6台（6t放水／台）が放水（3月18日14時前～14:38）
- ・米軍消防車1台が放水（3月18日14:45終了）
- ・東京消防庁ハイパーレスキュー隊が放水（3月20日3:40終了）
- ・格納容器内圧力が上昇（3月20日11:00、320kPa）。圧力下げの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（3月21日12:15、120kPa）
- ・ケーブル引き込みの現地調査（3月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（3月20日21:30～3月21日3:58）
- ・灰色がかった煙が発生（3月21日15:55頃）
- ・煙が収まっていることを確認（3月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（3月22日7:11現在）
- ・東京消防庁及び大阪市消防局が放水（約180t）（3月22日15:10～16:00）
- ・中央制御室の照明復帰（3月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を35t注水（3月23

- 日 11:03~13:20)。海水を約 120t 注水 (3 月 24 日 5:35 頃~16:05 頃)
- ・原子炉建屋からやや黒色がかった煙が発生 (3 月 23 日 16:20 頃)。3 月 23 日 23:30 頃及び 3 月 24 日 4:50 頃に確認したところ止んでいる模様
 - ・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 (3 月 25 日 13:28~16:00)
 - ・原子炉圧力容器へ淡水を注水開始 (3 月 25 日 18:02)
 - ・コンクリートポンプ車 (52m 級) が海水約 100t 放水 (3 月 27 日 12:34~14:36)
 - ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水をサプレッションプール水サージタンクへ移送 (3 月 28 日 17:40~3 月 31 日 8:40 頃)
 - ・消防ポンプによる淡水の原子炉圧力容器への注水を仮設電動ポンプに切り替え (3 月 28 日 20:30)
 - ・コンクリートポンプ車 (52m 級) が淡水約 100t 放水 (3 月 29 日 14:17~18:18)
 - ・コンクリートポンプ車 (52m 級) が淡水約 105t 放水 (3 月 31 日 16:30~19:33)
 - ・コンクリートポンプ車 (52m 級) が淡水約 75t 放水 (4 月 2 日 9:52~12:54)
 - ・タービン建屋の一部の照明が点灯 (4 月 2 日)
 - ・トレンチ立坑の水位を監視するためのカメラを設置 (4 月 2 日)
 - ・原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施 (4 月 3 日 10:03~12:16)
 - ・原子炉圧力容器への淡水の注水を外部電源に切り替え (4 月 3 日 12:18)
 - ・コンクリートポンプ車 (52m 級) が淡水約 70t 放水 (4 月 4 日 17:03~19:19)
 - ・コンクリートポンプ車 (52m 級) が淡水約 70t 放水 (4 月 7 日 06:53~08:53)
 - ・コンクリートポンプ車 (52m 級) が淡水約 75t 放水 (4 月 8 日 17:06~20:00)
 - ・コンクリートポンプ車 (52m 級) が淡水約 80t 放水 (4 月 10 日 17:15~19:15)
 - ・地震発生 (4 月 11 日 17:16 頃福島県浜通り) による 1、2 号機の外部電源喪失に伴い原子炉圧力容器への淡水の注水が停止 (4 月 11 日 17:16 頃)
 - ・1、2 号機の外部電源の復旧 (4 月 11 日 17:56) により、原子炉圧力容器への淡水の注水を再開 (4 月 11 日 18:04)
 - ・コンクリートポンプ車 (62m 級) が淡水約 35t 放水 (4 月 12 日 16:26~17:16)
 - ・コンクリートポンプ車 (62m 級) が淡水約 25t 放水 (4 月 14 日 15:56~16:32)
 - ・原子炉建屋において、無人ロボットによる状況確認等を実施 (4 月 17 日 11:30~14:00)
 - ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止 (4 月 18 日 12:38~13:05)
 - ・コンクリートポンプ車 (62m 級) が淡水約 30t 放水 (4 月 18 日 14:17~15:02)

- ・引き続き白煙の吐出確認 (4月22日 6:30 現在)
- ・原子炉圧力容器へ淡水を注水中 (4月22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℃)
- ・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 (3月15日 6:14)
- ・火災発生 (3月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 (3月15日 11:00 頃)
- ・火災が発生 (3月16日 5:45 頃)。事業者は現場での火災は確認できず (3月16日 6:15 頃)
- ・自衛隊が使用済燃料プールへ放水 (3月20日 9:43)
- ・ケーブル引き込みの現地調査 (3月20日 11:00~16:00)
- ・自衛隊が使用済燃料プールへ放水 (3月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 (3月21日 6:37~8:41)
- ・パワーセンターまでのケーブル敷設工事完了 (3月21日 15:00 頃)
- ・パワーセンター受電 (3月22日 10:35)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3月22日 17:17~20:32)
- ・コンクリートポンプ車 (58m 級) が海水約 130 t 放水 (3月23日 10:00~13:02)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3月24日 14:36~17:30)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3月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水 (3月25日 6:05~10:20)
- ・コンクリートポンプ車 (58m 級) が海水約 125t 放水 (3月27日 16:55~19:25)
- ・中央制御室の照明復帰 (3月29日 11:50)
- ・コンクリートポンプ車 (58m 級) が淡水約 140t 放水 (3月30日 14:04~18:33)
- ・コンクリートポンプ車 (58m 級) が淡水約 180t 放水 (4月1日 8:28~14:14)
- ・タービン建屋の一部の照明が点灯 (4月2日)
- ・4月2日より、集中環境施設プロセス主建屋の建屋内にたまった水を4号機のタービン建屋内に移送していたところ、4月3日より3号機のトレンチの立坑の水位が上昇したため、経路は不明であるものの念のため移送を中断 (4月4日 9:22)
- ・コンクリートポンプ車 (58m 級) が淡水約 180t 放水 (4月3日 17:14~22:16)
- ・コンクリートポンプ車 (58m 級) が淡水約 20t 放水 (4月5日 17:35~18:22)
- ・コンクリートポンプ車 (58m 級) が淡水約 38 t 放水 (4月7日 18:23~19:40)
- ・コンクリートポンプ車 (58m 級) が淡水約 90 t 放水 (4月9日 17:07~19:24)
- ・使用済燃料プール内に保管されている燃料の状況把握のため、使用済燃料プール水のサンプリング作業を実施 (4月12日 12:00~13:04)。採取したプール水について、放射線物質の核種分析を行った (4月13日)。その結果、¹³¹I

(ヨウ素)が $2.2 \times 10^2 \text{Bq/cm}^3$ 、 ^{134}Cs (セシウム)が $8.8 \times 10^1 \text{Bq/cm}^3$ 、 ^{137}Cs (セシウム)が $9.3 \times 10^1 \text{Bq/cm}^3$ 、検出(4月14日)

- ・コンクリートポンプ車(62m級)が淡水約195t放水(4月13日0:30~6:57)
- ・コンクリートポンプ車(62m級)が淡水約140t放水(4月15日14:30~18:29)
- ・コンクリートポンプ車(62m級)が淡水約140t放水(4月17日17:39~21:22)
- ・コンクリートポンプ車(62m級)が淡水約40t放水(4月19日10:17~11:35)
- ・コンクリートポンプ車(62m級)が淡水約100t放水(4月20日17:08~20:31)
- ・コンクリートポンプ車(62m級)が淡水約140t放水(4月21日17:14~21:20)
- ・引き続き白煙の吐出確認(4月22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(3月19日4:22)
- ・5号機の残留熱除去系(RHR)ポンプ(C)(3月19日5:00)及び6号機の残留熱除去系(RHR)ポンプ(B)(3月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)(3月19日5:00)
- ・5号機、冷温停止(3月20日14:30)
- ・6号機、冷温停止(3月20日19:27)
- ・5号機及び6号機、起動用変圧器まで受電(3月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(3月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(3月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(3月23日17:24)
- ・5号機の仮設の残留熱除去海水系(RHRS)ポンプの修理が完了(3月24日16:14)し、冷却を再開(3月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(3月25日15:38、15:42)
- ・5号機及び6号機サブドレンピットにある低レベルの施設内で集水・管理された地下水を放水口経由で海へ放出(5号機 4月4日21:00~4月8日12:14(約950t)、6号機 4月4日21:00~4月9日18:52(約373t))
- ・6号機のタービン建屋地下の溜まり水(約 100m^3)を復水器へ移送(4月19日11:00~15:00)
- ・6号機の仮設の残留熱除去海水系(RHRS)のホースの位置を変えるため、残留熱除去系(RHR)ポンプを一時停止(4月20日9:51)し、仮設のRHRS

ポンプ移設作業実施後、冷却を再開（4月20日15:56）

<使用済燃料共用プール>

- ・3月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（3月21日10:37～15:30）
- ・電源供給を開始（3月24日15:37）し、冷却を開始（3月24日18:05）
- ・電源供給回路の末端部の短絡により、電源供給停止（4月17日14:34）。その後、当該設備の点検を実施し、電源の供給が復旧（4月17日17:30）
- ・4月21日7:10時点でのプール水温度は29℃程度

<海水・土壌モニタリング>

- ・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（3月26日14:30）
（3月29日に計測した結果、水中濃度限度の3,355.0倍となった。（3月29日13:55）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1,262.5倍）検出された。（3月29日14:10）
- ・福島第一原子力発電所の敷地内（5地点）の土壌から、3月21日及び3月22日に採取した試料の中に、 ^{238}Pu （プルトニウム）、 ^{239}Pu （プルトニウム）、 ^{240}Pu （プルトニウム）を検出（3月28日23:45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。
- ・発電所敷地境界付近に設置している本設モニタリングポスト（No.1～8）が復旧（3月31日）。測定値については1日1回の予定。
- ・福島第一原子力発電所の敷地内の土壌から、3月25日（4地点）及び3月28日（3地点）に採取した試料（合計7検体）の中に、 ^{238}Pu （プルトニウム）、 ^{239}Pu （プルトニウム）、 ^{240}Pu （プルトニウム）を検出（4月6日18:30東京電力発表）。検出されたプルトニウムの濃度は、前回（3月28日公表）と同様に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）と同程度であり、通常的环境レベルで人体に問題となるものではない。
- ・南放水口付近の海水核種分析の結果、 ^{131}I （ヨウ素）が $1.8 \times 10^2 \text{Bq/cm}^3$ （周辺監視区域外の水中濃度限度の4385.0倍）検出された。（3月30日13:55）
- ・福島第一原子力発電所の敷地内の定例的に試料の採取を行うこととなっている3地点の土壌から、3月31日及び4月4日に採取した試料（合計6検体）のうち、3検体から ^{238}Pu （プルトニウム）、 ^{239}Pu （プルトニウム）、 ^{240}Pu （プルトニウム）を検出（4月14日18:30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）6と同程度であり、通常的环境レベルで人体に問題となるものではない。

<汚染水の拡散防止>

- ・専用港内からの汚染水の流出を防止するため、発電所南側防波堤周辺で大型土のうを用いた止水工事を実施（4月5日15:00～16:30）
- ・南側防波堤に汚染水拡散防止のためのシルトフェンスを二重に設置完了（4月11日10:45）
- ・2号機バースクリーンの海側に仮設の止水板（鋼板7枚中1枚）を設置（4月12日12:00～13:00）
- ・2号機バースクリーンの海側に仮設の止水板（鋼板7枚中2枚）を設置（4月13日8:30頃～10:00頃）
- ・3、4号機スクリーン前面に汚染水拡散防止のためのシルトフェンスを設置完了（4月13日13:50）
- ・1、2号機スクリーン前面及びカーテンウォールに汚染水拡散防止のためシルトフェンスを設置（4月14日12:20）
- ・3号スクリーンポンプ室と4号スクリーンポンプ室の間に、ゼオライトの土のうを3袋設置（4月15日14:30～15:45）
- ・2号機バースクリーンの海側に仮設の止水板（鋼板7枚中4枚）を設置（4月15日9:00～14:15）
- ・ゼオライトの土のうを1号スクリーンポンプ室と2号スクリーンポンプ室の間に2袋、2号スクリーンポンプ室と3号スクリーンポンプ室の間に5袋を設置（4月17日9:00～11:15）

<飛散防止剤の散布>

- ・共用プールの山側の約500m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月1日15:00～16:05）
- ・共用プール山側の約600m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月5日13:00～16:30、4月6日12:30～14:30）
- ・共用プール山側の約680m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月8日11:00～14:00）
- ・共用プール山側の約550m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月10日13:00～14:00）
- ・共用プール山側の約1,200m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月11日12:00～13:00）
- ・共用プール山側の約700m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布開始（4月12日12:00～13:00）
- ・共用プール山側の約400m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月13日11:00～11:30）
- ・共用プール山側の約1600m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月14日12:00～13:30）
- ・共用プール山側の約1900m²の範囲に、地面の放射性物質の飛散を防ぐ飛散

防止剤を試験的に散布（4月15日11:30～13:00）

- ・サプレッションプール水サージタンク山側の約1,800 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月16日11:00～13:00）
- ・集中廃棄物処理施設周辺の約1,900 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月17日10:00～13:30）
- ・集中廃棄物処理施設周辺の約1,200 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月18日9:00～14:30）
- ・集中廃棄物処理施設周辺の約1,900 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月20日12:00～13:30）
- ・共用プール山側の約1,300 m²及び5、6号機高圧開閉所山側の約5,100 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月21日12:00～15:00）

<がれきの撤去状況>

- ・リモートコントロール重機による、がれきの撤去を実施（4月10日）
- ・リモートコントロール重機によるがれきの撤去（コンテナ6個分）を実施（4月13日11:00～16:10）
- ・リモートコントロール重機によるがれきの撤去（コンテナ1個分）を実施（4月15日9:00～15:45）
- ・リモートコントロール重機によるがれきの撤去（コンテナ8個分）を実施（4月16日9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ2個分）を実施（4月17日9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ4個分）を実施（4月18日9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ3個分）を実施（4月19日9:00～15:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ1個分）を実施（4月20日9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ1個分）を実施（4月21日9:00～16:00）

<その他>

- ・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1,000mSv/h以上、3号機は、がれきがあり測定できず（3月27日15:30頃）。1号機立坑内の溜留水を仮設ポンプにて集中環境施設プロセス主建屋の貯槽に移送し、立坑内の水位が上端から約-0.14mから約-1.14mに減少（3月31日9:20～11:25）
- ・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（3月29日12:03）

- ・3月28日、集中環境施設プロセス主建屋で水溜まりを確認し、放射能分析の結果、3月29日管理区域内で総量約 $1.2 \times 10^1 \text{Bq/cm}^3$ 、非管理区域で総量 $2.2 \times 10^1 \text{Bq/cm}^3$ の放射能を検出
- ・原子炉等の冷却に使用する淡水を積んだ米軍のはしけ船（1号船）1隻が海上自衛隊の艦船にえい航され、福島第一原子力発電所専用港に接岸（3月31日15:42）。はしけ船（1号船）からろ過水タンクへ淡水を移送開始（4月1日15:58）。その後、ホースの不具合により中断（4月1日16:25）したが、4月2日に注水を再開（4月2日10:20～16:40）
- ・2隻目の原子炉等の冷却に使用する淡水を積んだ米軍のはしけ船（2号船）が海上自衛隊の艦船にえい航され、福島第一原子力発電所専用港に接岸（4月2日9:10）
- ・米軍のはしけ船（2号船）からはしけ船（1号船）へ淡水を移送（3日09:52～11:15）
- ・集中環境施設プロセス主建屋内の低レベル滞留水については、放水口南側海域から1台目のポンプによる放出を開始（4月4日19:03）し、更に全10台のポンプによる放出を実施（4月4日19:07）し、4月10日17時40分に水中ポンプによる海洋への放出作業を停止し、残水の確認を実施中（総放出量は約9,070t）
- ・雑固体廃棄物減容処理建屋内の低レベル滞留水については、放水口南側海域から5台のポンプによる放水を実施（4月6日17:20～4月7日18:20）
- ・タービン建屋内の溜まり水の集中廃棄物処理施設への排水準備のため、2～4号機のタービン建屋の外壁に孔あけを実施（4月7日）
- ・4月7日11:32に発生した宮城県沖の地震により、中断していた集中環境施設における排水作業を再開（4月8日14:30）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月10日15:59～16:28）
- ・1～4号機放水口サンプリング建屋より発火を確認（4月12日6:38頃）。初期消火活動の結果、炎と煙がないことを確認（同日7:00前）。その後、鎮火確認（同日9:12）
- ・3～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月14日10:17～12:25）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月15日8:02～9:55）
- ・1～3号機原子炉への注水ポンプ用の分電盤等を、津波対策として高台に移設（4月15日10:19～17:00）
- ・集中廃棄物処理施設の建屋内における止水対策が完了（4月18日）。
- ・1、2号機と3、4号機間の電源連携強化作業が完了（4月19日10:23）

- ・ 1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月21日 11:43～12:50）

○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、3月14日 17:00 冷温停止)
- 2号機 (110万kW) (自動停止、3月14日 18:00 冷温停止)
- 3号機 (110万kW) (自動停止、3月12日 12:15 冷温停止)
- 4号機 (110万kW) (自動停止、3月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（4月22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	0.17
原子炉水温	℃	24.2	24.7	33.2	28.2
原子炉水位* ²	mm	9346	10296	7790	8785
原子炉格納容器内 サブレーション [°] ール水温	℃	23	24	26	29
原子炉格納容器内 サブレーション [°] ール圧力	kPa (abs)	105	104	110	107
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) 各プラントの状況

< 1号機関係 >

- ・ 3月30日 17:56頃、1号機において、タービン建屋の1階の電源盤から煙が上がっていたが、電気の供給を切ったところ、煙の発生が止まった。消防署により、19:15 当該事象は電源盤の異常であり、火災ではないと判断された。
- ・ 1号機の原子炉を冷却する残留熱除去系（B）の電源が、外部電源に加え非常用電源からも受電可能となり、全号機において、残留熱除去系（B）のバックアップ電源（非常用電源）を確保（3月30日 14:30）

(5) 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（3月11日 18:08）
- ・ 1、2、4号機にて同法第10条通報（3月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（3月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 (3月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 (3月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、3月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、3月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0.28 μ Sv/h(4月21日 16:00)(約0.28 μ Sv/h(4月20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(3月11日 22:55)
- ・原子力災害対策特別措置法第10条通報(3月13日 13:09)

2 産業保安

○電気(4月21日 23:00)

- ・東北電力(4月21日 16:00 現在)

停電戸数: 約14万戸

停電地域: 岩手県 一部地域で停電(約2万8千戸)

宮城県 一部地域で停電(約8万2千戸)

福島県 一部地域で停電(約3万5千戸)

[参考情報] 停電戸数の状況の分類(4月20日 16:00 現在)

- ①津波等で東北電力の設備、インフラ、家屋等が流出した地域: 約8万4千戸
- ②がれき撤去・立入制限解除等の後、復旧作業に着手する地域: 約4万7千戸
- ③家屋、インフラは健全なものの、水没・損傷した東北電力の設備の復旧が必要な地域: 0戸
- ④東北電力の設備は復旧したが、家主の不在等により送電を留保している戸数: 約1万4千戸

- ・東京電力

停電は3月19日 1:00 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(4月21日 16:00 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 6号機
- ・東北電力 (4月21日 16:00 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 (4月21日 10:00 現在)

- ・供給停止戸数約5千戸 (延べ供給停止戸数* 約48万戸)
- *延べ供給停止戸数には、家屋倒壊等が確認された戸数を含む。

(1) 一般ガス (4月21日 10:00 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
3月14日 8:00 デパートの地下での爆発
- ・東部ガス (いわき市) 死者1名
3月12日 11:30 一般住宅での漏えいガスに着火

各社の供給停止状況は以下の通り。

- ・石巻ガス (石巻市) 3,986戸供給停止

(2) 簡易ガス (4月21日 10:00 現在)

各社の供給停止状況は以下の通り。

- ・釜石瓦斯 (上閉伊郡大槌町) 370戸供給停止
- ・ガス&ライフ (東松島市) 145戸供給停止
- ・泉金物産 (上閉伊郡大槌町) 68戸供給停止

○熱供給 (4月21日 10:00 現在)

- ・小名浜配湯 (いわき市小名浜) 供給停止

○LPGガス (4月14日 21:00 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
3月13日午前中 共同住宅でガス爆発
- ・いわき市鹿島の一般住宅でLPGガス漏れが発生、元栓を閉めて漏えい防止を図っているところ。

(4月11日 17:16頃、福島県内陸部で発生した地震によるもの(福島県浜通りの地震発生による状況について(第二報)で公表済み。))

○コンビナート（4月14日21:00現在）

- ・コスモ石油千葉製油所（千葉県市原市）
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。
- ・福島県いわき市の第一三共プロファーマ（株）小名浜工場でガス漏れ、火災が発生（既に鎮火。けが人なし）
（4月11日17:16頃、福島県内陸部で発生した地震によるもの（福島県浜通りの地震発生による状況について（第二報）で公表済み。）

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】

- 0:49 福島第一原子力発電所1号機にて事業者が同法第15条事象（格納容器圧力異常上昇）発生判断（01:20通報）
- 5:22 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）
- 5:32 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）
- 5:44 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 経済産業大臣が原子炉等規制法第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、楡葉町長、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、経済産業大臣が原子炉等規制法第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 : 0 8 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 : 2 0 福島第一原子力発電所3号機の耐圧ベント弁開放
- 9 : 3 0 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 : 0 9 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 : 1 2 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15
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15
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
- 7:44 (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
- 8:54 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
- 10:30 経済産業大臣が原子炉等規制法第64条第3項の規定に基づき、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について実施することを命じた。
- 10:59 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。
- 11:00 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20

km圏～30km圏内の住民に対する屋内退避を指示

- 16:30 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
- 22:00 経済産業大臣が原子炉等規制法第64条第3項の規定に基づき、4号機の使用済燃料プールへの注水について実施することを命じた。
- 23:46 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】

- 13:00 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
- 15:55 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
- 16:48 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】

- 7:44 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
- 8:58 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】

- 23:30 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

【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、飯舘村）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、飯館村）宛に発出。

17:50 原子力災害対策本部長から、ホ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。

原子力災害被災者支援の体制強化のため、経済産業大臣をチーム長とする「原子力被災者生活支援チーム」の設置、関係市町村への訪問等を実施。

原子力災害現地対策本部は、20-30km圏内の地域住民等に向けた、ニュースレター第1号を公表。

【3月30日】

各電気事業者等に対し、平成23年福島第一・第二原子力発電所事

故を踏まえた他の発電所の緊急安全対策の実施に係る指示文書を発出し、手交。

【3月31日】

原子力安全・保安院は、東京電力(株)に対し、3月31日の福島第二原子力発電所への街宣車の進入について、核物質防護等に係る対策に万全を期すよう口頭で指示。

原子力安全・保安院は、東京電力(株)に対し、作業員の放射線管理に万全を期すように注意喚起。

原子力災害現地対策本部は、20-30km圏内の地域住民等に向けた、ニュースレター第2号を公表。

【4月1日】

原子力安全・保安院は、東京電力(株)に対し、核種分析結果の誤りについて以下の3点について適切な対応をとるように嚴重注意。

- ・核種分析の過去の評価結果について、どの核種について評価の誤りがあるかを明らかにし、すみやかに再評価を行うこと。
- ・評価の誤りが発生した原因を調査するとともに、再発防止の徹底を行うこと。
- ・評価結果の誤り等については判明した段階で、早急に連絡を行うこと。

【4月2日】

福島第一原子力発電所2号機取水口付近からの放射性物質を含む液体の海への流出について、サンプリングした液体の核種分析を実施すること、2号機周辺に今回漏えいが発見され施設と同様の箇所がないか確認すること及び当該施設周辺においてより多くの場所で水を採取しモニタリングを強化することを口頭により指示。

【4月4日】

緊急やむを得ない措置として、海洋放出を実施するに当たっての助言を原子力安全委員会に求め、東京電力(株)に対し、現在実施している海洋モニタリングを着実に実施するとともに、さらに強化(測定ポイントの増加、実施頻度の増大)することにより、海洋放出による放射性物質の拡散による影響を調査・確認し、情報公開に努めること、併せて、海洋への放出を可能な限り低減するための方策を強化することを指示。

【4月5日】

福島第一原子力発電所から環境に影響を与える可能性のある放射性物質の放出に伴う措置に係る地方公共団体への事前の通報連絡について、指示文書を発出。

【4月6日】

1号機原子炉格納容器への窒素封入を実施するに当たって、原子力

安全・保安院から東京電力に対して以下の3点について指示（4月6日12:40）。①プラントパラメーターを適切に管理し、その変化に応じて安全を確保するための措置が適切に講じられるようにすること。②当該作業に従事する作業員の安全を確保する体制等を確立し実施すること。③窒素封入により当該原子炉格納容器内の気体が外部に漏出する可能性が否定できないことから、モニタリングを確実に実施し、更に強化することにより、窒素封入に伴う放射性物質の放出及び拡散による影響を調査及び確認し、情報公開に努めること。

【4月7日】

原子力災害現地対策本部は、20～30km圏内の地域住民等に向けた、ニュースレター第3号を公表（4月7日）

【4月9日】

原子力安全・保安院は、4月7日23時32分頃に発生した宮城県沖地震により、東北電力(株)東通原子力発電所1号機において全ての非常用ディーゼル発電機が動作可能でない状態に陥った事象を受け、各電気事業者等へ「非常用発電設備の保安規定上の取扱いについて」の指示文書を発出。

【4月10日】

原子炉等規制法第67条第1項に基づき、福島第一原子力発電所に滞留している高い放射線量が検出された排水の集中廃棄物処理建屋への移送に関して、その必要性、安全性に係る評価、恒久的な排水保管及び処理施設についての方針等に係る報告の徴収について指示文書を発出。

【4月13日】

- 原子力安全・保安院は、東京電力(株)に対し、原子炉等規制法第67条第1項に基づき、福島第一原子力発電所建屋の耐震安全性評価の実施結果及び有効な耐震補強工事等の対策の検討結果について報告を指示。
- 原子力安全・保安院は、東京電力(株)に対し、平成23年度東北地方太平洋沖地震により発生した津波に関して、詳細な分析及び検討を指示。
- 原子力安全・保安院は、東北電力(株)に対し、女川原子力発電所1号機から3号機において、4月7日23:32頃発生した2011年宮城県沖の地震時に取得した地震観測データの分析及び耐震安全上重要な設備の地震影響評価について報告を指示。

【4月14日】

- 4月13日にサンプリングを行った1、2号機のサブドレン（施設内で集水・管理された地下水）について、前回に比べ放射線濃度が

1桁上昇していたことから、原子力安全・保安院は監視の強化を図るよう、口頭で指示。

【4月15日】

- ・東京電力(株)において4月1日付け人事異動に伴う原子力災害対策特別措置法第9条第5項に基づく原子力防災管理者解任届出に遅延があったことを受け、原子力安全・保安院は東京電力(株)に対して、嚴重注意を行うとともに再発防止策を作成するよう口頭で指示。
- ・平成23年4月7日に宮城県沖地震により、電力系統の一部における地絡事故が発生し、原子力発電所等において一時的に外部電源の喪失が発生したことから、一般電気事業者等に対し外部電源の信頼性確保に係る対策を検討するなど指示。

