From: RST01 Hoc
Sent: Friday, April 08, 2011 5:44 PM
To: RST07 Hoc; RST09 Hoc; RST06 Hoc; Hoc, RST16
Subject: FW: [METI Japan](Apr_8)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 5_1600_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf; Apr_8_Radioactivity Level Map [Chart].pdf

FYI

-----Original Message-----
From: OST02 HOC
Sent: Friday, April 08, 2011 4:49 PM
To: RST01 Hoc
Subject: FW: [METI Japan](Apr_8)Update on Seismic and Tsunami Damage Information

-----Original Message-----
From: HOO Hoc
Sent: Friday, April 08, 2011 12:45 PM
To: LIA07 Hoc; OST01 HOC; OST02 HOC; OST03 HOC
Subject: FW: [METI Japan](Apr_8)Update on Seismic and Tsunami Damage Information

-----Original Message-----
From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Friday, April 08, 2011 12:38 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_8)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Friday, the following information has been updated.

---- Today's news ----
1. Message from Mr. Yukio Edano, Chief Cabinet Secretary of the Government of Japan, to the World Economic Forum Global Risks Meeting [Please refer to
8 below]

2. An earthquake occurred in Tohoku on April 7, but no abnormalities were found in the NPSs in the region. [Please refer to 13, 14 below]

3. Questions and answers on fishery products [Please refer to 9 below]

LLLL/203

---- Updates from METI ----
4. [METI] Apr 5_1600_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs [Please refer to the attached file]

5. [METI] Apr 8_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----
6. [NISA] Apr 8 1600_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is available) http://www.meti.go.jp/press/2011/04/20110408009/20110408009-1.pdf

7. [NISA] Apr 8 1400_Fukushima Dai-ichi Major Parameters of the Plant (only Japanese version is available) http://www.meti.go.jp/press/2011/04/20110408009/20110408009-3.pdf

---- Major Updates from other agencies of Japanese Government --- 8. [CAS] Apr 7_Message from Mr. Yukio Edano, Chief Cabinet Secretary of the Government of Japan, to the World Economic Forum Global Risks Meeting http://www.kantei.go.jp/foreign/incident/110407_wefmessage.html

9. [MAFF] Questions and answers on fishery products http://www.jfa.maff.go.jp/e/q_a/index.html

http://www.jfa.maff.go.jp/j/kakou/kensa/pdf/20110408chibamaiwashien.pdf

10. [MLIT] Apr 8 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay
http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawaski City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

11. [MLIT] Apr 8 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

12. [NSC] Apr 8 1645_Assessment of the result of environment monitoring (only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110408_1.pdf

---- Other Updates ----
13. [TEPCO] An earthquake occurred in Tohoku on April 7, but no abnormalities were found in the NPSs in the region
http://www.tepco.co.jp/en/press/corp-com/release/11040810-e.html

http://www.tepco.co.jp/en/press/corp-com/release/11040807-e.html

14.[Tohoku Electric Power] An earthquake occurred in Tohoku on April 7, but no abnormalities were found in the NPSs in the region http://www.tohoku-epco.co.jp/emergency/8/index.html (only Japanese version is available)

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

==========
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
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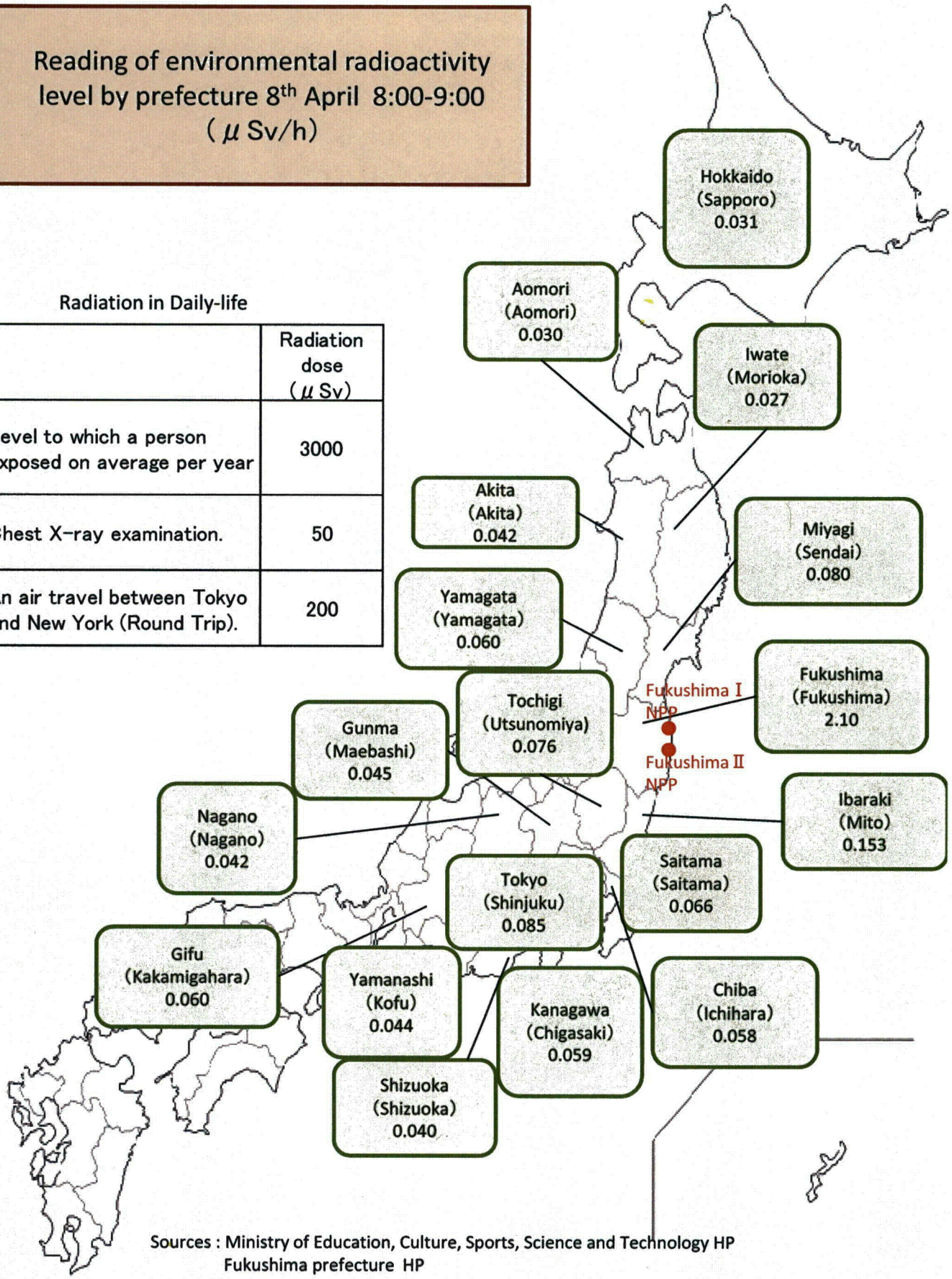
(See attached file: [METI] Apr 5_1600_Tohoku-Pacific Ocean Earthquake and the Seismic Damages to the NPSs.pdf) (See attached file: Apr_8_Radioactivity Level Map [Chart].pdf)

Reading of environmental radioactivity level by prefecture 8th April 8:00-9:00 (μSv/h)

Radiation in Daily-life

	Radiation dose (μSv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

Tohoku Pacific Earthquake and the seismic damage to the NPSs

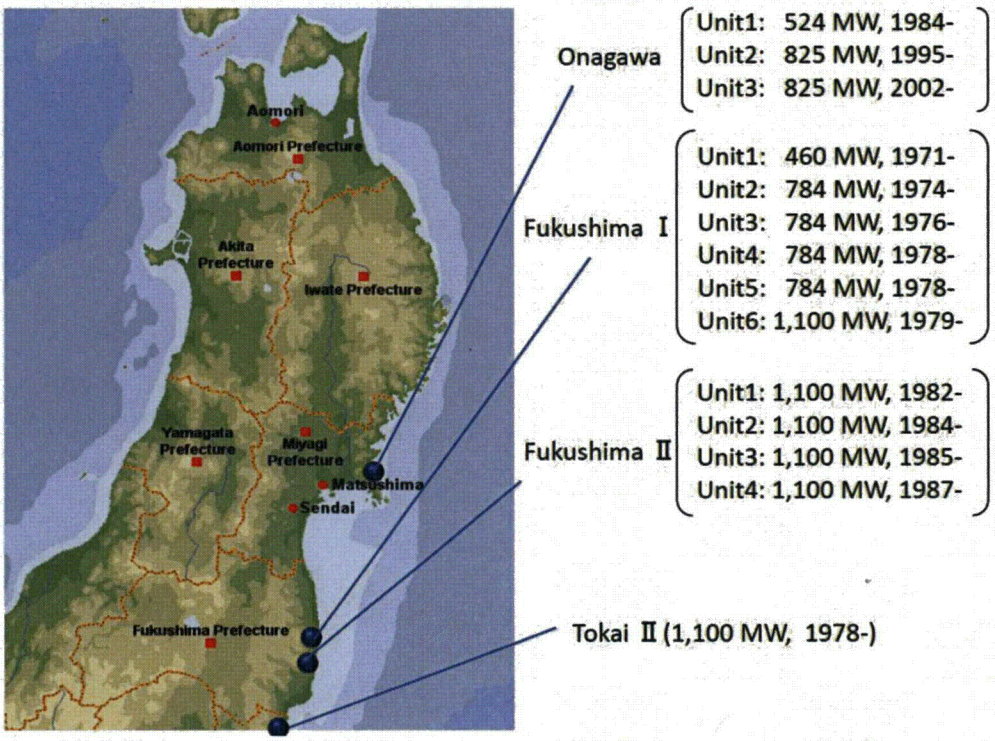
As of 16:00 April 5th, 2011 (JST)
Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Tohoku Pacific Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS) of Tokyo Electric Power Co. Inc.(TEPCO)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS of Tohoku Electric Power Co. Ltd.; Units 1, 2 and 3 at Fukushima I NPS of TEPCO; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS of TEPCO; and an unit of Tokai Dai-ni (II) NPS of Japan Atomic Power Co. Ltd.) were automatically shut-down.

After the automatic shut-down, Units 1, 2 and 3 at Onagawa, Unit 3 at Fukushima II, and the Unit at Tokai II have been cold shut down safely. As for the Units 1, 2 and 4 at Fukushima II, TEPCO operator of the station reported the nuclear emergency situation to Nuclear and Industrial Safety Agency (NISA), but afterward the three units have been cold shut down.



Tsunami damaged the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence at 14:46 on March 11th, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation. Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast.

The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 10 meters high from the seawater level. Fukushima I lost the AC power sources for Unit 1, 2, 3 and 4 and lost function necessary for cooling down the reactor cores (Unit1,2 and 3) and spent fuel kept in the pools (Unit1,2,3 and 4) inside reactor buildings. Consequently, the pressure and temperature of reactor cores and the water temperature of spent fuel pools went up.

For counter measures, water is being injected into the reactor pressure vessels of Units 1, 2 and 3. At the same time, police, fire brigade and the Self Defense Forces are attempting to pour water into the spent fuel pool of Units 3 and 4 by spraying seawater from helicopters, water cannon trucks and fire engine. Further, TEPCO engineers are working to restore external power supply to Units 1, 2, 3 and 4 (power supply to Units 5 and 6 was completed) by installing the electricity cable connecting to the transmission line of Tohoku Electric Power Co. Ltd. and other transmission route.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the reactor was automatically shut-down and the Tsunami disabled the equipments, the temperature of the reactor core went up and the water level inside the pressure vessel dropped and the reaction of cladding metal of fuel and water generated hydrogen. Vent of the primary containment vessel was operated at 10:17am on March 12th. The hydrogen leaked outside of the containment vessel and caused the explosion at the upper-part of a concrete building housing at 15:36 on March 12th.

- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 16:00 April 5th, instead of seawater. On March 29th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

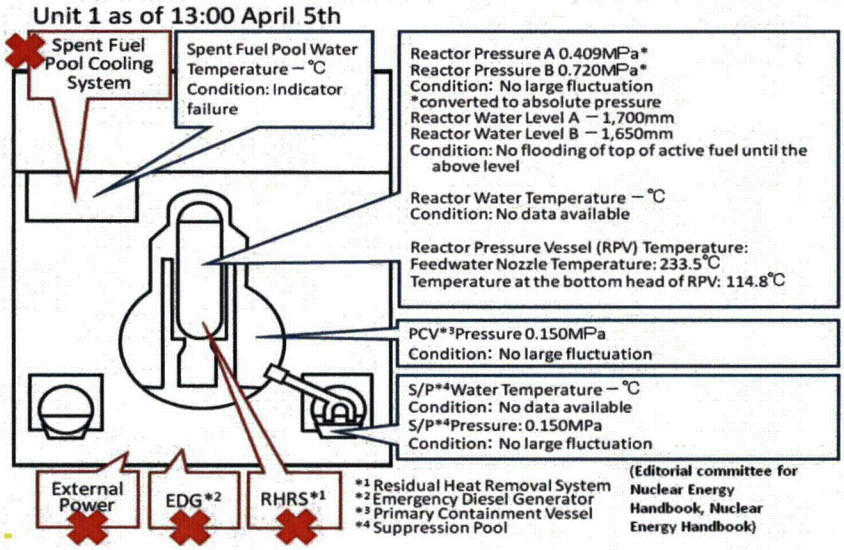
- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out. On April 2nd, a test water spray over the spent fuel pool was carried out in order to confirm the appropriate position for water spray.

- Lighting in the main control room was recovered on March 24th. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

- White smoke was confirmed to generate continuously as of 6:30am April 5th.

- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, 2.1×10^{5}Bq/cm^{3} of ^{131}I (Iodine) and 1.8×10^{6}Bq/cm^{3} of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since around 17:00 March 24th, the stagnant water has been transferred to the condenser. As the condenser was confirmed to be almost filled with water, pumping out the water to the condenser was stopped at 7:30am on March 29th.

- In order to prepare to transfer the stagnant water on the basement floor of the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water (A) (12:00 March 31th). After switching the place where the water was to be transferred to the surge tank of suppression pool water (B) (15:25 March 31th), the transfer was restarted and finished. (15:26 April 2nd) Thereafter, the water in the condenser was transferred to the condensate storage tank at 13:55 on April 3rd.



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the automatic shut-down of the reactor, the water injection function was sustained, but the reactor water level tended to decrease. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th.

- At 6:10am on March 15th, TEPCO reported that there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

- Seawater was being injected into the reactor pressure vessel; thereafter, fresh water is being injected as of 16:00 April 5th, instead of seawater. On March 27th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

- The seawater injection to the spent fuel pool of Unit 2 using the fire pump truck was switched to the fresh water injection using the temporary motor-driven pump on March 29th. On March 30th and April 4th, the injection of fresh water was resumed. On April 1st, fresh water injection to the spent fuel pool via the spent fuel cooling line using the temporary pump was carried out. At 6:00am on April 5th, the temperature in the spent fuel pool was 71.0 degree centigrade.

- The power center of Unit 2 received electricity on Match 20th. On March 26th, lighting of the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

- White smoke was confirmed to generate continuously as of 6:30amApril 5th.

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water from 16:45 March 29th till 11:50am April 1st. Thereafter, the water in the condenser was transferred to the condensate storage tank at 17:10 on April 2nd, and 13:55 on April 3rd.

- One more pump for the transfer of the water in the condenser of Unit 2 to the condensate storage tank was installed at 15:40 April on 5th.

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) for laying electric cables, located near the intake channel of Unit 2. In addition, the outflow from the crack with a length of around 20 cm in the concrete portion of the lateral surface of the pit into the sea was confirmed. (as of around 9:30 April 2nd) In order to stop the outflow, concrete was started to be poured into the pit. (16:25 and 19:02 April 2nd)

- As the measure to prevent the outflow of the water accumulated in the pits for conduit in the area around the inlet bar screen of Unit 2, the upper part of the power cable trench for power source at the intake channel was crushed and sawdust, high polymer absorbent and cutting-processed newspaper were put inside. (From 13:47 till 14:30 April 3rd)

- The tracer solution was put in from the two holes dug around the pit for the conduit near the inlet bar screen of Unit 2 and was confirmed to be flowed out from the crack to the sea at 14:15 April 5th. The coagulant (soluble glass) started to be injected from the holes around the pit in order to prevent the out flowing of the water at 15:07 April 5th.

Unit 3 Fresh water is being injected to the spent fuel pool and the reactor pressure vessel.

- After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel through the fire extinguishing system line. And vent of the primary containment vessel was operated at 20:41 on March 12th, at 8:41am on March 13th and at 5:20am on March 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

- On March 16th, 21st and 23rd, the smoke (sometimes whitish, grayish or slightly blackish one) was generated from Unit 3 and died down. As of 6:30am April 5th, white smoke was confirmed to generate continuously.

- For counter measures, seawater was being injected into the reactor pressure vessel, thereafter; fresh water is being injected as of 16:00 April 5th, instead of seawater. At the same time, to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to Unit 3 from sky and ground. On March 29th, the water spray (fresh water) using the concrete pump truck was carried out.

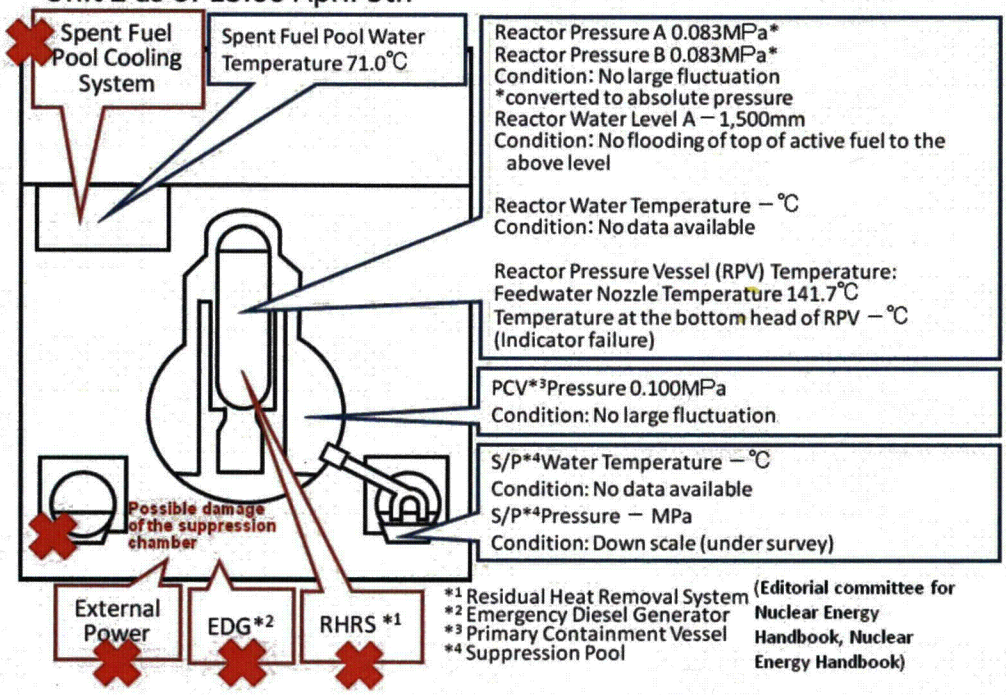
- Injection of seawater to the spent fuel pool via the cooling and purification line was carried out on March 23rd and March 24th. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump. From March 31st till April 4th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out three times.

- The pressure in the primary containment vessel of Unit 3 rose. (320 kPa as of 11:00 March 20th) Judging from the situation, immediate pressure relief was not required, and monitoring of the pressure continues. (107.1 kPa as of 10:20am April 5th)

- Works for the recovery of external power supply is being carried out. At 22:43 on March 22nd, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply at 12:18 on April 3rd.

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from 17:40 March 28th till around 8:40am March 31st.

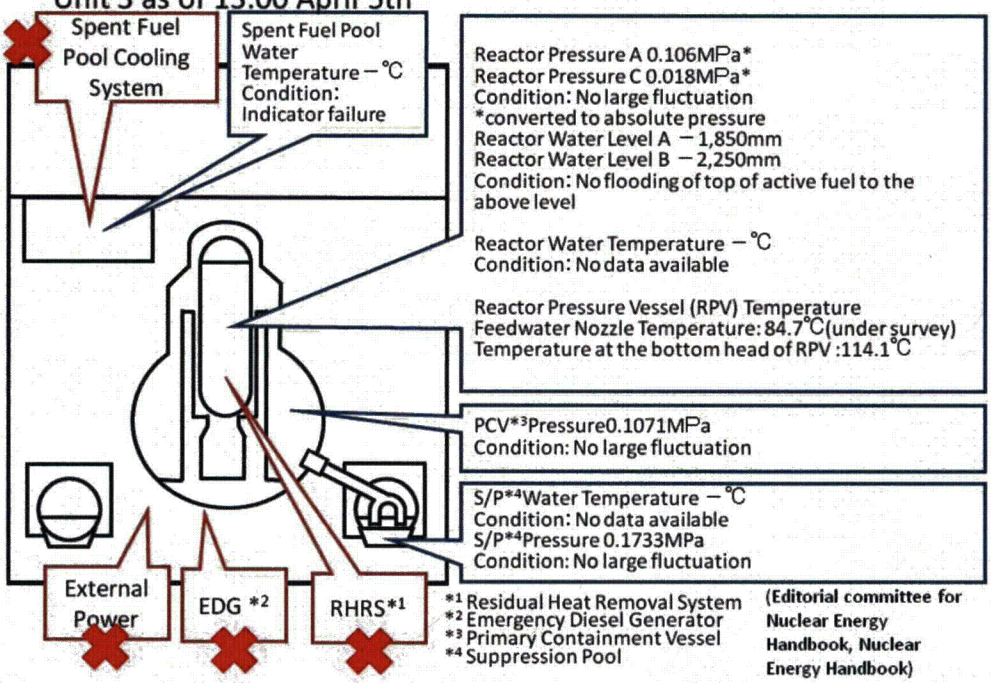
Unit 2 as of 13:00 April 5th



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

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

Unit 3 as of 13:00 April 5th



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

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

Unit 4 No fuel is in the reactor pressure vessel. Fresh water is being injected to the spent fuel pool.

- There is no fuel in the reactor pressure vessel due to replacement work of the shroud.

- The temperature of water in the spent fuel pool went up. At 4:08am on March 14th, the temperature in the spent fuel pool of Unit 4 was 84 degree centigrade.