【4月18日】

- ・4月10日付けで発出した報告の徴収に係る指示に基づき、東京電力(株)から提出された福島第一原子力発電所に滞留している高い放射線量が検出された排水の集中廃棄物処理建屋への移送に関する報告書を受領(4月18日)し、その内容を確認(4月19日)。

【4月21日】

- ・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20条第3項の規定に基づき、次の指示を出した。
 - 避難区域として、福島第二原子力発電所から半径10km圏内区域から半径8km圏内区域への変更を指示。
- ・内閣総理大臣より、福島県知事、富岡町長、双葉町長、大熊町長、浪江町長、川内村長、楢葉町長、南相馬市長、田村市長及び葛尾村長に対し、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20条第3項の規定に基づき、次の指示を出した。
 - 福島第一原子力発電所から半径20km圏内を警戒区域に設定し、緊急事態応急対策に従事する者以外の者に対して、市町村長が一時的な立入りを認める場合を除き、当該区域への立入禁止、又は当該区域からの退去を指示。

<被ばくの可能性(4月22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。

方ウント数	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以上の値を示した。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、パングランドの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。避難所や保健所等11ヶ所(常設)で実施中。4月19日までに162,126人に対し実施。そのうち、100,000cpm以上の値を示した者は102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29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、3月24日に福島県立医科大学附属病院へ搬送し、その後、3月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。3月28日正午頃3名の方がすべて退院した。当該作業員3名は4月11日に放射線医学総合研究所で再受診し、3名とも健康状態に問題はなかった。なお、両足に局所被ばくのあった2名の皮膚に熱傷の症状や紅斑などは認められていない。

また、4月1日11:35頃、米軍のはしけ船のホース手直し作業のために岸から船に乗り込む際、作業員1名が海に落下した。すぐに周囲の作業員に救助され、けが及び外部汚染はなかったが、念のため、ホールボディカウンタによる測定を行った結果、4月12日に内部取り込みなしと評価された。

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～3月27日、いわき市保健所において、0～15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。
- (5) 3月28日～3月30日、川俣町公民館及び飯館村役場において、0～15歳までの946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、飯館村）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、飯館村）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、楡葉町、南相馬市、田村市、葛尾村、広野町、いわき市、飯舘村）宛に発出。

<負傷者等の状況（4月22日8:00現在）>

1. 3月11日の地震による福島第一原子力発電所の負傷者
 - ・社員2名（軽傷、既に仕事復帰）
 - ・社員2名（地震、津波の際に割れたガラスで切り傷、既に仕事復帰）
 - ・社員1名（避難の際に擦り傷、既に仕事復帰）
 - ・協力会社1名（両足骨折で入院中）
 - ・死亡2名（地震発生後から東京電力（株）の社員2名が行方不明となり、捜査を継続してきたが、3月30日午後、4号機タービン建屋地下一階において当該社員2名が発見され、4月2日までに死亡が確認された。）
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11日の地震発生の際に、福島第二原子力発電所において、協力会社の1名（クレーンオペレータ）が死亡。（タワークレーンが折れ、オペレータールームがつぶれ、頭に当たった模様。）
 - ・3月11日に協力会社の1名を病院へ搬送（後日脳梗塞と判明）
 - ・3月12日に急病人1名発生（脳卒中、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12日に社員1名が左腕裂傷、病院へ搬送し手当（既に仕事復帰）
 - ・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）
 - ・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)

- ・4月7日午後、福島第一原子力発電所構内北側の土捨て場において、土のう作りをしていた作業員1名が体調不良になったため、Jビレッジに搬送し、身体サーベイにより汚染なしを確認した後、救急車でいわき市立共立病院に搬送された。4月8日、「脱水、一過性意識消失」と診断。
- ・4月9日午前9時19分、水処理建屋において全面マスク着用でケーブル処理作業を行っていた協力企業社員1名の気分が悪くなり、建屋の外にある蓋のずれたマンホールに足を踏み入れて負傷したため、病院へ搬送しました。診断の結果、「右膝挫傷」「右膝内側側副靭帯損傷疑い」と診断。なお、身体サーベイの結果、汚染はないことが確認された。
- ・4月10日午前11時10分頃、2号機ヤードにおいて排水ホースの敷設作業を行っていた協力企業社員1名の気分が悪くなったため、Jビレッジに搬送後、同日午後2時27分に救急車で総合警城共立病院へ搬送。なお、身体への放射性物質の付着はないことが確認された。

<住民避難の状況(4月22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。

4月21日11:00、内閣総理大臣の指示により、福島第二原子力発電所で発生した事故に関する避難区域を福島第二原子力発電所から半径10km圏内から半径8km圏内に変更するよう指示。

4月21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から20km圏内を警戒区域に設定し、緊急事態応急対策に従事する者以外の者に対して、市町村長が一時的な立入りを認める場合を除き、当該区域への立入禁止、又は当該区域からの退去を指示。(警戒区域の発動日時:4月22日0:00)

<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、千葉県の知事に対して、以下の品目について、当分の間、出荷等を控えるよう指示。

また、原子力災害対策本部は、出荷制限等の発動・解除の考え方については、原子力安全委員会の助言も踏まえ、以下のように整理した。

- ・出荷制限・解除の対象区域は、汚染区域の拡がりや集荷実態等を踏まえ、市町村単位など県を分割した区域ごとに行うことも可能とする
- ・暫定規制値を超えた品目の出荷制限については、汚染の地域的拡がりを勘案しつつ総合的に判断
- ・出荷制限の解除は、福島第一原子力発電所の状況を勘案しつつ、約1週間ごと検査を行い、3回連続で暫定規制値を下回った品目・区域に対して実施
- ・ただし、原子力発電所から放射性物質の放出が継続している間は、解除後も引き続き約1週間ごとに検査を実施

(1) 出荷制限・摂取制限品目 (4月22日8:00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(ホウレンソウ、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、紅葉苔、カキナなど)、カブ、原乳(一部地域※1を除く)、しいたけ(伊達市、相馬市、南相馬市、田村市、いわき市、新地町、川俣町、浪江町、双葉町、大熊町、富岡町、楡葉町、広野町、飯舘村、葛尾村、川内村及び福島市において露地で原木を用いて栽培されたものに限る。)、イカナゴの稚魚(コウナゴ)	非結球性葉菜類、結球性葉菜類及びアブラナ科の花蕾類(ホウレンソウ、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、紅葉苔、カキナなど)、しいたけ(飯舘村において露地で原木を用いて栽培されたものに限る。)、イカナゴの稚魚(コウナゴ)
茨城県	ホウレンソウ(北茨城市及び高萩市において産出されたものに限る。)	
栃木県	ホウレンソウ(一部地域※2を除く)	
千葉県	・香取市及び多古町において産出されたホウレンソウ ・旭市において採取されたホウレンソウ、チンゲンサイ、シュンギク、サンチュ、セルリー及びパセリ	

※1：喜多方市、磐梯町、猪苗代町、三島町、会津美里町、下郷町、南会津町、福島市、二本松市、伊達市、本宮市、郡山市、須賀川市、田村市(旧都路村の範囲を除く)、白河市、いわき市、相馬市、国見町、鏡石町、石川町、浅川町、古殿町、三春町、小野町、矢吹町、矢祭町、塙町、新地町、大玉村、平田村、西郷村、泉崎村、中島村、鮫川村、

※2：那須塩原市、塩谷町

(2) 水道水の飲用制限の要請 (4月22日 8:00 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	なし
乳児 ・対応を継続している水道事業	飯舘村飯舘簡易水道事業 (福島県飯舘村)
・対応を継続している水道雨水 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：渡邊、杉山

電話：03-3501-1505

03-3501-5890

From: HOO Hoc <HOO.Hoc@nrc.gov>
Sent: Saturday, April 23, 2011 3:53 PM
To: LIA07 Hoc; OST01 HOC
Subject: FW: IAEA distributed documents
Attachments: 110423_aftershock_23_April.pdf; Summary_of_reactor_unit_status_at_23-April_1700
_UTC.pdf; No110_info1500_April23_extract_set_.pdf; METI_NISA_110
_(Jap)_press_release.pdf; METI_NISA_110_(Jap)_plant_conditions.pdf; METI_NISA_110
_(Jap)_monitoring_results.pdf; No109_info0800_April23_extract_set_.pdf;
No109E_Conditions.pdf; No109_E-Parameter.pdf; No109_E-Monitoring_Data.pdf

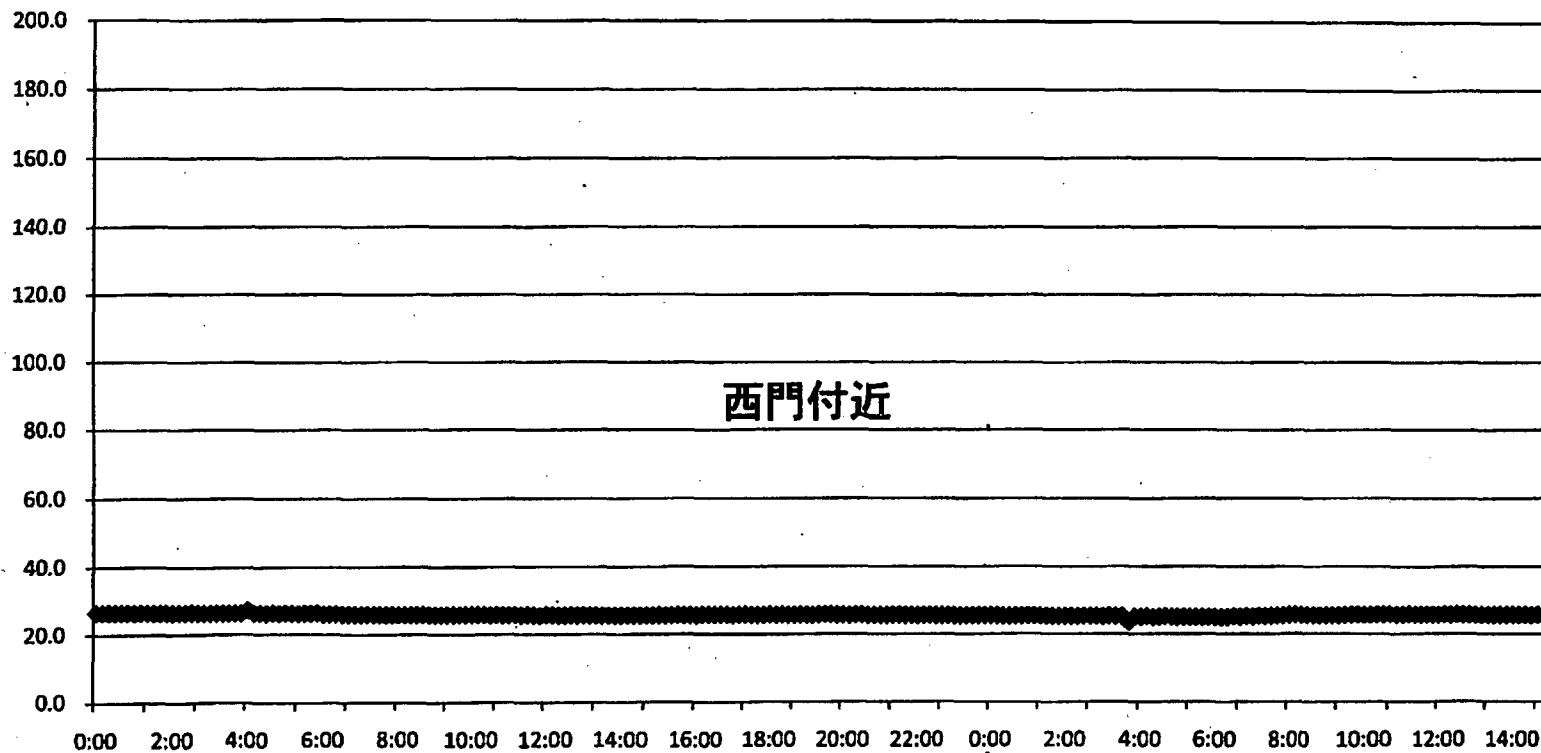
From: Kenagy, W David [SMTP:KENAGYWD@STATE.GOV]
Sent: Saturday, April 23, 2011 3:50:31 PM
To: Kenagy, W David; vince.mcclelland@nnsa.doe.gov; Rodriguez, Veronica;
ann.heinrich@nnsa.doe.gov; HOO Hoc; HOO2 Hoc; Huffman, William;
decair.sara@epamail.epa.gov; timothy.greten@dhs.gov;
maria.marinissen@hhs.gov; (b)(6); doehgeoc@oem.doe.gov;
hhs.spc@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;
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;
(b)(6) Jih, Rongsong;
(b)(6) Cutler, Kirsten B; Klug, Odin J
Subject: RE: IAEA distributed documents
Auto forwarded by a Rule

R 28/204

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)

$\mu\text{Sv/h}$



西門付近

4月22日

4月23日

福島第一原子力発電所 モニタリングポスト空間線量率($\mu\text{Sv/h}$)

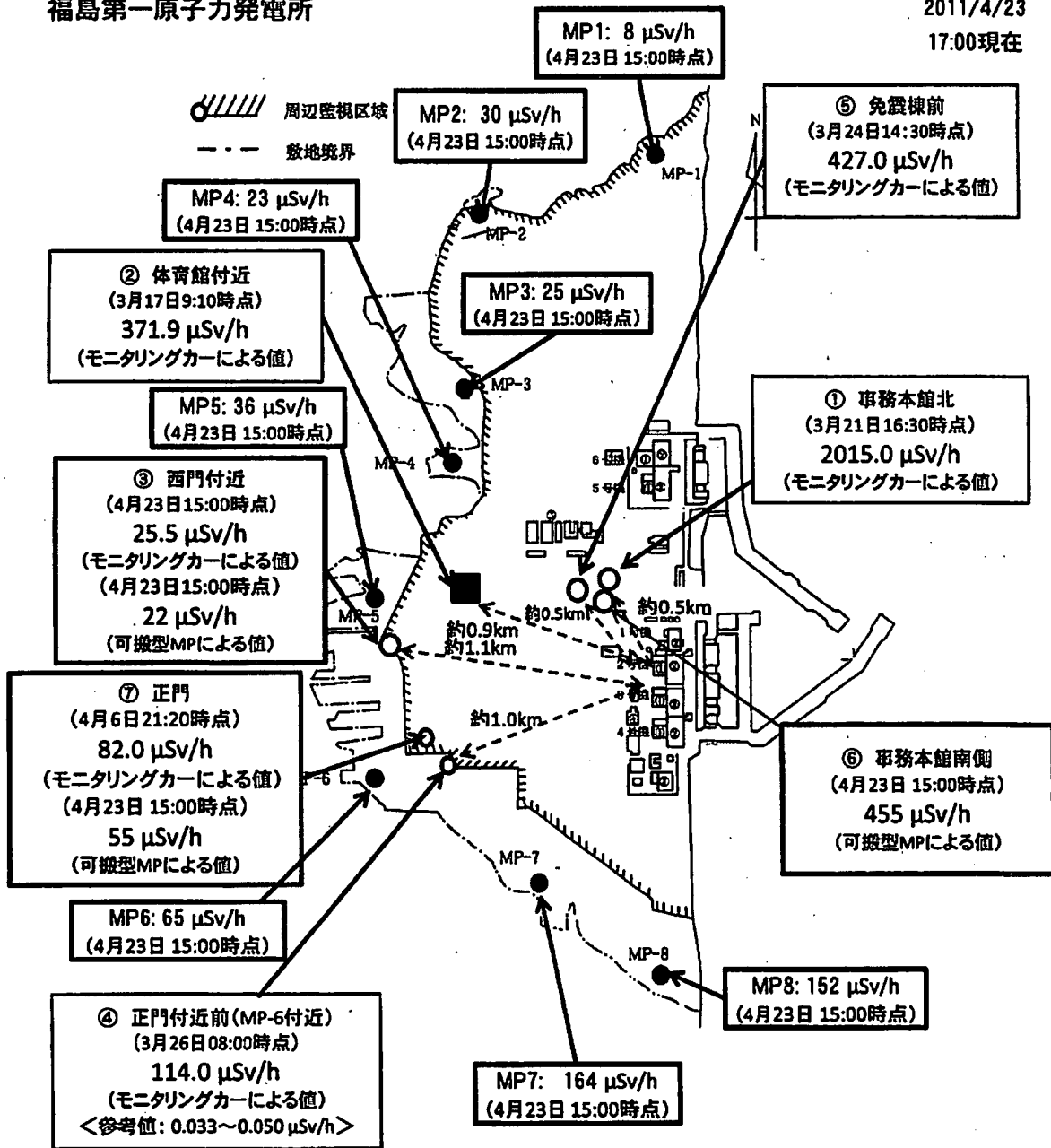
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2011/4/23 9:20	8	30	25	23	36	65	163	151
2011/4/23 9:30	8	30	25	23	36	65	163	151
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2011/4/23 14:50	8	30	25	23	36	65	164	153
2011/4/23 15:00	8	30	25	23	36	65	164	152

福島第一原子力発電所 モニタリングポスト空間線量率($\mu\text{Sv/h}$)

日時	MP-1	MP-2	MP-3	MP-4	MP-5	MP-6	MP-7	MP-8
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2011/4/23 4:40	8	30	25	23	37	66	167	154
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2011/4/23 8:50	8	30	25	23	36	65	163	151
2011/4/23 9:00	8	30	25	23	36	65	163	151

福島第一原子力発電所

2011/4/23
17:00現在



福島第二MP情報

日時	単位: $\mu\text{Sv/h}$							単位: m/s		天候
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	風向	風速	
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2011/4/23 9:20	2.3	1.8	2.4	2.0	2.0	2.0	-	南	5.1	-
2011/4/23 9:30	2.3	1.8	2.4	2.0	2.3	2.0	-	南	6.3	雨
2011/4/23 9:40	2.3	1.8	2.4	2.0	2.0	2.0	-	南南西	8.5	-
2011/4/23 9:50	2.3	1.8	2.4	2.0	2.0	2.0	-	南南西	9.6	-
2011/4/23 10:00	2.3	1.8	2.4	2.0	2.0	2.0	-	南	9.6	雨
2011/4/23 10:10	2.3	1.8	2.4	2.0	2.0	2.0	-	南	9.6	-
2011/4/23 10:20	2.3	1.8	2.5	2.0	2.0	2.0	-	南	9.5	-
2011/4/23 10:30	2.3	1.8	2.4	2.0	2.0	2.0	-	南	10.5	くもり
2011/4/23 10:40	2.3	1.8	2.4	2.0	2.0	2.0	-	南	12.9	-
2011/4/23 10:50	2.3	1.8	2.4	2.0	2.0	2.0	-	南	12.9	-
2011/4/23 11:00	2.3	1.8	2.4	2.0	2.0	2.0	-	南	14.4	くもり
2011/4/23 11:10	2.3	1.8	2.4	2.0	2.0	2.0	-	南	13.0	-
2011/4/23 11:20	2.3	1.8	2.4	2.0	2.0	2.0	-	南	13.3	-
2011/4/23 11:30	2.3	1.8	2.5	2.0	2.0	2.0	-	南	14.1	雨
2011/4/23 11:40	2.3	1.8	2.4	2.0	2.1	2.0	-	南	14.6	-
2011/4/23 11:50	2.3	1.8	2.5	2.0	2.0	2.0	-	南	15.5	-
2011/4/23 12:00	2.3	1.8	2.4	2.0	2.0	2.0	-	南	14.7	雨
2011/4/23 12:10	2.3	1.8	2.4	2.0	2.0	2.0	-	南	15.2	-
2011/4/23 12:20	2.3	1.8	2.5	2.0	2.0	2.0	-	南	16.6	-
2011/4/23 12:30	2.3	1.8	2.4	2.0	2.0	2.0	-	南	15.2	雨
2011/4/23 12:40	2.3	1.8	2.4	2.0	2.0	2.0	-	南	15.5	-
2011/4/23 12:50	2.3	1.8	2.4	2.0	2.0	2.0	-	南	16.0	-
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2011/4/23 13:10	2.3	1.8	2.4	2.0	2.1	2.0	-	南	16.6	-
2011/4/23 13:20	2.3	1.8	2.4	2.0	2.0	2.0	-	南	17.8	-
2011/4/23 13:30	2.3	1.8	2.4	2.0	2.0	2.0	-	南	17.1	くもり
2011/4/23 13:40	2.3	1.8	2.4	2.0	2.0	2.0	-	南	18.3	-
2011/4/23 13:50	2.3	1.8	2.5	2.0	2.0	2.0	-	南	18.1	-
2011/4/23 14:00	2.3	1.8	2.4	2.0	2.0	2.0	-	南	18.4	雨
2011/4/23 14:10	2.3	1.8	2.4	2.0	2.0	2.0	-	南	18.3	-
2011/4/23 14:20	2.3	1.8	2.4	2.0	2.0	1.9	-	南	17.5	-
2011/4/23 14:30	2.3	1.8	2.4	2.0	2.0	2.0	-	南	17.1	雨
2011/4/23 14:40	2.3	1.8	2.4	2.0	2.0	2.0	-	南	18.7	-
2011/4/23 14:50	2.3	1.8	2.4	2.0	2.0	1.9	-	南	18.2	-
2011/4/23 15:00	2.3	1.8	2.4	2.0	2.0	2.0	-	南	15.7	雨

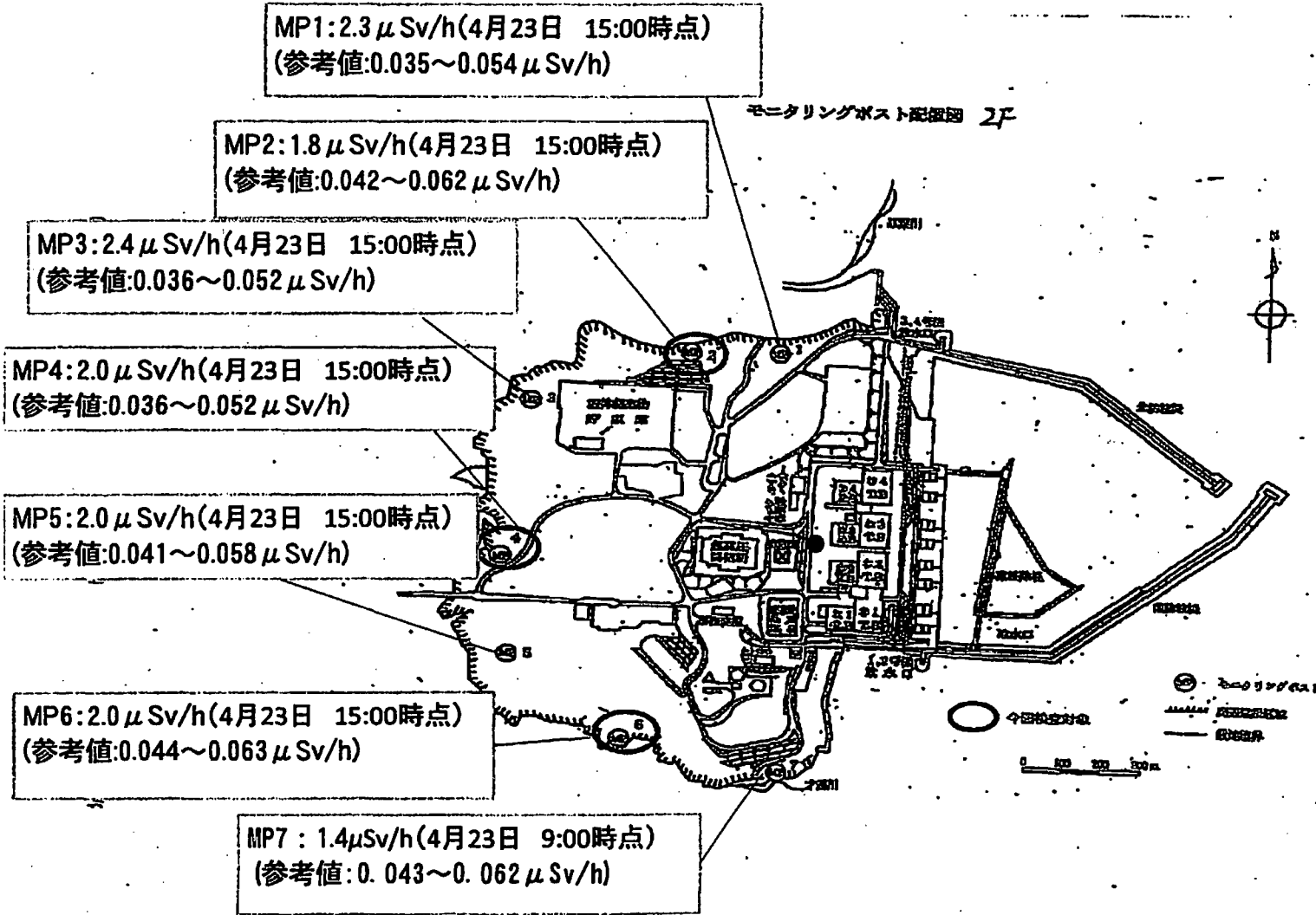
福島第二MP情報

単位m/s

日時	単位: $\mu\text{Sv/h}$							スタック		天候
	No.1	No.2	No.3	No.4	No.5	No.6	No.7	風向	風速	
2011/4/23 2:00	2.3	1.8	2.5	2.0	2.1	2.0	-	北北東	1.9	くもり
2011/4/23 2:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北	1.2	-
2011/4/23 2:20	2.3	1.8	2.5	2.0	2.1	2.0	-	北北西	1.1	-
2011/4/23 2:30	2.4	1.8	2.5	2.0	2.1	2.0	-	北西	1.1	くもり
2011/4/23 2:40	2.3	1.8	2.5	2.0	2.1	2.0	-	北西	1.1	-
2011/4/23 2:50	2.4	1.8	2.5	2.0	2.0	2.0	-	西北西	1.4	-
2011/4/23 3:00	2.3	1.8	2.5	2.0	2.1	2.0	-	西北西	1.0	雨
2011/4/23 3:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北	0.9	-
2011/4/23 3:20	2.4	1.8	2.5	2.0	2.1	2.0	-	北西	1.0	-
2011/4/23 3:30	2.4	1.8	2.5	2.0	2.1	2.0	-	西北西	1.1	雨
2011/4/23 3:40	2.4	1.8	2.5	2.0	2.0	2.0	-	西北西	1.4	-
2011/4/23 3:50	2.3	1.8	2.5	2.0	2.0	2.0	-	北西	1.0	-
2011/4/23 4:00	2.4	1.8	2.5	2.0	2.0	2.0	-	北北西	0.8	雨
2011/4/23 4:10	2.4	1.8	2.5	2.0	2.1	2.0	-	北北西	0.7	-
2011/4/23 4:20	2.3	1.8	2.5	2.0	2.1	2.0	-	北西	0.7	-
2011/4/23 4:30	2.3	1.8	2.5	2.0	2.1	2.0	-	北	1.1	雨
2011/4/23 4:40	2.3	1.8	2.5	2.0	2.0	2.0	-	北北西	1.1	-
2011/4/23 4:50	2.3	1.8	2.5	2.0	2.0	2.0	-	北東	0.6	-
2011/4/23 5:00	2.3	1.8	2.5	2.0	2.1	2.0	-	北北東	1.1	雨
2011/4/23 5:10	2.3	1.8	2.5	2.0	2.0	2.0	-	南南西	0.0	-
2011/4/23 5:20	2.3	1.8	2.5	2.0	2.1	2.0	-	北北東	0.3	-
2011/4/23 5:30	2.3	1.8	2.5	2.0	2.0	2.0	-	北北西	0.1	雨
2011/4/23 5:40	2.4	1.8	2.5	2.0	2.0	2.0	-	北北東	0.1	-
2011/4/23 5:50	2.3	1.8	2.5	2.0	2.1	2.0	-	北西	0.7	-
2011/4/23 6:00	2.3	1.8	2.5	2.0	2.0	2.0	-	東	0.6	雨
2011/4/23 6:10	2.3	1.8	2.5	2.0	2.0	2.0	-	東	1.9	-
2011/4/23 6:20	2.3	1.8	2.5	2.0	2.0	2.0	-	東北東	1.3	-
2011/4/23 6:30	2.3	1.8	2.5	2.0	2.0	2.0	-	東	1.1	雨
2011/4/23 6:40	2.3	1.8	2.5	2.0	2.0	2.0	-	南南東	4.1	-
2011/4/23 6:50	2.3	1.8	2.5	2.0	2.0	2.0	-	東南東	0.6	-
2011/4/23 7:00	2.3	1.8	2.5	2.0	2.0	2.0	-	東	1.4	雨
2011/4/23 7:10	2.3	1.8	2.4	2.0	2.0	2.0	-	北	0.2	-
2011/4/23 7:20	2.3	1.8	2.5	2.0	2.0	2.0	-	北東	1.5	-
2011/4/23 7:30	2.3	1.8	2.4	2.0	2.0	2.0	-	南東	2.3	雨
2011/4/23 7:40	2.3	1.8	2.5	2.0	2.0	2.0	-	東南東	0.0	-
2011/4/23 7:50	2.3	1.8	2.4	2.0	2.0	2.0	-	西南西	0.6	-
2011/4/23 8:00	2.3	1.8	2.4	2.0	2.0	2.0	-	西南西	0.5	雨
2011/4/23 8:10	2.3	1.8	2.4	2.0	2.0	2.0	-	南南東	0.8	-
2011/4/23 8:20	2.3	1.8	2.4	2.0	2.0	1.9	-	南西	1.4	-
2011/4/23 8:30	2.3	1.8	2.4	2.0	2.0	2.0	-	南	2.5	雨
2011/4/23 8:40	2.3	1.8	2.4	2.0	2.0	2.0	-	南	3.4	-
2011/4/23 8:50	2.3	1.8	2.4	2.0	2.0	1.9	-	南	4.9	-
2011/4/23 9:00	2.3	1.8	2.4	2.0	2.0	2.0	1.4	南	3.7	雨