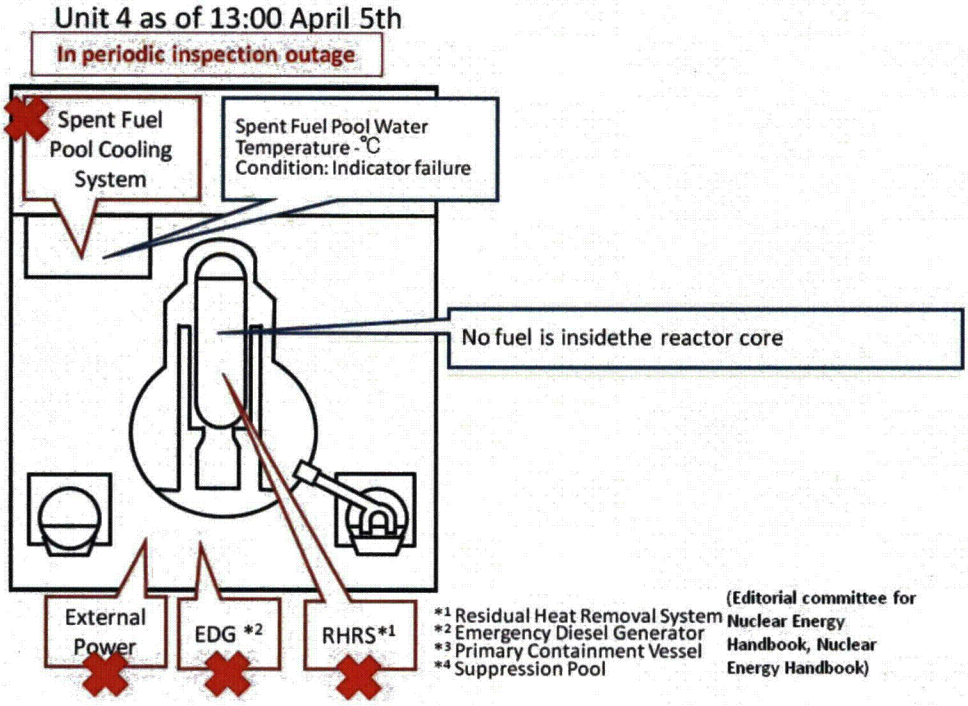
- It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am, but the fire was extinguished spontaneously as of 11:00am. And at 5:45am on March 16th, it was reported that a fire occurred at Unit 4; however, no fire was confirmed by TEPCO staff on the ground at 6:15am.

- White smoke was confirmed to generate continuously as of 6:30am April 5th.

- Water spray over the spent fuel pool of Unit 4 by Self-Defense Force was carried out three times from March 20th till March 21st. And water spray using a concrete pump truck had been carried out eight times from March 22nd till April 3rd. Injection of seawater to the spent fuel pool via the fuel pool cooling line was carried out on March 25th.

- The power center received electricity on March 22nd. On March 29th, lighting in the main control room was recovered. On April 2nd, lighting in the turbine building was partially turned on.

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from 3 April, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

- The emergency generator (B) for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

- The pump for residual heat removal system (RHR) (C) for Unit 5 and RHR (B) for Unit 6 started up on March 19th and recovered heat removal function. (power supply: emergency diesel generators for Unit 6)

- Unit 5 was under cold shut down at 14:30 and Unit 6 was under cold shut down at 19:27 on March 20th.

- Unit 5 and Unit 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and Unit 6 was switched from the emergency diesel generator to the external power supply on March 21st and March 22nd.

- The temporary pump of RHR seawater system (RHRS) for Unit 5 was automatically stopped at 17:24 on March 23rd when the power supply was switched from the temporary to the permanent. Thereafter, repair of the temporary pump of RHRS was completed at 16:14 and cooling was started again at 16:35 on March 24th.

- Power supply for the temporary pumps for RHRS of Unit 6 was switched from the temporary to the permanent at 15:38 and 15:42 on March 25th.

- The temperature of water in the spent fuel pool of Unit 5 and Unit 6 were 34.8 degree centigrade and 27.5 degree centigrade, respectively as of 13:00 April 5th.

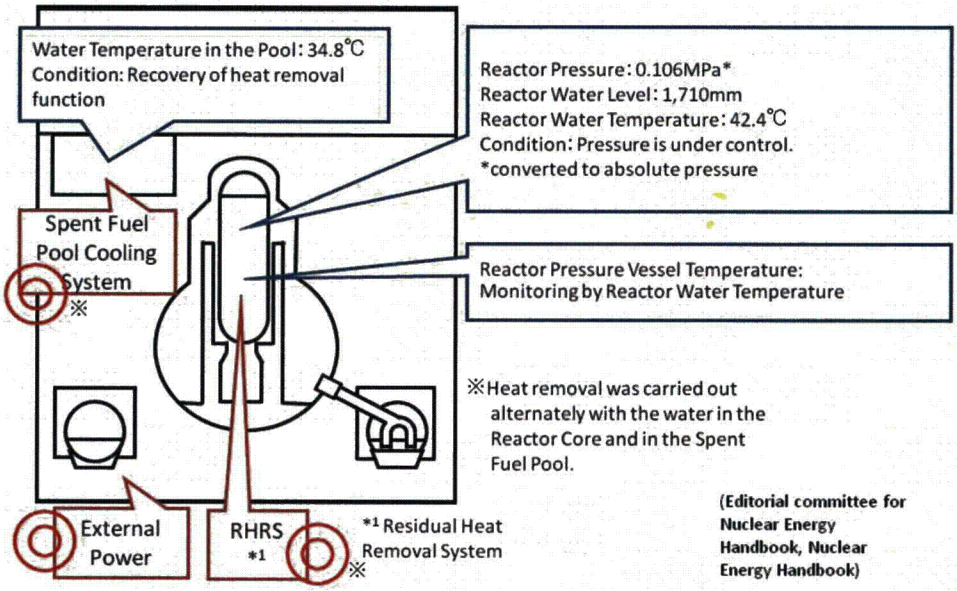
- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,500t) was started to be discharged through the water discharge canal to the sea at 21:00 April 4th.

Common Spent Fuel Pool

- The power supply was started at 15:37 and cooling was also started at 18:05 on March 24th. As of 7:10am April 5th, the water temperature of the pool was around 29 degree centigrade.

Unit 5 as of 13:00 April 5th

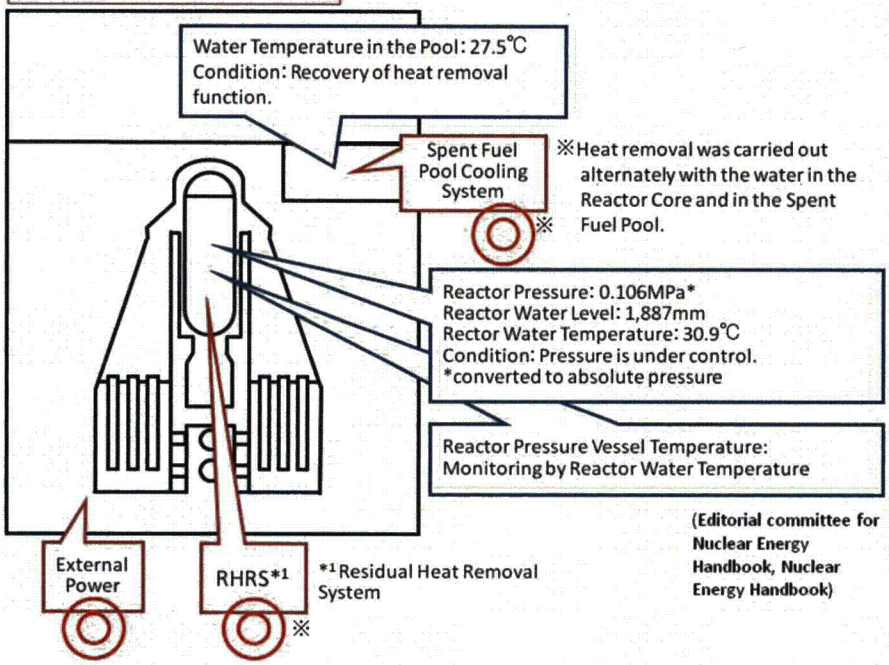
In periodic inspection outage



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

Unit 6 as of 13:00 April 5th

In periodic inspection outage



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

Other

- As the result of nuclide analysis at around the southern water discharge canal, 7.4×10^{1}Bq/cm^3 of ^{131}I (1850.5 times higher than the limit of concentration of water outside the Environmental Monitoring Aria) was detected as of 14:30 March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)

- As the result of the analysis at the northern water discharge canal, 4.6×10^{1}Bq/ cm^3 of ^{131}I (1262.5 times higher than the limit) was detected as of 14:10 March 29th.

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench. The rate of the Unit 3's trench could not measure because of the rubble. (Around 15:30 March 27th) The water of the Unit 1's was transferred to the storage tank in the main building of radioactive waste treatment facilities by the temporary pump. Thereafter the water level from the top of the vertical part went down from approximately -0.14m to approximately -1.14m. (From 9:20am till 11:25 March 31st)

- In the samples of soil collected on March 21st and 22nd on the site (at 5 points) of Fukushima I, plutonium 238, 239 and 240 were detected (23:45 March 28th announced by TEPCO). The concentration of the detected plutonium was at the equivalent level of the fallout (radioactive fallout) that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^{1} Bq/cm^3 in the controlled area and that of 2.2×10^{1} Bq/cm^3 in the non-controlled area were detected in March 29th.

- The barge (the first ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (15:42 March 31st) The transfer of fresh water from the barge to the filtrate tank was started. (15:58 April 1st) Thereafter it was suspended due to the malfunction of the hose (16:25 April 1st), but was carried out from 10:20am till 16:40 April 2nd.

- The barge (the second ship) of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force. (9:10am April 2nd)

- The spraying for test scattering of anti-scattering agent was carried out in the area of about 500 m^2 on the mountain-side of the Common Pool. (From 15:00 till 16:05 April 1st)

- The freshwater was transferred from the barge (the second ship) of the US armed force to the other barge (the first ship). (From 09:52 till 11:15 April 3rd)

- The stagnant water with low-level radioactivity in the main building of radioactive waste treatment facilities (Around 10,000t) was started to be discharged from the southern side of the water discharge canal to the sea, using the first pump at 19:03 April 4th. Further, at 19:07 on the same day, the discharge using 10 pumps in total was carried out.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram "Fukushima prefecture"). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.

- On March 16th, the Local Emergency Response Headquarter issued "the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefecture Governors and the heads of cities, towns and villages.

Monitoring Data

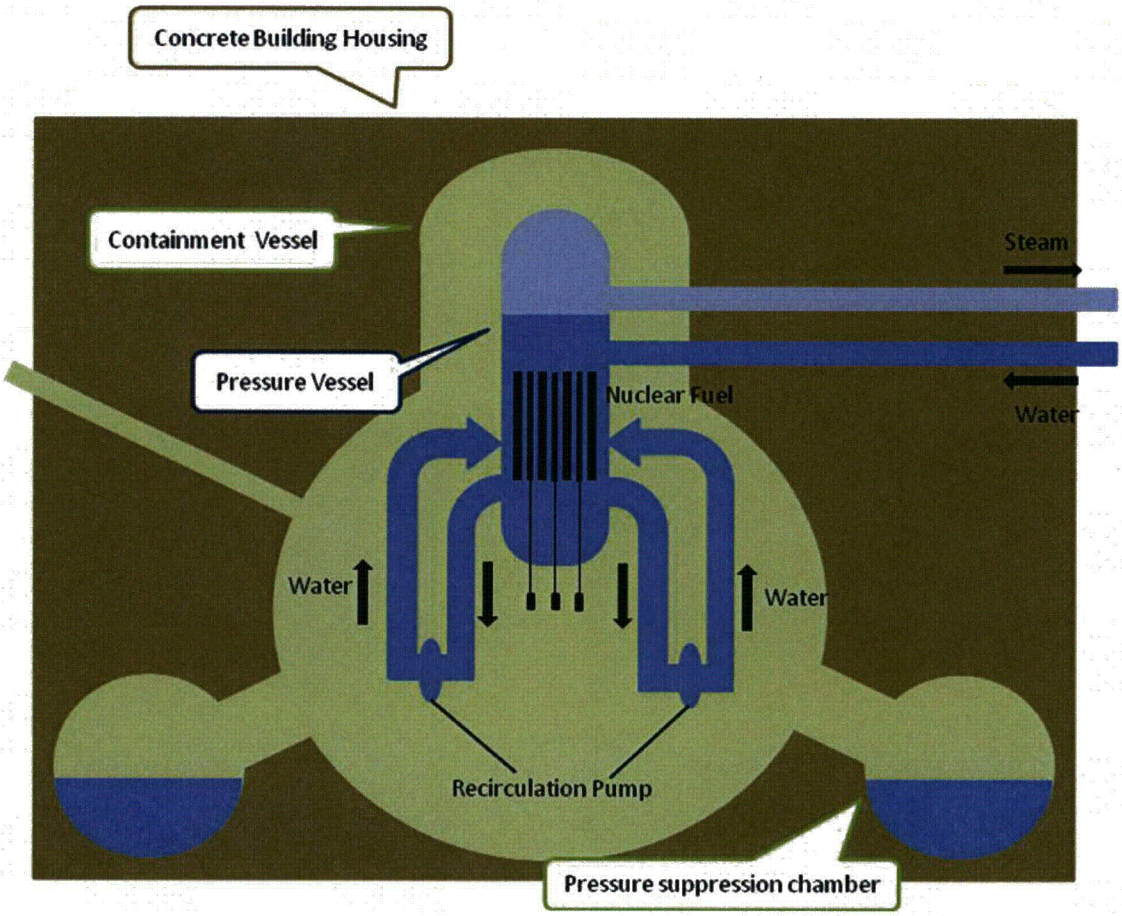
1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:
http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:
http://www.bousai.ne.jp/eng/

Outline of the Fukushima I Nuclear Power Station

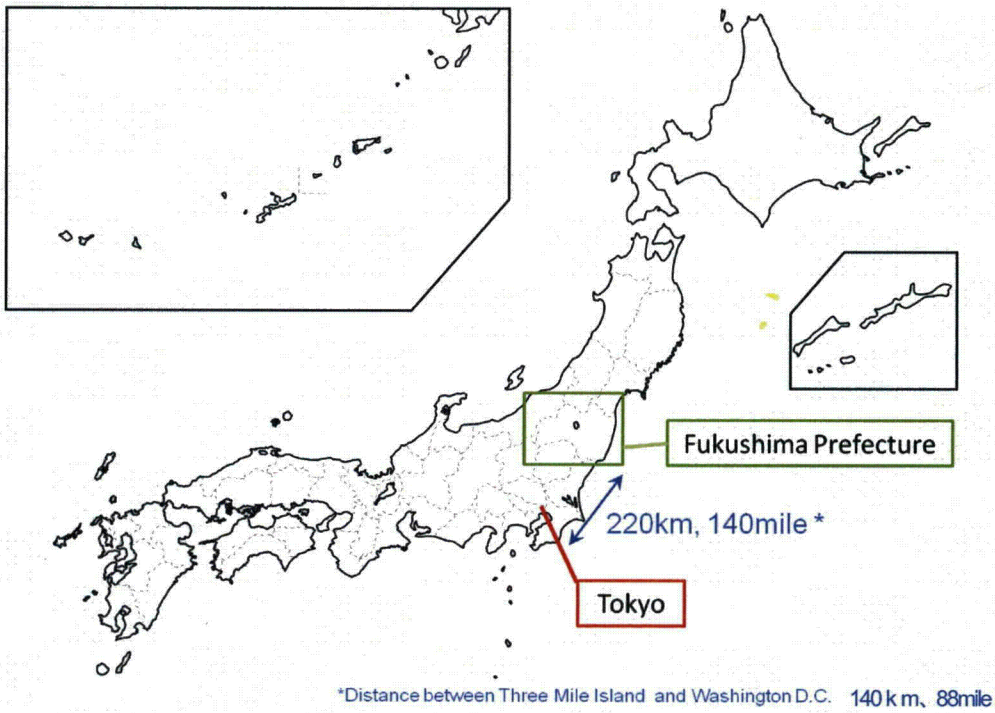
(Fukushima Dai-ichi nuclear power station)

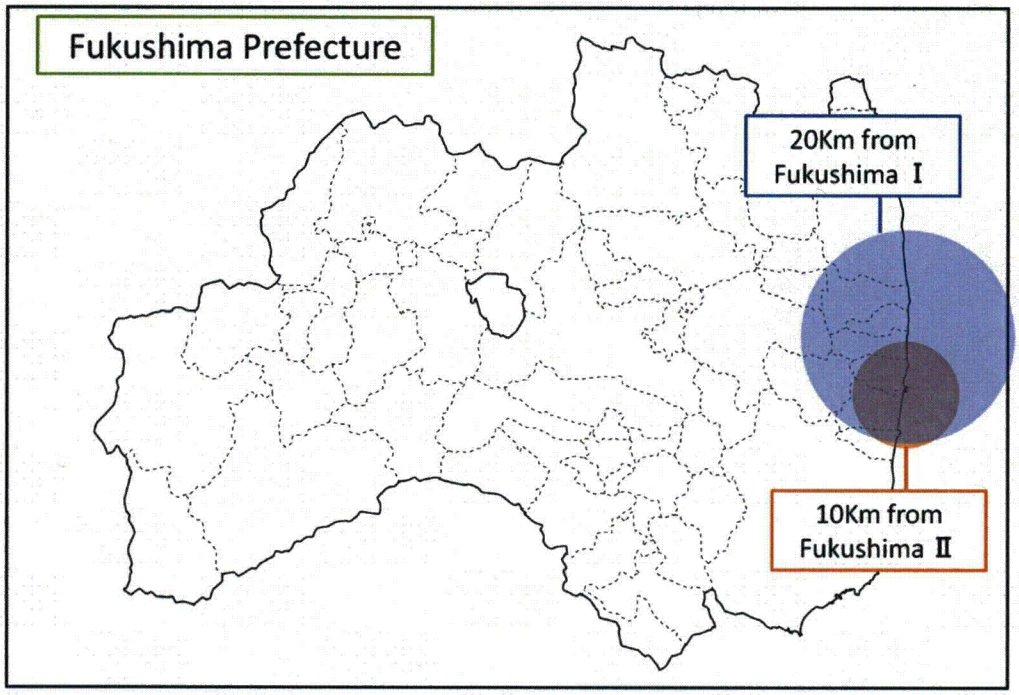
↓



(Structure of BWR)

Location of Fukushima I and II in Japan





From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "nuclear power"
Date: Sunday, April 10, 2011 6:13:32 AM

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Fars News Agency
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Nuclear Industry Shows Their True Green Cards
Treehugger
Here the ensuing frenzy has resulted in a moratorium on **nuclear power** plant permit extensions and the closure of seven nuclear plants. Now the **nuclear power** plant operators have fired a shot across the political bow: they have stopped supporting green **...**
See all stories on this topic »

Treehugger

Kaiga unit shut after pump house smoke
Express Buzz
KARWAR: The third reactor unit of the Kaiga **Nuclear Power** Generating Station was shut down on Friday after smoke was noticed in a pump house around 4 am, according to official sources. However, other units have been functioning as usual, they confirmed **...**
See all stories on this topic »

Chashma-II **nuclear power** plant starts trial generation of electricity
Pakistan Observer
Islamabad—Pakistan has achieved another milestone in generation of nuclear energy as Chashma **Nuclear Power** Plant Two (CHASNUPP-II) has started power generation on trial basis. The work on 325-MW power plant was initiated in April 2005 and has been **...**
See all stories on this topic »

How the poll was conducted
BusinessWeek

LLLL/204

By AP The Associated Press-GfK Poll on **nuclear power** was conducted by GfK Roper Public Affairs & Corporate Communications from Mar. 24-28. It is based on landline and cellphone telephone interviews with a nationally representative random sample of 1001 **...**
See all stories on this topic »

Navy halts discharge of suspected gay sailor targeted for 'unprofessional conduct'

LGBTQ Nation

Petty Officer Stephen C. Jones, who is stationed at the Naval **Nuclear Power** Training Command in Charleston, SC, was undergoing separation from the Navy for what his civilian lawyer and Servicemembers United alleged were trumped up charges based on the **...**
See all stories on this topic »

LGBTQ Nation

Tip: Use site restrict in your query to search within a site (site:nytimes.com or site:.edu). Learn more.

Remove this alert.
Create another alert.
Manage your alerts.

From: LIA07 Hoc
Sent: Friday, April 08, 2011 6:41 AM
To: RST01 Hoc; Hoc, RST16
Subject: RE: 0430 EDT (April 8, 2011) USNRC Earthquake/Tsunami Status Update

From Mike Weber, FYI

From: Weber, Michael
Sent: Friday, April 08, 2011 6:31 AM
To: LIA07 Hoc
Cc: ET01 Hoc; ET05 Hoc; OST02 HOC; Virgilio, Martin; Merzke, Daniel; RST01 Hoc
Subject: Response - 0430 EDT (April 8, 2011) USNRC Earthquake/Tsunami Status Update

Thanks. Do we understand the condition of and are we tracking the 2 Onogawa units that lost offsite power in yesterday's quake? The report that I saw yesterday indicated they had emergency power from one of the units that was providing power to all 3.

From: LIA07 Hoc
To: LIA07 Hoc
Sent: Fri Apr 08 05:16:22 2011
Subject: 0430 EDT (April 8, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, April 8, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

Jim Anderson
Executive Briefing Team Coordinator
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)
james.anderson@nrc.gov

LLLL/205

From: LIA07 Hoc
Sent: Saturday, April 09, 2011 3:21 PM
To: Batkin, Joshua; Borchardt, Bill; Bradford, Anna; Coggins, Angela; Cohen, Shari; Collins, Elmo; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Gibbs, Catina; Haney, Catherine; Hudson, Sharon; Jaczko, Gregory; Johnson, Michael; Leeds, Eric; Loyd, Susan; Monninger, John; Pace, Patti; Schwarz, Sherry; Sheron, Brian; Speiser, Herald; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael
Subject: One Pager: 1500 EDT, April 9, 2011
Attachments: April 9 1500 EDT.pdf

Attached please find the one pager from 1500 EDT, April 9, 2011.
Yen

LLLL/206

From: Weber, Michael
Sent: Saturday, April 09, 2011 8:58 AM
To: LIA07 Hoc
Cc: ET01 Hoc; ET05 Hoc; OST02 HOC
Subject: Response - 0430 EDT (April 9, 2011) USNRC Earthquake/Tsunami Status Update

Thanks. Note the error on page 2 of the sitrep regarding leadership of USG technical assistance to Japan. The decision was made at the Principal's Meeting on 4/1 (v. Deputies Meeting on 4/4).

From: LIA07 Hoc
To: LIA07 Hoc
Sent: Sat Apr 09 04:46:46 2011
Subject: 0430 EDT (April 9, 2011) USNRC Earthquake/Tsunami Status Update

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-Jim

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james.anderson@nrc.gov

LLLL/207

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Sunday, April 10, 2011 1:33:55 AM

News **3** new results for **"Nuclear Regulatory Commission"**

Nuclear 'event' in Richland considered minor

The Seattle Times

Energy Northwest said the decision to report the incident to the **Nuclear Regulatory Commission** was made in an abundance of caution. A small amount of hydrogen gas ignited when workers cut into a pipe in a non-nuclear area of the Columbia Generating **...**

See all stories on this topic »

Troubles in Japan don't deter energy officials

La Crosse Tribune

According to the **Nuclear Regulatory Commission**, the plant cannot be fully decommissioned until all of the spent fuel is removed from the pool. Prema Chandraphil, a spokeswoman for the **Nuclear Regulatory Commission**, said plans are under way to build dry **...**

See all stories on this topic »

Nuke waste piles up

Concord Monitor

The dramatic increases in the number of rods per pool have been approved by the federal **Nuclear Regulatory Commission**, partly because a national disposal site for nuclear waste has not been established. Experts say this federally sanctioned **...**

See all stories on this topic »

Tip: Use quotes ("like this") around a set of words in your query to match them exactly. Learn more.

Remove this alert.
Create another alert.
Manage your alerts.

LLLL/208

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Saturday, April 09, 2011 10:43:47 PM

News **3** new results for **"Nuclear Regulatory Commission"**

Nuclear Regulatory Commission: Watchdog or Lapdog?
Stamford Advocate
Internal government watchdogs and outside experts alike say the US **Nuclear Regulatory Commission** is too lenient on the industry it is charged with regulating, often making decisions based on the industry's profit margins rather than public safety. **...**
See all stories on this topic »

Japan Orders Nuclear Plant Operators to Obtain More Emergency Generators
New York Times
On Tuesday the United States **Nuclear Regulatory Commission** set off alarms when it said that such a leak might have happened in the No. 2 reactor at the plant, based on a high radiation reading in its drywell. But the agency has since appeared to step **...**
See all stories on this topic »

Garrett holds forum on nuclear plant decommissioning
Chicago Sun-Times
The plant was built between 1968 and 1973, and was licensed by the **Nuclear Regulatory Commission** for operation in 1973. The first of Zion's two reactors began producing nuclear power in December 1973. The second reactor came online the following **...**
See all stories on this topic »

Tip: Use a plus sign (+) to match a term in your query exactly as is. Learn more.

Remove this alert.
Create another alert.
Manage your alerts.

LLLL/209

From: LIA07 Hoc
Sent: Saturday, April 09, 2011 5:09 PM
To: RST01 Hoc; Hoc, PMT12; OST01 HOC; OST02 HOC
Subject: FW: Request-->RE: 0430 EDT (April 9, 2011) USNRC Earthquake/Tsunami Status Update

I'm not sure who has the documents noted below. Please respond. Thanks.
Yen
EBT Coordinator

From: NITOPS [mailto:NITOPS@nnsa.doe.gov]
Sent: Saturday, April 09, 2011 8:57 AM
To: LIA07 Hoc; Anderson, James
Cc: NITOPS
Subject: Request-->RE: 0430 EDT (April 9, 2011) USNRC Earthquake/Tsunami Status Update

Mr. Anderson,

The DOE Nuclear Incident Team would like a copy of the "Summary of Radiological Hazards in Japan" and a copy of the "Guidance for Return (Short Term and Permanent Re-Entry) of US Citizens to Areas around Fukushima Daiichi NPP" referenced in the April 9, 2011 "USNRC Earthquake/Tsunami Status Update."

Can you please e-mail the documents to this e-mail address?

Thanks,

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

From: LIA07 Hoc [mailto:LIA07.Hoc@nrc.gov]
Sent: Saturday, April 09, 2011 4:47 AM
To: LIA07 Hoc
Subject: 0430 EDT (April 9, 2011) USNRC Earthquake/Tsunami Status Update

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-Jim

LLLL/210

Jim Anderson
Executive Briefing Team Coordinator
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)
james.anderson@nrc.gov

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

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

---

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

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

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

Thanks,
Jeremy

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

LLLL/211

From: Wittick, Brian
Sent: Sunday, April 10, 2011 8:45 PM
To: ET02 Hoc
Subject: Out of Office: Stahl/Wittick Blackberry Transition

I will be out of the office until Monday, 5/2. For urgent matters please contact Jim Andersen at 301-415-1725.

LLL/212

From: ET01 Hoc
Sent: Sunday, April 10, 2011 10:43 AM
To: ET02 Hoc
Subject: FW: Draft Protective Action Recommendations (Composite Document) and Draft Summary

---
From: Virgilio, Martin
Sent: Sunday, April 10, 2011 10:42:50 AM
To: Hoc, PMT12; ET01 Hoc; RST01 Hoc
Cc: Dyer, Jim
Subject: RE: Draft Protective Action Recommendations (Composite Document) and Draft Summary
Auto forwarded by a Rule

Hi PMT/RST

I am currently in my office and will be visiting you later this morning. In general I believe we are on our way to having a good document to support an IPC and or deputies meeting later this week.

I have a couple of comments.

First, in my view the recommendation to evacuate American citizens was also based on concerns around the infrastructure in Japan around the site following the earthquake (roads, communications and other elements you would need to support a timely evacuation). A recommendation to allow folks back in would need to be based on reasonable confidence that those issues have been resolved.

Second, Phase 1 stability should be based in part upon reasonable (note not high, just reasonable) confidence that there would not be an energetic release that could be achieved with the right plant conditions and commercial grade equipment and that protective actions could be put back in place if necessary. Phase 2 stability provides a higher (note this is not without some residual risk) degree of confidence. I do not believe there would be much change if any around the action steps. Your call.

Marty

From: Hoc, PMT12
Sent: Saturday, April 09, 2011 4:07 PM
To: Virgilio, Martin
Subject: Draft Protective Action Recommendations (Composite Document) and Draft Summary

Marty

LLLL/213

Attached is a draft of the Protective Action Recommendations (composite of Grab & Go; Stability Paper; and Long-term Re-enty) and a draft of the summary for your review. These are still in progress and comments are still coming in. Let me know if you have any questions.

Sandi
PMT-PAAD

From: ET02 Hoc
Sent: Sunday, April 10, 2011 8:33 PM
To: LIA06 Hoc
Subject: consortium call chronology

Devices for condensing rad contaminated water - DOE - no update

Assistance in dealing with accumulated TB water - provided update that new options paper delivered on 7th to embassy.

Water storage tanks/trailer - waiting on feedback from GOJ. Evaluating shipping from WC and EC and airlift options. GOJ had series of additional questions also. Need to get back to GOJ on shipping methods.

Evap technologies - no update

Direct requests from GOJ to PNNL on water decon and storage - no update

Determine whether temp radwaste processing skids avail - provided info to TEPCO on 3/28 - have phone call with them tonight. Blamey - pass info to Japan team to forward to NISA. TEPCO has been put in touch with U.S. vendors and plants with avail equip. They are working directly with vendors to send equipment over. Can close after provide info to NISA.

Temp holding tanks - no update

Germanium semiconductor detectors - Cherry - item will be broken down in next version based on where each detector is being provided.

Rad survey meters/dosimetry/masks - no update

Ground rad monitoring devices - Cherry - gotten approval to place. US people placing devices are talking to Japanese counterparts in prep for installing.

Blamey - have request in to GOJ to discuss issue. Several ready to ship from Bruce - need to find out if they need in near term, or if sea is OK. Bruce will ship 2 early this week by air.

21 - robotic monitoring devices - in-country. Title transferred to Japan. When eqiupment reaches site, will go out with METI to work with Japanese on equipment.

Info on shielding materials for vehicles - no change. They seem to be greatly overestimating their shielding needs. We are ready to assist. Need to do rad mapping first.

Rad hardened camera/gamma-camera - same status as robot

KI prep - still with Japanese lawyers

HX to be used for SFP - working with commercial firm

Medical triage - no update

Extinguishant - no update

LLL/214

Incorporate PNNL into SFP crisis management dialogue - Cherry - should be closed - PNNL is part of process.

25 - waiting on GOJ for more info

27 - US coop in bringing priv ind engineers into shielding - haven't heard from GOJ yet

GEH on N2 purge analysis - have analysis - going to look at

33 - clarify for RST indications to assess RPV integrity/core location - received U2 analysis - lower priority, need to stay focused on mitigation, regardless of location

34 - list of alt flowpaths for purging - ongoing with RST

next item - ongoing with RST

Blamey - embassy having meeting on taking over list and logistics - can discuss tomorrow and how we transition moving forward.

From: LIA03 Hoc
Sent: Sunday, April 10, 2011 3:16 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

-----Original Message-----
From: LIA02 Hoc
Sent: Sunday, April 10, 2011 3:16 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

-----Original Message-----
From: Turner, Joseph
Sent: Sunday, April 10, 2011 3:16 PM
To: LIA02 Hoc; Gepford, Heather
Cc: ET02 Hoc
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Ok.
This message was sent via Blackberry.

----- Original Message -----
From: LIA02 Hoc
To: Gepford, Heather
Cc: Turner, Joseph; ET02 Hoc
Sent: Sun Apr 10 15:00:21 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Hello, Heather--
Mr. Turner, please include Heather from Region II on you blackberry list. Karen, I understand that you will be in the Ops Ctr tomorrow--please follow up with Heather if there are any special instructions.
Best regards,
Elizabeth

-----Original Message-----
From: Gepford, Heather
Sent: Sunday, April 10, 2011 2:54 PM
To: Reynolds, Steven; ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I've got the same problem as Steve with respect to getting a blackberry, since I'm in Region II. How are we going to handle the regional folks?

LLL/215

Thanks,
Heather Gepford

From: Reynolds, Steven
Sent: Sunday, April 10, 2011 1:18 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

I would like an international blackberry also. As I am in Region III, would it be possible to ask Jeff Mitman or Tony Huffert to bring it with them to Japan. If that is not possible, is it possible to overnight it tonight so that it will be in Region III tomorrow (Monday)?

thanks,
Steve Reynolds

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Anthony (Tony) Huffert, RES, one of the NRC staff who is traveling to Japan on Tuesday, would like to have an international Blackberry and international laptop. Even though he may not travel on Tuesday (see earlier e-mail from ET02 on this) we need to go on the assumption that he will travel on that day; therefore we need to have the BB and laptop ready and delivered to the Ops Center by 2PM tomorrow, Monday 4/11/11. Tony also would like to have some training on using the BB when he picks it up BB at 2PM.

My earlier e-mail indicated that Jeff Mitman, NRR wanted a international BB as well so let's work on getting him one for the same time. I'm sending him a cc of this e-mail so he can provide additional information and/or changes to pick up time based on his needs. Also, Jeff could you please indicate whether you want a laptop or not?

I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: Turner, Joseph
Sent: Sunday, April 10, 2011 4:14 PM
To: ET02 Hoc
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen, We will work this first thing tomorrow morning. Thanks, Joe This message was sent via Blackberry.

----- Original Message -----
From: ET02 Hoc
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele; Gepford, Heather; Reynolds, Steven
Sent: Sun Apr 10 15:25:38 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Joe, Debbie, Rob and other OIS:

Another request for a blackberry from a traveler in Region II (Gepford). Looks like we'll be busy first thing in the morning. Hopefully the HQ travelers can carry blackberries to the regional travelers so we don't have to mail them. I'll call Rob Heard when I get in the Ops Center in the morning. We haven't heard from Carl Moore yet but let's get a blackberry ready for him as well so it is ready for him. Here is the summary of what is needed tomorrow:

6 international blackberries needed for Huffert, Mitman, Garchow, Reynolds, Gepford and Moore
1 international laptop for Huffert (can he use one of the air cards currently in Japan if he wants to use the laptop from the hotel?)

Thanks...karen

-----Original Message-----
From: Gepford, Heather
Sent: Sunday, April 10, 2011 2:54 PM
To: Reynolds, Steven; ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

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LLLL/216

Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

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I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: Evans, Michele
Sent: Sunday, April 10, 2011 5:15 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

There will likely be 3 more travelers leaving on Thursday. Assume they will need bb too. Thanks.

Michele Evans

Sent from an NRC Blackberry
Michele Evans

----- Original Message -----
From: ET02 Hoc
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele; Gepford, Heather; Reynolds, Steven
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Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

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LLL/217

Thanks,
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To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

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Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
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From: Reynolds, Steven
Sent: Sunday, April 10, 2011 1:42 PM
To: ET02 Hoc
Subject: Thanks: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Thank you :)

From: ET02 Hoc
Sent: Sunday, April 10, 2011 12:40 PM
To: Reynolds, Steven; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Steve:
I'm hoping to hear back from Tony or Jeff to see if they could bring BBs with them rather than trying to mail them to the region travelers. I'll let you know when I find out.

Joe Turner/Rob Heard: Please add another international BB to the list - now up to 4 BBs. Thanks very much...karen

---

From: Reynolds, Steven
Sent: Sunday, April 10, 2011 1:18 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

I would like an international blackberry also. As I am in Region III, would it be possible to ask Jeff Mitman or Tony Huffert to bring it with them to Japan. If that is not possible, is it possible to overnight it tonight so that it will be in Region III tomorrow (Monday)?

thanks,
Steve Reynolds

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Anthony (Tony) Huffert, RES, one of the NRC staff who is traveling to Japan on Tuesday, would like to have an international Blackberry and international laptop. Even though he may not travel on Tuesday (see earlier e-mail from ET02 on this) we need to go on the assumption that he will travel on that day; therefore we need to have the BB and laptop ready and delivered to the Ops Center by 2PM tomorrow, Monday 4/11/11. Tony also would like to have some training on using the BB when he picks it up BB at 2PM.

LLLL/218

My earlier e-mail indicated that Jeff Mitman, NRR wanted a international BB as well so let's work on getting him one for the same time. I'm sending him a cc of this e-mail so he can provide additional information and/or changes to pick up time based on his needs. Also, Jeff could you please indicate whether you want a laptop or not?

I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: LIA03 Hoc
Sent: Sunday, April 10, 2011 6:30 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: CONSORTIUM CALL AT 2000 EDT TODAY

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 6:30 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: CONSORTIUM CALL AT 2000 EDT TODAY

From: Emche, Danielle
Sent: Sunday, April 10, 2011 6:30 PM
To: Stahl, Eric; LIA02 Hoc
Cc: Blamey, Alan; Wittick, Brian
Subject: Re: CONSORTIUM CALL AT 2000 EDT TODAY

As to who within our group has the lead for the call today, it is Alan, but we typically call as a group with DOE and the embassy, with the hope they will be in the overall lead soon.
Danielle
Sent from an NRC BlackBerry.

From: Stahl, Eric
To: LIA02 Hoc
Cc: Blamey, Alan; Emche, Danielle; Wittick, Brian
Sent: Sun Apr 10 18:05:51 2011
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

I'll verify with Alan when I get into the Embassy (in ~30 minutes). That wasn't what I heard during the last call (Friday 2000 call), but if Alan communicated with LT yesterday (or overnight) and decided on a different arrangement, then I could be mistaken.

I'm CCing Alan, Danielle and Brian – any of you please chime in if you've heard differently.

Thanks,
Eric

From: LIA02 Hoc
Sent: Monday, April 11, 2011 7:02 AM
To: Stahl, Eric
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Eric –

LLLL/219

Who did you hear this from? Because was the understanding of the LT Coordinator and LT Director who were on daytime Sunday – and communicated to the current night time shift – that your group had the lead. We were just inquiring as to who within your group (Alan Blamey?) would be heading up the call. Can you please check with Alan re this?

Thanks,

LIA02

From: Stahl, Eric
Sent: Sunday, April 10, 2011 5:58 PM
To: LIA02 Hoc; Liaison Japan
Cc: Emche, Danielle; Wittick, Brian
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

It is our understanding that the call the is still occurring and that NRC HQ will continue to take the lead (at least for today). Last I heard was that Embassy or DOE will transition to the lead at some point in the near future.

Thanks,
Eric

From: LIA02 Hoc
Sent: Monday, April 11, 2011 6:56 AM
To: Liaison Japan
Cc: Emche, Danielle; Stahl, Eric
Subject: CONSORTIUM CALL AT 2000 EDT TODAY
Importance: High

All,

Please confirm the Consortium call is still on for today at 2000 EDT.

Assuming it is on, please advise as to who will be heading up today's Consortium call.

Thanks,

LIA02

From: Garchow, Steve
Sent: Sunday, April 10, 2011 12:23 PM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Just let me know what you decide to do and what I need to do, if anything.

Steve Garchow
Chief Examiner
817-276-4426
SMG@NRC.gov

From: ET02 Hoc
Sent: Sunday, April 10, 2011 11:19 AM
To: Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Cc: Heard, Robert; Turner, Joseph; Reyes, Debra
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Steve:
I'm afraid I can't help with travel arrangements but am cc'ing the Liaison Team OIP reps to see if they can provide you with the information you need. I'm helping with getting BBs and laptops for the travelers. Would it be alright for us to get you a BB and send it along with one of the HQ folks who are traveling this week? Or do you want us to try to overnight one to you tomorrow assuming it can get to you before you leave on Tuesday? Or would you be agreeable with taking a BB from someone who is returning to the US. Our help desk can "recalibrate" it to you when you contact them (you tell them whose BB you took and they will work with you until the BB is functioning properly for you). Please let me know which option you prefer. Thanks...Karen

---

From: Garchow, Steve
Sent: Sunday, April 10, 2011 11:48 AM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,
I am in the office trying to get my desk cleared off for leaving on Tuesday. Are you the person I talk to about travel arrangements or do I wait and try again on Monday? Have tried the numbers provided but no one answers. The email address I was sent has been de-activated.

Steve Garchow
Chief Examiner
817-276-4426
SMG@NRC.gov

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather

LLLL/220

Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

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My earlier e-mail indicated that Jeff Mitman, NRR wanted a international BB as well so let's work on getting him one for the same time. I'm sending him a cc of this e-mail so he can provide additional information and/or changes to pick up time based on his needs. Also, Jeff could you please indicate whether you want a laptop or not?

I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: Turner, Joseph
Sent: Sunday, April 10, 2011 12:57 PM
To: ET02 Hoc; NOC_Members; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Ok. We will get working on it first thing tomorrow morning.
This message was sent via Blackberry.

From: ET02 Hoc
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Sent: Sun Apr 10 12:50:49 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I received an e-mail from Steve Garchow, region IV, who stated that he would like an International BB as well. I'm trying to work with the HQ staff traveling this week to see if they would be willing to take a BB to Steve. I'll keep you posted. To summarize what we need by 2PM tomorrow, Monday, April 11, 2011, is as follows:

Tony Huffert (RES), international BB and international laptop
Jeff Mitman (NRR), international BB
Steve Garchow (RIV), international BB

Of course if we need to get the BB to RIV via mail we might need a BB first thing in the morning.

Thanks...karen

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Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

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I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

LLLL/221

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 3:00 PM
To: Gepford, Heather
Cc: Turner, Joseph; ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Hello, Heather--
Mr. Turner, please include Heather from Region II on you blackberry list. Karen, I understand that you will be in the Ops Ctr tomorrow--please follow up with Heather if there are any special instructions.
Best regards,
Elizabeth

-----Original Message-----
From: Gepford, Heather
Sent: Sunday, April 10, 2011 2:54 PM
To: Reynolds, Steven; ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I've got the same problem as Steve with respect to getting a blackberry, since I'm in Region II. How are we going to handle the regional folks?

Thanks,
Heather Gepford

From: Reynolds, Steven
Sent: Sunday, April 10, 2011 1:18 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

I would like an international blackberry also. As I am in Region III, would it be possible to ask Jeff Mitman or Tony Huffert to bring it with them to Japan. If that is not possible, is it possible to overnight it tonight so that it will be in Region III tomorrow (Monday)?

thanks,
Steve Reynolds

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert

LLLL/222

Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

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I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 3:02 PM
To: Gepford, Heather
Cc: ET02 Hoc
Subject: FW: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Hi, Heather,
Here is the email trail for the other people who have blackberry requests in the pipeline. Mr. Turner is aware of your request, and you should receive further instructions tomorrow on how you will receive your device.
Best regards and safe travels,
Elizabeth of the International Liaison desk

From: Turner, Joseph
Sent: Sunday, April 10, 2011 12:57 PM
To: ET02 Hoc; NOC_Members; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Ok. We will get working on it first thing tomorrow morning.
This message was sent via Blackberry.

From: ET02 Hoc
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Sent: Sun Apr 10 12:50:49 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I received an e-mail from Steve Garchow, region IV, who stated that he would like an International BB as well. I'm trying to work with the HQ staff traveling this week to see if they would be willing to take a BB to Steve. I'll keep you posted. To summarize what we need by 2PM tomorrow, Monday, April 11, 2011, is as follows:

Tony Huffert (RES), international BB and international laptop
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Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

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LLLL/223

ET02 on this) we need to go on the assumption that he will travel on that day; therefore we need to have the BB and laptop ready and delivered to the Ops Center by 2PM tomorrow, Monday 4/11/11. Tony also would like to have some training on using the BB when he picks it up BB at 2PM.

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I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: ET02 Hoc
Sent: Sunday, April 10, 2011 6:05 PM
To: Huffert, Anthony; Mitman, Jeffrey
Cc: Turner, Joseph; Reyes, Debra; Garchow, Steve
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Tony, Thank you
Sandra Valencia

From: Huffert, Anthony
Sent: Sunday, April 10, 2011 5:38 PM
To: Mitman, Jeffrey; ET02 Hoc
Cc: Turner, Joseph; Reyes, Debra; Garchow, Steve
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I can assist with the extra BBs also.

Tony Huffert

From: Mitman, Jeffrey
Sent: Sunday, April 10, 2011 3:31 PM
To: ET02 Hoc; Huffert, Anthony
Cc: Turner, Joseph; Reyes, Debra; Garchow, Steve
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I can take an extra BB to Steve.

Jeff Mitman

From: ET02 Hoc
Sent: Sunday, April 10, 2011 12:38 PM
To: Huffert, Anthony; Mitman, Jeffrey
Cc: Turner, Joseph; Reyes, Debra; Garchow, Steve
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Tony and Jeff:

Would either of you take a BB to Steve Garchow when you travel to Japan on Tuesday? Since he is in the region I'm not sure we can get him a BB by tomorrow. Thanks very much...karen

---

From: Garchow, Steve
Sent: Sunday, April 10, 2011 12:21 PM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Whatever is easiest for you is ok with me. The region has arranged for the laptop I will be taking.

Steve Garchow

LLLL/224

Chief Examiner
817-276-4426
SMG@NRC.gov

From: ET02 Hoc
Sent: Sunday, April 10, 2011 11:19 AM
To: Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Cc: Heard, Robert; Turner, Joseph; Reyes, Debra
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Steve:
I'm afraid I can't help with travel arrangements but am cc'ing the Liaison Team OIP reps to see if they can provide you with the information you need. I'm helping with getting BBs and laptops for the travelers. Would it be alright for us to get you a BB and send it along with one of the HQ folks who are traveling this week? Or do you want us to try to overnight one to you tomorrow assuming it can get to you before you leave on Tuesday? Or would you be agreeable with taking a BB from someone who is returning to the US. Our help desk can "recalibrate" it to you when you contact them (you tell them whose BB you took and they will work with you until the BB is functioning properly for you). Please let me know which option you prefer. Thanks...Karen

---

From: Garchow, Steve
Sent: Sunday, April 10, 2011 11:48 AM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,
I am in the office trying to get my desk cleared off for leaving on Tuesday. Are you the person I talk to about travel arrangements or do I wait and try again on Monday? Have tried the numbers provided but no one answers. The email address I was sent has been de-activated.

Steve Garchow
Chief Examiner
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SMG@NRC.gov

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

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I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: ET02 Hoc
Sent: Sunday, April 10, 2011 6:08 PM
To: Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Thank you Michelle. We will follow up at a later time.

-----Original Message-----
From: Evans, Michele
Sent: Sunday, April 10, 2011 6:02 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

No not yet.

Sent from an NRC Blackberry
Michele Evans

----- Original Message -----
From: ET02 Hoc
To: Evans, Michele; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven
Sent: Sun Apr 10 17:56:07 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Michelle,
Yes, that is correct.

Do we have the names of the new travelers yet. If we do please provide them so we can start coordinating with the NOC.

Thank you

Sandra Valencia

-----Original Message-----
From: Evans, Michele
Sent: Sunday, April 10, 2011 5:15 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

LLL/225

There will likely be 3 more travelers leaving on Thursday. Assume they will need bb too. Thanks.