福島第二原子力発電所

2011/4/23
17:00現在



各発電所等の環境モニタリング結果

通常の平均値の範囲	会社名	発電所名	4月22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
0.23~0.27	北海道電力	海部発電所	0.032	0.032	0.032	0.031	0.032	0.032	0.032	0.032	0.032	0.032	0.032	0.032
0.24~0.60	東北電力	女川原子力発電所	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
0.012~0.060	東北電力	東通原子力発電所	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017	0.016	0.017	0.016	
0.033~0.050	福島第一原子力発電所	福島第一原子力発電所	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.017	0.016	0.017	0.016	
0.036~0.052	東京電力	福島第二原子力発電所	0.066	0.065	0.066	0.067	0.066	0.066	0.066	0.066	0.066	0.066	0.066	
0.011~0.159	東京電力	柏崎刈羽原子力発電所	0.333	0.331	0.330	0.331	0.331	0.329	0.328	0.328	0.327	0.329	0.329	
0.039~0.110	日本原子力発電	敦賀発電所	0.043	0.043	0.043	0.043	0.042	0.042	0.042	0.042	0.042	0.042	0.042	
0.064~0.108	中部電力	浜岡原子力発電所	0.034	0.034	0.033	0.033	0.034	0.036	0.037	0.036	0.036	0.036	0.034	
0.0207~0.132	北陸電力	志賀原子力発電所	0.038	0.032	0.032	0.031	0.032	0.032	0.032	0.032	0.033	0.033	0.034	
0.028~0.130	中国電力	島根原子力発電所	0.072	0.073	0.075	0.078	0.078	0.076	0.074	0.074	0.073	0.073	0.072	
0.070~0.077	関西電力	美浜発電所	0.043	0.043	0.046	0.047	0.046	0.044	0.043	0.043	0.042	0.042	0.042	
0.045~0.047	関西電力	高浜発電所	0.036	0.035	0.036	0.036	0.038	0.036	0.036	0.036	0.036	0.036	0.036	
0.036~0.040	関西電力	大飯発電所	0.014	0.014	0.013	0.014	0.014	0.016	0.017	0.017	0.020	0.019	0.019	
0.011~0.080	四国電力	伊方発電所	0.027	0.027	0.028	0.029	0.028	0.026	0.028	0.032	0.034	0.039	0.049	
0.023~0.087	九州電力	玄海原子力発電所	0.037	0.037	0.037	0.037	0.040	0.037	0.036	0.037	0.038	0.044	0.047	
0.034~0.120	九州電力	川内原子力発電所	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.016	0.016	
0.009~0.069	日本原燃(株)	六ヶ所 再処理工場	0.017	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.015	0.016	0.016	
0.009~0.071	日本原燃(株)	六ヶ所 埋没貯蔵所	0.023	0.023	0.023	0.023	0.022	0.022	0.022	0.022	0.022	0.022	0.022	

(注) 中部電力(株)からの4月1日12時〜19時より、宇田様等と分を加盟しないので報告を受けています。

通常の平均値の範囲	会社名	発電所名	4月23日											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.23~0.27	北海道電力	海部発電所	0.032	0.032	0.032	0.031	0.031	0.032	0.031	0.032	0.032	0.032	0.031	0.031
0.24~0.60	東北電力	女川原子力発電所	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	
0.012~0.060	東北電力	東通原子力発電所	0.017	0.016	0.018	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	
0.033~0.050	福島第一原子力発電所	福島第一原子力発電所	0.017	0.018	0.018	0.017	0.017	0.017	0.017	0.017	0.017	0.017	0.017	
0.036~0.052	東京電力	福島第二原子力発電所	0.066	0.067	0.066	0.067	0.065	0.065	0.066	0.066	0.066	0.067	0.069	
0.011~0.159	東京電力	柏崎刈羽原子力発電所	0.329	0.329	0.327	0.327	0.330	0.325	0.325	0.325	0.326	0.325	0.325	
0.039~0.110	日本原子力発電	敦賀発電所	0.043	0.044	0.045	0.044	0.045	0.043	0.043	0.042	0.042	0.042	0.042	
0.064~0.108	中部電力	浜岡原子力発電所	0.033	0.034	0.034	0.034	0.034	0.040	0.043	0.045	0.045	0.041	0.041	
0.028~0.130	中国電力	島根原子力発電所	0.071	0.074	0.078	0.078	0.078	0.076	0.079	0.080	0.075	0.073	0.073	
0.045~0.047	関西電力	高浜発電所	0.035	0.035	0.046	0.046	0.046	0.043	0.043	0.042	0.036	0.034	0.043	
0.036~0.040	関西電力	大飯発電所	0.022	0.024	0.025	0.025	0.025	0.027	0.031	0.029	0.020	0.016	0.016	
0.011~0.080	四国電力	伊方発電所	0.042	0.042	0.044	0.042	0.045	0.026	0.027	0.027	0.026	0.026	0.026	
0.023~0.087	九州電力	玄海原子力発電所	0.056	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.057	0.056	0.056	
0.034~0.120	九州電力	川内原子力発電所	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.016	
0.009~0.069	日本原燃(株)	六ヶ所 再処理工場	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	
0.009~0.071	日本原燃(株)	六ヶ所 埋没貯蔵所	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.023	

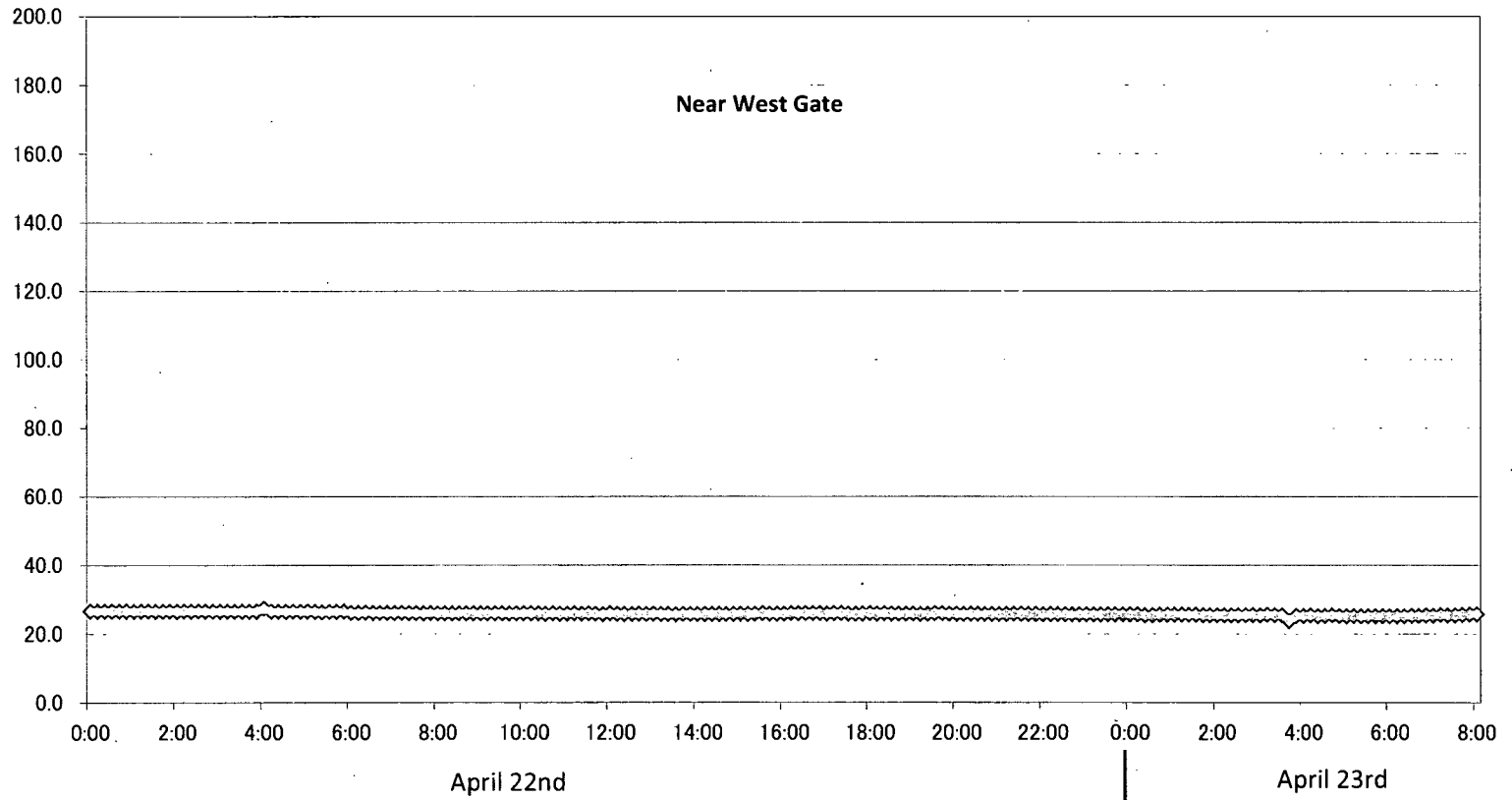
(注) 中部電力(株)からの4月1日12時〜19時より、宇田様等と分を加盟しないので報告を受けています。

4月23日 9時 まで

Dose Rate in the Fukushima Dai—ichi NPS

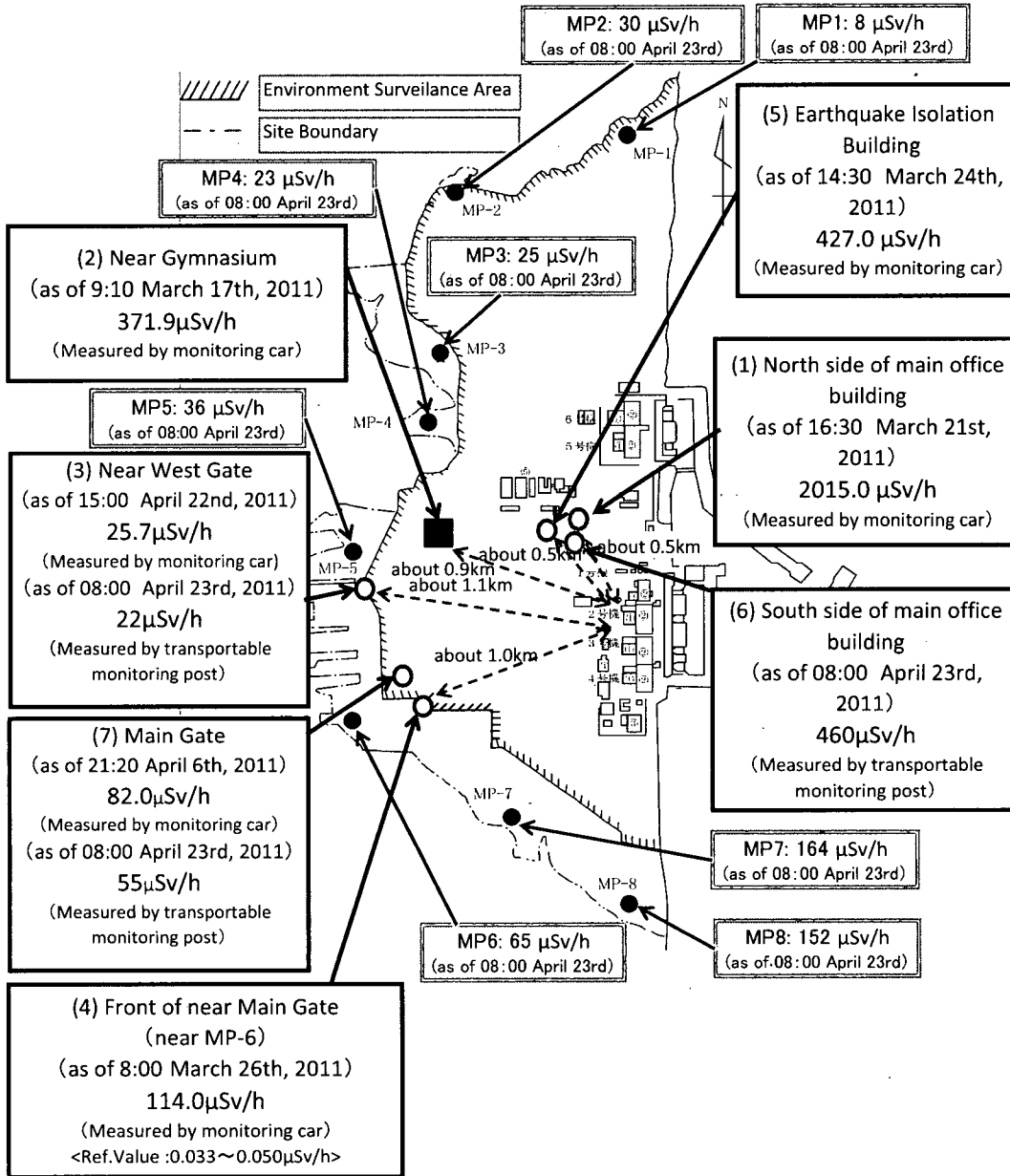
(Measured by monitoring car)

$\mu\text{Sv/h}$



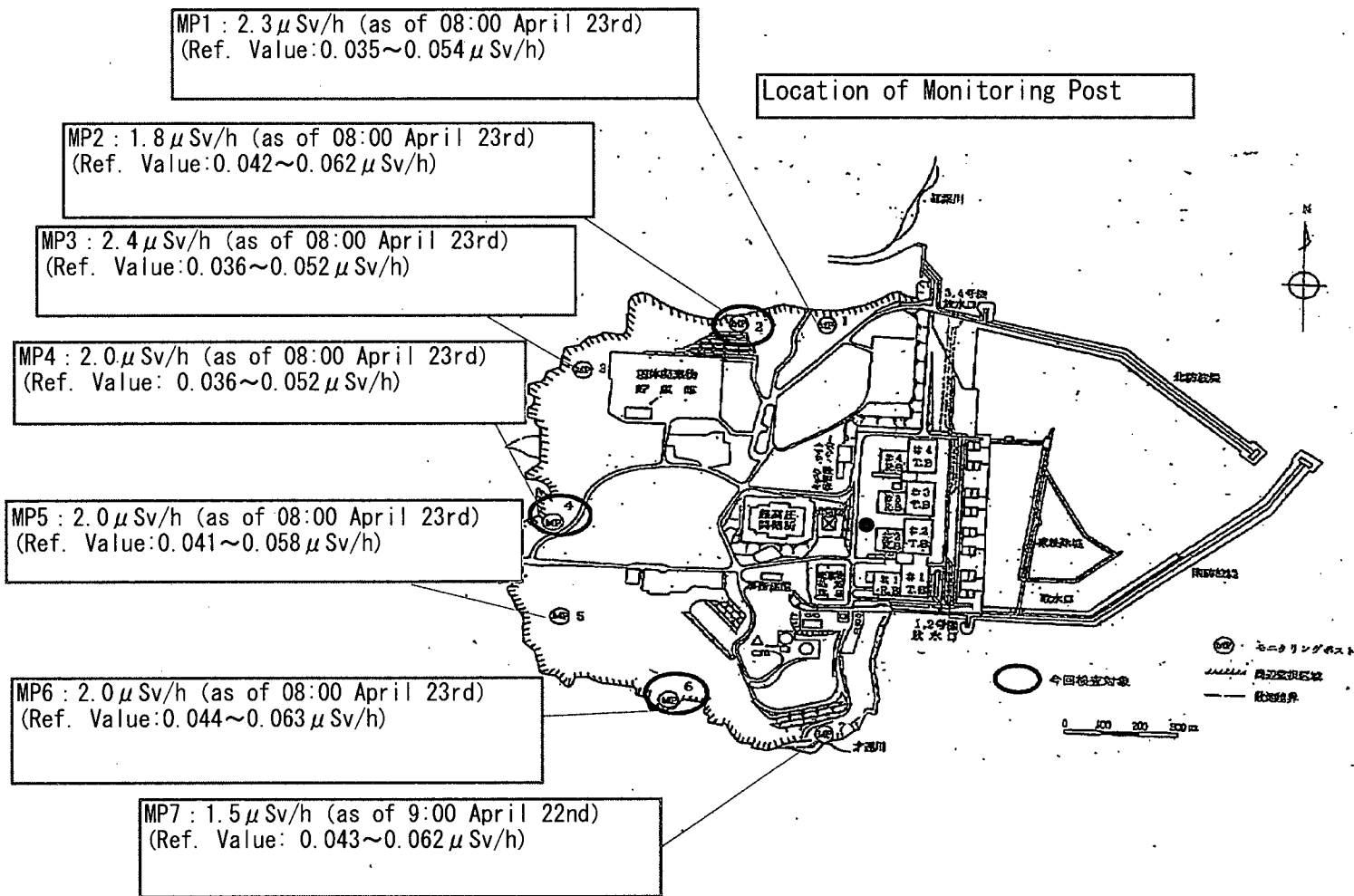
Fukushima Dai-ichi NPS

as of 10:00, April 23rd, 2011



Fukushima Dai-ri NPS

as of 10:00, April 23rd, 2011



Results of environmental monitoring at each NPSs etc. (as of 9:00PM, April 22nd)

unit: μ Sv/h

Range of normal average value	Company	NPS	April 22, 2011											
			0:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00
0.023~0.027	Hokkaido Electric Power Co.	Tomari NPS	0.032	0.032	0.031	0.032	0.032	0.033	0.032	0.032	0.032	0.032	0.032	0.031
0.024~0.060	Tohoku Electric Power Co.	Onagawa NPS	0.28	0.28	0.28	0.28	0.28	0.27	0.28	0.27	0.28	0.28	0.27	0.28
0.012~0.060		Higashidori NPS	0.016	0.016	0.017	0.016	0.017	0.017	0.017	0.017	0.018	0.019	0.018	0.018
0.033~0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi [*]	(publicized in another place.)											
0.036~0.052		Fukushima Dai-ni	(publicized in another place.)											
0.011~0.159	Japan Atomic Power Co.	Kashiwazaki kariwa NPS	0.066	0.065	0.065	0.066	0.066	0.066	0.066	0.066	0.065	0.066	0.067	0.066
0.036~0.053		Tokai Dai-ni NPS	0.331	0.328	0.328	0.328	0.328	0.327	0.329	0.327	0.331	0.329	0.330	0.330
0.039~0.110		Tsuruga NPS	0.073	0.073	0.073	0.074	0.073	0.073	0.074	0.073	0.073	0.073	0.073	inspection
0.064~0.108	Chubu Electric Power Co.	Hamaoka NPS	0.043	0.042	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.043	0.042	0.043
0.0207~0.132	Hokuriku Electric Power Co.	Shika NPS	0.033	0.034	0.033	0.034	0.034	0.034	0.034	0.034	0.033	0.034	0.033	0.034
0.028~0.130	Chugoku Electric Power Co.	Shimane NPS	0.030	0.030	0.030	0.030	0.030	0.030	0.030	0.031	0.030	0.030	0.031	0.031
0.070~0.077		Mihama NPS	0.074	0.074	0.074	0.074	0.072	0.072	0.074	0.074	0.072	0.074	0.073	0.073
0.045~0.047	Kansai Electric Power Co.	Takahama NPS	0.044	0.043	0.042	0.043	0.043	0.043	0.043	0.043	0.044	0.043	0.043	0.043
0.036~0.040		Ooi NPS	0.036	0.037	0.036	0.037	0.036	0.037	0.036	0.037	0.036	0.037	0.034	0.035
0.011~0.080	Shikoku Electric Power Co.	Ikata NPS	0.013	0.013	0.014	0.013	0.014	0.014	0.014	0.014	0.018	0.016	0.016	0.014
0.023~0.087	Kyushu Electric Power Co.	Genkai NPS	0.026	0.027	0.027	0.026	0.026	0.027	0.030	0.030	0.031	0.032	0.033	0.029
0.034~0.120		Sendai NPS	0.037	0.037	0.036	0.038	0.037	0.038	0.036	0.037	0.041	0.038	0.038	0.037
0.009~0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.016	0.016	0.016	0.016	0.018	0.019	0.018	0.017	0.018	0.017	0.016	0.016
0.009~0.071		Japan Nuclear Fuel Plant Disposal	0.022	0.022	0.022	0.023	0.024	0.024	0.025	0.025	0.024	0.024	0.023	0.022

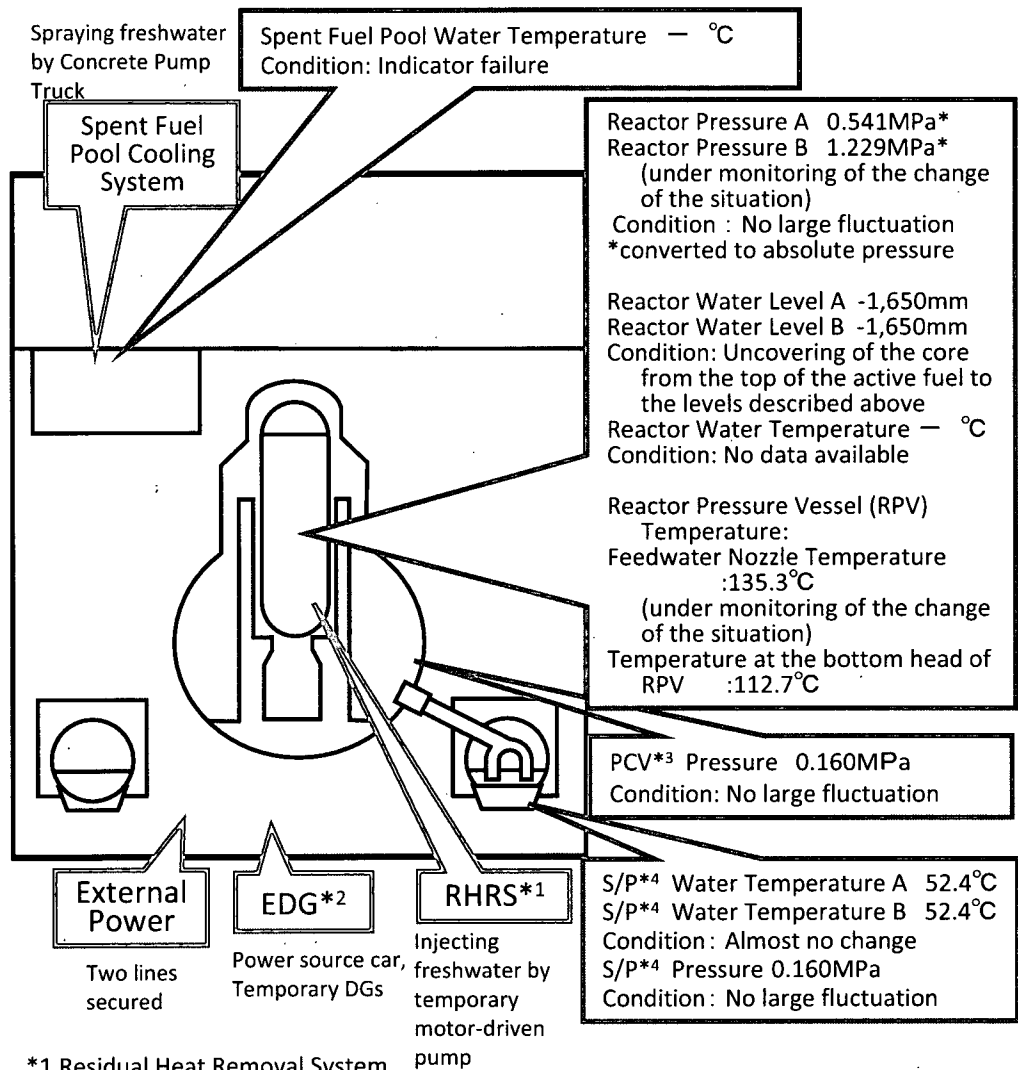
* Chubu Electric Power Co. reported that from 12:00, April 1st, the data did not include the contribution of cosmic rays.