Michele Evans

Sent from an NRC Blackberry
Michele Evans

----- Original Message -----
From: ET02 Hoc
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele; Gepford, Heather; Reynolds, Steven
Sent: Sun Apr 10 15:25:38 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Joe, Debbie, Rob and other OIS:

Another request for a blackberry from a traveler in Region II (Gepford). Looks like we'll be busy first thing in the morning. Hopefully the HQ travelers can carry blackberries to the regional travelers so we don't have to mail them. I'll call Rob Heard when I get in the Ops Center in the morning. We haven't heard from Carl Moore yet but let's get a blackberry ready for him as well so it is ready for him. Here is the summary of what is needed tomorrow:

6 international blackberries needed for Huffert, Mitman, Garchow, Reynolds, Gepford and Moore
1 international laptop for Huffert (can he use one of the air cards currently in Japan if he wants to use the laptop from the hotel?)

Thanks...karen

-----Original Message-----
From: Gepford, Heather
Sent: Sunday, April 10, 2011 2:54 PM
To: Reynolds, Steven; ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele
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Thanks,
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Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

No not yet.

Sent from an NRC Blackberry
Michele Evans

----- Original Message -----
From: ET02 Hoc
To: Evans, Michele; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven
Sent: Sun Apr 10 17:56:07 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Michelle,
Yes, that is correct.

Do we have the names of the new travelers yet. If we do please provide them so we can start coordinating with the NOC.

Thank you

Sandra Valencia

-----Original Message-----
From: Evans, Michele
Sent: Sunday, April 10, 2011 5:15 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

There will likely be 3 more travelers leaving on Thursday. Assume they will need bb too. Thanks.

Michele Evans

Sent from an NRC Blackberry
Michele Evans

LLL/226

----- Original Message -----
From: ET02 Hoc
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele; Gepford, Heather; Reynolds, Steven
Sent: Sun Apr 10 15:25:38 2011
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Joe, Debbie, Rob and other OIS:

Another request for a blackberry from a traveler in Region II (Gepford). Looks like we'll be busy first thing in the morning. Hopefully the HQ travelers can carry blackberries to the regional travelers so we don't have to mail them. I'll call Rob Heard when I get in the Ops Center in the morning. We haven't heard from Carl Moore yet but let's get a blackberry ready for him as well so it is ready for him. Here is the summary of what is needed tomorrow:

6 international blackberries needed for Huffert, Mitman, Garchow, Reynolds, Gepford and Moore
1 international laptop for Huffert (can he use one of the air cards currently in Japan if he wants to use the laptop from the hotel?)

Thanks...karen

-----Original Message-----
From: Gepford, Heather
Sent: Sunday, April 10, 2011 2:54 PM
To: Reynolds, Steven; ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I've got the same problem as Steve with respect to getting a blackberry, since I'm in Region II. How are we going to handle the regional folks?

Thanks,
Heather Gepford

From: Reynolds, Steven
Sent: Sunday, April 10, 2011 1:18 PM
To: ET02 Hoc; NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Garchow, Steve; Moore, Carl; Gepford, Heather; Evans, Michele
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

I would like an international blackberry also. As I am in Region III, would it be possible to ask Jeff Mitman or Tony Huffert to bring it with them to Japan. If that is not possible, is it possible to overnight it tonight so that it will be in Region III tomorrow (Monday)?

thanks,
Steve Reynolds

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Anthony (Tony) Huffert, RES, one of the NRC staff who is traveling to Japan on Tuesday, would like to have an international Blackberry and international laptop. Even though he may not travel on Tuesday (see earlier e-mail from ET02 on this) we need to go on the assumption that he will travel on that day; therefore we need to have the BB and laptop ready and delivered to the Ops Center by 2PM tomorrow, Monday 4/11/11. Tony also would like to have some training on using the BB when he picks it up BB at 2PM.

My earlier e-mail indicated that Jeff Mitman, NRR wanted a international BB as well so let's work on getting him one for the same time. I'm sending him a cc of this e-mail so he can provide additional information and/or changes to pick up time based on his needs. Also, Jeff could you please indicate whether you want a laptop or not?

I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: LIA07 Hoc
Sent: Sunday, April 10, 2011 4:39 AM
To: LIA07 Hoc
Subject: 0430 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update
Attachments: NRC Status Update 04.10.11--0430.pdf

Attached, please find a 0430 EDT, April 10, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

Jim Anderson
Executive Briefing Team Coordinator
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)
james.anderson@nrc.gov

LLLL/227

From: ET02 Hoc
Sent: Sunday, April 10, 2011 8:18 AM
To: Turner, Joseph; Reyes, Debra; Heard, Robert; Brusoe, Eric
Cc: NOC_Members; LIA02 Hoc; LIA03 Hoc; LIA06 Hoc
Subject: FW: Deployment to Japan / RSO

Everyone:
Shown below is the list of NRC staff who will be going to Japan this week. I wanted to give you a heads up concerning this travel. We have learned that USAID (who is funding the travel) isn't working over the weekend and requires 4 days advance notice to prepare such travel, so I'm not certain these folks will be leaving on Tuesday. Also as of today, Sunday 4/10/11, the only person to contact us about a BB or laptop is Jeff Mitman (he requested an international BB and wanted training on its use). I am working with the Liaison Team (OIP reps) to stay on top of this today and will provide further information as I receive it. I will be in the Ops Center tomorrow so I can provide an update then. Thanks...karen

---

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 7:53 AM
To: ET02 Hoc
Subject: FW: Deployment to Japan / RSO

Karen,

FYI and forwarding to OIS.

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

From: Evans, Michele
To: Reynolds, Steven; Garchow, Steve; Moore, Carl; Mitman, Jeffrey; Gepford, Heather; Huffert, Anthony; LIA03 Hoc; LIA06 Hoc
Cc: Satorius, Mark; Pederson, Cynthia; Howell, Art; Ferrell, Kimberly; Lee, Samson; McCree, Victor; Sheron, Brian; Uhle, Jennifer; Ruland, William; Gibson, Kathy; Tracy, Glenn; Linnerooth, Sarah; Kerben, Valerie; Buchholz, Jeri; Virgilio, Martin
Sent: Sat Apr 09 13:39:34 2011
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.

At this time we've identified 5 additional technical staff and one manager to support the team in Japan. **The plan is for Steve Garchow (RIV), Carl Moore (RIII), Jeff Mitman (NRR), Heather Gepford (RII),Tony Huffert (RES) and Steve Reynolds (RIII) to leave the USA on Tuesday, April 12.** The intent is that your stay will be three weeks or less.

The Operations Center Liaison Team (LT) will be contacting you later today 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:

LLLL/228

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 7:53 AM
To: ET02 Hoc
Subject: FW: Deployment to Japan / RSO

Karen,

FYI and forwarding to OIS.

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

From: Evans, Michele
To: Reynolds, Steven; Garchow, Steve; Moore, Carl; Mitman, Jeffrey; Gepford, Heather; Huffert, Anthony; LIA03 Hoc; LIA06 Hoc
Cc: Satorius, Mark; Pederson, Cynthia; Howell, Art; Ferrell, Kimberly; Lee, Samson; McCree, Victor; Sheron, Brian; Uhle, Jennifer; Ruland, William; Gibson, Kathy; Tracy, Glenn; Linnerooth, Sarah; Kerben, Valerie; Buchholz, Jeri; Virgilio, Martin
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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.

At this time we've identified 5 additional technical staff and one manager to support the team in Japan. **The plan is for Steve Garchow (RIV), Carl Moore (RIII), Jeff Mitman (NRR), Heather Gepford (RII),Tony Huffert (RES) and Steve Reynolds (RIII) to leave the USA on Tuesday, April 12.** The intent is that your stay will be three weeks or less.

The Operations Center Liaison Team (LT) will be contacting you later today 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 are 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

From: ET02 Hoc
Sent: Sunday, April 10, 2011 8:41 AM
To: Turner, Joseph; Reyes, Debra; Vaughan, Joel
Subject: FW: OUTLOOK MAILBOX

I sent the below e-mail message to Annie Kammerer asking that she archive her mailbox. After reading my e-mail a coworker wondered how Annie could archive her mailbox if she was using an international laptop - the archives would go on the laptop hard drive which is being shared amongst the Japan Site Team members. Any recommendations on what we should tell her? Not certain she understood my e-mail. Thanks...karen

-----Original Message-----
From: Kammerer, Annie
Sent: Saturday, April 09, 2011 9:00 AM
To: ET02 Hoc
Subject: RE: OUTLOOK MAILBOX

I didn't know I had a mailbox other than my regular one.

From: ET02 Hoc
Sent: Friday, April 08, 2011 10:42 AM
To: Giessner, John; Kammerer, Annie
Cc: LIA02 Hoc; LIA03 Hoc
Subject: OUTLOOK MAILBOX

I'm not sure if OIS has contacted your or not so I thought I would let you know that we (Executive Support Team in the Operations Center) received a report today regarding the status of mailboxes being used by responders to the Japanese event. According to the report John's mailbox is at 89.5% capacity and Annie's mailbox is at 82% capacity. If you could take a few minutes to archive your mailbox that would be great. The CSC is open 24/7 so if you need assistance in archiving your mailbox, please call them (301-415-1234). Thanks very much...Karen Jackson, Response Ops System Manager

LLLL/229

From: Emche, Danielle
Sent: Sunday, April 10, 2011 10:31 PM
To: LIA06 Hoc; 'cipullotl@state.gov'; 'wberger@usaid.gov'; 'cherryrc@state.gov'
Cc: Blamey, Alan; Karas, Rebecca; Blount, Tom; ET02 Hoc; ET01 Hoc; LIA01 Hoc; LIA02 Hoc; OST05 Hoc
Subject: RE: Consortium Call Notes for 4-10-2011.doc
Attachments: Consortium Call Notes for 4-10-2011.doc

Andy,

This is much appreciated. I'm also sending these notes to the other participants that sit in on the Consortium call here in Tokyo at the Embassy. They were all on the call this morning and are interested in receiving the notes going forward. Please add them to your list for distribution.

Danielle

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 9:36 PM
To: Liaison Japan; ET07 Hoc; ET02 Hoc; ET01 Hoc; LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA04 Hoc; LIA05 Hoc; LIA06 Hoc; LIA07 Hoc; LIA08 Hoc; LIA09 Hoc; LIA10 Hoc; LIA11 Hoc; LIA12 Hoc; OST05 Hoc
Cc: Blamey, Alan; Karas, Rebecca; Carpenter, Cynthia; Blount, Tom
Subject: Consortium Call Notes for 4-10-2011.doc

As per previous discussion, I've attached notes from earlier Consortium Call.

Andy Campbell
LT Dir.

LLLL/230

Consortium Call Notes for 4/10/2011 20:00 EDT

Cindy Carpenter led teleconference meeting starting at 20:00 hrs on 4/10/2011. Andy Campbell, Tom Blount and Rebecca Karas participating for NRC/ET & LT.

Roll call of participants

Discussion of U.S. – Japan Nuclear Related Assistance Tracker (The Matrix)

Item # Emb / NRC	Item/Issue & Status Update
21 / NA	Devices for condensing rad contaminated water - DOE - no update
21a / 30,31&32	Assistance in dealing with accumulated TB water - provided update that new options paper delivered on 7th to embassy.
21b / 30&31	Water storage tanks/trailer - waiting on feedback from GOJ. Evaluating shipping from WC and EC and airlift options. GOJ had series of additional questions also. Need to get back to GOJ on shipping methods.
21c / 32	Evap technologies - no update
21e / 13	Direct requests from GOJ to PNNL on water decon and storage - no update
21f / NA	Determine whether temp radwaste processing skids avail - provided info to TEPCO on 3/28 - have phone call with them tonight. Blamey - pass info to Japan team to forward to NISA. TEPCO has been put in touch with U.S. vendors and plants with avail equip. They are working directly with vendors to send equipment over. Can close after provide info to NISA.
21g-i / 30-32	Temp holding tanks - no update - wait for next call
4 / 19	Germanium semiconductor detectors - Cherry - item will be broken down in next version based on where each detector is being provided.
13a / 34	Rad survey meters/dosimetry/masks - no update
2a / 20&22	Ground rad monitoring devices - Cherry - gotten approval to place. US people placing devices are talking to Japanese counterparts in prep for installing.
2b / NA	Blamey - have request in to GOJ to discuss issue. Several ready to ship from Bruce - need to find out if they need in near term, or if sea is OK. Bruce will ship 2 early this week by air.
5 / 21	robotic monitoring devices - in-country. Title transferred to Japan. When eqiupment reaches site, will go out with METI to work with Japanese on equipment.

5a / NA	Info on shielding materials for vehicles - no change. They seem to be greatly overestimating their shielding needs. We are ready to assist. Need to do rad mapping first.
5b / NA	Rad hardened camera/gamma-camera - same status as robot
18 / 27	KI prep - still with Japanese lawyers
20 / NA	HX to be used for SFP - working with commercial firm
24 / NA	Medical triage - no update
25 / 28	Extinguishant/coolant - no update Waiting on GOJ for more info
26 / NA	Incorporate PNNL into SFP crisis management dialogue - Cherry - should be closed - PNNL is part of process.
27,29,29b/NA	US coop in bringing priv ind engineers into shielding - haven't heard from GOJ yet
32 / 111	GEH on N2 purge analysis - have analysis - going to look at
33 / NA	Clarify for RST indications to assess RPV integrity/core location - received U2 analysis - lower priority, need to stay focused on mitigation, regardless of location
34 / NA	List of alt flowpaths for purging - ongoing with RST
35 / NA	Confirm RST recommendation Re: RPV injct. - ongoing with RST

Alan Blamey - embassy having meeting on taking over list and logistics - can discuss tomorrow and how we transition moving forward.

Wagner, Katie

From: Wagner, Katie
Sent: Monday, April 11, 2011 11:29 AM
To: Santiago, Patricia
Cc: Lee, Richard
Subject: RE: ANSWER TO THE QUESTION ON MULTIPLE EVENTS

Pat,

I think that request was captured in item #90:

90	4/8/2011	Roger Rihm of the EDO	301-415-1717	Mourad Aissa x7511 Richard Lee x7526	FSTB	Request for assistance with some Qs and As for Senator Boxer regarding MOX fuel.	Mourad and Richard provided assistance with Q&A wording on 4/8.	Completed

Thanks,
Katie

From: Santiago, Patricia
Sent: Monday, April 11, 2011 11:22 AM
To: Armstrong, Kenneth; Tinkler, Charles
Cc: Lee, Richard; Wagner, Katie
Subject: FW: ANSWER TO THE QUESTION ON MULTIPLE EVENTS

I believe this is a response to OCA (Sen Boxer's office).

I am uncertain if the original question was captured in the database.
thanks

From: Scott, Michael
Sent: Friday, April 08, 2011 4:56 PM
To: Rihm, Roger
Cc: Santiago, Patricia
Subject: ANSWER TO THE QUESTION ON MULTIPLE EVENTS

In general, the NRC applies the Commission's safety goals on a per-reactor basis. However, in security assessments of two dual-unit sites in the 2002-2004 timeframe, the NRC considered the potential consequences of events simultaneously involving both reactors. The study found that the reactor containments and spent fuel pools are robust structures and resistant to a terrorist attack. The study also found that radiological releases are delayed and smaller than those predicted in past studies. Subsequently, additional mitigation measures were required (10CFR50.44(hh)) to further enhance safety.

LLLL/231

From: HOO Hoc
Sent: Monday, April 11, 2011 4:55 AM
To: ET07 Hoc; HOO Hoc
Subject: FW: 2011-04-11 08:16:13 UPDATED: (Mw 7.1) EASTERN HONSHU, JAPAN 37.0 140.5 (327d7)
Attachments: image001.jpg

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

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

From: USGS ENS [mailto:ens@usgs.gov]
Sent: Monday, April 11, 2011 4:50 AM
To: HOO Hoc
Subject: 2011-04-11 08:16:13 UPDATED: (Mw 7.1) EASTERN HONSHU, JAPAN 37.0 140.5 (327d7)

7.1 Mw - EASTERN HONSHU, JAPAN

Preliminary Earthquake Report

Magnitude	7.1 Mw
Date-Time	11 Apr 2011 08:16:13 UTC 11 Apr 2011 17:16:13 near epicenter 11 Apr 2011 02:16:13 standard time in your timezone
Location	37.007N 140.476E
Depth	13 km
Distances	38 km (24 miles) W (260 degrees) of Iwaki, Honshu, Japan 71 km (44 miles) N (359 degrees) of Mito, Honshu, Japan 81 km (50 miles) S (179 degrees) of Fukushima, Honshu, Japan

LLLL/232

Preliminary Earthquake Report

Magnitude	7.1 Mw
	163 km (101 miles) NNE (23 degrees) of TOKYO, Japan
Location Uncertainty	Horizontal: 12.0 km; Vertical 3.6 km
Parameters	Nph = 584; Dmin = 209.3 km; Rmss = 0.69 seconds; Gp = 18° M-type = Mw; Version = C
Event ID	US c0002n9v

For updates, maps, and technical information, see:
Event Page
or
USGS Earthquake Hazards Program

National Earthquake Information Center
U.S. Geological Survey
http://neic.usgs.gov/

Disclaimer

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:45 AM
To: Reynolds, Steven; Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; LIA03 Hoc
Subject: RE: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Yes, when reservations are made you will get a copy of the times.

Steve

From: Reynolds, Steven
Sent: Monday, April 11, 2011 10:37 AM
To: LIA02 Hoc; Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; LIA03 Hoc
Subject: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

When each of us know our flights and arrival times in Japan lets share it with each other.

Thanks,
Steve Reynolds

PS
Tony – thanks for bringing the blackberries and the passwords.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 8:07 AM
To: Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

All,

Tony Huffert will be carrying all of the blackberries with him.

Steve Bloom

From: Gepford, Heather
Sent: Monday, April 11, 2011 9:00 AM
To: Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

What is the status of Blackberrys for the rest of the Regional staff?

From: Mitman, Jeffrey
Sent: Monday, April 11, 2011 8:59 AM
To: ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

LLLL/233

Karen, I'll be at the Ops Center at 2 today (Monday). I'll be happy to take a couple of other Blackberrys with me.

Jeff Mitman

From: ET02 Hoc
Sent: Monday, April 11, 2011 8:29 AM
To: Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Jeff:
Can you come to the Ops Center today at 2PM to pick up you blackberry and one for Steve Reynolds and possibly take another one as well for another regional traveler? That is the time that Tony Huffert is coming today to pick up his and other blackberries and at the time OIS is going to provide some BB training.

I'm cc'ing all of this week's travelers for their information. Thanks...Karen Jackson

From: Bernhard, Rudolph
Sent: Monday, April 11, 2011 6:27 AM
To: LIA08 Hoc; Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc
Subject: RE: help with our Japan team computer network

Jeff, thanks for kicking off the request. I had no clue who to ask.

A subdirectory that all in country Japan team members could be mapped to would be great. Since we are all from different offices, we have no common network drive that we share. We do not want to use Sharepoint, but want a subdirectory that we can map to a drive that all can reach when using Citrix. IT would have to be provided with names of those shipped over in the future, so they could be added to the access for the drive or subdirectory.

Thanks
Rudy

From: LIA08 Hoc
Sent: Monday, April 11, 2011 6:15 AM
To: Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc; Bernhard, Rudolph
Subject: help with our Japan team computer network

Good morning

Our Japan site team called us this morning and asked if a separate network could be created for them to use to store documents created by and used by the NRC site team in Japan, similar I think to the way we use the M drive in the NRC Ops Center to capture event info at our end.

Please let us know if this is possible and what the procedure is for this to occur.

Thanks for any help you can provide

Jeff Temple
NRC Operations Center
Liaison Team Coordinator
301-816-5185

LLL/234

From: RST01 Hoc
Sent: Monday, April 11, 2011 3:39 AM
To: RST06 Hoc; RST08 Hoc
Subject: FW: decay heat load vs burn of SFP question

From: Bernhard, Rudolph
Sent: Sunday, April 10, 2011 8:26 PM
To: RST01 Hoc
Subject: decay heat load vs burn of SFP question

The initial call by the Sandia guys here is that up to a 10% reduction in decay heat load for the percent of fuel that is burned. That is, if 100% of the pool went up, the residue would still have 90% of the decay heat load. The thought was that the whole pool would not burn, so less then 10% difference. Given the inaccuracies of the measurement of the added water mass each fill, this is not significant enough to change the calcs.

LLLL/235

From: LIA06 Hoc
Sent: Monday, April 11, 2011 4:29 AM
To: LIA08 Hoc
Subject: FW: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011
Attachments: USNRC Earthquake-Tsunami Update 041111 0430EDT.pdf

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

From: LIA07 Hoc
Sent: Monday, April 11, 2011 4:29 AM
To: LIA07 Hoc
Subject: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011

Attached, please find a 0430 EDT, April 11, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Yen

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

LLLL/236

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "nuclear power"
Date: Saturday, April 09, 2011 6:13:59 AM

News **9** new results for **"nuclear power"**

Japan tightens rules for nuclear plant backups

CNN International

By Matt Smith, CNN Tougher contingency plans have been ordered for Japanese **nuclear power** stations in light of the Fukushima Daiichi disaster. Engineers examine rising water levels in reactor No. 3 condenser Tokyo (CNN) -- Japanese regulators issued **...**

CNN International

See all stories on this topic »

Nuclear Crisis Fuels Duel at Diablo

Wall Street Journal

Japan's unfolding reactor crisis is fueling a battle over **nuclear power** across the Pacific, in earthquake-prone California. Pacific Gas & Electric Co., the big California utility, is seeking a 20-year license extension for its two reactors at Diablo **...**

See all stories on this topic »

Fox News Poll: 83% Think Nuclear Crisis Like Japan Could Happen in US

Fox News

In addition, the number believing **nuclear power** is not safe is on the rise. Fully 83 percent of voters think a disaster similar to Japan's could happen in the US, while a small 15-percent minority doesn't think so. That's according to a Fox News poll **...**

See all stories on this topic »

Nuclear radiation from Japanese power plant reaches Pakistan: PAEC

DailyIndia.com

Islamabad, April 9(ANI): Traces of airborne radioactive iodine, believed to have originated from the stricken Fukushima **nuclear power** plant in Japan, have been detected in Pakistan. The Pakistan Atomic Energy Commission (PAEC) said in a press release **...**

See all stories on this topic »

Bushehr power plant refueling begins

Press TV

The Bushehr **nuclear power** plant is located 17 kilometers southeast of the city of Bushehr on the Persian Gulf coast. Iran's Bushehr **nuclear power** plant is being reloaded with fuel after an inspection and a cleanup of the reactor and the plant's **...**

Press TV

See all stories on this topic »

How Much of a Threat?

New York Times

... citizens are dead or missing after last month's devastating earthquake and tsunami, hundreds of thousands have lost their homes and Japan's government and power company are still struggling to control three badly damaged **nuclear power** reactors. **...**

See all stories on this topic »

Japan`s morality and sheer will to help overcome crisis

For now, nobody can accurately assess the scale of pain inflicted on Japan by the triple whammy of the earthquake, the subsequent tsunami and the radioactive leaks from the Fukushima **Nuclear**

LLLL/237

Power Plant. Among the three, the nuclear crisis is the most ...
See all stories on this topic »

Former Greenpeace director tells Mo. commerce group **nuclear power** is safe

Fulton Sun

By Bob Watson **Nuclear power** as an energy source is going to grow in the future, Patrick Moore told Missourians attending the state Chamber of Commerce and Industry's "Energy Future" conference Thursday. "It's heartened a lot of us who support **nuclear** ...
See all stories on this topic »

Mayor urges Kyushu Electric to enhance safety before adding reactor

istockAnalyst.com (press release)

KAGOSHIMA, Apr. 8, 2011 (Kyodo News International) -- The mayor of Kagoshima urged Kyushu Electric Power (OOTC:KYSEY) Co., operator of the Sendai **nuclear power** plant close to his city, on Friday to review safety steps at the plant before adding a new ...
See all stories on this topic »

From: LIA10 Hoc
Sent: Monday, April 11, 2011 12:04 PM
To: LIA08 Hoc; LIA02 Hoc; LIA03 Hoc
Subject: FW: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update
Attachments: USNRC Earthquake-Tsunami Update.041111.1200EDT.pdf

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From: LIA02 Hoc
Sent: Monday, April 11, 2011 12:04 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

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From: LIA07 Hoc
Sent: Monday, April 11, 2011 12:04 PM
Subject: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 11, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Starting today, the NRC is transitioning a great portion of its response support efforts to its line organizations, resulting in a reduction in staffing at the Headquarters Operations Center. As such, we will only be issuing the status update once a day at 1200 EDT. The timing and frequency of the updates may change to support evolving needs of the NRC Site Team in Japan.

Please note that this information is "Official Use Only" and is not intended to be shared with other stakeholders without NRC approval.

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

Thank you,
Sara

Sara Mroz
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

LLLL/238

To: LIA02 Hoc; Gepford, Heather; Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

All:
Tony and Jeff Mitman will be carrying the blackberries with them for those traveling in this group.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 9:07 AM
To: Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

All,

Tony Huffert will be carrying all of the blackberries with him.

Steve Bloom

From: Gepford, Heather
Sent: Monday, April 11, 2011 9:00 AM
To: Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

What is the status of Blackberrys for the rest of the Regional staff?

From: Mitman, Jeffrey
Sent: Monday, April 11, 2011 8:59 AM
To: ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen, I'll be at the Ops Center at 2 today (Monday). I'll be happy to take a couple of other Blackberrys with me.

Jeff Mitman

From: ET02 Hoc
Sent: Monday, April 11, 2011 8:29 AM
To: Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Jeff:

LLLL/239

Can you come to the Ops Center today at 2PM to pick up you blackberry and one for Steve Reynolds and possibly take another one as well for another regional traveler? That is the time that Tony Huffert is coming today to pick up his and other blackberries and at the time OIS is going to provide some BB training.

I'm cc'ing all of this week's travelers for their information. Thanks...Karen Jackson

From: ET02 Hoc
Sent: Monday, April 11, 2011 8:29 AM
To: Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Importance: High

Jeff:
Can you come to the Ops Center today at 2PM to pick up you blackberry and one for Steve Reynolds and possibly take another one as well for another regional traveler? That is the time that Tony Huffert is coming today to pick up his and other blackberries and at the time OIS is going to provide some BB training.

I'm cc'ing all of this week's travelers for their information. Thanks...Karen Jackson

---

From: Mitman, Jeffrey
Sent: Sunday, April 10, 2011 3:32 PM
To: ET02 Hoc; Huffert, Anthony
Cc: Turner, Joseph; Reyes, Debra; Garchow, Steve
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I can take an extra BB to Steve.

Jeff Mitman

From: ET02 Hoc
Sent: Sunday, April 10, 2011 12:38 PM
To: Huffert, Anthony; Mitman, Jeffrey
Cc: Turner, Joseph; Reyes, Debra; Garchow, Steve
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Tony and Jeff:

Would either of you take a BB to Steve Garchow when you travel to Japan on Tuesday? Since he is in the region I'm not sure we can get him a BB by tomorrow. Thanks very much...karen

---

From: Garchow, Steve
Sent: Sunday, April 10, 2011 12:21 PM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Whatever is easiest for you is ok with me. The region has arranged for the laptop I will be taking.

Steve Garchow
Chief Examiner
817-276-4426
SMG@NRC.gov

LLLL/240

From: ET02 Hoc
Sent: Sunday, April 10, 2011 11:19 AM
To: Garchow, Steve; LIA02 Hoc; LIA03 Hoc
Cc: Heard, Robert; Turner, Joseph; Reyes, Debra
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Steve:
I'm afraid I can't help with travel arrangements but am cc'ing the Liaison Team OIP reps to see if they can provide you with the information you need. I'm helping with getting BBs and laptops for the travelers. Would it be alright for us to get you a BB and send it along with one of the HQ folks who are traveling this week? Or do you want us to try to overnight one to you tomorrow assuming it can get to you before you leave on Tuesday? Or would you be agreeable with taking a BB from someone who is returning to the US. Our help desk can "recalibrate" it to you when you contact them (you tell them whose BB you took and they will work with you until the BB is functioning properly for you). Please let me know which option you prefer. Thanks...Karen

---

From: Garchow, Steve
Sent: Sunday, April 10, 2011 11:48 AM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,
I am in the office trying to get my desk cleared off for leaving on Tuesday. Are you the person I talk to about travel arrangements or do I wait and try again on Monday? Have tried the numbers provided but no one answers. The email address I was sent has been de-activated.

Steve Garchow
Chief Examiner
817-276-4426
SMG@NRC.gov

From: ET02 Hoc
Sent: Sunday, April 10, 2011 10:39 AM
To: NOC_Members; Turner, Joseph; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Anthony (Tony) Huffert, RES, one of the NRC staff who is traveling to Japan on Tuesday, would like to have an international Blackberry and international laptop. Even though he may not travel on Tuesday (see earlier e-mail from ET02 on this) we need to go on the assumption that he will travel on that day; therefore we need to have the BB and laptop ready and delivered to the Ops Center by 2PM tomorrow, Monday 4/11/11. Tony also would like to have some training on using the BB when he picks it up BB at 2PM.

My earlier e-mail indicated that Jeff Mitman, NRR wanted a international BB as well so let's work on getting him one for the same time. I'm sending him a cc of this e-mail so he can provide additional information and/or changes to pick up time based on his needs. Also, Jeff could you please indicate whether you want a laptop or not?

I have not heard from the other travelers yet. Thanks...Karen Jackson, EST Response Ops Systems Mgr

From: Reynolds, Steven
Sent: Monday, April 11, 2011 3:52 PM
To: ET02 Hoc
Subject: Thanks: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen,

Thank you very much for taking such good care of us out in the regions.

Steve

From: ET02 Hoc
Sent: Monday, April 11, 2011 2:41 PM
To: LIA02 Hoc; Reynolds, Steven; Gepford, Heather; Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl
Subject: RE: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Just wanted to let you know that Tony Huffert and Jeff Mitman have received the blackberries for the regional staff and will be bringing them to Japan. ...karen

---

From: LIA02 Hoc
Sent: Monday, April 11, 2011 2:27 PM
To: Reynolds, Steven; Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; LIA03 Hoc; Liaison Japan
Subject: RE: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

All arriving 4/13

American 0153
Moore arriving 4:15 pm
Gepford arriving 4:15 pm
Reynolds arriving 4:15 pm

American 2411
Garchow arriving 3:15 pm

United 0803
Huffert arriving 3:10 pm
Mitman arriving 3:10 pm

Steve

From: Reynolds, Steven
Sent: Monday, April 11, 2011 10:37 AM
To: LIA02 Hoc; Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; LIA03 Hoc
Subject: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

LLLL/241

When each of us know our flights and arrival times in Japan lets share it with each other.

Thanks,
Steve Reynolds

PS
Tony – thanks for bringing the blackberries and the passwords.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 8:07 AM
To: Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

All,

Tony Huffert will be carrying all of the blackberries with him.

Steve Bloom

From: Gepford, Heather
Sent: Monday, April 11, 2011 9:00 AM
To: Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

What is the status of Blackberrys for the rest of the Regional staff?

From: Mitman, Jeffrey
Sent: Monday, April 11, 2011 8:59 AM
To: ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen, I'll be at the Ops Center at 2 today (Monday). I'll be happy to take a couple of other Blackberrys with me.

Jeff Mitman

From: ET02 Hoc
Sent: Monday, April 11, 2011 8:29 AM
To: Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Jeff:
Can you come to the Ops Center today at 2PM to pick up you blackberry and one for Steve Reynolds and possibly take another one as well for another regional traveler? That is the time that Tony Huffert is coming today to pick up his and other blackberries and at the time OIS is going to provide some BB training.

I'm cc'ing all of this week's travelers for their information. Thanks...Karen Jackson

From: Garchow, Steve
Sent: Monday, April 11, 2011 10:40 AM
To: Reynolds, Steven; LIA02 Hoc; Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Moore, Carl; LIA03 Hoc
Subject: RE: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I am scheduled to arrive Wednesday at 1515.

Steve Garchow
Chief Examiner
817-276-4426
SMG@NRC.gov

From: Reynolds, Steven
Sent: Monday, April 11, 2011 9:37 AM
To: LIA02 Hoc; Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; LIA03 Hoc
Subject: Question: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

When each of us know our flights and arrival times in Japan lets share it with each other.

Thanks,
Steve Reynolds

PS
Tony – thanks for bringing the blackberries and the passwords.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 8:07 AM
To: Gepford, Heather; Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

All,

Tony Huffert will be carrying all of the blackberries with him.

Steve Bloom

From: Gepford, Heather
Sent: Monday, April 11, 2011 9:00 AM
To: Mitman, Jeffrey; ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

What is the status of Blackberrys for the rest of the Regional staff?

From: Mitman, Jeffrey
Sent: Monday, April 11, 2011 8:59 AM

LLL/242

To: ET02 Hoc
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Karen, I'll be at the Ops Center at 2 today (Monday). I'll be happy to take a couple of other Blackberrys with me.

Jeff Mitman

From: ET02 Hoc
Sent: Monday, April 11, 2011 8:29 AM
To: Mitman, Jeffrey
Cc: Huffert, Anthony; Garchow, Steve; Moore, Carl; Gepford, Heather; Reynolds, Steven; LIA02 Hoc; LIA03 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP
Importance: High

Jeff:
Can you come to the Ops Center today at 2PM to pick up you blackberry and one for Steve Reynolds and possibly take another one as well for another regional traveler? That is the time that Tony Huffert is coming today to pick up his and other blackberries and at the time OIS is going to provide some BB training.

I'm cc'ing all of this week's travelers for their information. Thanks...Karen Jackson

From: Karas, Rebecca
Sent: Monday, April 11, 2011 10:24 AM
To: ET02 Hoc
Subject: RE: Question on ET Chronology entry.

Was meant to mean that the Chief Cabinet secretary stated that the government is in process of re-defining the evac zone. In other words, "source states that government...."

Rebecca Karas, Chief
Geosciences and Geotechnical Engineering Branch 1
Division of Site and Environmental Reviews
Office of New Reactors
U.S. Nuclear Regulatory Commission
Phone: 301-415-7533
Fax: 301-415-5397

From: ET02 Hoc
Sent: Monday, April 11, 2011 12:31 AM
To: Rebecca Karas; Karas, Rebecca
Subject: Question on ET Chronology entry.

Becky,

There was a question concerning your last ET Chronology Entry from tonight. The source was NHK/Chief Cabinet Secy and it just says: "States government is in process of re-defining evacuation zone."

Was this supposed to be "Japanese government is in process of re-defining evacuation zone."? An LT Rep was questioning whether this was United States or Japanese govt.

Upon confirmation we will update the Chronology entry.

Thanks!
-Nick

LLL/243

From: LIA10 Hoc
Sent: Monday, April 11, 2011 4:29 AM
To: LIA08 Hoc; LIA02 Hoc; LIA03 Hoc
Subject: FW: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011
Attachments: USNRC Earthquake-Tsunami Update 041111 0430EDT.pdf

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From: LIA03 Hoc
Sent: Monday, April 11, 2011 4:29 AM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011

From: LIA07 Hoc
Sent: Monday, April 11, 2011 4:29 AM
To: LIA07 Hoc
Subject: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011

Attached, please find a 0430 EDT, April 11, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Yen

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

LLL4/244

From: Reyes, Debra
Sent: Monday, April 11, 2011 11:15 AM
To: ET02 Hoc
Subject: RE: BB's

Tim Barnes from the CSC will be contacting Mr. Reynolds to explain the options.

debbie

From: ET02 Hoc
Sent: Monday, April 11, 2011 11:14 AM
To: Reyes, Debra
Subject: RE: BB's
Importance: High

Debbie:
I just talked to Steve and he understands that he will lose e-mail functionality of his current BB in order to provision the new one that we are providing him. He stated that he thought the region BB's cannot be reprovisioned to work in Japan based on Mr. Giessner's experience in Japan. Thanks...karen

---

From: Reyes, Debra
Sent: Monday, April 11, 2011 10:18 AM
To: ET02 Hoc
Cc: Reyes, Debra
Subject: RE: BB's

Good morning,

Steven Reynolds (RIII) already has an NRC issued BB. We need to know if we should have his loaner BB provisioned because if we do he will lose service on his existing BB or do you just want to provide BB un-provisioned and get it provisioned remotely?

Please let me know as soon as you can.

Thanks!

From: Heard, Robert
Sent: Monday, April 11, 2011 9:41 AM
To: ET02 Hoc
Cc: Turner, Joseph; Reyes, Debra; Bissett, Ryan; Brusoe, Eric
Subject: RE: BB's

When I spoke to Joe this morning, he did not see any problem with having them all ready by 2PM today. I will follow up.

From: ET02 Hoc
Sent: Monday, April 11, 2011 9:39 AM
To: Heard, Robert
Subject: BB's
Importance: High

LLLL/245

Rob:

Is there any problem with having all the BB's ready by 2PM today? Both HQ travelers are willing to carry the regional BBs with them so we will need all of them to be ready by then. Thanks...karen

From: LIA08 Hoc
Sent: Monday, April 11, 2011 3:31 PM
To: ET02 Hoc
Cc: LIA02 Hoc
Subject: RE: STILL IN JAPAN

John is still there, Jack was never there.

Clyde Ragland
Liaison Team Coordinator
Clyde.ragland@nrc.gov

From: LIA03 Hoc
Sent: Monday, April 11, 2011 3:28 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: STILL IN JAPAN

From: LIA02 Hoc
Sent: Monday, April 11, 2011 3:28 PM
To: LIA08 Hoc; LIA03 Hoc; LIA10 Hoc
Subject: FW: STILL IN JAPAN

From: ET02 Hoc
Sent: Monday, April 11, 2011 3:28 PM
To: LIA02 Hoc
Subject: STILL IN JAPAN

Steve:
Can you check to see or do you know if John Monninger and Jack Ramsey are or are not still in Japan? Thanks...karen

LLLL/246

From: LIA02 Hoc
Sent: Monday, April 11, 2011 3:31 PM
To: ET02 Hoc
Subject: RE: STILL IN JAPAN

Marie has returned.

From: ET02 Hoc
Sent: Monday, April 11, 2011 3:29 PM
To: LIA02 Hoc
Subject: RE: STILL IN JAPAN

Marie Miller? Still there or not?

From: ET02 Hoc
Sent: Monday, April 11, 2011 3:28 PM
To: LIA02 Hoc
Subject: STILL IN JAPAN

Steve:
Can you check to see or do you know if John Monninger and Jack Ramsey are or are not still in Japan? Thanks...karen

LLL/247

From: Marshall, Jane
Sent: Monday, April 11, 2011 1:08 PM
To: OST01 HOC
Cc: Morris, Scott; McDermott, Brian; Evans, Michele
Subject: Current transition plan
Attachments: transition plan - monday.docx

FYI – the current transition plan document.

LLLL/248

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

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

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

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

Messaging on Transition

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

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

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

Actions by Team:

Executive Team

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

Executive Briefing Team

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

ET Support Team

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

NSIR Incident Response Staff (weekday dayshift; as part of the line organization)

1. Implement a process for capturing relevant items from various workstations and emails (an auto-forward or bounce-back message may help for emails).
2. Provide SharePoint and WebEOC access and instruction to support staff so that SharePoint can be utilized once the briefing products are consolidated/discontinued.
3. Determine an effective method to track actions, information, and decisions if Chronology is to be discontinued.
4. Address Ops Center operational issues (facility and Ops Center computer system issues)
5. Determine computer work station usage and how to transition to the 6 person team functions.

Protective Measures Team

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

Reactor Safety Team

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

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

Liaison Team

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

The LT member will participate on the following calls:

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

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

Actions to Implement Prior to Transition

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

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

g. OIP –Steve Bloom (backup: Danielle EmcheNRO – Jeff Ciocco (backup: Tom Kevern

h.

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

From: McMurtray, Anthony
Sent: Monday, April 11, 2011 9:37 AM
To: OST02 HOC; OST01 HOC
Subject: FW: Request for Slide Package from Shaw Group

fyi.

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 9:47 PM
To: McMurtray, Anthony
Cc: Murray, Charles
Subject: FW: Request for Slide Package from Shaw Group

Slide package is in agency mail process – likely in mail room – need to follow-up first thing Monday AM.

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

From: LIA06 Hoc
Sent: Sunday, April 10, 2011 9:42 PM
To: Carpenter, Cynthia; Blount, Tom; Virgilio, Martin
Subject: FW: Request for Slide Package from Shaw Group

I'll put this as an action item in turnover so that it can be followed up with mailroom in am.

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

From: LIA02 Hoc
Sent: Sunday, April 10, 2011 9:19 PM
To: LIA06 Hoc
Subject: FW: Request for Slide Package from Shaw Group

As requested

From: Emche, Danielle
Sent: Sunday, April 10, 2011 9:14 PM
To: LIA02 Hoc
Cc: Liaison Japan; Stahl, Eric; LIA06 Hoc; Casto, Chuck
Subject: Re: Request for Slide Package from Shaw Group

Fedex tracking number is 8695-5112-8152.

It was delivered 4/8 at HQ and signed for by M. Costillo. Maybe someone needs to check. The Embassy said they can't scan them in because they are an odd paper size and the file will be too big to email. I'm not sure that their answer makes sense but that's what I'm told. Please confirm that Marty has his hands on the slides.

LLLL/249

Danielle
Sent from an NRC BlackBerry.

From: LIA02 Hoc
To: Casto, Chuck
Cc: Liaison Japan; Emche, Danielle; Stahl, Eric; LIA06 Hoc
Sent: Sun Apr 10 19:53:51 2011
Subject: Request for Slide Package from Shaw Group

Chuck,

Marty Virgilio and the ET have asked that you forward to us the package of slides presented to the Site Team recently by the Shaw Group. Can you please send?

Thanks,

LIA02

From: Coe, Doug
To: Correia, Richard
Subject: RE: Task 2
Date: Monday, April 11, 2011 11:28:47 AM

Perhaps Fred can designate one of his RST members to talk further with Mary regarding how future such event trees could be made even more useful

---

From: Correia, Richard
Sent: Monday, April 11, 2011 11:27 AM
To: Drouin, Mary; Coe, Doug; Demoss, Gary
Subject: RE: Task 2

I didn't follow up with Fred since he said he was going to ask the industry for their input/feedback. Let me check back with Fred and find out what has transpired.

Thx Mary.

Rich

Richard Correia, PE
Director, Division of Risk Analysis
Office of Nuclear Regulatory Research
US NRC

richard.correia@nrc.gov

From: Drouin, Mary
Sent: Monday, April 11, 2011 11:24 AM
To: Correia, Richard; Coe, Doug; Demoss, Gary
Subject: RE: Task 2

Rich,

Tks for the feedback, although I have to admit that I am confused by his statement "exclusions (hydrogen generation and Core/concrete interactions) were really key pieces." The diagrams indicate when H2 generation will occur and when core/concrete interactions will occur, they were not excluded. I am very confused.

Tks, mary

From: Correia, Richard
Sent: Monday, April 11, 2011 11:16 AM
To: Coe, Doug; Demoss, Gary; Drouin, Mary
Subject: FW: Task 2

Feedback from Fred Brown.

Richard Correia, PE
Director, Division of Risk Analysis

LLL/250

Office of Nuclear Regulatory Research
US NRC

richard.correia@nrc.gov

From: Brown, Frederick
Sent: Friday, April 08, 2011 3:31 PM
To: Correia, Richard
Subject: Re: Task 2

Rich,

Yes thanks, though the exclusions (hydrogen generation and Core/concrete interactions) were really key pieces. I'm working to see if the industry will take it from here.

Fred

From: Correia, Richard
To: Brown, Frederick
Sent: Thu Apr 07 07:21:38 2011
Subject: RE: Task 2

Fred,

I know you've very busy with the PT 26 rule package and the Ops center but was the information we provided on event trees useful?

Richard Correia, PE
Director, Division of Risk Analysis
Office of Nuclear Regulatory Research
US NRC

richard.correia@nrc.gov

From: Correia, Richard
Sent: Monday, April 04, 2011 1:06 PM
To: Brown, Frederick; RST01 Hoc
Cc: RST06 Hoc; Ruland, William; Hackett, Edwin; Cheok, Michael; Gibson, Kathy; McDermott, Brian; Hoc, PMT12; Drouin, Mary; Demoss, Gary; Tinkler, Charles; Coe, Doug
Subject: Task 2

Fred et al.,

Attached are the results of Task 2 (described below) in three slides: two contain the requested basic event tree diagrams; one has information about the diagrams, assumptions and considerations.

Several folks in RES & NRR contributed. Mary Drouin (RES) is the primary POC should there any questions or a need for a meeting/discussion to assist in anyway.

Regards,

Rich

Richard Correia, PE
Director, Division of Risk Analysis
Office of Nuclear Regulatory Research
US NRC

richard.correia@nrc.gov

From: Brown, Frederick
Sent: Thursday, March 31, 2011 9:35 AM
To: RST01 Hoc
Cc: RST06 Hoc; Ruland, William; Hackett, Edwin; Correia, Richard; Cheok, Michael; Gibson, Kathy; McDermott, Brian; Hoc, PMT12
Subject: Proposed Task Tracker

Peter,

There are two items being worked outside the Ops Center for the RST. The ET is aware of both, but they are not currently being tracked (or were not last night).

You may want to add the following two items to the task tracker so that everyone knows what has actually been requested, and who is working it. Also, if the tasks are reshaped, there will be a way of making the redirection visible to the ET and others.

Background e-mails are on the RST01 and RST06 systems from the last two evenings, subject: "Request for Ops Center RTS support"

Fred

Task 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).
>
> 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).**

This task was accepted by RES, and I understand that Kathy Gibson's Division (RES/DSA) has the lead supported by NRR/DE.

Task 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.

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)?**

Once NRC staff validates this concept, and creates a framework for the event trees, we may be able to turn it over to INPO/GEH for completion.

This task has also been accepted by RES, and Rich Correia's Division (RES/DRA) has the lead, with support from NRR/DE.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 11:36 AM
To: ET02 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Karen,
Who is POC to get blackberries...

Steve

From: ET02 Hoc
Sent: Monday, April 11, 2011 10:02 AM
To: Wittick, Brian; LIA02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

I have updated the "liaison japan" group based on information supplied by OIP as follows – Bernhard, Call, Casto, Collins, Dorman, Emche, Garchow, Gepford, Hay, Holahan, Huffert, Mitman, Monninger, Moore, Ramsey, Reynolds, Salay and Stahl. If anyone else should be included please let me know. Thanks...karen

---

From: Wittick, Brian
Sent: Monday, April 11, 2011 3:52 AM
To: LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Request the "liaison japan" group address be updated with the current list of people in Japan. Also, request that the "pre-travel checklist" for new people coming to Japan be updated to identify that people should check in with OIS to ensure they have the correct type of international blackberry. I have an international blackberry and assumed it would work everywhere since it previously had and the carrier said it should, but turns out only specific international blackberries do and OIS knows which ones.