Range of normal average value	Company	NPS	April 22, 2011											
			12:00	13:00	14:00	15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00	23:00
0.023~0.027	Hokkaido Electric Power Co.	Tomari NPS	0.032	0.032	0.032	0.031	0.032	0.031	0.032	0.032	0.032	0.032		
0.024~0.060	Tohoku Electric Power Co.	Onagawa NPS	0.28	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27	0.27		
0.012~0.060		Higashidori NPS	0.018	0.018	0.018	0.018	0.017	0.017	0.017	0.017	0.016	0.017		
0.033~0.050	Tokyo Electric Power Co.	Fukushima Dai-ichi [*]	(publicized in another place.)											
0.036~0.052		Fukushima Dai-ni	(publicized in another place.)											
0.011~0.159	Japan Atomic Power Co.	Kashiwazaki kariwa NPS	0.066	0.065	0.066	0.067	0.066	0.066	0.066	0.066	0.067	0.066	0.066	
0.036~0.053		Tokai Dai-ni NPS	0.333	0.331	0.331	0.330	0.330	0.331	0.329	0.328	0.328	0.327		
0.039~0.110		Tsuruga NPS	inspection	inspection	inspection	inspection	0.083	0.082	0.082	0.075	0.073	0.073		
0.064~0.108	Chubu Electric Power Co.	Hamaoka NPS	0.043	0.043	0.043	0.043	0.043	0.042	0.043	0.042	0.042	0.042		
0.0207~0.132	Hokuriku Electric Power Co.	Shika NPS	0.034	0.034	0.033	0.033	0.035	0.034	0.036	0.037	0.036	0.035		
0.028~0.130	Chugoku Electric Power Co.	Shimane NPS	0.038	0.032	0.032	0.031	0.032	0.031	0.032	0.033	0.036	0.033		
0.070~0.077		Mihama NPS	0.072	0.073	0.075	0.076	0.078	0.078	0.076	0.074	0.074	0.073		
0.045~0.047	Kansai Electric Power Co.	Takahama NPS	0.043	0.043	0.045	0.047	0.047	0.046	0.044	0.043	0.043	0.042		
0.036~0.040		Ooi NPS	0.035	0.035	0.036	0.040	0.040	0.040	0.038	0.036	0.036	0.036		
0.011~0.080	Shikoku Electric Power Co.	Ikata NPS	0.014	0.014	0.014	0.013	0.014	0.015	0.016	0.017	0.020	0.020		
0.023~0.087	Kyushu Electric Power Co.	Genkai NPS	0.027	0.027	0.028	0.029	0.028	0.026	0.028	0.032	0.034	0.040		
0.034~0.120		Sendai NPS	0.037	0.037	0.037	0.037	0.040	0.037	0.036	0.037	0.036	0.038		
0.009~0.069	Japan Nuclear Fuel Limited	Japan Nuclear Fuel Reprocessing Plant	0.017	0.017	0.016	0.016	0.016	0.016	0.016	0.016	0.016	0.015		
0.009~0.071		Japan Nuclear Fuel Plant Disposal	0.023	0.023	0.023	0.022	0.022	0.022	0.022	0.022	0.022	0.022		

* Chubu Electric Power Co. reported that from 12:00, April 1st, the data did not include the contribution of cosmic rays.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 1 (As of 2:00 April 23rd, 2011)

Major Events after the Earthquake



- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 12th 01:20 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 12th 10:17 Started to vent.
- March 12th 15:36 Sound of explosion
- March 12th 20:20 Started to inject seawater and borated water to the Reactor Core.
- March 23rd 02:33 The amount of injected water to the Reactor Core was increased utilizing the Feedwater Line in addition to the Fire Extinguish Line. (2m³/h →18m³/h)
- 09:00 Switched to the Feedwater Line only.(18m³/h →11m³/h)
- March 24th 11:30 Lighting in the Central Control Room was recovered.
- March 25th 15:37 Started to inject fresh water.
- March 29th 08:32 Switched to the water injection to the Reactor Core using the temporary motor-driven pump.
- March 31st 12:00 ~2nd 15:26 Started to transfer the stagnant water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 31st 13:03~16:04 Water spray by Concrete Pump Truck (Fresh water)
- April 3rd 12:02 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:55 Started to transfer the water from the Condenser to CST.
- April 6th 22:30 Started the operation for the injection of nitrogen to PCV.
- April 7th 01:31 Confirmed starting the injection of nitrogen to PCV.
- April 9th 04:10 Started using highly pure nitrogen generator in the injection of nitrogen to PCV.
- April 10th 09:30 Completed transferring the water from the Condenser to CST.
- April 11th around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core and nitrogen injection to PCV were suspended.
- April 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.
- April 11th 23:19 Restarted operation for injecting nitrogen to PCV.
- April 11th 23:34 Confirmed starting injection of nitrogen to PCV.
- April 17th 16:00~17:30 Confirmed the situation in the reactor building using an unmanned robot.
- April 18th 11:50~12:12 Stopped the water injection into the reactor core to replace the current hose with a new one.
- April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

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

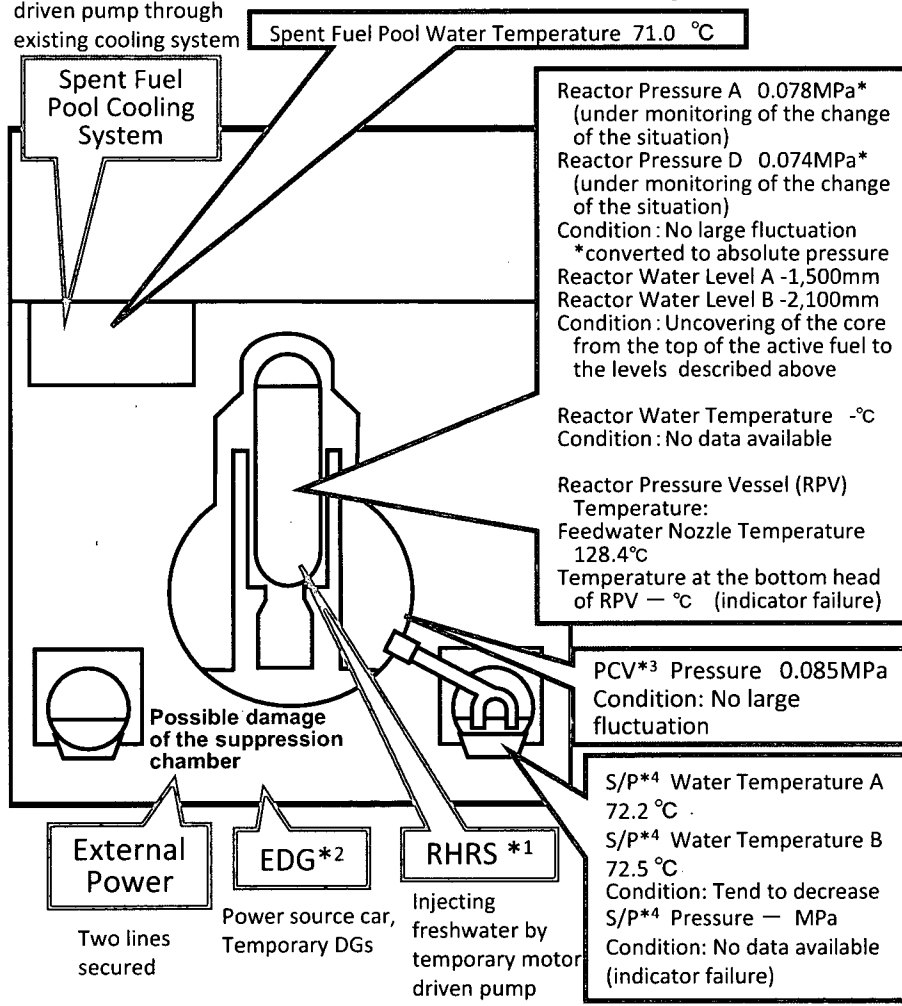
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 2

(As of 2:00 April 23rd, 2011)

Spraying freshwater by temporary motor-driven pump through existing cooling system



Major Events after the Earthquake 1/2

- March 11th 14:46 Under operation, Automatic shutdown by the earthquake
- March 11th 15:42 Report based on the Article 10 (Total loss of A/C power)
- March 11th 16:36 Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
- March 13th 11:00 Started to vent.
- March 14th 13:25 Occurrence of the Article 15 event (Loss of reactor cooling functions)
- March 14th 16:34 Started to inject seawater to the Reactor Core.
- March 14th 22:50 Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
- March 15th 00:02 Started to vent.
- March 15th 06:10 Sound of explosion
- March 15th around 06:20 Possible damage of the suppression chamber
- March 20th 15:05~17:20 Approximately 40 ton seawater injection to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
- March 20th 15:46 Power Center received electricity.
- March 21st 18:22 White smoke generated. The smoke died down and almost invisible at 07:11 March 22nd.
- March 22nd 16:07 Injection of around 18 tons of seawater to SFP
- March 25th 10:30~12:19 Sea water injection to SFP via FPC
- March 26th 10:10 Started to inject fresh water to the Reactor Core.
- March 26th 16:46 Lighting in the Central Control Room was recovered.
- March 27th 18:31 Switched to the water injection to the core using the temporary motor-driven pump.
- March 29th 16:30~18:25 Switched to the temporary motor-driven pump injecting fresh water to SFP.
- March 29th 16:45~1st 11:50 Transferred the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
- March 30th 9:25~23:50 Confirmed malfunction of the temporary motor-driven pump injecting fresh water to SFP(9:45). Switched to the injection using the fire pump Truck, but suspended as cracks were confirmed in the hose. (12:47, 13:10) Resumed injection of fresh water(19:05)
- April 1st 14:56~17:05 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 2nd around 9:30 The water, of which the dose rate was at the level of more than 1,000mSv/h, was confirmed to be collected in the pit located near the Intake Channel of Unit 2. The outflow from the lateral surface of the pit into the sea was also confirmed.
- April 2nd 17:10 Started to transfer the water from the Condenser to the CST.
- April 3rd 12:12 The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
- April 3rd 13:47~14:30 20 bags of sawdust, 80 bags of high polymer absorbent and 3 bags of cutting-processed newspaper were put into the Pit for the Conduit.
- April 4th 7:08~7:11 Approximately 13kg of tracer (bath agent) was put in from the Pit for the Duct for Seawater Pipe.
- April 4th 11:05~13:37 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 5th 14:15 Tracer is confirmed to outflow through the permeable layer around the pit into the sea. 15:07 Started to inject coagulant.
- April 6th around 5:38 The water outflow from the lateral surface of the pit was confirmed to stopped.
- April 7th 13:29~14:34 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 9th 13:10 Completed transferring the water from the Condenser to CST.
- April 10th 10:37~12:38 Freshwater injection to SFP via FPC using the temporary motor-driven pump.
- April 11th around 17:16 Loss of external power supply due to an earthquake occurred (at Hamadori in Fukushima Prefecture). Water injection to the Reactor Core was suspended.
- April 11th 17:56 External power supply was recovered.
- April 11th 18:04 Resumed injecting water to the Reactor Core.

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

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

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

Major Events after the Earthquake 2/2

April 12th 19:35~April 13th 17:04 Transfer from the trench of the turbine building to the Condenser.

April 13th 11:00 Suspended the transfer for checking leaks, etc.

April 13th 13:15~14:55 Freshwater injection to SFP via FPC using the temporary motor-driven pump.

April 16th 10:13~11:54 Freshwater injection to SFP via FPC using the temporary motor-driven pump. (The temporary motor-driven pump stopped at 11:39 due to an earthquake that occurred at around 11:19. SFP was confirmed to be filled to capacity through observing a rise of the water level in the Skimmer Tank.)

April 16th around 11:19 An earthquake occurred (in the southern part of Ibaraki Prefecture).

April 18th 13:42~ Confirmed the situation in the reactor building using an unmanned robot.

April 18th 12:13~12:37 Stopped the water injection into the reactor core to replace the current hose with a new one.

April 18th 09:30~17:40 Injected coagulant (soluble glass) into the power cable trench.

April 19th 08:00~15:30 Injected coagulant (soluble glass) into the power cable trench.

April 19th 10:08~ Started to transfer the stagnant water with high-level radioactivity from the trench of the turbine building to the buildings of radioactive waste treatment facilities.

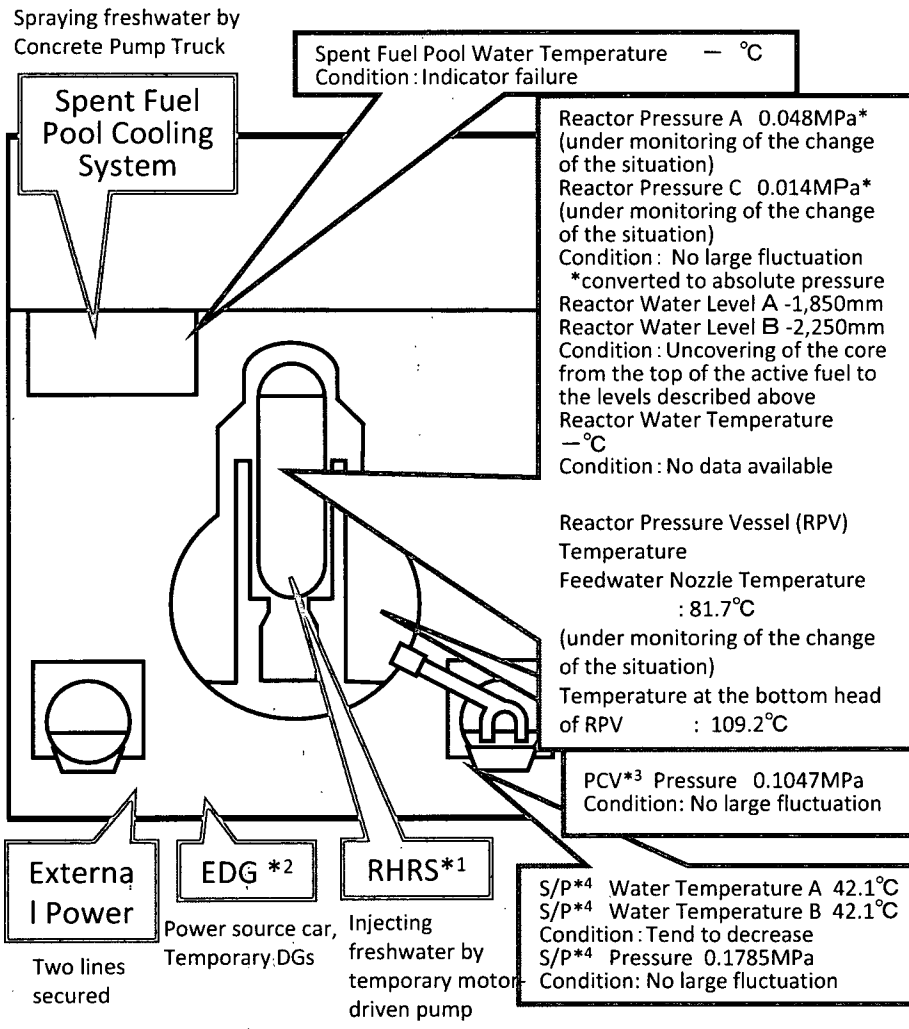
April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

April 19th 16:08~17:28 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

April 22nd 15:55~17:40 Injected freshwater to SFP via FPC using the temporary motor-driven pump.

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 3 (As of 2:00 April 23rd, 2011)

Major Events after the Earthquake



March 11 th 14:46	Under operation, Automatic shutdown by the earthquake
March 11 th 15:42	Report based on the Article 10 (Total loss of A/C power)
March 13 th 05:10	Occurrence of the Article 15 event (Inability of water injection of the Emergency Core Cooling System)
March 13 th 08:41	Started to vent.
March 13 th 13:12	Started to inject seawater and borated water to the Reactor Core.
March 14 th 05:20	Started to vent.
March 14 th 07:44	Occurrence of the Article 15 event (Unusual rise of the pressure in PCV)
March 14 th 11:01	Sound of explosion
March 16 th around 08:30	White smoke generated.
March 17 th 09:48~10:01	Water discharge by the helicopters of Self-Defense Force
March 17 th 19:05~19:15	Water spray from the ground by High pressure water-cannon trucks of Police
March 17 th 19:35~20:09	Water spray from the ground by fire engines of Self-Defense Force
March 18 th before 14:00~14:38	Water spray from the ground by 6 fire engines of Self-Defense Force
March 18 th ~14:45	Water spray from the ground by a fire engine of the US Military
March 19 th 00:30 ~01:10	Water spray by Hyper Rescue Unit of Tokyo Fire Department
March 19 th 14:10 ~ 20 th 03:40	Water spray by Hyper Rescue Unit of Tokyo Fire Department
March 20 th 11:00	Pressure of PCV rose(320kPa).Afterward fell.
March 20 th 21:36 ~ 21 st 03:58	Water spray by Hyper Rescue Unit of Tokyo Fire Department
March 21 st around 15:55	Grayish smoke generated and was confirmed to be died down at 17:55.
March 22 nd 15:10 ~16:00	Water spray by Hyper Rescue Unit of Tokyo Fire Department and Osaka City Fire Bureau.
March 22 nd 22:46	Lighting in the Central Control Room was recovered.
March 23 rd 11:03 ~13:20	Injection of about 35 ton of sea water to the Spent Fuel Pool (SFP) via the Fuel Pool Cooling Line (FPC)
March 23 rd around 16:20	Black smoke generated and was confirmed to died down at around 23:30 and 24 th 04:50.
March 24 th 05:35~16:05	Injection of around 120 ton of sea water to SFP via FPC
March 25 th 13:28~16:00	Water spray by Kawasaki City Fire Bureau supported by Tokyo Fire Department
March 25 th 18:02	Started fresh water injection to the core.
March 27 th 12:34~14:36	Water spray by Concrete Pump Truck
March 28 th 17:40~31 st around 8:40	Transferring the water from the Condensate Storage Tank (CST) to the Surge Tank of Suppression Pool Water (SPT)
March 28 th 20:30	Switched to the water injection to the core using a temporary motor-driven pump.
April 3 rd 12:18	The power supply to the temporary motor-driven pump was switched from the temporary power supply to the external power supply.
April 11 th around 17:16	Loss of external power supply of Unit 1 and 2 due to an earthquake occurred (at Hamadori in Fukushima Prefecture) and water injection to the Reactor Core was suspended.
April 11 th 18:04	External power supply of Units 1 and 2 recovered (April 11 th 17:56). Resumed injecting water to the Reactor Core.
April 17 th 11:30~14:00	Confirmed the situation in the reactor building using unmanned robot.
April 18 th 12:38~13:05	Stopped the water injection into the reactor core to replace the current hose with a new one
April 19 th 10:23	Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.
April 22 nd 13:40~14:00	Injected freshwater on trial into SFP using the Fuel Pool Coolant Purification Line

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

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

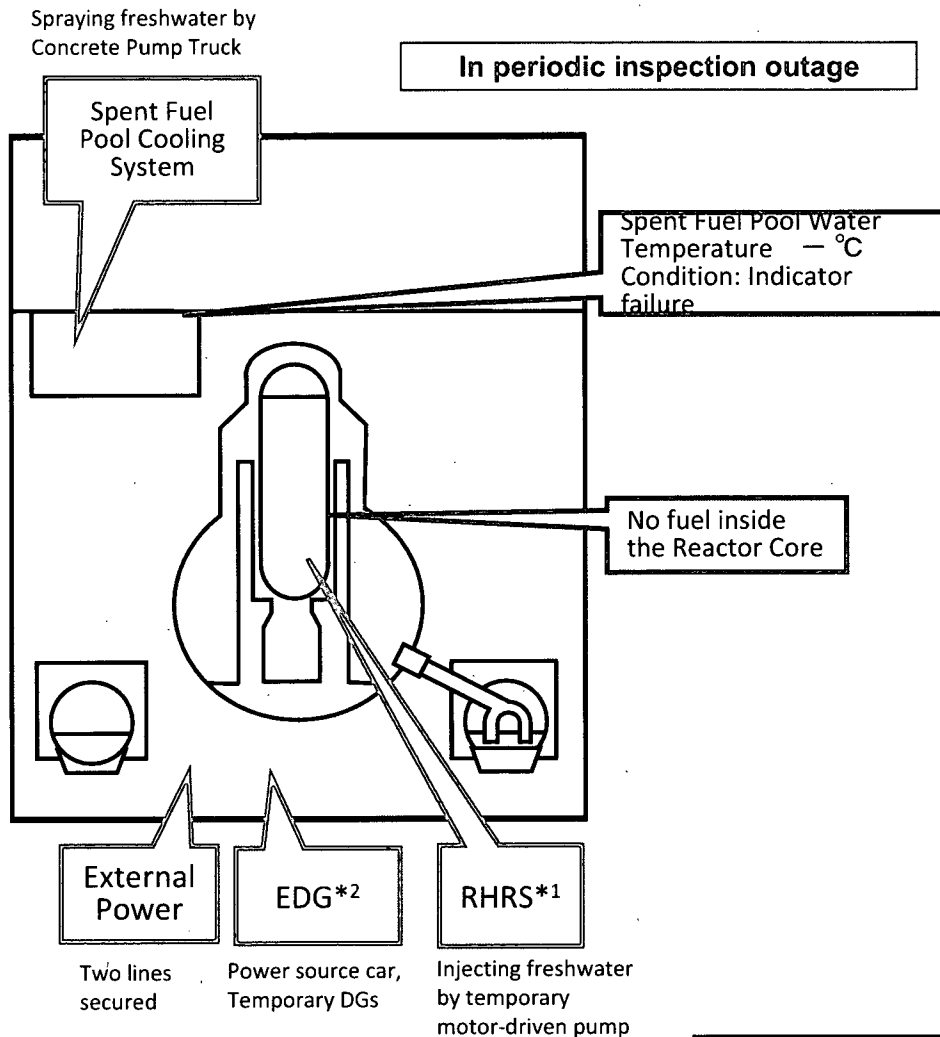
(Editorial committee for Nuclear Energy Handbook, Nuclear Energy Handbook)

Major Events after the Earthquake 2/2

<Water spray by Concrete Pump Truck (Fresh water)>

March 29th 14:17~18:18, March 31st 16:30~19:33, April 2nd 09:52~12:54, April 4th 17:03~19:19, April 7th 06:53 ~08:53,
April 8th 17:06~20:00, April 10th 17:15~19:15, April 12th 16:26~17:16, April 14th 15:56~16:32, April 18th 14:17~
15:02, April 22nd 14:19~15:40

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 4 (As of 2:00 April 23rd, 2011)



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

Major Events after the Earthquake

In periodic inspection outage when the earthquake occurred

- March 14th 04:08 Water temperature in the Spent Fuel Pool (SFP), 84°C
- March 15th 06:14 Confirmed the partial damage of wall in the 4th floor.
- March 15th 09:38 Fire occurred in the 3rd floor. (12:25 extinguished)
- March 16th 05:45 Fire occurred. TEPCO couldn't confirm any fire on the ground. (06:15)
- March 20th 08:21~09:40 Water spray over SFP by Self-Defense Force
- March 20th around 18:30~19:46 Water spray over SFP by Self-Defense Force
- March 21st 06:37~08:41 Water spray over SFP by Self-Defense Force
- March 21st around 15:00 Work for laying cable to Power Center was completed.
- March 22nd 10:35 Power Center received electricity.

<Water spray by Concrete Pump Truck (Seawater)>

- March 22nd 17:17~20:32, March 23rd 10:00~13:02, March 24th 14:36~17:30, March 25th 19:05~22:07, March 27th 16:55~19:25

March 25th 06:05~10:20 Sea water injection to SFP via the Fuel Pool Cooling Line (FPC)

March 29th 11:50 Lighting in the Central Control Room was recovered.

April 11th around 17:16 An earthquake occurred (at Hamadori in Fukushima Prefecture).

April 12th 12:00~13:04 Sampled the water in SFP.

April 19th 10:23 Completed the work of strengthening connection of the power supplies between Units 1-2 and Units 3-4.

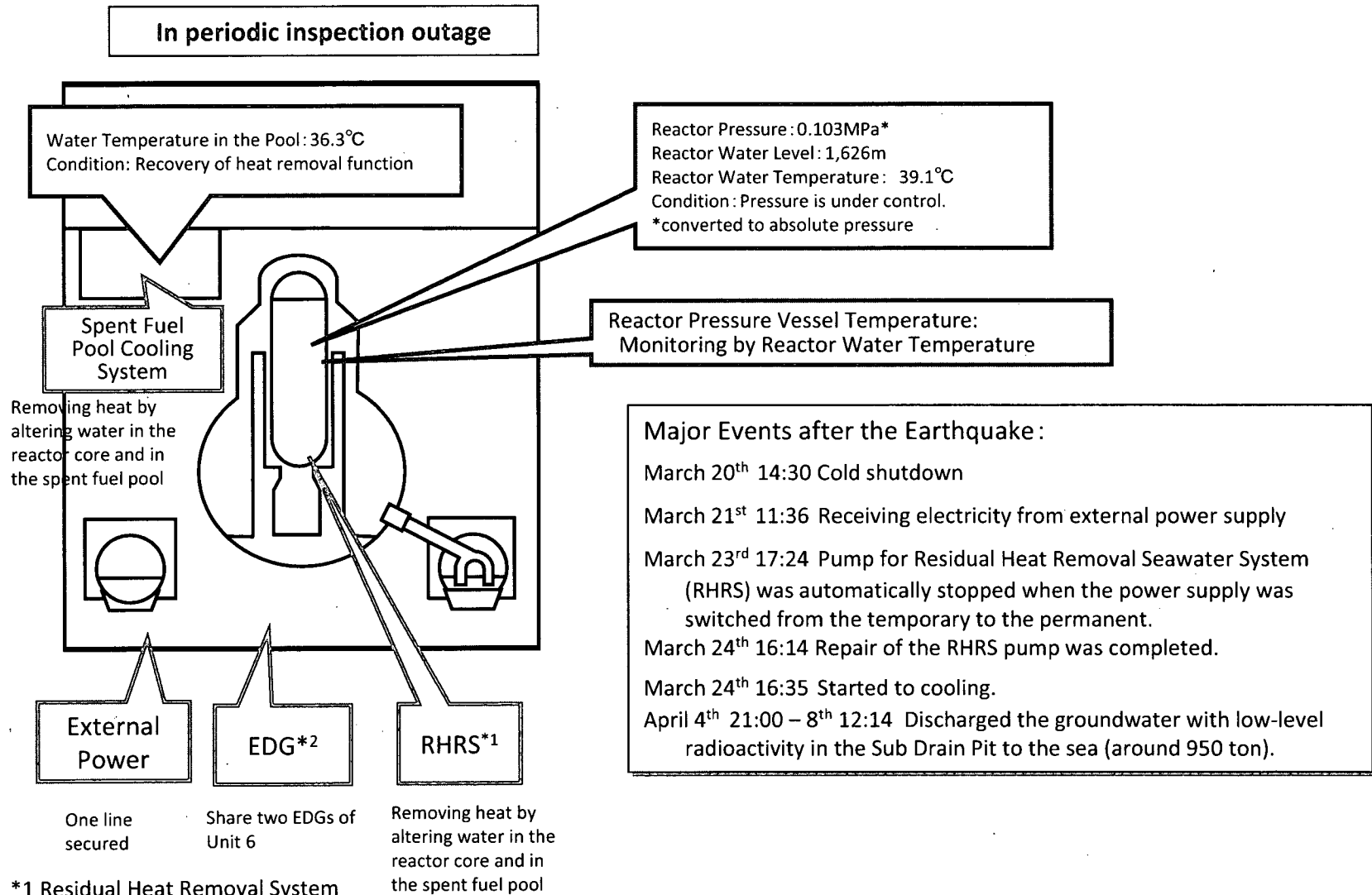
April 22nd Measured the water level of SFP by a gauge hung on Concrete Pump Truck (62m class).

< Water spray by Concrete Pump Truck (Fresh water)> March 30th 14:04~18:33, April 1st 08:28~14:14, April 3rd 17:14~22:16, April 5th 17:35~18:22, April 7th 18:23~19:40, April 9th 17:07~19:24, April 13th 0:30~6:57, April 15th 14:30~18:29, April 17th 17:39~21:22, April 19th 10:17~11:35, April 20th 17:08~20:31, April 21st 17:14~21:20, April 22nd 17:52~23:53

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

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 5 (As of 2:00 April 23rd, 2011)

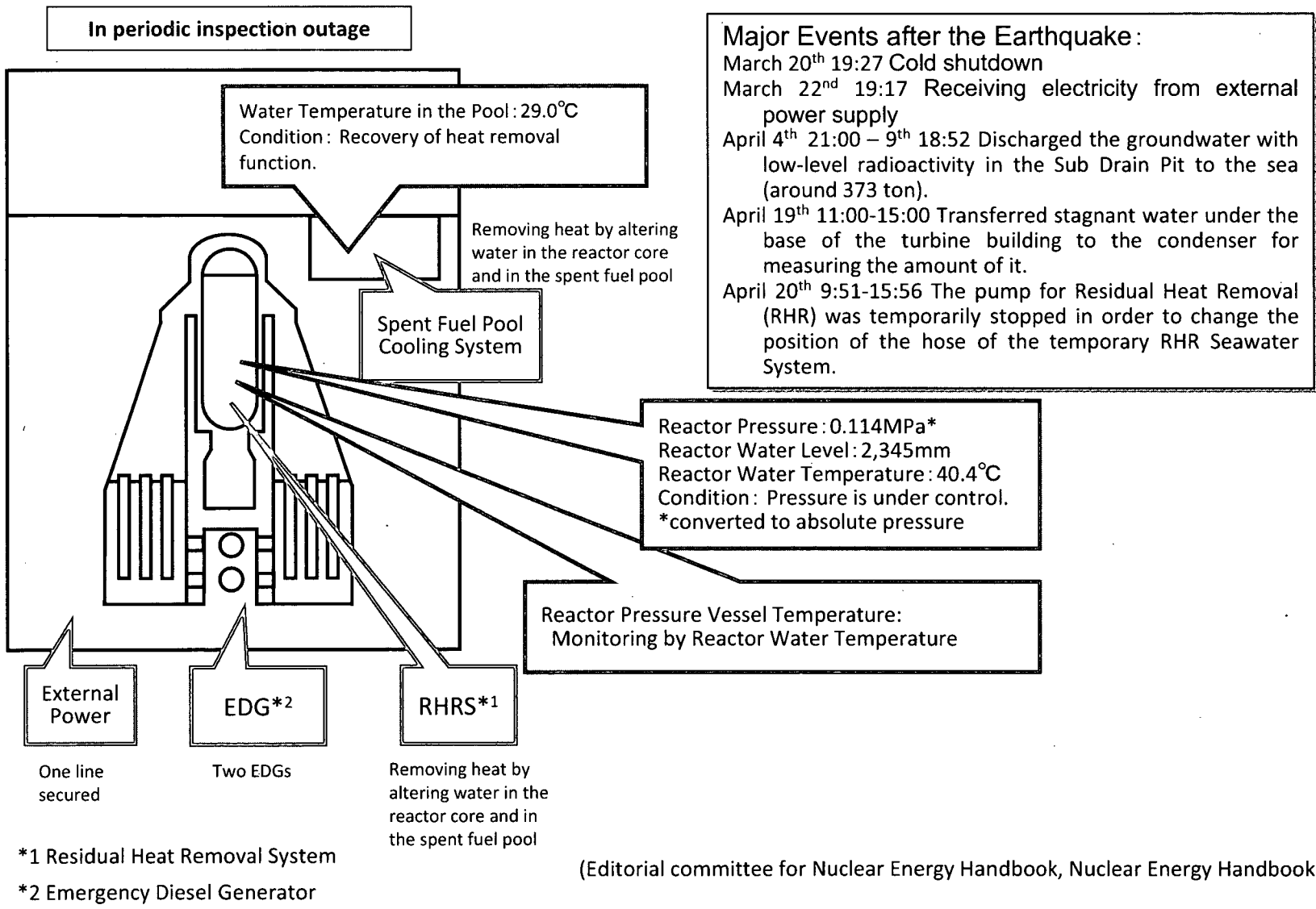


*1 Residual Heat Removal System

*2 Emergency Diesel Generator

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

Conditions of Fukushima Dai-ichi Nuclear Power Station Unit 6 (As of 2:00 April 23rd, 2011)



From: HOO Hoc <HOO.Hoc@nrc.gov>
Sent: Monday, April 25, 2011 2:28 PM
To: LIA07 Hoc; OST01 HOC
Subject: FW: IAEA distributed documents
Attachments: METI_NISA_112_(Jap)_monitoring_data.pdf; METI_NISA_112_(Jap)_plant_status.pdf;
METI_NISA_112_(Jap)_press_release.1.doc; METI_NISA_112_(Jap)_press_release.doc;
Summary_of_reactor_unit_status_at_24-April_1700.UTC.pdf

From: Kenagy, W David [SMTP:KENAGYWD@STATE.GOV]
Sent: Monday, April 25, 2011 2:26:15 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) doehqec@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;
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;
Mahaffey, Charles T; (b)(6) Jih, Rongsong;
(b)(6) Cutler, Kirsten B; Klug, Odin J
Subject: RE: IAEA distributed documents
Auto forwarded by a Rule

RRR/205

平成23年4月25日

原子力安全・保安院

地震被害情報（第112報）

（4月25日08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。

前回からの主な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

- ・ 4号機について、コンクリートポンプ車（62m級）が淡水約165tを放水（4月24日12:25～17:07）
- ・ 5号機の原子炉建屋山側の約860㎡の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月24日11:30～13:00）
- ・ リモートコントロール重機によるがれきの撤去（コンテナ3個分）を実施（4月24日9:00～16:00）

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、3月20日14:30冷温停止)
- 6号機(110万kW)(定検により停止中、3月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(4月25日02:00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]	0.541(A) 1.261(B)	0.081(A) 0.074(D)	0.046(A) 0.012(C)	—	0.104	0.117
原子炉格納容器圧力 (D/W) [kPa]	155	80	103.8	—	—	—
原子炉水位*2 [mm]	-1700(A) -1700(B)	-1500(A) -2100(B)	-1850(A) -2250(B)	—	1979	2237
原子炉格納容器内 S/C水温 [°C]	51.6(A) 51.5(B)	71.3(A) 71.6(B)	41.6(A) 41.6(B)	—	—	—
原子炉格納容器内 S/C圧力 [kPa]	155	計器不良	178.7	—	—	—
使用済燃料プール 水温度 [°C]	計器不良	47.0	計器不良	計器不良	35.1	30.0
備考	4/25 00:00 現在の値	4/25 00:00 現在の値	4/25 00:00 現在の値	4/25 現在	4/25 02:00 現在の値	4/25 02:00 現在の値

*1: 絶対圧に換算

*2: 燃料頂部からの数値

(4) 各プラント等の状況

<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(3月11日16:36)
- ・ベント開始(3月12日10:17)
- ・原子炉圧力容器内に消火系ラインを用いて海水を注水開始(3月12日20:20)

- 一時中断 (3月14日 1:10)
- ・ 1号機で爆発音 (3月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 ($2\text{m}^3/\text{h} \rightarrow 18\text{m}^3/\text{h}$) (3月23日 2:33)。その後、給水系のみに切替 (約 $11\text{m}^3/\text{h}$) (3月23日 9:00)
- ・ 中央制御室の照明復帰 (3月24日 11:30)
- ・ 原子炉圧力容器へ淡水を注水開始。 (3月25日 15:37)
- ・ 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 $2.1 \times 10^8 \text{Bq}/\text{cm}^3$ 、 ^{137}Cs (セシウム) が $1.8 \times 10^6 \text{Bq}/\text{cm}^3$ 、検出
- ・ 消防ポンプによる淡水の原子炉圧力容器への注水を仮設電動ポンプに切り替え (3月29日 8:32)
- ・ タービン建屋地下の溜まり水を、3月24日 17時頃から復水器へ移送開始。復水器の水位が満水に近いことが確認されたため、復水器への排水を停止 (3月29日 7:30)。タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水を、サプレッションプール水サージタンク (A) へ移送開始 (3月31日 12:00) し、移送先をサプレッションプール水タンクへ (B) に切り替えた後 (3月31日 15:25)、移送を再開し、終了した (4月2日 15:26)
- ・ 使用済燃料プールについて、コンクリートポンプ車 (62m級) が約 90t 放水 (淡水) (3月31日 13:03~16:04)。コンクリートポンプ車 (62m級) による放水位置の確認のため、試験放水 (4月2日 17:16~17:19)
- ・ タービン建屋の一部の照明が点灯 (4月2日)
- ・ 原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施 (4月3日 10:42~11:52)
- ・ 原子炉圧力容器への淡水の注水を外部電源に切り替え (4月3日 12:02)
- ・ タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水器の水を復水貯蔵タンクへ移送開始 (4月3日 13:55)
- ・ 原子炉格納容器内での水素燃焼の可能性を下げることを目的として、原子炉格納容器への窒素封入操作開始 (4月6日 22:30)
- ・ 原子炉格納容器への窒素封入開始を確認 (4月7日 1:31)
- ・ 原子炉格納容器への窒素封入を高純度窒素発生装置に切替 (4月9日 4:10)
- ・ 復水器から復水貯蔵タンクへの移送完了 (4月10日 09:30)
- ・ 地震発生 (4月11日 17:16頃福島県浜通り) により外部電源が喪失するとともに原子炉圧力容器への淡水の注水及び原子炉格納容器への窒素封入が停止 (4月11日 17:16頃)
- ・ 外部電源復旧 (4月11日 17:56)
- ・ 原子炉圧力容器への淡水の注水再開 (4月11日 18:04)
- ・ 原子炉格納容器への窒素封入を開始 (4月11日 23:34)
- ・ 原子炉建屋において、無人ロボットによる状況確認等を実施 (4月17日 16:00)

～17:30)

- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止 (4月18日 11:50～12:12)
- ・白煙の吐出確認できず (4月25日 6:30 現在)
- ・原子炉圧力容器へ淡水を注水中 (4月25日 08:00 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 (3月11日 16:36)
- ・ベント開始 (3月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 (3月14日 11:00 過ぎ)
- ・原子炉圧力容器の水位が低下傾向 (3月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 (3月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の注水作業開始 (3月14日 16:34)
- ・原子炉圧力容器の水位が低下傾向 (3月14日 22:50)
- ・ベント開始 (3月15日 0:02)
- ・2号機で爆発音するとともに、サプレッションプール (圧力抑制室) の圧力低下 (3月15日 6:10)。同室に異常が発生したおそれ (3月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 (3月19日 13:30)
- ・使用済燃料プールに海水を 40 t 注水 (冷却系配管に消防車のポンプを接続) (3月20日 15:05～17:20)
- ・パワーセンター受電 (3月20日 15:46)
- ・白煙が発生 (3月21日 18:22)
- ・白煙はほとんど見えない程度に減少 (3月22日 7:11 現在)
- ・使用済燃料プールに海水を 18 t 注水 (3月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水 (3月25日 10:30～12:19)
- ・原子炉圧力容器への淡水の注水開始 (3月26日 10:10)
- ・中央制御室の照明復帰 (3月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水を仮設電動ポンプに切り替え (3月27日 18:31)
- ・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、¹³⁴I (ヨウ素) 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、¹³⁴I (ヨウ素) 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 (3月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水を仮設電動ポンプによる淡水に切り替え注水（3月29日16:30～18:25）
- ・30日9:25より使用済燃料プールへの注水をしていたところ、仮設電動ポンプの不調が同日9:45に確認されたため、消防ポンプによる切り替えを行ったが、ホースの亀裂が確認（3月30日12:47、13:10）されたため、注水を中断。淡水の注水を再開（3月30日19:05～23:50）
- ・使用済燃料プールに、使用済燃料冷却系を用いて仮設電動ポンプにより淡水を約70t注水（4月1日14:56～17:05）
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水をサブレーションプール水サージタンクへ移送（3月29日16:45～4月1日11:50）
- ・取水口付近にある電源ケーブルを収めているピット内に、1,000mSv/hを超える水が溜まっていること及びピット側面のコンクリート部分に長さ約20cmの亀裂があり、当該部分より、水が海に流出していることを確認（4月2日9:30頃）。止水処置のため、コンクリートを注入（4月2日16:25、19:02）
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水器の水を復水貯蔵タンクへ移送開始（4月2日17:10）
- ・トレンチ立坑及びタービン建屋地下1階の水位を監視するためのカメラを設置（4月2日）
- ・タービン建屋の一部の照明が点灯（4月2日）
- ・原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施（4月3日10:22～12:06）
- ・原子炉圧力容器への淡水の注水を外部電源に切り替え（4月3日12:12）
- ・2号機バースクリーン近傍にあるピット内に溜まっている水の海水への流出を防止する措置として、取水電源トレンチの天端を破碎し、おがくず（3kg/袋）20袋、高分子吸収材（100g/袋）80袋、裁断処理した新聞紙（大きいゴミ袋）3袋を投入（4月3日13:47～14:30）
- ・トレーサー（乳白色の入浴剤）約13kgを海水配管トレンチ立坑から投入（4月4日7:08～7:11）
- ・使用済燃料プールに、使用済燃料冷却系を用いて仮設電動ポンプによる淡水（約70t）を注水（4月4日11:05～13:37）
- ・2号機バースクリーン近傍のピット周辺に2箇所穴を開け、トレーサーを注入し、亀裂部から海に流出していることを確認（4月5日14:15）。ピット周辺に開けた穴に水流出防止のための凝固剤（水ガラス）注入開始（4月5日15:07）。水の流出が止まったことを確認（4月6日5:38頃）また、タービン建屋の水位については、上昇してないことを確認。さらに、流出していた箇所について、ゴム板と治具（つかえ棒）により止水の対策を実施（4月6日13:15完了）

- ・復水器の水を復水貯蔵タンクに移送するポンプを1台増設(計2台 30m³/h)
(4月5日 15:40頃)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約36t)(4月7日 13:39~14:34)
- ・復水器から復水貯蔵タンクへの移送完了(4月9日 13:10)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約60t)(4月10日 10:37~12:38)
- ・地震発生(4月11日 17:16頃)により外部電源が喪失するとともに原子炉圧力容器への淡水の注水が停止(4月11日 17:16頃)
- ・外部電源復旧(4月11日 17:56)
- ・原子炉圧力容器への淡水の注水を再開(4月11日 18:04)
- ・タービン建屋トレンチの滞留水を水中ポンプにより、復水器のホットウェルへ移送を開始(4月12日 19:35)。漏えい確認等のため、一時停止(4月13日 11:00)。その後、漏えいが無いことが確認されたことから、4月13日 15:02に移送を再開し、4月13日 17:04に滞留水の移送を停止。移送実績は約660t
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約60t)(4月13日 13:15~14:55)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約45t)(4月16日 10:13~11:54 ※11:19頃に発生した地震の影響で11:39に仮設電動ポンプ停止。11:54にスキマーレベルの上昇の確認により、満水を確認。)
- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止(4月18日 12:13~12:37)
- ・原子炉建屋において、無人ロボットによる状況確認等を実施(4月18日 13:42~14:33)
- ・電源トレンチ内に止水剤(水ガラス)を約17,000L注入(4月18日 9:30~17:40)
- ・使用済燃料プール水の状況把握のため、使用済燃料プールからスキマーサージタンクに流出した水のサンプリング作業を実施(4月16日)。採取したプール水について、放射線物質の核種分析を行ったその結果、¹³¹I(ヨウ素)が $4.1 \times 10^3 \text{Bq/cm}^3$ 、¹³⁴Cs(セシウム)が $1.6 \times 10^5 \text{Bq/cm}^3$ 、¹³⁷Cs(セシウム)が $1.5 \times 10^5 \text{Bq/cm}^3$ を検出(4月17日)
- ・タービン建屋トレンチにある滞留水(高線量の滞留水)を集中廃棄物処理施設へ移送開始(4月19日 10:08~)
- ・電源トレンチ内に止水剤(水ガラス)を約7,000L注入(4月19日 8:00~15:30)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約47t)(4月19日 16:08~17:28)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約50t)(4月22日 15:55~17:40)
- ・引き続き、白煙の吐出確認(4月25日 6:30現在)

- ・原子炉圧力容器へ淡水を注水中（4月25日08:00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（3月13日5:10）
- ・ベント開始（3月13日8:41）
- ・原子炉圧力容器内に消火系ラインから真水を注水開始（3月13日11:55）
- ・原子炉圧力容器内に消火系ラインから海水を注水開始（3月13日13:12）
- ・3号機及び1号機の注水をくみ上げ箇所海水が少なくなったため停止（3月14日1:10）
- ・3号機の海水の注水を再開（3月14日3:20）
- ・ベント開始（3月14日5:20）
- ・格納容器圧力が異常上昇（3月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（3月14日7:52）
- ・1号機と同様に原子炉建屋付近で爆発（3月14日11:01）
- ・白い湯気のような煙が発生（3月16日8:30頃）
- ・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（3月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（3月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（3月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（3月17日16:10）
- ・自衛隊消防車により放水（3月17日19:35）
- ・警察庁機動隊による放水（3月17日19:05～19:13）
- ・自衛隊消防車5台が放水（3月17日19:35、19:45、19:53、20:00、20:07）
- ・自衛隊消防車6台（6t放水／台）が放水（3月18日14時前～14:38）
- ・米軍消防車1台が放水（3月18日14:45終了）
- ・東京消防庁ハイパーレスキュー隊が放水（3月20日3:40終了）
- ・格納容器内圧力が上昇（3月20日11:00、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（3月21日12:15、120kPa）
- ・ケーブル引き込みの現地調査（3月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（3月20日21:30～3月21日3:58）
- ・灰色がかった煙が発生（3月21日15:55頃）
- ・煙が収まっていることを確認（3月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（3月22日7:11現在）
- ・東京消防庁及び大阪市消防局が放水（約180t）（3月22日15:10～16:00）

- ・中央制御室の照明復帰 (3月22日 22:43)
- ・使用済燃料プールの使用済燃料プール冷却系から海水を 35t 注水 (3月23日 11:03~13:20)。海水を約 120t 注水 (3月24日 5:35頃~16:05頃)
- ・原子炉建屋からやや黒色がかかった煙が発生 (3月23日 16:20頃)。3月23日 23:30頃及び3月24日 4:50頃に確認したところ止んでいる模様
- ・タービン建屋1階及び地下1階において、タービン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 (3月25日 13:28~16:00)
- ・原子炉圧力容器へ淡水を注水開始 (3月25日 18:02)
- ・コンクリートポンプ車 (52m級) が海水約 100t 放水 (3月27日 12:34~14:36)
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水をサプレッションプール水サージタンクへ移送 (3月28日 17:40~3月31日 8:40頃)
- ・消防ポンプによる淡水の原子炉圧力容器への注水を仮設電動ポンプに切り替え (3月28日 20:30)
- ・コンクリートポンプ車 (52m級) が淡水約 100t 放水 (3月29日 14:17~18:18)
- ・コンクリートポンプ車 (52m級) が淡水約 105t 放水 (3月31日 16:30~19:33)
- ・コンクリートポンプ車 (52m級) が淡水約 75t 放水 (4月2日 9:52~12:54)
- ・タービン建屋の一部の照明が点灯 (4月2日)
- ・トリチウム立坑の水位を監視するためのカメラを設置 (4月2日)
- ・原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施 (4月3日 10:03~12:16)
- ・原子炉圧力容器への淡水の注水を外部電源に切り替え (4月3日 12:18)
- ・コンクリートポンプ車 (52m級) が淡水約 70t 放水 (4月4日 17:03~19:19)
- ・コンクリートポンプ車 (52m級) が淡水約 70t 放水 (4月7日 06:53~08:53)
- ・コンクリートポンプ車 (52m級) が淡水約 75t 放水 (4月8日 17:06~20:00)
- ・コンクリートポンプ車 (52m級) が淡水約 80t 放水 (4月10日 17:15~19:15)
- ・地震発生 (4月11日 17:16頃福島県浜通り) による1、2号機の外部電源喪失に伴い原子炉圧力容器への淡水の注水が停止 (4月11日 17:16頃)
- ・1、2号機の外部電源の復旧 (4月11日 17:56) により、原子炉圧力容器への淡水の注水を再開 (4月11日 18:04)
- ・コンクリートポンプ車 (62m級) が淡水約 35t 放水 (4月12日 16:26~17:16)
- ・コンクリートポンプ車 (62m級) が淡水約 25t 放水 (4月14日 15:56~16:32)
- ・原子炉建屋において、無人ロボットによる状況確認等を実施 (4月17日 11:30~14:00)
- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止 (4月22日 22:43)

月 18 日 12:38~13:05)

- ・コンクリートポンプ車 (62m 級) が淡水約 30t 放水 (4 月 18 日 14:17~15:02)
- ・燃料プール冷却材浄化系を用いて使用済燃料プールに淡水を試験注水 (4 月 22 日 13:40~14:00)
- ・コンクリートポンプ車 (62m 級) が淡水約 50t 放水 (4 月 22 日 14:19~15:40)
- ・引き続き白煙の吐出確認 (4 月 25 日 6:30 現在)
- ・原子炉圧力容器へ淡水を注水中 (4 月 25 日 08:00 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°C)
- ・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 (3 月 15 日 6:14)
- ・火災発生 (3 月 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 (3 月 15 日 11:00 頃)
- ・火災が発生 (3 月 16 日 5:45 頃)。事業者は現場での火災は確認できず (3 月 16 日 6:15 頃)
- ・自衛隊が使用済燃料プールへ放水 (3 月 20 日 9:43)
- ・ケーブル引き込みの現地調査 (3 月 20 日 11:00~16:00)
- ・自衛隊が使用済燃料プールへ放水 (3 月 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 (3 月 21 日 6:37~8:41)
- ・パワーセンターまでのケーブル敷設工事完了 (3 月 21 日 15:00 頃)
- ・パワーセンター受電 (3 月 22 日 10:35)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3 月 22 日 17:17~20:32)
- ・コンクリートポンプ車 (58m 級) が海水約 130 t 放水 (3 月 23 日 10:00~13:02)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3 月 24 日 14:36~17:30)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3 月 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水 (3 月 25 日 6:05~10:20)
- ・コンクリートポンプ車 (58m 級) が海水約 125t 放水 (3 月 27 日 16:55~19:25)
- ・中央制御室の照明復帰 (3 月 29 日 11:50)
- ・コンクリートポンプ車 (58m 級) が淡水約 140t 放水 (3 月 30 日 14:04~18:33)
- ・コンクリートポンプ車 (58m 級) が淡水約 180t 放水 (4 月 1 日 8:28~14:14)
- ・タービン建屋の一部の照明が点灯 (4 月 2 日)
- ・4 月 2 日より、集中環境施設プロセス主建屋の建屋内にたまった水を 4 号機のタービン建屋内に移送していたところ、4 月 3 日より 3 号機のトレンチの立坑の水位が上昇したため、経路は不明であるものの念のため移送を中断 (4 月 4 日 9:22)
- ・コンクリートポンプ車 (58m 級) が淡水約 180t 放水 (4 月 3 日 17:14~22:16)
- ・コンクリートポンプ車 (58m 級) が淡水約 20t 放水 (4 月 5 日 17:35~18:22)

- ・コンクリートポンプ車（58m級）が淡水約 38 t 放水（4月7日 18:23～19:40）
- ・コンクリートポンプ車（58m級）が淡水約 90 t 放水（4月9日 17:07～19:24）
- ・使用済燃料プール内に保管されている燃料の状況把握のため、使用済燃料プール水のサンプリング作業を実施（4月12日 12:00～13:04）。採取したプール水について、放射線物質の核種分析を行った（4月13日）。その結果、 ^{131}I （ヨウ素）が $2.2 \times 10^2 \text{Bq/cm}^3$ 、 ^{134}Cs （セシウム）が $8.8 \times 10^1 \text{Bq/cm}^3$ 、 ^{137}Cs （セシウム）が $9.3 \times 10^1 \text{Bq/cm}^3$ 、検出（4月14日）
- ・コンクリートポンプ車（62m級）が淡水約 195t 放水（4月13日 0:30～6:57）
- ・コンクリートポンプ車（62m級）が淡水約 140t 放水（4月15日 14:30～18:29）
- ・コンクリートポンプ車（62m級）が淡水約 140t 放水（4月17日 17:39～21:22）
- ・コンクリートポンプ車（62m級）が淡水約 40t 放水（4月19日 10:17～11:35）
- ・コンクリートポンプ車（62m級）が淡水約 100t 放水（4月20日 17:08～20:31）
- ・コンクリートポンプ車（62m級）が淡水約 140t 放水（4月21日 17:14～21:20）
- ・コンクリートポンプ車（62m級）を用いて計測装置を吊り下げ、使用済燃料プールの水位等を測定（4月22日）
- ・コンクリートポンプ車（62m級）が淡水約 200t 放水（4月22日 17:52～23:53）
- ・コンクリートポンプ車（62m級）が淡水約 140t を放水（4月23日 12:30～16:44）
- ・コンクリートポンプ車（62m級）が淡水約 165t を放水開始（4月24日 12:25～17:07）
- ・白煙の吐出確認できず（4月25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（3月19日 4:22）
- ・5号機の残留熱除去系（RHR）ポンプ（C）（3月19日 5:00）及び6号機の残留熱除去系（RHR）ポンプ（B）（3月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）（3月19日 5:00）
- ・5号機、冷温停止（3月20日 14:30）
- ・6号機、冷温停止（3月20日 19:27）
- ・5号機及び6号機、起動用変圧器まで受電（3月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（3月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（3月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（3月23日 17:24）

- ・ 5号機の仮設の残留熱除去海水系 (RHRS) ポンプの修理が完了 (3月24日 16:14) し、冷却を再開 (3月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 (3月25日 15:38、15:42)
- ・ 5号機及び6号機サブドレンピットにある低レベルの施設内で集水・管理された地下水を放水口経由で海へ放出 (5号機 4月4日 21:00~4月8日 12:14(約950t)、6号機 4月4日 21:00~4月9日 18:52(約373t))
- ・ 6号機のタービン建屋地下の溜まり水(約100m³)を復水器へ移送 (4月19日 11:00~15:00)
- ・ 6号機の仮設の残留熱除去海水系 (RHRS) のホースの位置を変えるため、残留熱除去系 (RHR) ポンプを一時停止 (4月20日 9:51) し、仮設のRHRS ポンプ移設作業実施後、冷却を再開 (4月20日 15:56)