Thanks,
Brian

From: Stahl, Eric
Sent: Sunday, April 10, 2011 5:58 PM
To: LIA02 Hoc; Liaison Japan
Cc: Emche, Danielle; Wittick, Brian
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

It is our understanding that the call the is still occurring and that NRC HQ will continue to take the lead (at least for today). Last I heard was that Embassy or DOE will transition to the lead at some point in the near future.

Thanks,
Eric

LLLL/251

From: LIA02 Hoc
Sent: Monday, April 11, 2011 6:56 AM
To: Liaison Japan
Cc: Emche, Danielle; Stahl, Eric
Subject: CONSORTIUM CALL AT 2000 EDT TODAY
Importance: High

All,

Please confirm the Consortium call is still on for today at 2000 EDT.

Assuming it is on, please advise as to who will be heading up today's Consortium call.

Thanks,

LIA02

From: ET02 Hoc
Sent: Monday, April 11, 2011 10:45 AM
To: LIA02 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Done...karen

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:44 AM
To: ET02 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Brian Wittick is not on the list and should be.

steve

From: ET02 Hoc
Sent: Monday, April 11, 2011 10:02 AM
To: Wittick, Brian; LIA02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

I have updated the "liaison japan" group based on information supplied by OIP as follows – Bernhard, Call, Casto, Collins, Dorman, Emche, Garchow, Gepford, Hay, Holahan, Huffert, Mitman, Monninger, Moore, Ramsey, Reynolds, Salay and Stahl. If anyone else should be included please let me know. Thanks...karen

---

From: Wittick, Brian
Sent: Monday, April 11, 2011 3:52 AM
To: LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Request the "liaison japan" group address be updated with the current list of people in Japan. Also, request that the "pre-travel checklist" for new people coming to Japan be updated to identify that people should check in with OIS to ensure they have the correct type of international blackberry. I have an international blackberry and assumed it would work everywhere since it previously had and the carrier said it should, but turns out only specific international blackberries do and OIS knows which ones.

Thanks,
Brian

From: Stahl, Eric
Sent: Sunday, April 10, 2011 5:58 PM
To: LIA02 Hoc; Liaison Japan
Cc: Emche, Danielle; Wittick, Brian
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

It is our understanding that the call the is still occurring and that NRC HQ will continue to take the lead (at least for today). Last I heard was that Embassy or DOE will transition to the lead at some point in the near future.

LLL/252

Thanks,
Eric

From: LIA02 Hoc
Sent: Monday, April 11, 2011 6:56 AM
To: Liaison Japan
Cc: Emche, Danielle; Stahl, Eric
Subject: CONSORTIUM CALL AT 2000 EDT TODAY
Importance: High

All,

Please confirm the Consortium call is still on for today at 2000 EDT.

Assuming it is on, please advise as to who will be heading up today's Consortium call.

Thanks,

LIA02

From: Wittick, Brian
Sent: Monday, April 11, 2011 5:00 AM
To: Emche, Danielle; LIA08 Hoc; LIA02 Hoc; ET02 Hoc
Cc: LIA06 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

We also have unconfirmed information that they have fire trucks available to line up for makeup water supplies. Make sure you are tuned to NHK which is were we are getting much of our info.

Thanks
Brian

From: Emche, Danielle
Sent: Monday, April 11, 2011 4:55 AM
To: LIA08 Hoc; Wittick, Brian; LIA02 Hoc; ET02 Hoc
Cc: LIA06 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

We just heard that units 1-3 lost power and stopped injecting water. We heard from the admiral at the Embassy. It was not a fun earthquake to experience, it was very unsettling.

From: LIA08 Hoc
Sent: Monday, April 11, 2011 4:50 AM
To: Wittick, Brian; LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Thanks Brian and Danielle. As soon as you can get us any info about the condition of nuclear plants in NE Japan after the aftershock of 7.1 a few minutes ago, please let us know. The White House will be calling soon for info. Jeff Temple

---

From: Wittick, Brian
Sent: Monday, April 11, 2011 3:52 AM
To: LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Request the "liaison japan" group address be updated with the current list of people in Japan. Also, request that the "pre-travel checklist" for new people coming to Japan be updated to identify that people should check in with OIS to ensure they have the correct type of international blackberry. I have an international blackberry and assumed it would work everywhere since it previously had and the carrier said it should, but turns out only specific international blackberries do and OIS knows which ones.

Thanks,
Brian

From: Stahl, Eric
Sent: Sunday, April 10, 2011 5:58 PM
To: LIA02 Hoc; Liaison Japan
Cc: Emche, Danielle; Wittick, Brian
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

LLLL/253

It is our understanding that the call the is still occurring and that NRC HQ will continue to take the lead (at least for today). Last I heard was that Embassy or DOE will transition to the lead at some point in the near future.

Thanks,
Eric

From: LIA02 Hoc
Sent: Monday, April 11, 2011 6:56 AM
To: Liaison Japan
Cc: Emche, Danielle; Stahl, Eric
Subject: CONSORTIUM CALL AT 2000 EDT TODAY
Importance: High

All,

Please confirm the Consortium call is still on for today at 2000 EDT.

Assuming it is on, please advise as to who will be heading up today's Consortium call.

Thanks,

LIA02

From: ET02 Hoc
Sent: Monday, April 11, 2011 3:59 AM
To: LIA02 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Do you need any assistance with either of these two items? I'm not sure who has been keeping track of the pre-travel checklist and Liaison Japan group addresses.

Thanks,
-Nick

From: Wittick, Brian
Sent: Monday, April 11, 2011 3:52 AM
To: LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Request the "liaison japan" group address be updated with the current list of people in Japan. Also, request that the "pre-travel checklist" for new people coming to Japan be updated to identify that people should check in with OIS to ensure they have the correct type of international blackberry. I have an international blackberry and assumed it would work everywhere since it previously had and the carrier said it should, but turns out only specific international blackberries do and OIS knows which ones.

Thanks,
Brian

From: Stahl, Eric
Sent: Sunday, April 10, 2011 5:58 PM
To: LIA02 Hoc; Liaison Japan
Cc: Emche, Danielle; Wittick, Brian
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

It is our understanding that the call the is still occurring and that NRC HQ will continue to take the lead (at least for today). Last I heard was that Embassy or DOE will transition to the lead at some point in the near future.

Thanks,
Eric

From: LIA02 Hoc
Sent: Monday, April 11, 2011 6:56 AM
To: Liaison Japan
Cc: Emche, Danielle; Stahl, Eric
Subject: CONSORTIUM CALL AT 2000 EDT TODAY
Importance: High

All,

Please confirm the Consortium call is still on for today at 2000 EDT.

LLLL/254

Assuming it is on, please advise as to who will be heading up today's Consortium call.

Thanks,

LIA02

From: LIA08 Hoc
Sent: Monday, April 11, 2011 5:05 AM
To: Emche, Danielle; Wittick, Brian; LIA02 Hoc; ET02 Hoc
Cc: LIA06 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Thanks Danielle. The last 7.1 was hardly felt in Toyko. Sounds like this one was closer. Hang in there. Jeff

---

From: Emche, Danielle
Sent: Monday, April 11, 2011 4:55 AM
To: LIA08 Hoc; Wittick, Brian; LIA02 Hoc; ET02 Hoc
Cc: LIA06 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

We just heard that units 1-3 lost power and stopped injecting water. We heard from the admiral at the Embassy. It was not a fun earthquake to experience, it was very unsettling.

From: LIA08 Hoc
Sent: Monday, April 11, 2011 4:50 AM
To: Wittick, Brian; LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Thanks Brian and Danielle. As soon as you can get us any info about the condition of nuclear plants in NE Japan after the aftershock of 7.1 a few minutes ago, please let us know. The White House will be calling soon for info. Jeff Temple

---

From: Wittick, Brian
Sent: Monday, April 11, 2011 3:52 AM
To: LIA02 Hoc; ET02 Hoc
Cc: Emche, Danielle; LIA06 Hoc; LIA08 Hoc
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

Request the "liaison japan" group address be updated with the current list of people in Japan. Also, request that the "pre-travel checklist" for new people coming to Japan be updated to identify that people should check in with OIS to ensure they have the correct type of international blackberry. I have an international blackberry and assumed it would work everywhere since it previously had and the carrier said it should, but turns out only specific international blackberries do and OIS knows which ones.

Thanks,
Brian

From: Stahl, Eric
Sent: Sunday, April 10, 2011 5:58 PM
To: LIA02 Hoc; Liaison Japan
Cc: Emche, Danielle; Wittick, Brian
Subject: RE: CONSORTIUM CALL AT 2000 EDT TODAY

It is our understanding that the call the is still occurring and that NRC HQ will continue to take the lead (at least for today). Last I heard was that Embassy or DOE will transition to the lead at some point in the near future.

LLLL/255

Thanks,
Eric

From: LIA02 Hoc
Sent: Monday, April 11, 2011 6:56 AM
To: Liaison Japan
Cc: Emche, Danielle; Stahl, Eric
Subject: CONSORTIUM CALL AT 2000 EDT TODAY
Importance: High

All,

Please confirm the Consortium call is still on for today at 2000 EDT.

Assuming it is on, please advise as to who will be heading up today's Consortium call.

Thanks,

LIA02

From: Reyes, Debra
Sent: Monday, April 11, 2011 11:12 AM
To: ET02 Hoc
Subject: RE: BB for Traveler's Leaving On Thursday

Okay.

From: ET02 Hoc
Sent: Monday, April 11, 2011 11:11 AM
To: Reyes, Debra
Cc: Turner, Joseph; Heard, Robert
Subject: BB for Traveler's Leaving On Thursday
Importance: High

Debbie:

Timothy Lupold, NRR, will be traveling to Japan on Thursday (first of 3 additional travelers this week); therefore he needs a BB ready on Wednesday. T hanks...karen

LLLL/256

From: ET02 Hoc
Sent: Monday, April 11, 2011 7:00 AM
To: Ballam, Nick
Subject: Ops Center Info & files
Attachments: transition plan - updated.docx

Here.

http://148.184.213.135/eoc7/default.aspx?organizationname=EOC Professional&langlcid=en-US

Staffing Plan File

LLLL/257

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

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

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

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

Messaging on Transition

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

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

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

Actions by Team:

Executive Team

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

Executive Briefing Team

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

ET Support Team

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

NSIR Incident Response Staff (dayshift; as part of the line organization)

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

Protective Measures Team

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

Reactor Safety Team

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

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

Liaison Team

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

The LT member will participate on the following calls:

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

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

Actions to Implement Prior to Transition

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

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

h.

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

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Friday, April 08, 2011 9:49:58 PM

News **1** new result for **"Nuclear Regulatory Commission"**

Worries Grow as Experts Argue About Nuclear Dangers at Japan Plant
New York Times
An assessment in late March by the **Nuclear Regulatory Commission** said that hydrogen explosions at the plant might have blown particles of nuclear fuel from the reactors' spent-fuel pools up to a mile away. The Tokyo Electric Power Company, the operator **...**
See all stories on this topic »

LLLL/258

From: Joosten, Sandy
To: Hayden, Elizabeth; Harrington, Holly; Couret, Ivonne
Subject: Transcript
Date: Tuesday, March 22, 2011 9:25:53 AM

The transcript from yesterday's meeting on Japan has been posted to the public web site.

Thanks,
Sandy

LLLL/259

From: ET01 Hoc
Sent: Wednesday, April 27, 2011 3:41 PM
To: ET02 Hoc
Subject: FW: Comments on the Draft Risk Analysis

From: Correia, Richard
Sent: Wednesday, April 27, 2011 3:41:10 PM
To: ET01 Hoc
Subject: Fw: Comments on the Draft Risk Analysis
Auto forwarded by a Rule

Richard Correia, Director
Division of Risk Analysis
RES

Sent from a Blackberry

From: Skeen, David
To: RST01 Hoc; Holian, Brian; Hiland, Patrick; Cheok, Michael
Cc: Correia, Richard; Tracy, Glenn; Johnson, Michael
Sent: Wed Apr 27 15:06:51 2011
Subject: FW: Comments on the Draft Risk Analysis

FYI – RST issued a tasker this afternoon for NRR to review Jeff Mitman's preliminary risk analysis. I was not aware that See-Meng had already reviewed it and provided his comments below. I appreciate Jeff's efforts to develop a risk analysis to begin discussion, but I also think See-Meng makes some good points. My suggestion would be that we have See-Ming discuss with Jeff, if necessary, to ensure we have a common understanding (and thus a common staff position) of the risk.

Mike – I would guess that Brian Holian will assign this task to DRA in NRR. Please let me know if I can be of further assistance.

From: Wong, See-Meng
Sent: Wednesday, April 27, 2011 1:53 PM
To: Skeen, David
Subject: FW: Comments on the Draft Risk Analysis

Dave,

FYI. My comments on Jeff Mitman's draft risk analysis.

See Meng.

From: Wong, See-Meng
Sent: Wednesday, April 27, 2011 1:49 PM
To: Mitman, Jeffrey; Rodriguez, Veronica; Lee, Samson; Cheok, Michael; Circle, Jeff; Zoulis, Antonios; Bernhard,

LLLL/260

Rudolph; Weerakkody, Sunil
Cc: Garchow, Steve; Reynolds, Steven
Subject: RE: Comments on the Draft Risk Analysis

Jeff,

At the request of Mike Johnson (ET member on HOC watch duty), I had a quick review of your "Draft Risk Analysis of Fukushima Units 1,2,& 3" presentation on the Monday night shift at the HQ Operations Center. We had several questions and comments that I would like to summarize below for your consideration:

1. What were the bases (or references) for numerical values for the initiating event frequency estimates, equipment failure rates, and human error probabilities (HEPs) for the operator actions in the entire risk analysis? What data are available to determine the failure probabilities for hoses and pumps over a one-year time period?
2. Is the usual fault tree/event tree methodology an appropriate approach to develop the "risk analysis" to provide insights to "look for vulnerabilities and perform risk ranking" for this atypical situation of severe accident environment in light of best available information that the Fukushima units have reached some partial meltdown conditions.
3. Are the figure-of-merits used in your "risk analysis" for risk metrics (e.g., 0.3% LERF per year) the right terms to provide risk insights?

Having made these comments on the technical approach and quality of your "risk analysis", I would like to offer an alternative approach to meet the intent of your task. I believe an appropriate approach should begin with a failure modes and effects analysis, with focus on the following steps:

1. Failure modes of equipment, with impacts from both "internal" and external initiators (we need to define what "internal" initiators mean).
2. Effects, in terms of defeating a function or train, and small or large release.
3. Potential mitigating factors, including recovery (e.g., can one easily recover if a pump is running high dose rate contaminated water through the lines?).

After accomplishing these steps with appropriate consideration of all available information (which may be challenging at this juncture), we have to assess whether there is sufficient data to quantify the results to provide meaningful insights.

In addition to the technical concerns with the draft risk analysis, there is NRC Executive Team concerns and sensitivity to making a presentation of risk analysis without **peer review** to GOJ (Government of Japan) representatives. Besides Mike Johnson, Dave Skeen who is the NRR ET point of contact has expressed this concern during my turnover briefing yesterday.

Respectfully submitted,

See Meng Wong
Senior Reactor Analyst
Division of Risk Assessment
Office of Nuclear Reactor Regulation

From: Mitman, Jeffrey
Sent: Tuesday, April 26, 2011 9:20 PM
To: Wong, See-Meng; Rodriguez, Veronica; Lee, Samson; Cheok, Michael; Circle, Jeff; Zoulis, Antonios; Bernhard, Rudolph; Weerakkody, Sunil
Cc: Garchow, Steve; Reynolds, Steven
Subject: Comments on the Draft Risk Analysis

I understand that there are questions about the draft risk analysis regarding the failure rates of the hoses (currently estimated at 10% per year). This event tree evaluates failures not just from a seismic event. Yes the hoses, assuming they are sufficiently flexible, are more resilient than a hard pipe in a seismic event. However, the hoses are out in the open and subject to debris falling on them from a future seismic event. In addition, the hoses are vulnerable to be run over by construction vehicles including ones that are remotely controlled. Finally, the hoses go into the turbine building were they connect to the hard pipe. I have limited knowledge on the conditions in the turbine buildings other than the basements are filled with water (are the hoses underwater?), lack lighting and have been subjected to 9.0 seismic event.

As I attempted to explain in the presentation and when I presented it to the GOJ, the emphasis should not be on the absolute values presented (which of course is true for all risk analysis). The usefulness of this analysis is the ability to look for vulnerabilities and to perform risk ranking. The analysis identifies vulnerabilities:

- Lack of redundancy in the installed hoses
- Lack of redundancy in the injection piping
- Lack of redundancy to vent the reactors IF they are intact
- Significant risk improvement with increased training, procedures and reduction in operator stress.

All of these insights are valid if the analysis is wrong by an order of magnitude (either too high or too low).

Having said all this, it would be useful for a thorough review of the details in the model. Especially useful is a review for vulnerabilities/risks/initiators that I've missed. For example, Rudy has identified that the typhoon season will soon be upon Japan and that this could cause an interruption in the ability to inject (I plan to add this initiator shortly). However, I recognize that the SPAR model that I've built is poorly/not documented and review will be difficult. I welcome your input.

Jeff Mitman

Lee, Richard

From: Lee, Richard
Sent: Tuesday, April 12, 2011 8:19 AM
To: Marksberry, Don
Subject: FW: April 11, 12 Updates on Nitrogen Purge, Building Water levels, Parameters, and area dose
Attachments: 20110412 0700 Plant Parameters.pdf; Building water levels 4 11.pdf; Nitrogen Purge 4 12.pdf; 20110411 1530 Facility Area Survey Data .pdf

Don:

FYI

Richard

From: Salay, Michael
Sent: Tuesday, April 12, 2011 6:02 AM
To: Lee, Richard
Subject: FW: April 11, 12 Updates on Nitrogen Purge, Building Water levels, Parameters, and area dose

Longer scale nitrogen purge plot included.

-Mike

From: Gard, Lee A (INPO) [mailto:GardLA@INPO.org]
Sent: Tuesday, April 12, 2011 12:55 AM
To: Blamey, Alan; Wittick, Brian; Collins, Elmo; Gauntt, Randall O; michael.call@nrc.gov; Hay, Michael; Miller, Marie; richard.kondo@crbard.com; Bernhard, Rudolph; Salay, Michael
Subject: FW: April 11, 12 Updates on Nitrogen Purge, Building Water levels, Parameters, and area dose

LLLL/261

Lee, Richard

From: Gauntt, Randall O [rogaunt@sandia.gov]
Sent: Tuesday, April 12, 2011 6:58 PM
To: kcw@dycoda.com; Goldmann, Andrew S; Lachance, Jeffrey Lynn
Cc: Burns, Shawn; Pickering, Susan Y; Orrell, Stanley A; Tinkler, Charles; Lee, Richard; Salay, Michael; Kelly, John E (NE)
Subject: RE: 1F4 SFP Calculations

KC,

I wonder if vigorous boiling in some assemblies, perhaps grouped together, collectively reduce the local overlying hydro head such that local flashing could occur in some assemblies? I visualize a frothed up region of the pool that presents a reduced head due to high void fraction. Could such flashing increase pressure drop and depress the water level in affected assemblies such that the burn could initiate even with overlying water? Maybe it's a dynamic or cyclic process that becomes unstable - kind of like TY Chu's lower head boiling tests showed.

Perhaps multi-dimensional effects in the water above the canned assemblies. John Kelly got me thinking about this on our call last night.

Looking for some way to initiate hydrogen generation with water still overlying the larger pool area.

Randy

From: Casey Wagner [kcw@dycoda.com]
Sent: Tuesday, April 12, 2011 2:38 PM
To: Goldmann, Andrew S
Cc: Burns, Shawn; Pickering, Susan Y; Gauntt, Randall O
Subject: 1F4 SFP Calculations

These are the 1F4 SFP calculations I performed a few weeks ago. In the first one, the water boils off from the nominal level. In the second one, there is a 10" hole that quickly drains the SFP to 5 m, then a boil-off occurs. The model correctly reflects the number of assemblies and fresh fuel in the SFP. The decay heat was 2.4 MW from a ORNL ORIGEN calculation. Recently got information where TEPCO estimates 1F4 SFP is 1.8 MW. 2.4 MW conservatively assumed that 548 assemblies were at 105 dats and the remaining 814 at ~500 days.

I did the same type of calculations for 1F3.

Please excuse my confusion. I did these calculations over 2 weeks ago and had accidently over-wrote the plotting results with other requests from NRC or Gauntt. If you need something else, let me know.

Casey

LLLL/262

Lee, Richard

From: Lee, Richard
Sent: Tuesday, April 12, 2011 5:44 PM
To: Powers, Dana
Subject: FW: SFP MCCI

Hi, Dana

Mikey-san is asking for your Zr-Si reactions stuff. Please let me know when he should expect to get it.

Thx,Richard

-----Original Message-----
From: Salay, Michael
Sent: Tuesday, April 12, 2011 4:18 PM
To: Lee, Richard
Subject: RE: SFP MCCI

Richard,

I know we are recommending not putting sand. Upon request for we were preparing a package for Japanese. They seemed to be very interested in our rapid feedback on this issue. It was requested from above that we transmit what we could yesterday by 2:00 pm JST.

I had the collection of this package on the back burner unit I heard, about 45 min before time to transmit, that we should send by 2.

What we were able to transmit was a brief thermal analysis (3D computer code) using different sand materials (the same one that you attached). What it indicates is that, if sand were used, fuel in the pool would melt and potentially fail the concrete supporting structure.

When we discussed this analysis with HQ RST a few days ago Jennifer informed us about the MCCI analysis. I had also heard about it - I think also from Jason. The MCCI analysis indicated that the concrete structure would not melt through [if pool dries out in air]. Someone at the RST also mentioned that info on Zr-Si reactions were coming(I believe that I heard Dana's name on the call too from the HQ end).

I believe information on an exothermic reaction between Zr-Si at high temperatures would be valuable for them because it would alert them to additional adverse affects of using sand. I believe information indicating that the supporting structure would not fail if it just dries out (no sand used) would also be useful for them. Neither of the two issues change the implications provided on the DOE thermal analysis.

When I send the DOE thermal doc to the Japan Atomic Energy Commission on behalf of Chuck Casto, because I heard that these documents were coming, I indicated in the transmittal message (upon mgmt request) that other documents exist.

If you have an idea we will be able to get info on the Zr-Si exothermic reaction, please let me know. Please send this when you have available.

Thank you,
-Mike

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

LLL/263

From: Lee, Richard
Sent: Tuesday, April 12, 2011 9:07 AM
To: Salay, Michael
Subject: RE: SFP MCCI

Mike:

Hossein and I did not know about any MCCI analysis for SFP. Dana's writeup will not address any such MCCI issue. As a matter of fact, since we do not support adding sand, we are not going to do any such analysis. Those who advocate for it can do so. You only need to bring up issues from them to address. We are NOT going to do their job.