<使用済燃料共用プール>

- ・ 3月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 (3月21日 10:37~15:30)
- ・ 電源供給を開始 (3月24日 15:37) し、冷却を開始 (3月24日 18:05)
- ・ 電源供給回路の末端部の短絡により、電源供給停止 (4月17日 14:34)。その後、当該設備の点検を実施し、電源の供給が復旧 (4月17日 17:30)
- ・ 4月24日6:40時点でのプール水温度は31°C程度

<海水・土壌モニタリング>

- ・ 南放水口付近の海水核種分析の結果、¹³¹I (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 (3月26日 14:30)
(3月29日に計測した結果、水中濃度限度の3,355.0倍となった。(3月29日 13:55) 一方、1F放水口北側の海水核種分析の結果、¹³¹I (ヨウ素) が $4.6 \times 10^1 \text{Bq/cm}^3$ (同1,262.5倍) 検出された。(3月29日 14:10))
- ・ 福島第一原子力発電所の敷地内 (5地点) の土壌から、3月21日及び3月22日に採取した試料の中に、²³⁸Pu (プルトニウム)、²³⁹Pu (プルトニウム)、²⁴⁰Pu (プルトニウム) を検出 (3月28日 23:45 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。
- ・ 発電所敷地境界付近に設置している本設モニタリングポスト (No.1~8) が復旧 (3月31日)。測定値については1日1回の予定。
- ・ 福島第一原子力発電所の敷地内の土壌から、3月25日 (4地点) 及び3月28日 (3地点) に採取した試料 (合計7検体) の中に、²³⁸Pu (プルトニウム)、²³⁹Pu (プルトニウム)、²⁴⁰Pu (プルトニウム) を検出 (4月6日 18:30 東京電力発表)。検出されたプルトニウムの濃度は、前回 (3月28日公表) と同様に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)と同程度であり、通常環境レベルで人体に問題となるものではない。

- ・南放水口付近の海水核種分析の結果、 ^{131}I (ヨウ素) が $1.8 \times 10^2 \text{Bq/cm}^3$ (周辺監視区域外の水中濃度限度の 4385.0 倍) 検出された。(3月30日 13:55)
- ・福島第一原子力発電所の敷地内の定例的に試料の採取を行うこととなっている3地点の土壌から、3月31日及び4月4日に採取した試料(合計6検体)のうち、3検体から ^{238}Pu (プルトニウム)、 ^{239}Pu (プルトニウム)、 ^{240}Pu (プルトニウム) を検出(4月14日 18:30 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)6と同程度であり、通常環境レベルで人体に問題となるものではない。

<汚染水の拡散防止>

- ・専用港内からの汚染水の流出を防止するため、発電所南側防波堤周辺で大型土のうを用いた止水工事を実施(4月5日 15:00~16:30)
- ・南側防波堤に汚染水拡散防止のためのシルトフェンスを二重に設置完了(4月11日 10:45)
- ・2号機バースクリーンの海側に仮設の止水板(鋼板7枚中1枚)を設置(4月12日 12:00~13:00)
- ・2号機バースクリーンの海側に仮設の止水板(鋼板7枚中2枚)を設置(4月13日 8:30頃~10:00頃)
- ・3、4号機スクリーン前面に汚染水拡散防止のためのシルトフェンスを設置完了(4月13日 13:50)
- ・1、2号機スクリーン前面及びカーテンウォールに汚染水拡散防止のためシルトフェンスを設置(4月14日 12:20)
- ・3号スクリーンポンプ室と4号スクリーンポンプ室の間に、ゼオライトの土のうを3袋設置(4月15日 14:30~15:45)
- ・2号機バースクリーンの海側に仮設の止水板(鋼板7枚中4枚)を設置(4月15日 9:00~14:15)
- ・ゼオライトの土のうを1号スクリーンポンプ室と2号スクリーンポンプ室の間に2袋、2号スクリーンポンプ室と3号スクリーンポンプ室の間に5袋を設置(4月17日 9:00~11:15)

<飛散防止剤の散布>

- ・共用プールの山側の約 500m^2 の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布(4月1日 15:00~16:05)
- ・共用プール山側の約 600m^2 の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布(4月5日 13:00~16:30、4月6日 12:30~14:30)
- ・共用プール山側の約 680m^2 の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布(4月8日 11:00~14:00)

- ・共用プール山側の約 550m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月10日 13:00～14:00）
- ・共用プール山側の約 1,200m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月11日 12:00～13:00）
- ・共用プール山側の約 700m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布開始（4月12日 12:00～13:00）
- ・共用プール山側の約 400m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月13日 11:00～11:30）
- ・共用プール山側の約 1600m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月14日 12:00～13:30）
- ・共用プール山側の約 1900m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月15日 11:30～13:00）
- ・サプレッションプール水サージタンク山側の約 1,800 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月16日 11:00～13:00）
- ・集中廃棄物処理施設周辺の約 1,900 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月17日 10:00～13:30）
- ・集中廃棄物処理施設周辺の約 1,200 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月18日 9:00～14:30）
- ・集中廃棄物処理施設周辺の約 1,900 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月20日 12:00～13:30）
- ・共用プール山側の約 1,300 m²及び5,6号機高圧開閉所山側の約 5,100 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月21日 12:00～15:00）
- ・5号機の原子炉建屋山側の約 860 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月24日 11:30～13:00）

<がれきの撤去状況>

- ・リモートコントロール重機による、がれきの撤去を実施（4月10日）
- ・リモートコントロール重機によるがれきの撤去（コンテナ6個分）を実施（4月13日 11:00～16:10）
- ・リモートコントロール重機によるがれきの撤去（コンテナ1個分）を実施（4月15日 9:00～15:45）
- ・リモートコントロール重機によるがれきの撤去（コンテナ8個分）を実施（4月16日 9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ2個分）を実施（4月17日 9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ4個分）を実施（4月18日 9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ3個分）を実施（4

月 19 日 9:00~15:00)

- ・リモートコントロール重機によるがれきの撤去 (コンテナ 1 個分) を実施 (4 月 20 日 9:00~16:00)
- ・リモートコントロール重機によるがれきの撤去 (コンテナ 1 個分) を実施 (4 月 21 日 9:00~16:00)
- ・リモートコントロール重機によるがれきの撤去 (コンテナ 2 個分) を実施 (4 月 22 日 9:00~16:00)
- ・リモートコントロール重機によるがれきの撤去 (コンテナ 3 個分) を実施 (4 月 24 日 9:00~16:00)

<その他>

- ・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 1,000mSv/h 以上、3号機は、がれきがあり測定できず (3月27日 15:30 頃)。1号機立坑内の溜留水を仮設ポンプにて集中環境施設プロセス主建屋の貯槽に移送し、立坑内の水位が上端から約-0.14m から約-1.14m に減少 (3月31日 9:20~11:25)
- ・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 (3月29日 12:03)
- ・3月28日、集中環境施設プロセス主建屋で水溜まりを確認し、放射能分析の結果、3月29日管理区域内で総量約 $1.2 \times 10^1 \text{Bq/cm}^3$ 、非管理区域で総量 $2.2 \times 10^1 \text{Bq/cm}^3$ の放射能を検出
- ・原子炉等の冷却に使用する淡水を積んだ米軍のはしけ船 (1号船) 1隻が海上自衛隊の艦船にえい航され、福島第一原子力発電所専用港に接岸 (3月31日 15:42)。はしけ船 (1号船) からろ過水タンクへ淡水を移送開始 (4月1日 15:58)。その後、ホースの不具合により中断 (4月1日 16:25) したが、4月2日に注水を再開 (4月2日 10:20~16:40)
- ・2隻目の原子炉等の冷却に使用する淡水を積んだ米軍のはしけ船 (2号船) が海上自衛隊の艦船にえい航され、福島第一原子力発電所専用港に接岸 (4月2日 9:10)
- ・米軍のはしけ船 (2号船) からはしけ船 (1号船) へ淡水を移送 (3日 09:52~11:15)
- ・集中環境施設プロセス主建屋内の低レベル滞留水については、放水口南側海域から1台目のポンプによる放出を開始 (4月4日 19:03) し、更に全10台のポンプによる放出を実施 (4月4日 19:07) し、4月10日 17時40分に水中ポンプによる海洋への放出作業を停止し、残水の確認を実施中 (総放出量は約 9,070t)
- ・雑固体廃棄物減容処理建屋内の低レベル滞留水については、放水口南側海域

- から5台のポンプによる放水を実施（4月6日17:20～4月7日18:20）
- ・タービン建屋内の溜まり水の集中廃棄物処理施設への排水準備のため、2～4号機のタービン建屋の外壁に孔あけを実施（4月7日）
- ・4月7日11:32に発生した宮城県沖の地震により、中断していた集中環境施設における排水作業を再開（4月8日14:30）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月10日15:59～16:28）
- ・1～4号機放水口サンプリング建屋より発火を確認（4月12日6:38頃）。初期消火活動の結果、炎と煙がないことを確認（同日7:00前）。その後、鎮火確認（同日9:12）
- ・3～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月14日10:17～12:25）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月15日8:02～9:55）
- ・1～3号機原子炉への注水ポンプ用の分電盤等を、津波対策として高台に移設（4月15日10:19～17:00）
- ・集中廃棄物処理施設の建屋内における止水対策が完了（4月18日）。
- ・1，2号機と3，4号機間の電源連携強化作業が完了（4月19日10:23）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月21日11:43～12:50）

○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、3月14日17:00冷温停止）
- 2号機（110万kW）（自動停止、3月14日18:00冷温停止）
- 3号機（110万kW）（自動停止、3月12日12:15冷温停止）
- 4号機（110万kW）（自動停止、3月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（4月25日02:00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	0.17
原子炉水温	℃	24.1	24.6	34.2	27.9
原子炉水位* ²	mm	9396	10246	7786	8785
原子炉格納容器内 サブプレッションプール水温	℃	23	24	26	29

原子炉格納容器内 サブプレッションプール圧力	kPa (abs)	107	104	110	106
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) 各プラントの状況

< 1号機関係 >

- ・ 3月30日17:56頃、1号機において、タービン建屋の1階の電源盤から煙が上がっていたが、電気の供給を切ったところ、煙の発生が止まった。消防署により、19:15当該事象は電源盤の異常であり、火災ではないと判断された。
- ・ 1号機の原子炉を冷却する残留熱除去系(B)の電源が、外部電源に加え非常用電源からも受電可能となり、全号機において、残留熱除去系(B)のバックアップ電源(非常用電源)を確保(3月30日14:30)

(5) 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(3月11日18:08)
- ・ 1、2、4号機にて同法第10条通報(3月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(3月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(3月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(3月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、3月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、3月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0.26 μ Sv/h(4月24日16:00)(約0.27 μ Sv/h(4月23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(3月11日22:55)
- ・ 原子力災害対策特別措置法第10条通報(3月13日13:09)

2 産業保安

○電気(4月24日17:00)

- ・ 東北電力(4月24日16:00現在)

停電戸数: 約14万戸

停電地域：岩手県 一部地域で停電（約2万7千戸）
宮城県 一部地域で停電（約7万9千戸）
福島県 一部地域で停電（約3万5千戸）

[参考情報] 停電戸数の状況の分類（4月23日16:00現在）

- ① 津波等で東北電力の設備、インフラ、家屋等が流出した地域：約8万3千戸
- ② がれき撤去・立入制限解除等の後、復旧作業に着手する地域：約4万5千戸
- ③ 家屋、インフラは健全なものの、水没・損傷した東北電力の設備の復旧が必要な地域：0戸
- ④ 東北電力の設備は復旧したが、家主の不在等により送電を留保している戸数：約1万4千戸

・東京電力

停電は3月19日1:00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（4月24日9:00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 6号機

・東北電力（4月24日16:00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（4月24日10:00現在）

- ・供給停止戸数約4千戸（延べ供給停止戸数※ 約48万戸）

※延べ供給停止戸数には、家屋倒壊等が確認された戸数を含む。

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

3月14日8:00 デパートの地下での爆発

- ・東部ガス（いわき市）死者1名

3月12日11:30 一般住宅での漏えいガスに着火

各社の供給停止状況は以下の通り。

- ・石巻ガス（石巻市）3,120戸供給停止

○熱供給（4月24日10:00現在）

- ・小名浜配湯（いわき市小名浜）供給停止

○LPGガス（4月14日21:00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
3月13日午前中 共同住宅でガス爆発
- ・いわき市鹿島の一般住宅でLPGガス漏れが発生、元栓を閉めて漏えい防止を図っているところ。

（4月11日17:16頃、福島県内陸部で発生した地震によるもの（福島県浜通りの地震発生による状況について（第二報）で公表済み。））

○コンビナート（4月14日21:00現在）

- ・コスモ石油千葉製油所（千葉県市原市）
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。
- ・福島県いわき市の第一三共プロファーマ（株）小名浜工場でガス漏れ、火災が発生（既に鎮火。けが人なし）

（4月11日17:16頃、福島県内陸部で発生した地震によるもの（福島県浜通りの地震発生による状況について（第二報）で公表済み。））

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】

- 0:49 福島第一原子力発電所1号機にて事業者が同法第15条事象(格納容器圧力異常上昇)発生判断(01:20通報)
- 5:22 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)
- 5:32 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)
- 5:44 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
- 6:07 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
- 6:50 経済産業大臣が原子炉等規制法第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。
- 7:45 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。
- 17:00 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
- 17:39 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。
- 18:25 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。
- 19:55 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
- 20:05 総理指示を踏まえ、経済産業大臣が原子炉等規制法第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。
- 20:20 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 : 0 8 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 : 2 0 福島第一原子力発電所3号機の耐圧ベント弁開放
- 9 : 3 0 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 : 0 9 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 : 1 2 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 : 3 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14日】

- 1 : 1 0 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海水が少なくなったため停止。
- 3 : 2 0 福島第一原子力発電所3号機の海水注入を再開
- 4 : 4 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
- 5 : 3 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
- 7 : 5 2 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（格納容器圧力異常上昇）である旨、受信
- 13 : 2 5 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15条事象（原子炉冷却機能喪失）である旨、受信
- 22 : 1 3 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 : 3 5 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 : 0 0 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 : 0 0 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 : 2 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
- 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
- 7:44 (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
- 8:54 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
- 10:30 経済産業大臣が原子炉等規制法第64条第3項の規定に基づき、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について実施することを命じた。
- 10:59 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。
- 11:00 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
- 16:30 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
- 22:00 経済産業大臣が原子炉等規制法第64条第3項の規定に基づき、4号機の使用済燃料プールへの注水について実施することを命じた。
- 23:46 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】

- 13:00 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
- 15:55 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
- 16:48 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】

- 7:44 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
- 8:58 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】

- 23:30 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、楡葉町、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、楡葉町、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)等の故障及び信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。

原子力災害被災者支援の体制強化のため、経済産業大臣をチーム長とする「原子力被災者生活支援チーム」の設置、関係市町村への訪問等を実施。

原子力災害現地対策本部は、20-30km圏内の地域住民等に向けた、ニュースレター第1号を公表。

【3月30日】

各電気事業者等に対し、平成23年福島第一・第二原子力発電所事故を踏まえた他の発電所の緊急安全対策の実施に係る指示文書を出し、手交。

【3月31日】

原子力安全・保安院は、東京電力(株)に対し、3月31日の福島第二原子力発電所への街宣車の進入について、核物質防護等に係る対策に万全を期すよう口頭で指示。

原子力安全・保安院は、東京電力(株)に対し、作業員の放射線管理に万全を期すように注意喚起。

原子力災害現地対策本部は、20-30km圏内の地域住民等に向けた、ニュースレター第2号を公表。

【4月1日】

原子力安全・保安院は、東京電力(株)に対し、核種分析結果の誤りについて以下の3点について適切な対応をとるよう厳重注意。

- ・核種分析の過去の評価結果について、どの核種について評価の誤りがあるかを明らかにし、すみやかに再評価を行うこと。
- ・評価の誤りが発生した原因を調査するとともに、再発防止の徹底を行うこと。
- ・評価結果の誤り等については判明した段階で、早急に連絡を行うこと。

【4月2日】

福島第一原子力発電所2号機取水口付近からの放射性物質を含む液体の海への流出について、サンプリングした液体の核種分析を実施すること、2号機周辺に今回漏えいが発見され施設と同様の箇所がないか確認すること及び当該施設周辺においてより多くの場所で水を採取しモニタリングを強化することを口頭により指示。

【4月4日】

緊急やむ得ない措置として、海洋放出を実施するに当たっての助言を原子力安全委員会に求め、東京電力(株)に対し、現在実施している海洋モニタリングを着実に実施するとともに、さらに強化(測定ポイントの増加、実施頻度の増大)することにより、海洋放出による放射性物質の拡散による影響を調査・確認し、情報公開に努めること、併せて、海洋への放出を可能な限り低減するための方策を強化することを指示。

【4月5日】

福島第一原子力発電所から環境に影響を与える可能性のある放射性物質の放出に伴う措置に係る地方公共団体への事前の通報連絡について、指示文書を発出。

【4月6日】

1号機原子炉格納容器への窒素封入を実施するに当たって、原子力安全・保安院から東京電力に対して以下の3点について指示(4月6日12:40)。①プラントパラメーターを適切に管理し、その変化に応じて安全を確保するための措置が適切に講じられるようにすること。②当該作業に従事する作業員の安全を確保する体制等を確立し実施すること。③窒素封入により当該原子炉格納容器内の気体が外部に漏出する可能性が否定できないことから、モニタリングを確実に実施し、更に強化することにより、窒素封入に伴う放射性物質の放出及び拡散による影響を調査及び確認し、情報公開に努めること。

【4月7日】

原子力災害現地対策本部は、20～30km圏内の地域住民等に向けた、ニュースレター第3号を公表(4月7日)

【4月9日】

原子力安全・保安院は、4月7日23時32分頃に発生した宮城県沖地震により、東北電力(株)東通原子力発電所1号機において全ての非常用ディーゼル発電機が動作可能でない状態に陥った事象を受け、各電気事業者等へ「非常用発電設備の保安規定上の取扱いについて」の指示文書を発出。

【4月10日】

原子炉等規制法第67条第1項に基づき、福島第一原子力発電所に滞留している高い放射線量が検出された排水の集中廃棄物処理建屋への移送に関して、その必要性、安全性に係る評価、恒久的な排水保管及び処理施設についての方針等に係る報告の徴収について指示文書を発出。

【4月13日】

原子力安全・保安院は、東京電力(株)に対し、原子炉等規制法第

67条第1項に基づき、福島第一原子力発電所建屋の耐震安全性評価の実施結果及び有効な耐震補強工事等の対策の検討結果について報告を指示。

- ・原子力安全・保安院は、東京電力（株）に対し、平成23年度東北地方太平洋沖地震により発生した津波に関して、詳細な分析及び検討を指示。
- ・原子力安全・保安院は、東北電力（株）に対し、女川原子力発電所1号機から3号機において、4月7日23:32頃発生した2011年宮城県沖の地震時に取得した地震観測データの分析及び耐震安全上重要な設備の地震影響評価について報告を指示。

【4月14日】

- ・4月13日にサンプリングを行った1、2号機のサブドレン（施設内で集水・管理された地下水）について、前回に比べ放射線濃度が1桁上昇していたことから、原子力安全・保安院は監視の強化を図るよう、口頭で指示。

【4月15日】

- ・東京電力（株）において4月1日付け人事異動に伴う原子力災害対策特別措置法第9条第5項に基づく原子力防災管理者解任届出に遅延があったことを受け、原子力安全・保安院は、東京電力（株）に対して、嚴重注意を行うとともに再発防止策を作成するよう口頭で指示。
- ・平成23年4月7日に宮城県沖地震により、電力系統の一部における地絡事故が発生し、原子力発電所等において一時的に外部電源の喪失が発生したことから、一般電気事業者等に対し外部電源の信頼性確保に係る対策を検討するなど指示。

【4月18日】

- ・4月10日付けで発出した報告の徴収に係る指示に基づき、東京電力（株）から提出された福島第一原子力発電所に滞留している高い放射線量が検出された排水の集中廃棄物処理建屋への移送に関する報告書を受領（4月18日）し、その内容を確認（4月19日）。

【4月21日】

- ・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20条第3項の規定に基づき、次の指示を出した。
 - 避難区域として、福島第二原子力発電所から半径10km圏内区域から半径8km圏内区域への変更を指示。
- ・内閣総理大臣より、福島県知事、富岡町長、双葉町長、大熊町長、浪江町長、川内村長、楢葉町長、南相馬市長、田村市長及び葛尾村

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20条第3項の規定に基づき、次の指示を出した。

- 福島第一原子力発電所から半径20km圏内を警戒区域に設定し、緊急事態応急対策に従事する者以外の者に対して、市町村長が一時的な立入りを認める場合を除き、当該区域への立入禁止、又は当該区域からの退去を指示。

【4月22日】

- ・ 内閣総理大臣より、福島県知事、浪江町長、川内村長、楡葉町長、南相馬市長、田村市長、葛尾村長、広野町長、いわき市長、飯舘村長及び川俣町長に対し、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20条第3項に基づき、次の指示を出した。

- 福島第一原子力発電所から半径20kmから30km圏内に設定されていた屋内への退避を解除し、計画的避難区域及び緊急時避難準備区域を設定したので、当該区域内における避難のための計画的な立退き若しくは常に緊急時に避難のための立退き又は屋内への退避が可能な準備を居住者等が行うように指示。

- ・ 原子力災害対策本部は、事故状況の全体像を把握するとともに、計画的避難区域等の設定の評価等のため、下記項目を取り組むべく「環境モニタリング強化計画」を定めた。

- 福島第一原子力発電所周辺を含む適切な範囲での放射性物質の分布状況の把握
- 今後の各区域（避難区域、計画的避難区域及び緊急時避難準備区域）における線量評価や放射性物質の蓄積状況評価のための準備
- 周辺住民等の被ばく線量評価のための環境の線量情報の提供

【4月24日】

原子力安全・保安院は、東京電力(株)からプラントデータの数値の一部に誤りがあるとの報告を受けた件について、以下の内容について口頭で嚴重注意を行った。

- ・ 本パラメータは、事故対応を的確かつ迅速に行うための基礎となるデータであるところ、これが誤って伝えられたことは極めて遺憾である。
- ・ 引き続き、点検を速やかにかつ確実に行うこと。
- ・ 万全な再発防止策を講じること。

<被ばくの可能性（4月25日08:00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以上の値を示した。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。避難所や保健所等11ヶ所（常設）で実施中。4月22日までに169,874人に対し実施。そのうち、100,000cpm以上の値を示した者は102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30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、3月24日に福島県立医科大学附属病院へ搬送し、その後、3月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。3月28日正午頃3名の方がすべて退院した。当該作業員3名は4月11日に放射線医学総合研究所で再受診し、3名とも健康状態に問題はなかった。なお、両足に局所被ばくのあった2名の皮膚に熱傷の症状や紅斑などは認められていない。

また、4月1日11:35頃、米軍のはしけ船のホース手直し作業のために岸から船に乗り込む際、作業員1名が海に落下した。すぐに周囲の作業員に救助され、けが及び外部汚染はなかったが、念のため、ホールボディカウンタによる測定を行った結果、4月12日に内部取り込みなしと評価された。

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～3月27日、いわき市保健所において、0～15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。
- (5) 3月28日～3月30日、川俣町公民館及び飯舘村役場において、0～15歳までの946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/cm²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、飯館村）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、飯館村）宛に発出。

<負傷者等の状況（4月25日08:00現在）>

1. 3月11日の地震による福島第一原子力発電所の負傷者
 - ・社員2名（軽傷、既に仕事復帰）
 - ・社員2名（地震、津波の際に割れたガラスで切り傷、既に仕事復帰）
 - ・社員1名（避難の際に擦り傷、既に仕事復帰）
 - ・協力会社1名（両足骨折で入院中）
 - ・死亡2名（地震発生後から東京電力（株）の社員2名が行方不明となり、捜査を継続してきたが、3月30日午後、4号機タービン建屋地下一階において当該社員2名が発見され、4月2日までに死亡が確認された。）
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11日の地震発生の際に、福島第二原子力発電所において、協力会社の1名（クレーンオペレータ）が死亡。（タワークレーンが折れ、オペレータールームがつぶれ、頭に当たった模様。）
 - ・3月11日に協力会社の1名を病院へ搬送（後日脳梗塞と判明）
 - ・3月12日に急病人1名発生（脳卒中、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12日に社員1名が左腕裂傷、病院へ搬送し手当（既に仕事復帰）
- ・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）
- ・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）
- ・4月7日午後、福島第一原子力発電所構内北側の土捨て場において、土のう作りをしていた作業員1名が体調不良になったため、Jビレッジに搬送し、身体サーベイにより汚染なしを確認した後、救急車にていわき市立公立病院に搬送された。4月8日、「脱水、一過性意識消失」と診断。
- ・4月9日午前9時19分、水処理建屋において全面マスク着用でケーブル処理作業を行っていた協力企業社員1名の気分が悪くなり、建屋の外にある蓋のずれたマンホールに足を踏み入れて負傷したため、病院へ搬送しました。診断の結果、「右膝挫傷」「右膝内側側副靭帯損傷疑い」と診断。なお、身体サーベイの結果、汚染はないことが確認された。
- ・4月10日午前11時10分頃、2号機ヤードにおいて排水ホースの敷設作業を行っていた協力企業社員1名気分が悪くなったため、Jビレッジに搬送後、同日午後2時27分に救急車で総合磐城公立病院へ搬送。なお、身体への放射性物質の付着はないことが確認された。
- ・4月23日午後4時30分頃、発電所構外（櫛葉町内生コン工場）において、作業員1名がコンクリートミキサーで使用したホースの接続部の手入れ作業を行っていた際に、液体が飛散し目に入った。目に痛みを感じたことから、Jヴィレッジに搬送し産業医の診察を受けた後、受診できる眼科が近くなかったため、念のため救急車にていわき市立公立病院へ搬送。左目に軟膏等の処方を受け、眼帯をして宿舎に帰宅したが、専門医が不在であったため、4月24日に再診したところ、中等度の結膜炎で1週間程度の通院治療を要すると診断された。
なお、通常業務は行えることとことから、4月24日から普通作業（内業）に従事している。

<住民避難の状況（4月23日08:00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。

4月21日11:00、内閣総理大臣の指示により、福島第二原子力発電所で発生した事故に関する避難区域を福島第二原子力発電所から半径10km圏内から半径8km圏内に変更するよう指示。

4月21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から20km圏内を警戒区域に設定し、緊急事態応急対策に従事する者以外の者に対して、市町村長が一時的な立入りを認める場合を除き、当該区域への立入禁止、又は当該区域からの退去を指示。(警戒区域の発動日時：4月22日0:00)

4月22日9:44、内閣総理大臣の指示により、福島第一原子力発電所から20kmから30km圏内の屋内退避を解除するとともに、計画的避難区域及び緊急時避難準備区域を設定し、当該区域内における避難のための計画的な立退き若しくは常に緊急時に避難のための立退き又は屋内への退避が可能な準備を居住者等が行うよう指示。