Hossein has seen a heat conduction analysis that DOE did for adding material to the SFP. It is attached.

Richard

-----Original Message-----
From: Salay, Michael
Sent: Tuesday, April 12, 2011 1:36 AM
To: Lee, Richard
Subject: RE: SFP MCCI

Thanks Richard,

Has Dana provided you with the Sand-Zr reaction analysis? It is OK to provide this analysis to the Japanese?

Have you heard anything about the SFP MCCI analysis. Jennifer was aware of this analysis and said to ask him. I haven't heard back from Jason. Would you please see what you can find out about this? i.e. whether we can obtain, whether we can release, and whether sand on top would make a difference.

If they are not available, do you have any ideas when these items would be available?

Thank you,
-Mike

-----Original Message-----
From: Lee, Richard
Sent: Sunday, April 10, 2011 7:21 PM
To: Salay, Michael
Subject: RE: SFP MCCI

Mikey-san:

I have not seen the calculations you mentioned here-in. Dana will send us the reactions between Zr and sand on Monday. RST asked about the Zr and sand reactions a few days ago. I consulted Dana. Since he was at ACRS, he did not have the chemistry table that he needed to writeup the equations.

Richard

From: Salay, Michael
Sent: Sunday, April 10, 2011 4:09 AM
To: Schaperow, Jason; Lee, Richard
Cc: 'rogaunt@sandia.gov'

Subject: SFP MCCI

Jason, Richard,

I can't remember which one of you were involved with this or if Randy was involved with this.

A few days ago we received an SFP heat conduction analysis from DOE to support the assessment for entombment with sand. A bullet stated "Temperatures well beyond melting point of materials in pool and could result in structural concrete failure".

While on the phone with HQ yesterday, Jennifer mentioned an analysis that indicated that structural concrete would not fail in the event of a Zirconium fire. Is this Mitch Farmer's calculation?

- Would you please provide me with a copy of the analysis.

- Although I have not seen the analysis, I recall that an MCCI analysis came in during the initial concern on SFP4 – i.e. before the sand issue was discussed. If this is the case, would the conclusion be different in the event that the pool is covered with sand?

- There was also an analysis indicating an exothermic reaction with Si and Zr. If you have this would you please send?

This is just to prepare a package to give to NISA in the event that this issue comes up again.

Thanks,
-Mike

Lee, Richard

From: Esmaili, Hossein
Sent: Tuesday, April 12, 2011 5:16 PM
To: Gauntt, Randall O
Cc: Lee, Richard
Subject: RE: Status of 1F2 and 1F3 calculations

Randy,

I know you (or Mark) are doing calculations – but I was wondering if you have documented what the boundary conditions are, for example

U1, iso conder working for some time – how they have been refilled (if at all) – was HPCI working at some time?

If you have these information for U1-3 documented, can you send it to us. We are trying to understand what systems were available initially.

Also – how was the deck done? Starting with PB and scale volumes, etc.?

Thanks

hossein

From: Gauntt, Randall O [mailto:rogaunt@sandia.gov]
Sent: Monday, April 11, 2011 9:58 AM
To: mtl@dycoda.com; Tinkler, Charles; Esmaili, Hossein; Kelly, John E (NE)
Cc: Lachance, Jeffrey Lynn; Lee, Richard; Salay, Michael
Subject: RE: Status of 1F2 and 1F3 calculations

Here are some latest iterations on the melcor analyses. Getting them calibrated.
Mark, look over the unit 2 conditions. We are still thinking about unit 3 - it's not clear from the conditions that there should be core damage. Look over the graphs and see what you think.

Sorry - I am tired an should send out something more clear.

Randy

From: M.T. Leonard [mtl@dycoda.com]
Sent: Monday, April 11, 2011 7:28 AM
To: Tinkler, Charles
Cc: Gauntt, Randall O
Subject: RE: Status of 1F2 and 1F3 calculations

Charlie (FYI) –
Ignore the summary of Unit 2 from last night. Randy and Jeff reviewed the available data for timing of seawater injection judged it started too early in this first Unit 2 calculation. We reviewed the injection data again and determined the start should be delayed about 5 hrs from original calc (i.e., from 73.7 to 78.5 hrs). This will change the core response considerably from the first calculation. The adjusted case is running and I should have an updated U2 summary by COB today.

Mark

1212/264

From: M.T. Leonard [mailto:mtl@dycoda.com]
Sent: Sunday, April 10, 2011 7:00 PM
To: Randy Gauntt (SNL); Jeff LaChance (jllacha@sandia.gov)
Cc: Tinkler, Charles (Charles.Tinkler@nrc.gov)
Subject: Status of 1F2 and 1F3 calculations

Randy & Jeff –
A few surprises in the U2 and U3 calculations. Summaries of results available so far are attached.

Both calculations suggest far less damage than we expected. The 1F2 calc, in fact shows effectively no damage. In-core water level barely decreases to one-third core height before seawater injection begins. Seawater injection will be steady beyond this point, so further uncovery and damage is not likely.

The 1F3 calculation is also a surprise in that the amount of damage is significant, but the 10 hour time period between loss of all ECCS and the beginning of seawater injection is not enough to allow material degradation to proceed to a point that RPV lower head integrity is challenged. In fact, the degree of damage in 1F3 is less than 1F1. Material damage based on Zr clad oxidation is approx. 2/3 of the core. But if one measures it in terms of material relocation, the damage level is much smaller. All of ring 1 (~15% of the core), approx. 1/2 of ring 2 (10%) and 1/3 or ring 3 (9%) of fuel material relocates to the lower plenum. This totals approx. one-third of the core material in the lower plenum when the RPV is refilled.

Mark

Lee, Richard

From: Lee, Richard
Sent: Tuesday, April 12, 2011 3:09 PM
To: Wagner, Katie
Cc: Esmaili, Hossein; Marksberry, Don
Subject: RE: SharePoint site

Then how do we set up the sub-folders marked with OUO under the "Fukushima" site be allowed only to a selected group of people.

From: Wagner, Katie
Sent: Tuesday, April 12, 2011 2:52 PM
To: Esmaili, Hossein
Cc: Lee, Richard; Marksberry, Don
Subject: RE: SharePoint site

Hossein,

Yes, from my training I would interpret the phrase "all descendent sites" to apply to all divisions and subfolders.

Also, when I spoke with someone about posting SUNSI material, what I got from that conversation was that the information control people want to see ONLY small groups of people (ie. up to 12 people, total) with a need to know have access to posted SUNSI material.

Thanks,
Katie

From: Esmaili, Hossein
Sent: Tuesday, April 12, 2011 2:33 PM
To: Lee, Richard; Wagner, Katie
Cc: Marksberry, Don
Subject: RE: SharePoint site

Richard,

At the bottom of the RES share point, it says the following

This SharePoint site, <u>and all descendent</u> sites …

So I assume, it applies to all divisions and subfolders.

Is that right, Katie?

hossein

From: Lee, Richard
Sent: Tuesday, April 12, 2011 2:11 PM
To: Esmaili, Hossein
Cc: Marksberry, Don
Subject: RE: SharePoint site

LLLL/265

Hi, Hossein:

We need to how to add the precaution statement at the bottom of the sharepoint site. Please consult Katie. If she cannot do it, have the PMDA staff who is familiar with sharepoint to add the statement

Thx, Richard

From: Marksberry, Don
Sent: Tuesday, April 12, 2011 1:58 PM
To: Lee, Richard; Esmaili, Hossein
Subject: SharePoint site

Richard

It looks like we can post SUNSI information, but on the need-to-know basis. This assumes that all who can access your page has the need-to-know or the folder has access restrictions.

Here is the precaution statement at the bottom of the SharePoint site:

Information Security and Records Reminder

This SharePoint site, and all descendent sites, is for internal use only. By using this site, you agree that you are aware of the record value of content and that, as a contributor, you will manage content in accordance with agency guidance. You also acknowledge that content in this site is subject to search under the Freedom of Information Act (FOIA) and litigation discovery requests. You also agree not to post any Personally Identifiable Information (PII) and that you will use the appropriate access controls and permissions when posting Sensitive Unclassified Non-Safeguards Information (SUNSI) content to this site and its descendents

Lee, Richard

From: Lee, Richard
Sent: Tuesday, April 12, 2011 2:29 PM
To: Wagner, Katie
Subject: FW: Spent Fuel Pool Info - Package

Hi, Katie;

Please log this in from RST01 Hoc. I sent an e-mail earlier as a first response to RST01 Hoc.

Richard

From: RST01 Hoc
Sent: Tuesday, April 12, 2011 1:35 PM
To: Versluis, Rob; gauldi@ornl.gov
Cc: Lee, Richard; 'rogaunt@sandia.gov'; Salay, Michael
Subject: RE: Spent Fuel Pool Info - Package

Rob,

The numbers I received from DOE for SFP Decay heat are as follows:

U1 – 0.07 MWth
U2 – 0.5 MWth
U3 – 0.2 MWth
U4 – 2.3 MWth

These numbers are different than what ORNL has calculated.

Who can I talk to at DOE to discuss how their numbers were calculated and have him discuss/ resolve the issue with ORNL so we are in agreement as to what the assumed decay heat load in the SFP's is.

Your help is appreciated.

Thanks,

Mike

Mike Brown
Reactor Safety Team

From: Salay, Michael
Sent: Monday, April 11, 2011 8:43 PM
To: RST01 Hoc

LLLL/266

Cc: Lee, Richard; 'rogaunt@sandia.gov'; Blamey, Alan
Subject: FW: Spent Fuel Pool Info - Package

This is the package on decay powers to be reviewed for release (along with text table below. It contains two spreadsheets and four SFP loadings. I believe that these loading are the ones used for the calculations.

The differences in decay power for the SFP decay powers are:

UNIT ORNL, consortium doc
F1 0.189 MW (3/11/2010),0.7 MW
F2 0.542 MW (3/11/2010),0.47 MW
F3 0.472 MW (3/11/2010),0.23 MW
F4 2.316 MW (3/15/2010),1.86 MW

-Mike Salay
NRC Japan Team

From: Salay, Michael
Sent: Monday, April 11, 2011 4:49 PM
To: Blamey, Alan
Cc: Bernhard, Rudolph; RST01 Hoc
Subject: FW: Spent Fuel Pool Info

Alan,

ORNL's decay power calculations based on the per-bundle SFP loadings continue to differ from that currently considered by TEPCO and the consortium. Calculations are attached.

-Mike

From: Lee, Richard
Sent: Monday, April 11, 2011 11:38 AM
To: Salay, Michael
Cc: Esmaili, Hossein; Gauntt, Randy
Subject: FW: Spent Fuel Pool Info

Fyi

From: Gauld, Ian C. [mailto:gauldi@ornl.gov]
Sent: Monday, April 11, 2011 11:15 AM
To: Lee, Richard
Cc: Wagner, John C.
Subject: RE: Spent Fuel Pool Info

Richard

The Fukushima pool heating rates were updated recently using the actual SFP loadings and discharge dates for all assemblies in the pool. The results are attached. The results for units 1-3 are lower based on the more detailed loading information. Unit 4 is near the same value as earlier estimates (dominated by full core offload). Summarizing the updated SFP heat loads:
F1 0.189 MW (3/11/2010)
F2 0.542 MW (3/11/2010)
F3 0.472 MW (3/11/2010)

F4 2.316 MW (3/15/2010)

If consortium results differ much from these values we need to resolve. We have seen differences due to assumptions (operating and decay) and also due to methods, e.g. very conservative applications of the decay heat standard.

Thanks

Ian

From: Lee, Richard [mailto:Richard.Lee@nrc.gov]
Sent: Monday, April 11, 2011 8:16 AM
To: Gauld, Ian C.
Cc: Wagner, John C.
Subject: FW: Spent Fuel Pool Info
Importance: High

Hi, Ian:

Please see the e-mail. We need to reconcile the differences between ORNL and the one consortium provided one.

Thanks, Richard

From: Salay, Michael
Sent: Monday, April 11, 2011 12:33 AM
To: Lee, Richard
Cc: 'Gauntt, Randall O'
Subject: RE: Spent Fuel Pool Info

Richard,

Has there been any update on the decay powers provided by ORNL? The numbers provided below are somewhat different than the numbers the consortium has been working with. There are significant differences between the two sets.

Do the numbers below reflect the detailed SFP loadings that we were provided with? If not, do we have updated numbers for the SFP powers?

Because it is a concern if water additions are being based on powers that are lower than actual decay power, this has been an issue identified as a potential issue to discuss with NISA/TEPCO at our daily meetings. Therefore it is essential that we have these numbers right.

How sure are we about these numbers?

Thanks,
-Mike

From: Gauntt, Randall O [mailto:rogaunt@sandia.gov]
Sent: Saturday, April 09, 2011 9:32 PM
To: Salay, Michael
Subject: FW: Spent Fuel Pool Info

From: Gauntt, Randall O
Sent: Tuesday, March 22, 2011 3:25 PM
To: charles.tinkler@nrc.gov; kcw@dycoda.com; jason.schaperow@nrc.gov
Subject: FW: Spent Fuel Pool Info

Other info from ORNL on pools.

From: Lee, Richard [Richard.Lee@nrc.gov]
Sent: Monday, March 21, 2011 12:05 PM
To: Tinkler, Charles; Gauntt, Randall O
Subject: FW: Spent Fuel Pool Info

fyi

From: Gauld, Ian C. [mailto:gauldi@ornl.gov]
Sent: Monday, March 21, 2011 10:53 AM
To: Lee, Richard
Cc: Parks, Cecil V.; Wagner, John C.; Aissa, Mourad
Subject: FW: Spent Fuel Pool Info

Richard

Attached are inventory and decay heat data prepared for the pools in Fukushima units 1-4 generated using more complete inventory information and actual discharged dates (in table of attached doc file). The heat load for F4 is slightly higher than before (2.3 -> 2.4 MW) due to more assemblies in the pool than previously considered (1207 -> 1331).
The inventories include the decay since the last reload (or offload), plus each additional reload using 13 month intervals and 1/3 of core for until each pool reaches the stated inventory. The estimated decay heat loads for each pool, in MW, are
F1 0.322
F2 0.788
F3 0.597
F4 2.434

In the previous figures sent by Cecil, I removed too many assemblies. Results don't change much but it's confusing. Curves should have stopped at pool inventory minus the number that remain in the pool (the hottest ones). It was late. I can quickly regenerate this figure if needed.

Thanks

Ian

Lee, Richard

From: Lee, Richard
Sent: Tuesday, April 12, 2011 9:26 AM
To: Salay, Michael
Subject: RE: Spent Fuel Pool Info - Package

Mike:

Thanks, I forwarded it to Ian Gauld (ORNL) for review and take action as appropriate.

Richard

From: Salay, Michael
Sent: Monday, April 11, 2011 8:43 PM
To: RST01 Hoc
Cc: Lee, Richard; 'rogaunt@sandia.gov'; Blamey, Alan
Subject: FW: Spent Fuel Pool Info - Package

This is the package on decay powers to be reviewed for release (along with text table below. It contains two spreadsheets and four SFP loadings. I believe that these loading are the ones used for the calculations.

The differences in decay power for the SFP decay powers are:

UNIT ORNL, consortium doc
F1 0.189 MW (3/11/2010),0.7 MW
F2 0.542 MW (3/11/2010),0.47 MW
F3 0.472 MW (3/11/2010),0.23 MW
F4 2.316 MW (3/15/2010),1.86 MW

-Mike Salay
NRC Japan Team

From: Salay, Michael
Sent: Monday, April 11, 2011 4:49 PM
To: Blamey, Alan
Cc: Bernhard, Rudolph; RST01 Hoc
Subject: FW: Spent Fuel Pool Info

Alan,

ORNL's decay power calculations based on the per-bundle SFP loadings continue to differ from that currently considered by TEPCO and the consortium. Calculations are attached.

-Mike

From: Lee, Richard
Sent: Monday, April 11, 2011 11:38 AM
To: Salay, Michael
Cc: Esmaili, Hossein; Gauntt, Randy
Subject: FW: Spent Fuel Pool Info

LLLL/267

Fyi

From: Gauld, Ian C. [mailto:gauldi@ornl.gov]
Sent: Monday, April 11, 2011 11:15 AM
To: Lee, Richard
Cc: Wagner, John C.
Subject: RE: Spent Fuel Pool Info

Richard

The Fukushima pool heating rates were updated recently using the actual SFP loadings and discharge dates for all assemblies in the pool. The results are attached. The results for units 1-3 are lower based on the more detailed loading information. Unit 4 is near the same value as earlier estimates (dominated by full core offload). Summarizing the updated SFP heat loads:
F1 0.189 MW (3/11/2010)
F2 0.542 MW (3/11/2010)
F3 0.472 MW (3/11/2010)
F4 2.316 MW (3/15/2010)

If consortium results differ much from these values we need to resolve. We have seen differences due to assumptions (operating and decay) and also due to methods, e.g. very conservative applications of the decay heat standard.

Thanks

Ian

From: Lee, Richard [mailto:Richard.Lee@nrc.gov]
Sent: Monday, April 11, 2011 8:16 AM
To: Gauld, Ian C.
Cc: Wagner, John C.
Subject: FW: Spent Fuel Pool Info
Importance: High

Hi, Ian:

Please see the e-mail. We need to reconcile the differences between ORNL and the one consortium provided one.

Thanks, Richard

From: Salay, Michael
Sent: Monday, April 11, 2011 12:33 AM
To: Lee, Richard
Cc: 'Gauntt, Randall O'
Subject: RE: Spent Fuel Pool Info

Richard,

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Sent: Monday, March 21, 2011 10:53 AM
To: Lee, Richard
Cc: Parks, Cecil V.; Wagner, John C.; Aissa, Mourad
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Thanks

Ian

Lee, Richard

From: Salay, Michael
Sent: Tuesday, April 12, 2011 1:36 AM
To: Lee, Richard
Subject: RE: SFP MCCI

Thanks Richard,

Has Dana provided you with the Sand-Zr reaction analysis? It is OK to provide this analysis to the Japanese?

Have you heard anything about the SFP MCCI analysis. Jennifer was aware of this analysis and said to ask him. I haven't heard back from Jason. Would you please see what you can find out about this? i.e. whether we can obtain, whether we can release, and whether sand on top would make a difference.

If they are not available, do you have any ideas when these items would be available?

Thank you,
-Mike

-----Original Message-----
From: Lee, Richard
Sent: Sunday, April 10, 2011 7:21 PM
To: Salay, Michael
Subject: RE: SFP MCCI

Mikey-san:

I have not seen the calculations you mentioned here-in. Dana will send us the reactions between Zr and sand on Monday. RST asked about the Zr and sand reactions a few days ago. I consulted Dana. Since he was at ACRS, he did not have the chemistry table that he needed to writeup the equations.

Richard

From: Salay, Michael
Sent: Sunday, April 10, 2011 4:09 AM
To: Schaperow, Jason; Lee, Richard
Cc: 'rogaunt@sandia.gov'
Subject: SFP MCCI

Jason, Richard,

I can't remember which one of you were involved with this or if Randy was involved with this.

A few days ago we received an SFP heat conduction analysis from DOE to support the assessment for entombment with sand. A bullet stated "Temperatures well beyond melting point of materials in pool and could result in structural concrete failure".

While on the phone with HQ yesterday, Jennifer mentioned an analysis that indicated that structural concrete would not fail in the event of a Zirconium fire. Is this Mitch Farmer's calculation?

LLL/268

- Would you please provide me with a copy of the analysis.

- Although I have not seen the analysis, I recall that an MCCI analysis came in during the initial concern on SFP4 – i.e. before the sand issue was discussed. If this is the case, would the conclusion be different in the event that the pool is covered with sand?

- There was also an analysis indicating an exothermic reaction with Si and Zr. If you have this would you please send?

This is just to prepare a package to give to NISA in the event that this issue comes up again.

Thanks,
-Mike

From: Brown, Frederick
Sent: Tuesday, April 12, 2011 8:44 AM
To: RST01 Hoc; OST01 HOC; Hoc, PMT12
Subject: FW: INFO: Slides from the Japanese Delegation on Fukushima Event
Attachments: Fukushima - safety measures at other NPPs.pdf; Fukushima event - seismic damage to NPPs.pdf

FYI, and note the additional dose information in NRO.

From: Tabatabai, Omid
Sent: Monday, April 11, 2011 8:53 AM
To: Frye, Timothy; Hawkins, Kimberly; Dudes, Laura; Holahan, Gary; Thorp, John; Brown, Frederick; Karas, Rebecca; Munson, Clifford; Shuaibi, Mohammed; Cook, Christopher; Beardsley, James; Kowal, Mark; Roach, Edward; Rosenberg, Stacey; Chokshi, Nilesh; Sanfilippo, Nathan; Cubbage, Amy; Grobe, Jack; King, Mark; Casto, Chuck; Tappert, John; Copeland, Douglas; Craffey, Ryan; Harmon, David; Issa, Alfred; Patel, Jay
Subject: INFO: Slides from the Japanese Delegation on Fukushima Event

Just got back from the 5th Convention on Nuclear Safety (CNS) meeting at the IAEA. Attached are two sets of slides that the Japanese delegation presented on the first day of the Convention. The Japanese delegation also held a special session on this event on Wednesday of last week but they did not provide any handouts. Many slides that they used on the Wednesday's session were the same ones that they had used on the first day.

The attached file entitled, "Fukushima – safety measures...", summarizes what the Japanese regulator have planned to implement, short- and long-term, at other NPPs as a result of the events at Fukushima. The other attached file entitled, "Fukushima – seismic damage...", summarizes the event and the accident progression.

I also brought back another set of slides that provided detailed environmental monitoring and radiation/radioactive release data after the event. That set of slides was too big to .pdf and distribute via email. I provided this copy to NRO/DSER (Cliff Munson) if anyone needs to make a copy.

The Convention will conclude at the end of this week and a summary of the meeting will be published. I will distribute additional information once I receive them from the IAEA.