<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、千葉県の知事に対して、以下の品目について、当分の間、出荷等を控えるよう指示。

また、原子力災害対策本部は、出荷制限等の発動・解除の考え方については、原子力安全委員会の助言も踏まえ、以下のように整理した。

- ・ 出荷制限・解除の対象区域は、汚染区域の拡がりや集荷実態等を踏まえ、市町村単位など県を分割した区域ごとに行うことも可能とする
- ・ 暫定規制値を超えた品目の出荷制限については、汚染の地域的拡がりを勘案しつつ総合的に判断
- ・ 出荷制限の解除は、福島第一原子力発電所の状況を勘案しつつ、約1週間ごと検査を行い、3回連続で暫定規制値を下回った品目・区域に対して実施
- ・ ただし、原子力発電所から放射性物質の放出が継続している間は、解除後も引き続き約1週間ごとに検査を実施

(1) 出荷制限・摂取制限品目 (4月23日08:00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(ホウレンソウ、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、紅葉苔、カキナなど)、カブ、原乳(一部地域 ^{※1} を除く)、しいたけ(伊達市、相馬市、南相馬市、田村市、いわき市、新地町、川俣町、浪江町、双葉町、大熊町、富岡町、檜葉町、広野町、飯舘村、葛尾村、	非結球性葉菜類、結球性葉菜類及びアブラナ科の花蕾類(ホウレンソウ、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、紅葉苔、カキナなど)、しいたけ(飯舘村において露地で原木を用いて栽培されたものに限る。)、イカナゴの稚魚(コウナゴ)

	川内村及び福島市において露地で原木を用いて栽培されたものに限る。)、イカナゴの稚魚(コウナゴ)	
茨城県	ハウレンソウ(北茨城市及び高萩市において産出されたものに限る。)	
栃木県	ハウレンソウ(一部地域 ^{※2} を除く)	

※1：喜多方市、磐梯町、猪苗代町、三島町、会津美里町、下郷町、南会津町、福島市、二本松市、伊達市、本宮市、郡山市、須賀川市、田村市(旧都路村の範囲を除く)、白河市、いわき市、相馬市、国見町、鏡石町、石川町、浅川町、古殿町、三春町、小野町、矢吹町、矢祭町、塙町、新地町、大玉村、平田村、西郷村、泉崎村、中島村、鮫川村、

※2：那須塩原市、塩谷町

(2) 水道水の飲用制限の要請(4月23日 08:00 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	なし
乳児	飯館村飯館簡易水道事業(福島県飯館村)
・対応を継続している水道事業	
・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、飯館村)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：渡邊、杉山

電話：03-3501-1505

03-3501-5890

平成23年4月25日

原子力安全・保安院

地震被害情報（第112報） （4月25日0.8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。

前回からの主な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

- ・4号機について、コンクリートポンプ車（62m級）が淡水約165tを放水（4月24日12:25～17:07）
- ・5号機の原子炉建屋山側の約860㎡の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月24日11:30～13:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ3個分）を実施（4月24日9:00～16:00）

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、3月20日14:30冷温停止)
- 6号機(110万kW)(定検により停止中、3月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(4月25日02:00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]	0.541(A) 1.261(B)	0.081(A) 0.074(D)	0.046(A) 0.012(C)	—	0.104	0.117
原子炉格納容器圧力 (D/W) [kPa]	155	80	103.8	—	—	—
原子炉水位*2 [mm]	-1700(A) -1700(B)	-1500(A) -2100(B)	-1850(A) -2250(B)	—	1979	2237
原子炉格納容器内 S/C水温 [°C]	51.6(A) 51.5(B)	71.3(A) 71.6(B)	41.6(A) 41.6(B)	—	—	—
原子炉格納容器内 S/C圧力 [kPa]	-155	計器不良	178.7	—	—	—
使用済燃料プール 水温度 [°C]	計器不良	47.0	計器不良	計器不良	35.1	30.0
備考	4/25 00:00 現在の値	4/25 00:00 現在の値	4/25 00:00 現在の値	4/25 現在	4/25 02:00 現在の値	4/25 02:00 現在の値

*1: 絶対圧に換算

*2: 燃料頂部からの数値

(4) 各プラント等の状況

<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(3月11日16:36)
- ・ベント開始(3月12日10:17)
- ・原子炉圧力容器内に消火系ラインを用いて海水を注水開始(3月12日20:20)

- 一時中断 (3月14日 1:10)
- ・ 1号機で爆発音 (3月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 ($2\text{m}^3/\text{h} \rightarrow 18\text{m}^3/\text{h}$) (3月23日 2:33)。その後、給水系のみに切替 (約 $11\text{m}^3/\text{h}$) (3月23日 9:00)
- ・ 中央制御室の照明復帰 (3月24日 11:30)
- ・ 原子炉圧力容器へ淡水を注水開始。 (3月25日 15:37)
- ・ 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 $2.1 \times 10^9 \text{Bq}/\text{cm}^3$ 、 ^{137}Cs (セシウム) が $1.8 \times 10^6 \text{Bq}/\text{cm}^3$ 、検出
- ・ 消防ポンプによる淡水の原子炉圧力容器への注水を仮設電動ポンプに切り替え (3月29日 8:32)
- ・ タービン建屋地下の溜まり水を、3月24日 17時頃から復水器へ移送開始。復水器の水位が満水に近いことが確認されたため、復水器への排水を停止 (3月29日 7:30)。タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水を、サプレッションプール水サージタンク (A) へ移送開始 (3月31日 12:00) し、移送先をサプレッションプール水タンクへ (B) に切り替えた後 (3月31日 15:25)、移送を再開し、終了した (4月2日 15:26)
- ・ 使用済燃料プールについて、コンクリートポンプ車 (62m級) が約 90t 放水 (淡水) (3月31日 13:03~16:04)。コンクリートポンプ車 (62m級) による放水位置の確認のため、試験放水 (4月2日 17:16~17:19)
- ・ タービン建屋の一部の照明が点灯 (4月2日)
- ・ 原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施 (4月3日 10:42~11:52)
- ・ 原子炉圧力容器への淡水の注水を外部電源に切り替え (4月3日 12:02)
- ・ タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水器の水を復水貯蔵タンクへ移送開始 (4月3日 13:55)
- ・ 原子炉格納容器内での水素燃焼の可能性を下げることを目的として、原子炉格納容器への窒素封入操作開始 (4月6日 22:30)
- ・ 原子炉格納容器への窒素封入開始を確認 (4月7日 1:31)
- ・ 原子炉格納容器への窒素封入を高純度窒素発生装置に切替 (4月9日 4:10)
- ・ 復水器から復水貯蔵タンクへの移送完了 (4月10日 09:30)
- ・ 地震発生 (4月11日 17:16頃福島県浜通り) により外部電源が喪失するとともに原子炉圧力容器への淡水の注水及び原子炉格納容器への窒素封入が停止 (4月11日 17:16頃)
- ・ 外部電源復旧 (4月11日 17:56)
- ・ 原子炉圧力容器への淡水の注水再開 (4月11日 18:04)
- ・ 原子炉格納容器への窒素封入を開始 (4月11日 23:34)
- ・ 原子炉建屋において、無人ロボットによる状況確認等を実施 (4月17日 16:00)

～17:30)

- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止 (4月18日11:50～12:12)
- ・白煙の吐出確認できず (4月25日6:30現在)
- ・原子炉圧力容器へ淡水を注水中 (4月25日08:00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(3月11日16:36)
- ・ベント開始(3月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(3月14日11:00過ぎ)
- ・原子炉圧力容器の水位が低下傾向(3月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(3月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の注水作業開始(3月14日16:34)
- ・原子炉圧力容器の水位が低下傾向(3月14日22:50)
- ・ベント開始(3月15日0:02)
- ・2号機で爆発音するとともに、サプレッションプール(圧力抑制室)の圧力低下(3月15日6:10)。同室に異常が発生したおそれ(3月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(3月19日13:30)
- ・使用済燃料プールに海水を40t注水(冷却系配管に消防車のポンプを接続)(3月20日15:05～17:20)
- ・パワーセンター受電(3月20日15:46)
- ・白煙が発生(3月21日18:22)
- ・白煙はほとんど見えない程度に減少(3月22日7:11現在)
- ・使用済燃料プールに海水を18t注水(3月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水(3月25日10:30～12:19)
- ・原子炉圧力容器への淡水の注水開始(3月26日10:10)
- ・中央制御室の照明復帰(3月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水を仮設電動ポンプに切り替え(3月27日18:31)
- ・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、¹³⁴I(ヨウ素)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、¹³⁴I(ヨウ素)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(3月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水を仮設電動ポンプによる淡水に切り替え注水（3月29日16:30～18:25）
- ・30日9:25より使用済燃料プールへの注水をしていたところ、仮設電動ポンプの不調が同日9:45に確認されたため、消防ポンプによる切り替えを行ったが、ホースの亀裂が確認（3月30日12:47、13:10）されたため、注水を中断。淡水の注水を再開（3月30日19:05～23:50）
- ・使用済燃料プールに、使用済燃料冷却系を用いて仮設電動ポンプにより淡水を約70t注水（4月1日14:56～17:05）
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水をサプレッションプール水サージタンクへ移送（3月29日16:45～4月1日11:50）
- ・取水口付近にある電源ケーブルを収めているピット内に、1,000mSv/hを超える水が溜まっていること及びピット側面のコンクリート部分に長さ約20cmの亀裂があり、当該部分より、水が海に流出していることを確認（4月2日9:30頃）。止水処置のため、コンクリートを注入（4月2日16:25、19:02）
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水器の水を復水貯蔵タンクへ移送開始（4月2日17:10）
- ・トレンチ立坑及びタービン建屋地下1階の水位を監視するためのカメラを設置（4月2日）
- ・タービン建屋の一部の照明が点灯（4月2日）
- ・原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施（4月3日10:22～12:06）
- ・原子炉圧力容器への淡水の注水を外部電源に切り替え（4月3日12:12）
- ・2号機バースクリーン近傍にあるピット内に溜まっている水の海水への流出を防止する措置として、取水電源トレンチの天端を破碎し、おがくず（3kg/袋）20袋、高分子吸収材（100g/袋）80袋、裁断処理した新聞紙（大きいゴミ袋）3袋を投入（4月3日13:47～14:30）
- ・トレーサー（乳白色の入浴剤）約13kgを海水配管トレンチ立坑から投入（4月4日7:08～7:11）
- ・使用済燃料プールに、使用済燃料冷却系を用いて仮設電動ポンプによる淡水（約70t）を注水（4月4日11:05～13:37）
- ・2号機バースクリーン近傍のピット周辺に2箇所の穴を開け、トレーサーを注入し、亀裂部から海に流出していることを確認（4月5日14:15）。ピット周辺に開けた穴に水流出防止のための凝固剤（水ガラス）注入開始（4月5日15:07）。水の流出が止まったことを確認（4月6日5:38頃）また、タービン建屋の水位については、上昇してないことを確認。さらに、流出していた箇所について、ゴム板と治具（つかえ棒）により止水の対策を実施（4月6日13:15完了）

- ・復水器の水を復水貯蔵タンクに移送するポンプを1台増設(計2台 30m³/h)
(4月5日15:40頃)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約36t)(4月7日13:39~14:34)
- ・復水器から復水貯蔵タンクへの移送完了(4月9日13:10)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約60t)(4月10日10:37~12:38)
- ・地震発生(4月11日17:16頃)により外部電源が喪失するとともに原子炉圧力容器への淡水の注水が停止(4月11日17:16頃)
- ・外部電源復旧(4月11日17:56)
- ・原子炉圧力容器への淡水の注水を再開(4月11日18:04)
- ・タービン建屋トレンチの滞留水を水中ポンプにより、復水器のホットウェルへ移送を開始(4月12日19:35)。漏えい確認等のため、一時停止(4月13日11:00)。その後、漏えいが無いことが確認されたことから、4月13日15:02に移送を再開し、4月13日17:04に滞留水の移送を停止。移送実績は約660t
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約60t)(4月13日13:15~14:55)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約45t)(4月16日10:13~11:54 ※11:19頃に発生した地震の影響で11:39に仮設電動ポンプ停止。11:54にスキマーレベルの上昇の確認により、満水を確認。)
- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止(4月18日12:13~12:37)
- ・原子炉建屋において、無人ロボットによる状況確認等を実施(4月18日13:42~14:33)
- ・電源トレンチ内に止水剤(水ガラス)を約17,000L注入(4月18日9:30~17:40)
- ・使用済燃料プール水の状況把握のため、使用済燃料プールからスキマーサージタンクに流出した水のサンプリング作業を実施(4月16日)。採取したプール水について、放射線物質の核種分析を行ったその結果、¹³¹I(ヨウ素)が4.1×10³Bq/cm³、¹³⁴Cs(セシウム)が1.6×10⁵Bq/cm³、¹³⁷Cs(セシウム)が1.5×10⁵Bq/cm³を検出(4月17日)
- ・タービン建屋トレンチにある滞留水(高線量の滞留水)を集中廃棄物処理施設へ移送開始(4月19日10:08~)
- ・電源トレンチ内に止水剤(水ガラス)を約7,000L注入(4月19日8:00~15:30)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約47t)(4月19日16:08~17:28)
- ・使用済燃料プール冷却系から使用済燃料プールに淡水を注水(約50t)(4月22日15:55~17:40)
- ・引き続き、白煙の吐出確認(4月25日6:30現在)

- ・原子炉圧力容器へ淡水を注水中（4月25日08:00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（3月13日5:10）
- ・ベント開始（3月13日8:41）
- ・原子炉圧力容器内に消火系ラインから真水を注水開始（3月13日11:55）
- ・原子炉圧力容器内に消火系ラインから海水を注水開始（3月13日13:12）
- ・3号機及び1号機の注水をくみ上げ箇所海水が少なくなったため停止（3月14日1:10）
- ・3号機の海水の注水を再開（3月14日3:20）
- ・ベント開始（3月14日5:20）
- ・格納容器圧力が異常上昇（3月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（3月14日7:52）
- ・1号機と同様に原子炉建屋付近で爆発（3月14日11:01）
- ・白い湯気のような煙が発生（3月16日8:30頃）
- ・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（3月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（3月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（3月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（3月17日16:10）
- ・自衛隊消防車により放水（3月17日19:35）
- ・警察庁機動隊による放水（3月17日19:05～19:13）
- ・自衛隊消防車5台が放水（3月17日19:35、19:45、19:53、20:00、20:07）
- ・自衛隊消防車6台（6t放水／台）が放水（3月18日14時前～14:38）
- ・米軍消防車1台が放水（3月18日14:45終了）
- ・東京消防庁ハイパーレスキュー隊が放水（3月20日3:40終了）
- ・格納容器内圧力が上昇（3月20日11:00、320kPa）。圧力下げの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（3月21日12:15、120kPa）
- ・ケーブル引き込みの現地調査（3月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（3月20日21:30～3月21日3:58）
- ・灰色がかった煙が発生（3月21日15:55頃）
- ・煙が収まっていることを確認（3月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（3月22日7:11現在）
- ・東京消防庁及び大阪市消防局が放水（約180t）（3月22日15:10～16:00）

- ・中央制御室の照明復帰 (3月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を 35t 注水 (3月23日 11:03~13:20)。海水を約 120t 注水 (3月24日 5:35頃~16:05頃)
- ・原子炉建屋からやや黒色がかった煙が発生 (3月23日 16:20頃)。3月23日 23:30頃及び3月24日 4:50頃に確認したところ止んでいる模様
- ・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 (3月25日 13:28~16:00)
- ・原子炉圧力容器へ淡水を注水開始 (3月25日 18:02)
- ・コンクリートポンプ車 (52m級) が海水約 100t 放水 (3月27日 12:34~14:36)
- ・タービン建屋地下の溜まり水を復水器へ移送する準備のため、復水貯蔵タンクの水をサプレッションプール水サージタンクへ移送 (3月28日 17:40~3月31日 8:40頃)
- ・消防ポンプによる淡水の原子炉圧力容器への注水を仮設電動ポンプに切り替え (3月28日 20:30)
- ・コンクリートポンプ車 (52m級) が淡水約 100t 放水 (3月29日 14:17~18:18)
- ・コンクリートポンプ車 (52m級) が淡水約 105t 放水 (3月31日 16:30~19:33)
- ・コンクリートポンプ車 (52m級) が淡水約 75t 放水 (4月2日 9:52~12:54)
- ・タービン建屋の一部の照明が点灯 (4月2日)
- ・トレンチ立坑の水位を監視するためのカメラを設置 (4月2日)
- ・原子炉圧力容器への淡水の注水に用いている電動ポンプの電源を仮設電源から外部電源に切り替えるため、一時的に消防ポンプに切り替えて原子炉へ淡水の注水を実施 (4月3日 10:03~12:16)
- ・原子炉圧力容器への淡水の注水を外部電源に切り替え (4月3日 12:18)
- ・コンクリートポンプ車 (52m級) が淡水約 70t 放水 (4月4日 17:03~19:19)
- ・コンクリートポンプ車 (52m級) が淡水約 70t 放水 (4月7日 06:53~08:53)
- ・コンクリートポンプ車 (52m級) が淡水約 75t 放水 (4月8日 17:06~20:00)
- ・コンクリートポンプ車 (52m級) が淡水約 80t 放水 (4月10日 17:15~19:15)
- ・地震発生 (4月11日 17:16頃福島県浜通り) による1、2号機の外部電源喪失に伴い原子炉圧力容器への淡水の注水が停止 (4月11日 17:16頃)
- ・1、2号機の外部電源の復旧 (4月11日 17:56) により、原子炉圧力容器への淡水の注水を再開 (4月11日 18:04)
- ・コンクリートポンプ車 (62m級) が淡水約 35t 放水 (4月12日 16:26~17:16)
- ・コンクリートポンプ車 (62m級) が淡水約 25t 放水 (4月14日 15:56~16:32)
- ・原子炉建屋において、無人ロボットによる状況確認等を実施 (4月17日 11:30~14:00)
- ・炉心注水に使用しているホースを新品に交換するため注水ポンプを停止 (4

月 18 日 12:38~13:05)

- ・コンクリートポンプ車 (62m 級) が淡水約 30t 放水 (4 月 18 日 14:17~15:02)
- ・燃料プール冷却材浄化系を用いて使用済燃料プールに淡水を試験注水 (4 月 22 日 13:40~14:00)
- ・コンクリートポンプ車 (62m 級) が淡水約 50t 放水 (4 月 22 日 14:19~15:40)
- ・引き続き白煙の吐出確認 (4 月 25 日 6:30 現在)
- ・原子炉圧力容器へ淡水を注水中 (4 月 25 日 08:00 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℃)
- ・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 (3 月 15 日 6:14)
- ・火災発生 (3 月 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 (3 月 15 日 11:00 頃)
- ・火災が発生 (3 月 16 日 5:45 頃)。事業者は現場での火災は確認できず (3 月 16 日 6:15 頃)
- ・自衛隊が使用済燃料プールへ放水 (3 月 20 日 9:43)
- ・ケーブル引き込みの現地調査 (3 月 20 日 11:00~16:00)
- ・自衛隊が使用済燃料プールへ放水 (3 月 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 (3 月 21 日 6:37~8:41)
- ・パワーセンターまでのケーブル敷設工事完了 (3 月 21 日 15:00 頃)
- ・パワーセンター受電 (3 月 22 日 10:35)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3 月 22 日 17:17~20:32)
- ・コンクリートポンプ車 (58m 級) が海水約 130 t 放水 (3 月 23 日 10:00~13:02)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3 月 24 日 14:36~17:30)
- ・コンクリートポンプ車 (58m 級) が海水約 150 t 放水 (3 月 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水 (3 月 25 日 6:05~10:20)
- ・コンクリートポンプ車 (58m 級) が海水約 125t 放水 (3 月 27 日 16:55~19:25)
- ・中央制御室の照明復帰 (3 月 29 日 11:50)
- ・コンクリートポンプ車 (58m 級) が淡水約 140t 放水 (3 月 30 日 14:04~18:33)
- ・コンクリートポンプ車 (58m 級) が淡水約 180t 放水 (4 月 1 日 8:28~14:14)
- ・タービン建屋の一部の照明が点灯 (4 月 2 日)
- ・4 月 2 日より、集中環境施設プロセス主建屋の建屋内にたまった水を 4 号機のタービン建屋内に移送していたところ、4 月 3 日より 3 号機のトレンチの立坑の水位が上昇したため、経路は不明であるものの念のため移送を中断 (4 月 4 日 9:22)
- ・コンクリートポンプ車 (58m 級) が淡水約 180t 放水 (4 月 3 日 17:14~22:16)
- ・コンクリートポンプ車 (58m 級) が淡水約 20t 放水 (4 月 5 日 17:35~18:22)

- ・コンクリートポンプ車 (58m 級) が淡水約 38 t 放水 (4 月 7 日 18:23~19:40)
- ・コンクリートポンプ車 (58m 級) が淡水約 90 t 放水 (4 月 9 日 17:07~19:24)
- ・使用済燃料プール内に保管されている燃料の状況把握のため、使用済燃料プール水のサンプリング作業を実施 (4 月 12 日 12:00~13:04)。採取したプール水について、放射線物質の核種分析を行った (4 月 13 日)。その結果、 ^{131}I (ヨウ素) が $2.2 \times 10^2 \text{Bq/cm}^3$ 、 ^{134}Cs (セシウム) が $8.8 \times 10^1 \text{Bq/cm}^3$ 、 ^{137}Cs (セシウム) が $9.3 \times 10^1 \text{Bq/cm}^3$ 、検出 (4 月 14 日)
- ・コンクリートポンプ車 (62m 級) が淡水約 195t 放水 (4 月 13 日 0:30~6:57)
- ・コンクリートポンプ車 (62m 級) が淡水約 140t 放水 (4 月 15 日 14:30~18:29)
- ・コンクリートポンプ車 (62m 級) が淡水約 140t 放水 (4 月 17 日 17:39~21:22)
- ・コンクリートポンプ車 (62m 級) が淡水約 40t 放水 (4 月 19 日 10:17~11:35)
- ・コンクリートポンプ車 (62m 級) が淡水約 100t 放水 (4 月 20 日 17:08~20:31)
- ・コンクリートポンプ車 (62m 級) が淡水約 140t 放水 (4 月 21 日 17:14~21:20)
- ・コンクリートポンプ車 (62m 級) を用いて計測装置を吊り下げ、使用済燃料プールの水位等を測定 (4 月 22 日)
- ・コンクリートポンプ車 (62m 級) が淡水約 200t 放水 (4 月 22 日 17:52~23:53)
- ・コンクリートポンプ車 (62m 級) が淡水約 140t を放水 (4 月 23 日 12:30~16:44)
- ・コンクリートポンプ車 (62m 級) が淡水約 165t を放水開始 (4 月 24 日 12:25~17:07)
- ・白煙の吐出確認できず (4 月 25 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 (3月19日 4:22)
- ・5号機の残留熱除去系 (RHR) ポンプ (C) (3月19日 5:00) 及び6号機の残留熱除去系 (RHR) ポンプ (B) (3月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) (3月19日 5:00)
- ・5号機、冷温停止 (3月20日 14:30)
- ・6号機、冷温停止 (3月20日 19:27)
- ・5号機及び6号機、起動用変圧器まで受電 (3月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 (3月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 (3月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 (3月23日 17:24)

- ・ 5号機の仮設の残留熱除去海水系 (RHRS) ポンプの修理が完了 (3月24日 16:14) し、冷却を再開 (3月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 (3月25日 15:38、15:42)
- ・ 5号機及び6号機サブドレンピットにある低レベルの施設内で集水・管理された地下水を放水口経由で海へ放出 (5号機 4月4日 21:00~4月8日 12:14 (約950t)、6号機 4月4日 21:00~4月9日 18:52 (約373t))
- ・ 6号機のタービン建屋地下の溜まり水 (約100m³) を復水器へ移送 (4月19日 11:00~15:00)
- ・ 6号機の仮設の残留熱除去海水系 (RHRS) のホースの位置を変えるため、残留熱除去系 (RHR) ポンプを一時停止 (4月20日 9:51) し、仮設のRHRS ポンプ移設作業実施後、冷却を再開 (4月20日 15:56)

<使用済燃料共用プール>

- ・ 3月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 (3月21日 10:37~15:30)
- ・ 電源供給を開始 (3月24日 15:37) し、冷却を開始 (3月24日 18:05)
- ・ 電源供給回路の末端部の短絡により、電源供給停止 (4月17日 14:34)。その後、当該設備の点検を実施し、電源の供給が復旧 (4月17日 17:30)
- ・ 4月24日6:40時点でのプール水温度は31℃程度

<海水・土壌モニタリング>

- ・ 南放水口付近の海水核種分析の結果、¹³¹I (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 (3月26日 14:30)
(3月29日に計測した結果、水中濃度限度の3,355.0倍となった。(3月29日 13:55) 一方、1F放水口北側の海水核種分析の結果、¹³¹I (ヨウ素) が $4.6 \times 10^1 \text{Bq/cm}^3$ (同1,262.5倍) 検出された。(3月29日 14:10))
- ・ 福島第一原子力発電所の敷地内 (5地点) の土壌から、3月21日及び3月22日に採取した試料の中に、²³⁸Pu (プルトニウム)、²³⁹Pu (プルトニウム)、²⁴⁰Pu (プルトニウム) を検出 (3月28日 23:45 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。
- ・ 発電所敷地境界付近に設置している本設モニタリングポスト (No.1~8) が復旧 (3月31日)。測定値については1日1回の予定。
- ・ 福島第一原子力発電所の敷地内の土壌から、3月25日 (4地点) 及び3月28日 (3地点) に採取した試料 (合計7検体) の中に、²³⁸Pu (プルトニウム)、²³⁹Pu (プルトニウム)、²⁴⁰Pu (プルトニウム) を検出 (4月6日 18:30 東京電力発表)。検出されたプルトニウムの濃度は、前回 (3月28日公表) と同様に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)と同程度であり、通常環境レベルで人体に問題となるものではない。

- ・南放水口付近の海水核種分析の結果、 ^{131}I (ヨウ素) が $1.8 \times 10^2 \text{Bq/cm}^3$ (周辺監視区域外の水中濃度限度の 4385.0 倍) 検出された。(3月30日 13:55)
- ・福島第一原子力発電所の敷地内の定例的に試料の採取を行うこととなっている3地点の土壌から、3月31日及び4月4日に採取した試料(合計6検体)のうち、3検体から ^{238}Pu (プルトニウム)、 ^{239}Pu (プルトニウム)、 ^{240}Pu (プルトニウム) を検出(4月14日 18:30 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)6と同程度であり、通常環境レベルで人体に問題となるものではない。

<汚染水の拡散防止>

- ・専用港内からの汚染水の流出を防止するため、発電所南側防波堤周辺で大型土のうを用いた止水工事を実施(4月5日 15:00~16:30)
- ・南側防波堤に汚染水拡散防止のためのシルトフェンスを二重に設置完了(4月11日 10:45)
- ・2号機バースクリーンの海側に仮設の止水板(鋼板7枚中1枚)を設置(4月12日 12:00~13:00)
- ・2号機バースクリーンの海側に仮設の止水板(鋼板7枚中2枚)を設置(4月13日 8:30頃~10:00頃)
- ・3、4号機スクリーン前面に汚染水拡散防止のためのシルトフェンスを設置完了(4月13日 13:50)
- ・1、2号機スクリーン前面及びカーテンウォールに汚染水拡散防止のためシルトフェンスを設置(4月14日 12:20)
- ・3号スクリーンポンプ室と4号スクリーンポンプ室の間に、ゼオライトの土のうを3袋設置(4月15日 14:30~15:45)
- ・2号機バースクリーンの海側に仮設の止水板(鋼板7枚中4枚)を設置(4月15日 9:00~14:15)
- ・ゼオライトの土のうを1号スクリーンポンプ室と2号スクリーンポンプ室の間に2袋、2号スクリーンポンプ室と3号スクリーンポンプ室の間に5袋を設置(4月17日 9:00~11:15)

<飛散防止剤の散布>

- ・共用プールの山側の約 500m^2 の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布(4月1日 15:00~16:05)
- ・共用プール山側の約 600m^2 の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布(4月5日 13:00~16:30、4月6日 12:30~14:30)
- ・共用プール山側の約 680m^2 の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布(4月8日 11:00~14:00)

- ・共用プール山側の約 550m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月10日 13:00～14:00）
- ・共用プール山側の約 1,200m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月11日 12:00～13:00）
- ・共用プール山側の約 700m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布開始（4月12日 12:00～13:00）
- ・共用プール山側の約 400m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月13日 11:00～11:30）
- ・共用プール山側の約 1600m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月14日 12:00～13:30）
- ・共用プール山側の約 1900m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月15日 11:30～13:00）
- ・サプレッションプール水サージタンク山側の約 1,800 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月16日 11:00～13:00）
- ・集中廃棄物処理施設周辺の約 1,900 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月17日 10:00～13:30）
- ・集中廃棄物処理施設周辺の約 1,200 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月18日 9:00～14:30）
- ・集中廃棄物処理施設周辺の約 1,900 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月20日 12:00～13:30）
- ・共用プール山側の約 1,300 m²及び5,6号機高圧開閉所山側の約 5,100 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月21日 12:00～15:00）
- ・5号機の原子炉建屋山側の約 860 m²の範囲に、地面の放射性物質の飛散を防ぐ飛散防止剤を試験的に散布（4月24日 11:30～13:00）

＜がれきの撤去状況＞

- ・リモートコントロール重機による、がれきの撤去を実施（4月10日）
- ・リモートコントロール重機によるがれきの撤去（コンテナ6個分）を実施（4月13日 11:00～16:10）
- ・リモートコントロール重機によるがれきの撤去（コンテナ1個分）を実施（4月15日 9:00～15:45）
- ・リモートコントロール重機によるがれきの撤去（コンテナ8個分）を実施（4月16日 9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ2個分）を実施（4月17日 9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ4個分）を実施（4月18日 9:00～16:00）
- ・リモートコントロール重機によるがれきの撤去（コンテナ3個分）を実施（4

月 19 日 9:00～15:00)

- ・リモートコントロール重機によるがれきの撤去 (コンテナ 1 個分) を実施 (4 月 20 日 9:00～16:00)
- ・リモートコントロール重機によるがれきの撤去 (コンテナ 1 個分) を実施 (4 月 21 日 9:00～16:00)
- ・リモートコントロール重機によるがれきの撤去 (コンテナ 2 個分) を実施 (4 月 22 日 9:00～16:00)
- ・リモートコントロール重機によるがれきの撤去 (コンテナ 3 個分) を実施 (4 月 24 日 9:00～16:00)

<その他>

- ・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 1,000mSv/h 以上、3号機は、がれきがあり測定できず (3月27日 15:30 頃)。1号機立坑内の溜留水を仮設ポンプにて集中環境施設プロセス主建屋の貯槽に移送し、立坑内の水位が上端から約-0.14m から約-1.14mに減少 (3月31日 9:20～11:25)
- ・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 (3月29日 12:03)
- ・3月28日、集中環境施設プロセス主建屋で水溜まりを確認し、放射能分析の結果、3月29日管理区域内で総量約 $1.2 \times 10^4 \text{Bq/cm}^3$ 、非管理区域で総量 $2.2 \times 10^4 \text{Bq/cm}^3$ の放射能を検出
- ・原子炉等の冷却に使用する淡水を積んだ米軍のはしけ船 (1号船) 1隻が海上自衛隊の艦船にえい航され、福島第一原子力発電所専用港に接岸 (3月31日 15:42)。はしけ船 (1号船) からろ過水タンクへ淡水を移送開始 (4月1日 15:58)。その後、ホースの不具合により中断 (4月1日 16:25) したが、4月2日に注水を再開 (4月2日 10:20～16:40)
- ・2隻目の原子炉等の冷却に使用する淡水を積んだ米軍のはしけ船 (2号船) が海上自衛隊の艦船にえい航され、福島第一原子力発電所専用港に接岸 (4月2日 9:10)
- ・米軍のはしけ船 (2号船) からはしけ船 (1号船) へ淡水を移送 (3日 09:52～11:15)
- ・集中環境施設プロセス主建屋内の低レベル滞留水については、放水口南側海域から1台目のポンプによる放出を開始 (4月4日 19:03) し、更に全10台のポンプによる放出を実施 (4月4日 19:07) し、4月10日 17時40分に水中ポンプによる海洋への放出作業を停止し、残水の確認を実施中 (総放出量は約 9,070t)
- ・雑固体廃棄物減容処理建屋内の低レベル滞留水については、放水口南側海域

- から5台のポンプによる放水を実施（4月6日17:20～4月7日18:20）
- ・タービン建屋内の溜まり水の集中廃棄物処理施設への排水準備のため、2～4号機のタービン建屋の外壁に孔あけを実施（4月7日）
- ・4月7日11:32に発生した宮城県沖の地震により、中断していた集中環境施設における排水作業を再開（4月8日14:30）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月10日15:59～16:28）
- ・1～4号機放水口サンプリング建屋より発火を確認（4月12日6:38頃）。初期消火活動の結果、炎と煙がないことを確認（同日7:00前）。その後、鎮火確認（同日9:12）
- ・3～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月14日10:17～12:25）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月15日8:02～9:55）
- ・1～3号機原子炉への注水ポンプ用の分電盤等を、津波対策として高台に移設（4月15日10:19～17:00）
- ・集中廃棄物処理施設の建屋内における止水対策が完了（4月18日）。
- ・1、2号機と3、4号機間の電源連携強化作業が完了（4月19日10:23）
- ・1～4号機について、原子炉建屋の状況を把握するため、無人ヘリによる動画撮影を実施（4月21日11:43～12:50）

○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、3月14日17:00冷温停止）
- 2号機（110万kW）（自動停止、3月14日18:00冷温停止）
- 3号機（110万kW）（自動停止、3月12日12:15冷温停止）
- 4号機（110万kW）（自動停止、3月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（4月25日02:00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	0.17
原子炉水温	℃	24.1	24.6	34.2	27.9
原子炉水位*2	mm	9396	10246	7786	8785
原子炉格納容器内サブプレッションプール水温	℃	23	24	26	29

原子炉格納容器内 サプレッションプール圧力	kPa (abs)	107	104	110	106
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) 各プラントの状況

< 1号機関係 >

- ・ 3月30日 17:56頃、1号機において、タービン建屋の1階の電源盤から煙が上がっていたが、電気の供給を切ったところ、煙の発生が止まった。消防署により、19:15 当該事象は電源盤の異常であり、火災ではないと判断された。
- ・ 1号機の原子炉を冷却する残留熱除去系（B）の電源が、外部電源に加え非常用電源からも受電可能となり、全号機において、残留熱除去系（B）のバックアップ電源（非常用電源）を確保（3月30日 14:30）

(5) 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（3月11日 18:08）
- ・ 1、2、4号機にて同法第10条通報（3月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（3月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（3月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（3月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、3月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、3月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 0.26 μ Sv/h（4月24日 16:00）（約 0.27 μ Sv/h（4月23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（3月11日 22:55）
- ・ 原子力災害対策特別措置法第10条通報（3月13日 13:09）

2. 産業保安

○電気（4月24日 17:00）

- ・ 東北電力（4月24日 16:00 現在）
- 停電戸数：約 14 万戸

停電地域：岩手県 一部地域で停電（約2万7千戸）
宮城県 一部地域で停電（約7万9千戸）
福島県 一部地域で停電（約3万5千戸）

[参考情報] 停電戸数の状況の分類（4月23日16:00現在）

- ① 津波等で東北電力の設備、インフラ、家屋等が流出した地域：約8万3千戸
- ② がれき撤去・立入制限解除等の後、復旧作業に着手する地域：約4万5千戸
- ③ 家屋、インフラは健全なものの、水没・損傷した東北電力の設備の復旧が必要な地域：0戸
- ④ 東北電力の設備は復旧したが、家主の不在等により送電を留保している戸数：約1万4千戸

・東京電力

停電は3月19日1:00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（4月24日9:00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 6号機

・東北電力（4月24日16:00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（4月24日10:00現在）

・供給停止戸数約4千戸（延べ供給停止戸数※ 約48万戸）

※延べ供給停止戸数には、家屋倒壊等が確認された戸数を含む。

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

3月14日8:00 デパートの地下での爆発

・東部ガス（いわき市）死者1名

3月12日11:30 一般住宅での漏えいガスに着火

各社の供給停止状況は以下の通り。

・石巻ガス（石巻市）3,120戸供給停止

○熱供給（4月24日10:00現在）

・小名浜配湯（いわき市小名浜）供給停止

○LPGガス（4月14日21:00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

3月13日午前中 共同住宅でガス爆発

・いわき市鹿島の一般住宅でLPGガス漏れが発生、元栓を閉めて漏えい防止を図っているところ。

（4月11日17:16頃、福島県内陸部で発生した地震によるもの（福島県浜通りの地震発生による状況について（第二報）で公表済み。））

○コンビナート（4月14日21:00現在）

・コスモ石油千葉製油所（千葉県市原市）

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。

・福島県いわき市の第一三共プロファーマ（株）小名浜工場でガス漏れ、火災が発生（既に鎮火。けが人なし）

（4月11日17:16頃、福島県内陸部で発生した地震によるもの（福島県浜通りの地震発生による状況について（第二報）で公表済み。））

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】

- 0:49 福島第一原子力発電所1号機にて事業者が同法第15条事象(格納容器圧力異常上昇)発生判断(01:20通報)
- 5:22 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)
- 5:32 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)
- 5:44 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
- 6:07 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
- 6:50 経済産業大臣が原子炉等規制法第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。
- 7:45 内閣総理大臣より、福島県知事、広野町長、楡葉町長、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。
- 17:00 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
- 17:39 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。
- 18:25 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。
- 19:55 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
- 20:05 総理指示を踏まえ、経済産業大臣が原子炉等規制法第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。
- 20:20 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 : 0 8 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 : 2 0 福島第一原子力発電所3号機の耐圧ベント弁開放
- 9 : 3 0 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 : 0 9 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 : 1 2 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 : 3 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14日】

- 1 : 1 0 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 : 2 0 福島第一原子力発電所3号機の海水注入を再開
- 4 : 4 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
- 5 : 3 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
- 7 : 5 2 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（格納容器圧力異常上昇）である旨、受信
- 13 : 2 5 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15条事象（原子炉冷却機能喪失）である旨、受信
- 22 : 1 3 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 : 3 5 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 : 0 0 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 : 0 0 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 : 2 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
- 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
- 7:44 (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
- 8:54 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
- 10:30 経済産業大臣が原子炉等規制法第64条第3項の規定に基づき、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について実施することを命じた。
- 10:59 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。
- 11:00 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
- 16:30 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
- 22:00 経済産業大臣が原子炉等規制法第64条第3項の規定に基づき、4号機の使用済燃料プールへの注水について実施することを命じた。
- 23:46 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】

- 13:00 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
- 15:55 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
- 16:48 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】

- 7:44 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
- 8:58 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】

- 23:30 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、楡葉町、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、楡葉町、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。

原子力災害被災者支援の体制強化のため、経済産業大臣をチーム長とする「原子力被災者生活支援チーム」の設置、関係市町村への訪問等を実施。

原子力災害現地対策本部は、20-30km圏内の地域住民等に向けた、ニュースレター第1号を公表。

【3月30日】

各電気事業者等に対し、平成23年福島第一・第二原子力発電所事故を踏まえた他の発電所の緊急安全対策の実施に係る指示文書を出し、手交。

【3月31日】

原子力安全・保安院は、東京電力(株)に対し、3月31日の福島第二原子力発電所への街宣車の進入について、核物質防護等に係る対策に万全を期すよう口頭で指示。

原子力安全・保安院は、東京電力(株)に対し、作業員の放射線管理に万全を期すように注意喚起。

原子力災害現地対策本部は、20-30km圏内の地域住民等に向けた、ニュースレター第2号を公表。

【4月1日】

原子力安全・保安院は、東京電力(株)に対し、核種分析結果の誤りについて以下の3点について適切な対応をとるように嚴重注意。

- ・核種分析の過去の評価結果について、どの核種について評価の誤りがあるかを明らかにし、すみやかに再評価を行うこと。
- ・評価の誤りが発生した原因を調査するとともに、再発防止の徹底を行うこと。
- ・評価結果の誤り等については判明した段階で、早急に連絡を行うこと。

【4月2日】

福島第一原子力発電所2号機取水口付近からの放射性物質を含む液体の海への流出について、サンプリングした液体の核種分析を実施すること、2号機周辺に今回漏えいが見えられ施設と同様の箇所がないか確認すること及び当該施設周辺においてより多くの場所で水を採取しモニタリングを強化することを口頭により指示。

【4月4日】

緊急やむ得ない措置として、海洋放出を実施するに当たっての助言を原子力安全委員会に求め、東京電力(株)に対し、現在実施している海洋モニタリングを着実に実施するとともに、さらに強化(測定ポイントの増加、実施頻度の増大)することにより、海洋放出による放射性物質の拡散による影響を調査・確認し、情報公開に努めること、併せて、海洋への放出を可能な限り低減するための方策を強化することを指示。

【4月5日】

福島第一原子力発電所から環境に影響を与える可能性のある放射性物質の放出に伴う措置に係る地方公共団体への事前の通報連絡について、指示文書を発出。

【4月6日】

1号機原子炉格納容器への窒素封入を実施するに当たって、原子力安全・保安院から東京電力に対して以下の3点について指示(4月6日12:40)。①プラントパラメーターを適切に管理し、その変化に応じて安全を確保するための措置が適切に講じられるようにすること。②当該作業に従事する作業員の安全を確保する体制等を確立し実施すること。③窒素封入により当該原子炉格納容器内の気体が外部に漏出する可能性が否定できないことから、モニタリングを確実に実施し、更に強化することにより、窒素封入に伴う放射性物質の放出及び拡散による影響を調査及び確認し、情報公開に努めること。

【4月7日】

原子力災害現地対策本部は、20～30km圏内の地域住民等に向けた、ニュースレター第3号を公表(4月7日)

【4月9日】

原子力安全・保安院は、4月7日23時32分頃に発生した宮城県沖地震により、東北電力(株)東通原子力発電所1号機において全ての非常用ディーゼル発電機が動作可能でない状態に陥った事象を受け、各電気事業者等へ「非常用発電設備の保安規定上の取扱いについて」の指示文書を発出。

【4月10日】

原子炉等規制法第67条第1項に基づき、福島第一原子力発電所に滞留している高い放射線量が検出された排水の集中廃棄物処理建屋への移送に関して、その必要性、安全性に係る評価、恒久的な排水保管及び処理施設についての方針等に係る報告の徴収について指示文書を発出。

【4月13日】

・原子力安全・保安院は、東京電力(株)に対し、原子炉等規制法第

67条第1項に基づき、福島第一原子力発電所建屋の耐震安全性評価の実施結果及び有効な耐震補強工事等の対策の検討結果について報告を指示。

- ・原子力安全・保安院は、東京電力（株）に対し、平成23年度東北地方太平洋沖地震により発生した津波に関して、詳細な分析及び検討を指示。
- ・原子力安全・保安院は、東北電力（株）に対し、女川原子力発電所1号機から3号機において、4月7日23:32頃発生した2011年宮城県沖の地震時に取得した地震観測データの分析及び耐震安全上重要な設備の地震影響評価について報告を指示。

【4月14日】

- ・4月13日にサンプリングを行った1、2号機のサブドレン（施設内で集水・管理された地下水）について、前回に比べ放射線濃度が1桁上昇していたことから、原子力安全・保安院は監視の強化を図るよう、口頭で指示。

【4月15日】

- ・東京電力（株）において4月1日付け人事異動に伴う原子力災害対策特別措置法第9条第5項に基づく原子力防災管理者解任届出に遅延があったことを受け、原子力安全・保安院は、東京電力（株）に対して、嚴重注意を行うとともに再発防止策を作成するよう口頭で指示。
- ・平成23年4月7日に宮城県沖地震により、電力系統の一部における地絡事故が発生し、原子力発電所等において一時的に外部電源の喪失が発生したことから、一般電気事業者等に対し外部電源の信頼性確保に係る対策を検討するなど指示。

【4月18日】

- ・4月10日付けで発出した報告の徴収に係る指示に基づき、東京電力（株）から提出された福島第一原子力発電所に滞留している高い放射線量が検出された排水の集中廃棄物処理建屋への移送に関する報告書を受領（4月18日）し、その内容を確認（4月19日）。

【4月21日】

- ・内閣総理大臣より、福島県知事、広野町長、楡葉町長、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20条第3項の規定に基づき、次の指示を出した。
 - 避難区域として、福島第二原子力発電所から半径10km圏内区域から半径8km圏内区域への変更を指示。
- ・内閣総理大臣より、福島県知事、富岡町長、双葉町長、大熊町長、浪江町長、川内村長、楡葉町長、南相馬市長、田村市長及び葛尾村

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20条第3項の規定に基づき、次の指示を出した。

- 福島第一原子力発電所から半径20km圏内を警戒区域に設定し、緊急事態応急対策に従事する者以外の者に対して、市町村長が一時的な立入りを認める場合を除き、当該区域への立入りを禁止、又は当該区域からの退去を指示。

【4月22日】

- ・ 内閣総理大臣より、福島県知事、浪江町長、川内村長、楡葉町長、南相馬市長、田村市長、葛尾村長、広野町長、いわき市長、飯館村長及び川俣町長に対し、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20条第3項に基づき、次の指示を出した。
 - 福島第一原子力発電所から半径20kmから30km圏内に設定されていた屋内への退避を解除し、計画的避難区域及び緊急時避難準備区域を設定したので、当該区域内における避難のための計画的な立退き若しくは常に緊急時に避難のための立退き又は屋内への退避が可能な準備を居住者等が行うように指示。
- ・ 原子力災害対策本部は、事故状況の全体像を把握するとともに、計画的避難区域等の設定の評価等のため、下記項目を取り組むべく「環境モニタリング強化計画」を定めた。
 - 福島第一原子力発電所周辺を含む適切な範囲での放射性物質の分布状況の把握
 - 今後の各区域(避難区域、計画的避難区域及び緊急時避難準備区域)における線量評価や放射性物質の蓄積状況評価のための準備
 - 周辺住民等の被ばく線量評価のための環境の線量情報の提供

【4月24日】

原子力安全・保安院は、東京電力(株)からプラントデータの数値の一部に誤りがあるとの報告を受けた件について、以下の内容について口頭で嚴重注意を行った。

- ・ 本パラメータは、事故対応を的確かつ迅速に行うための基礎となるデータであるところ、これが誤って伝えられたことは極めて遺憾である。
- ・ 引き続き、点検を速やかにかつ確実に行うこと。
- ・ 万全な再発防止策を講じること。

<被ばくの可能性 (4月25日 08:00 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以上の値を示した。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。避難所や保健所等11ヶ所(常設)で実施中。4月22日までに169,874人に対し実施。そのうち、100,000cpm以上の値を示した者は102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30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、3月24日に福島県立医科大学附属病院へ搬送し、その後、3月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。3月28日正午頃3名の方がすべて退院した。当該作業員3名は4月11日に放射線医学総合研究所で再受診し、3名とも健康状態に問題はなかった。なお、両足に局所被ばくのあった2名の皮膚に熱傷の症状や紅斑などは認められていない。

また、4月1日11:35頃、米軍のはしけ船のホース手直し作業のために岸から船に乗り込む際、作業員1名が海に落下した。すぐに周囲の作業員に救助され、けが及び外部汚染はなかったが、念のため、ホールボディカウンタによる測定を行った結果、4月12日に内部取り込みなしと評価された。

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～3月27日、いわき市保健所において、0～15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。
- (5) 3月28日～3月30日、川俣町公民館及び飯舘村役場において、0～15歳までの946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、飯館村）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、飯館村）宛に発出。

<負傷者等の状況（4月25日08:00現在）>

1. 3月11日の地震による福島第一原子力発電所の負傷者
 - ・社員2名（軽傷、既に仕事復帰）
 - ・社員2名（地震、津波の際に割れたガラスで切り傷、既に仕事復帰）
 - ・社員1名（避難の際に擦り傷、既に仕事復帰）
 - ・協力会社1名（両足骨折で入院中）
 - ・死亡2名（地震発生後から東京電力（株）の社員2名が行方不明となり、捜査を続けてきたが、3月30日午後、4号機タービン建屋地下一階において当該社員2名が発見され、4月2日までに死亡が確認された。）
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11日の地震発生の際に、福島第二原子力発電所において、協力会社の1名（クレーンオペレータ）が死亡。（タワークレーンが折れ、オペレータールームがつぶれ、頭に当たった模様。）
 - ・3月11日に協力会社の1名を病院へ搬送（後日脳梗塞と判明）
 - ・3月12日に急病人1名発生（脳卒中、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12日に社員1名が左腕裂傷、病院へ搬送し手当（既に仕事復帰）
- ・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）
- ・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）
- ・4月7日午後、福島第一原子力発電所構内北側の土捨て場において、土のう作りをしていた作業員1名が体調不良になったため、Jビレッジに搬送し、身体サーベイにより汚染なしを確認した後、救急車でいわき市立公立病院に搬送された。4月8日、「脱水、一過性意識消失」と診断。
- ・4月9日午前9時19分、水処理建屋において全面マスク着用でケーブル処理作業を行っていた協力企業社員1名の気分が悪くなり、建屋の外にある蓋のずれたマンホールに足を踏み入れて負傷したため、病院へ搬送しました。診断の結果、「右膝挫傷」「右膝内側側副靭帯損傷疑い」と診断。なお、身体サーベイの結果、汚染はないことが確認された。
- ・4月10日午前11時10分頃、2号機ヤードにおいて排水ホースの敷設作業を行っていた協力企業社員1名気分が悪くなったため、Jビレッジに搬送後、同日午後2時27分に救急車で総合磐城公立病院へ搬送。なお、身体への放射性物質の付着はないことが確認された。
- ・4月23日午後4時30分頃、発電所構外（楢葉町内生コン工場）において、作業員1名がコンクリートミキサーで使用したホースの接続部の手入れ作業を行っていた際に、液体が飛散し目に入った。目に痛みを感じたことから、Jヴィレッジに搬送し産業医の診察を受けた後、受診できる眼科が近くなかったため、念のため救急車でいわき市立公立病院へ搬送。左目に軟膏等の処方を受け、眼帯をして宿舎に帰宅したが、専門医が不在であったため、4月24日に再診したところ、中等度の結膜炎で1週間程度の通院治療を要すると診断された。なお、通常業務は行えることとのことから、4月24日から普通作業（内業）に従事している。

<住民避難の状況（4月23日08:00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、20 km圏内の避難地域への立入禁止について通知。

4月21日11:00、内閣総理大臣の指示により、福島第二原子力発電所で発生した事故に関する避難区域を福島第二原子力発電所から半径10 km圏内から半径8 km圏内に変更するよう指示。

4月21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から20 km圏内を警戒区域に設定し、緊急事態応急対策に従事する者以外の者に対して、市町村長が一時的な立入りを認める場合を除き、当該区域への立入禁止、又は当該区域からの退去を指示。(警戒区域の発動日時：4月22日0:00)

4月22日9:44、内閣総理大臣の指示により、福島第一原子力発電所から20 kmから30 km圏内の屋内退避を解除するとともに、計画的避難区域及び緊急時避難準備区域を設定し、当該区域内における避難のための計画的な立退き若しくは常に緊急時に避難のための立退き又は屋内への退避が可能な準備を居住者等が行うよう指示。

<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、千葉県の知事に対して、以下の品目について、当分の間、出荷等を控えるよう指示。

また、原子力災害対策本部は、出荷制限等の発動・解除の考え方については、原子力安全委員会の助言も踏まえ、以下のように整理した。

- ・ 出荷制限・解除の対象区域は、汚染区域の拡がりや集荷実態等を踏まえ、市町村単位など県を分割した区域ごとに行うことも可能とする
- ・ 暫定規制値を超えた品目の出荷制限については、汚染の地域的拡がりを勘案しつつ総合的に判断
- ・ 出荷制限の解除は、福島第一原子力発電所の状況を勘案しつつ、約1週間ごと検査を行い、3回連続で暫定規制値を下回った品目・区域に対して実施
- ・ ただし、原子力発電所から放射性物質の放出が継続している間は、解除後も引き続き約1週間ごとに検査を実施

(1) 出荷制限・摂取制限品目 (4月23日08:00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(ホウレンソウ、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、紅葉苔、カキナなど)、カブ、原乳(一部地域 ^{※1} を除く)、しいたけ(伊達市、相馬市、南相馬市、田村市、いわき市、新地町、川俣町、浪江町、双葉町、大熊町、富岡町、楡葉町、広野町、飯舘村、葛尾村、	非結球性葉菜類、結球性葉菜類及びアブラナ科の花蕾類(ホウレンソウ、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、紅葉苔、カキナなど)、しいたけ(飯舘村において露地で原木を用いて栽培されたものに限る。)、イカナゴの稚魚(コウナゴ)

	川内村及び福島市において露地で原木を用いて栽培されたものに限る。)、イカナゴの稚魚(コウナゴ)	
茨城県	ハウレンソウ(北茨城市及び高萩市において産出されたものに限る。)	
栃木県	ハウレンソウ(一部地域 ^{※2} を除く)	

※1：喜多方市、磐梯町、猪苗代町、三島町、会津美里町、下郷町、南会津町、福島市、二本松市、伊達市、本宮市、郡山市、須賀川市、田村市(旧都路村の範囲を除く)、白河市、いわき市、相馬市、国見町、鏡石町、石川町、浅川町、古殿町、三春町、小野町、矢吹町、矢祭町、塙町、新地町、大玉村、平田村、西郷村、泉崎村、中島村、鮫川村、

※2：那須塩原市、塩谷町

(2) 水道水の飲用制限の要請(4月23日08:00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	なし
乳児 ・対応を継続している水道事業	飯舘村飯舘簡易水道事業(福島県飯舘村)
・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)

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