Thanks,
Omid

LLLL/269

On the Implementation of Emergency Safety Measures at Other Power Plants drawn from the 2011 Accident at Fukushima Dai-ichi and Dai-ni Nuclear Power Stations
(Minister's Instructions, Released on March 30th)

Nuclear and Industrial Safety Agency
April 4th , 2011

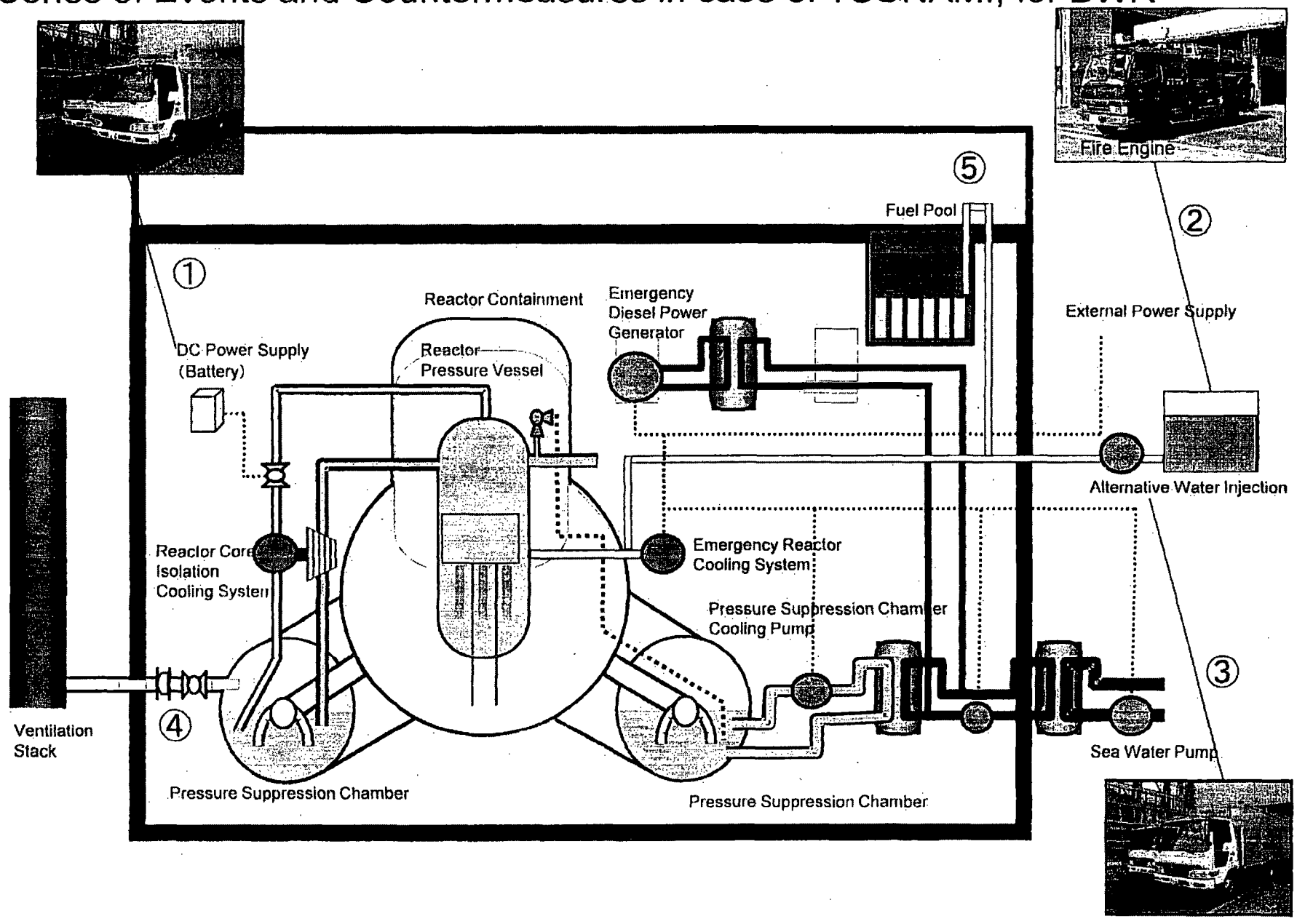
Summary

- While continuing to do our utmost to take every possible measure to deal with the accident, NISA will launch an effort to understand every aspect of the accident, including the onset mechanism of the tsunami that struck the area, and to analyze and assess the situation so as to take drastic and fundamental corrective measures.
- NPPs other than Fukushima Dai-ichi and Fukushima Dai-ni will implement emergency safety measures to enable the recovery of cooling functions while preventing, to the extent possible, the release of radioactive materials. This activity will be based on the currently available scientific knowledge.
- Electric utility companies are to appropriately undertake these emergency safety measures which would then be verified through NISA inspections, thereby preventing the possible damage to reactor core due to tsunami-induced loss of all AC power supply and preventing the subsequent nuclear disaster.

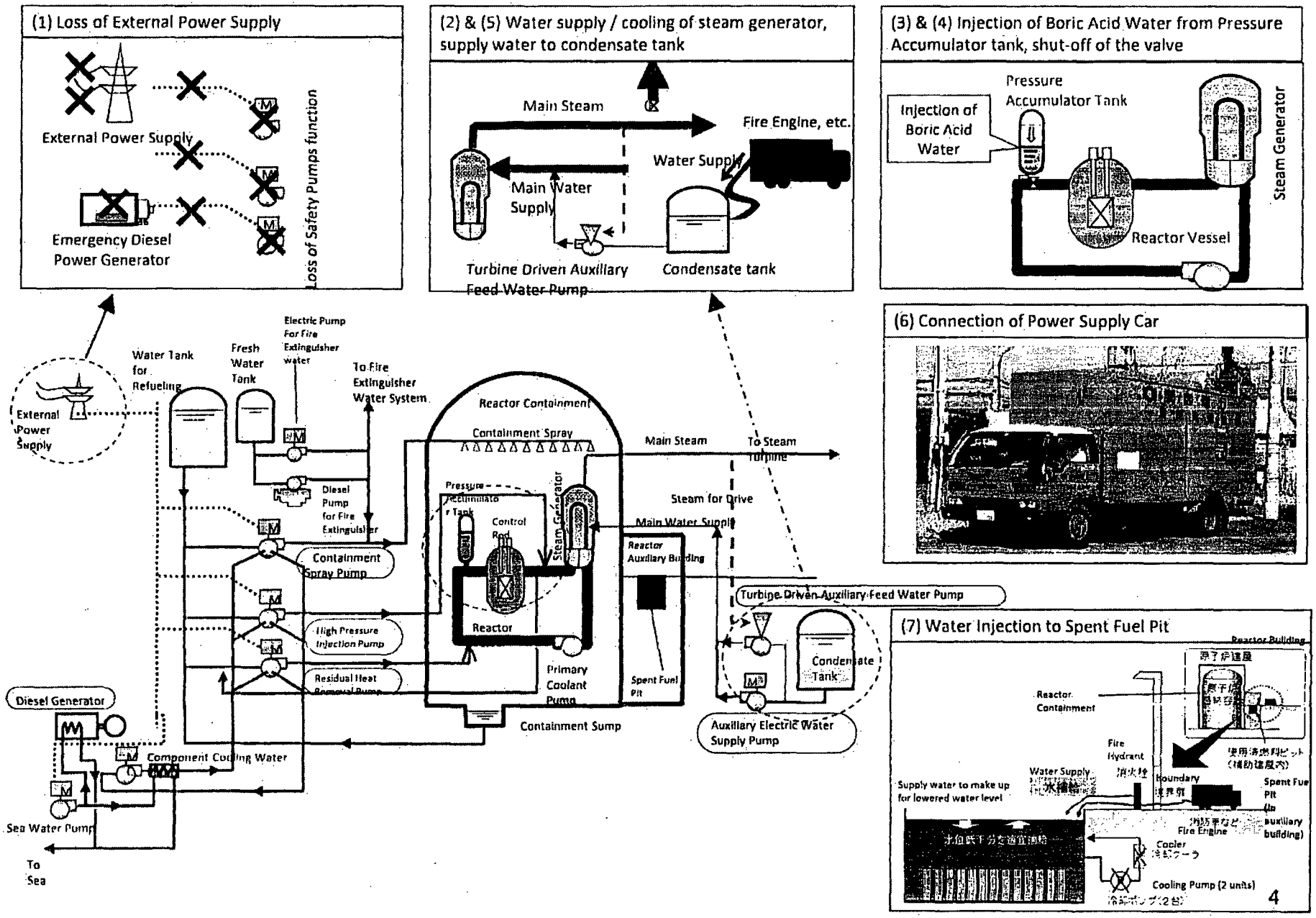
Measures drawn from Fukushima Dai-ichi Nuclear Power Accident

Phase	Emergency Safety Measures	Drastic measures
	Short term	Medium-to-Long term
Expected completion	Approx. 1 month (around mid-April)	Decide as per debate at Accident Investigation Commission, etc.
Target (Required standard)	Depending on tsunami, prevent core damage and occurrence of spent-fuel damage even when 1) all alternate-current power sources, 2) seawater cooling function, and 3) spent-fuel pool cooling function are lost.	Prevent occurrence of disasters taking into account "anticipated tsunami height" to be set by referencing tsunami that caused recent disaster.
Examples of specific measures	Securing equipment: ・Deploy power-supply vehicles (to cool reactors and spent-fuel pools). ・Deploy fire engines (to supply coolant water). ・Deploy fire hoses (to secure water-feeding path from fresh-water tank, sea-water pit, etc.). Developing manual: ・Develop implementation procedures for emergency measures utilizing above-mentioned equipment. Training: ・Implementation of training on emergency measures based on implementation procedures manual.	Securing equipment ・Build seawalls. ・Deploy watertight doors. ・Devise other necessary equipment-related measures. *To be followed by implementation of equipment-related improvements as necessary (e.g.: secure spare air-cooled diesel generators, sea water pump motors). Develop manual Conduct training
Confirmation by NISA, etc.	・Approval of amendment of ministerial ordinance to ensure effectiveness of emergency safety measures as well as operational safety program that incorporates those measures. ・Rigorous vetting of implementation status of emergency safety measures by means of inspection, etc.	
Operators' response	・Efforts under way to procure equipment. (Locations to set them up also being secured). ・Manual compiled anew drawing on recent accident. Training being implemented. ・Strive to improve emergency safety measures continuously, even after their confirmation, to ensure their reliability.	

Series of Events and Countermeasures in case of TSUNAMI, for BWR



Series of Events and Countermeasures in case of TSUNAMI, for PWR



The 2011 off the Pacific coast of Tohoku Pacific Earthquake and the seismic damage to the NPPs

4th April, 2011

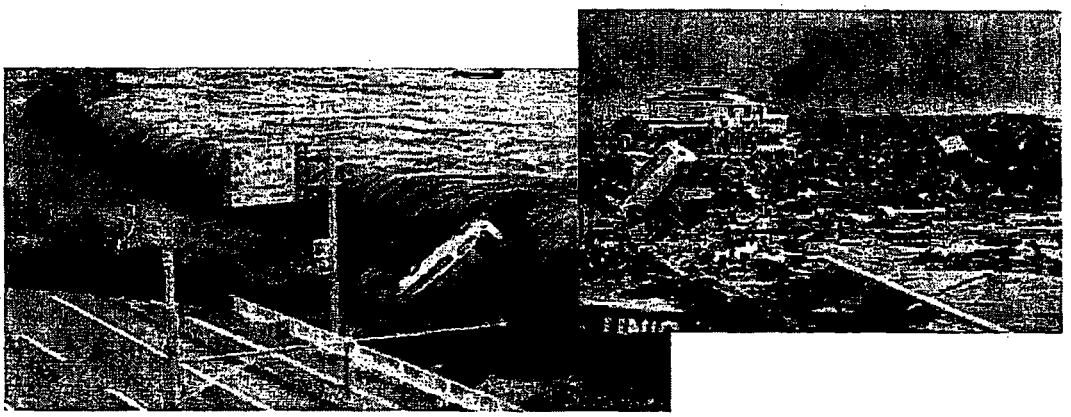
Nuclear and Industrial Safety Agency (NISA)
Japan Nuclear Energy Safety Organization (JNES)

Japan

Contents

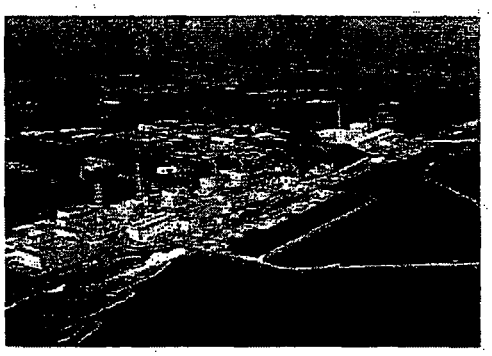
Note: Some date in this material may be incorrect. Especially, all the plant parameters were lost during some period in the accident and some parameters are apparently inconsistent among them.

1. Outline of earthquake and nuclear reactors

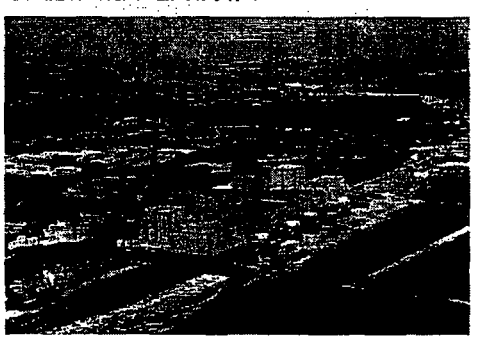


1-1. 2011 off Tohoku Pacific Earthquake

Fukushima Dai-ichi NPP



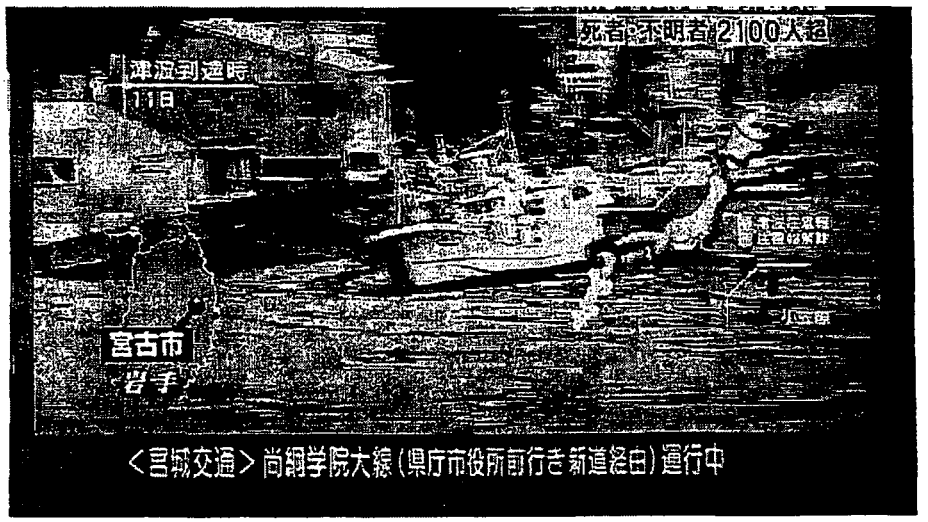
Fukushima Dai-ni NPP



- **Occurred 14:46 March 11, 2011**
- **Magnitude:9.0 Mw**
- **Epicenter location: 38° 6"N and 142° 51"E, and 24km in depth**
- **It is said that the height of tsunami attacked Fukushima NPP was more than 14m**

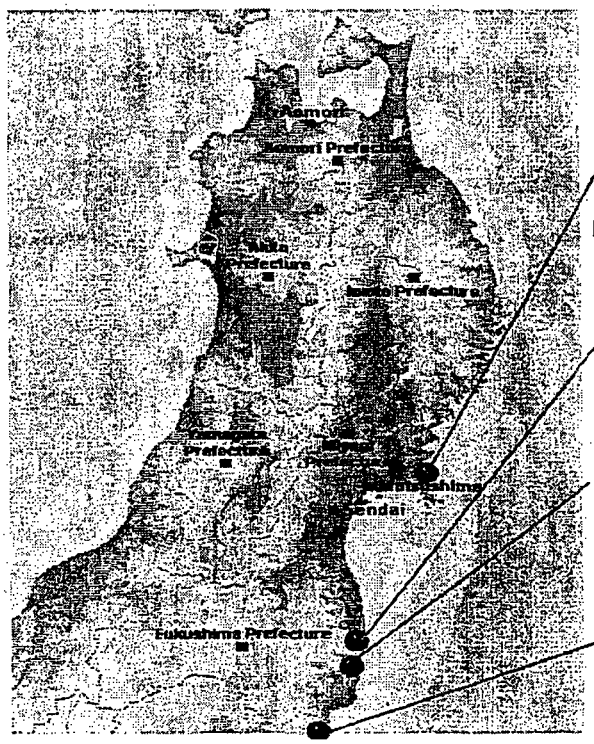
1-2. Tsunami after the earthquake

- **East coast of northern area in the main island of Japan is seriously damaged**
- **As of April 4, 12,175 people are dead and 15,489 people are missing**



1-3. Nuclear reactors near epicenter of the earthquake

Location of the Nuclear Installations



Onagawa
- Unit1: 524 MW, 1984-
- Unit2: 825 MW, 1995-
- Unit3: 825 MW, 2002-

Fukushima I
- Unit1: 460 MW, 1971-
- Unit2: 784 MW, 1974-
- Unit3: 784 MW, 1976-
- Unit4: 784 MW, 1978-
- Unit5: 784 MW, 1978-
- Unit6: 1,100 MW, 1979-

Fukushima II
- Unit1: 1,100 MW, 1982-
- Unit2: 1,100 MW, 1984-
- Unit3: 1,100 MW, 1985-
- Unit4: 1,100 MW, 1987-

Tokai II (1,100 MW, 1978-)

1-4. Automatic shut-down of nuclear reactors

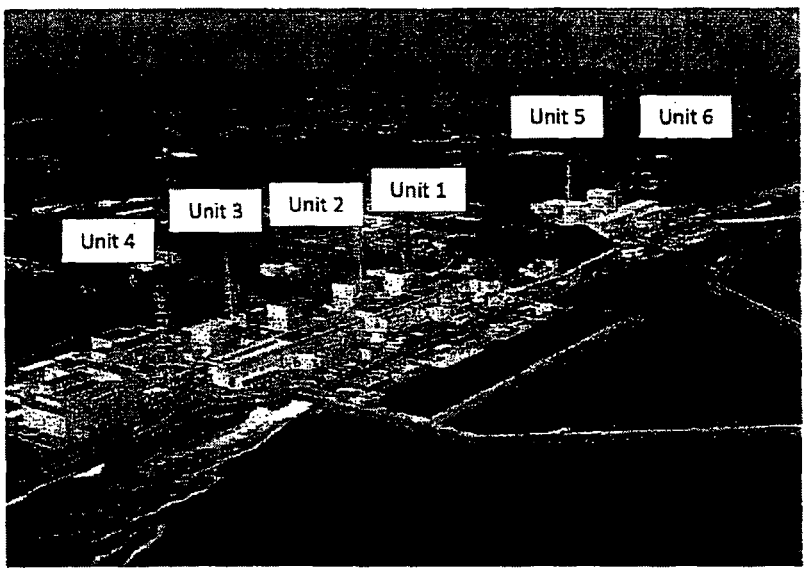
- **11 reactors were automatically shut-down**
  - Onagawa Unit 1,2,3
  - Fukushima Dai-ichi (I) Unit 1,2,3
  - Fukushima-Dai-ni (II) Unit 1,2,3,4
  - Tokai Dai-ni (II)

- **3 reactors were under periodic inspection**
  - Fukushima Dai-ichi (I) Unit 4,5,6

-After the automatic shut-down, the Unit 1-3 at Onagawa Nuclear Power Station, the Unit 3 at Fukushima II Nuclear Power Station, and the Unit at Tokai II Nuclear Power Station have been cold shut down safely.

-As for the unit 1,2,4 at Fukushima II Nuclear Power Station, the operator of the station reported NISA nuclear emergency situation because the temperature of the suppression pools became more than 100 ℃, but afterward the three units have been cold shut down.

2. Outline of Fukushima Dai-ichi NPS

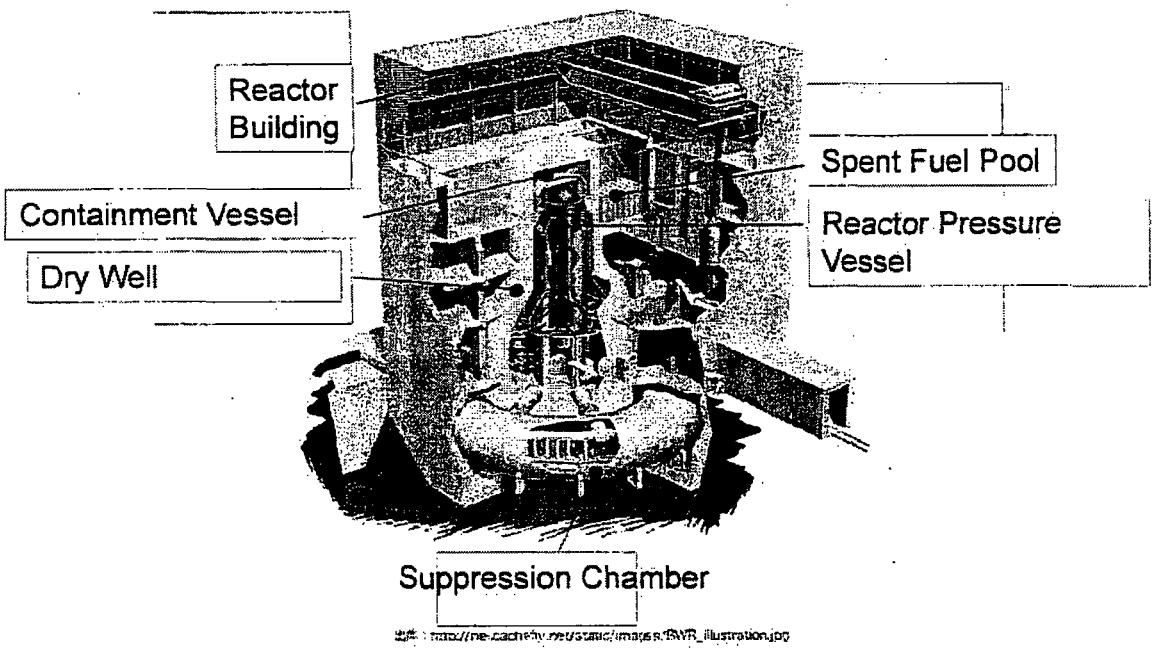


2-1. Summary of Fukushima Dai-ichi NPS

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
	BWR-3	BWR-4	BWR-4	BWR-4	BWR-4	BWR-5
PCV Model	Mark-1	Mark-1	Mark-1	Mark-1	Mark-1	Mark-2
Electric Output (MWe)	460	784	784	784	784	1100
Max. pressure of RPV	8.24MPa	8.24MPa	8.24MPa	8.24MPa	8.62MPa	8.62MPa
Max. Temp of the RPV	300℃	300℃	300℃	300℃	302℃	302℃
Max. Pressure of the CV	0.43MPa	0.38MPa	0.38MPa	0.38MPa	0.38MPa	0.28MPa
Max. Temp of the CV	140℃	140℃	140℃	140℃	138℃	171℃(D/W) 105℃(S/C)
Commercial Operation	1971,3	1974,7	1976,3	1978,10	1978,4	1979,10
Emergency DG	2	2	2	2	2	3*
Electric Grid	275kV × 4				500kV × 2	
Plant Status on Mar. 11	In Operation	In Operation	In Operation	Refueling Outage	Refueling Outage	Refueling Outage

* One Emergency DG is Air-Cooled

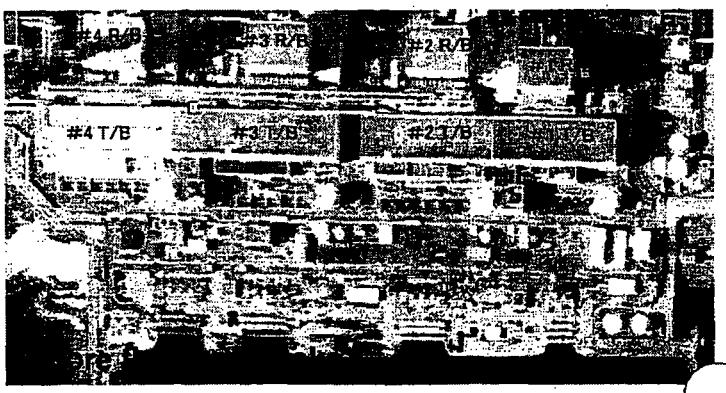
2-2. Overview of Mark-1 Type BWR (Unit 1,2,3 and 4)

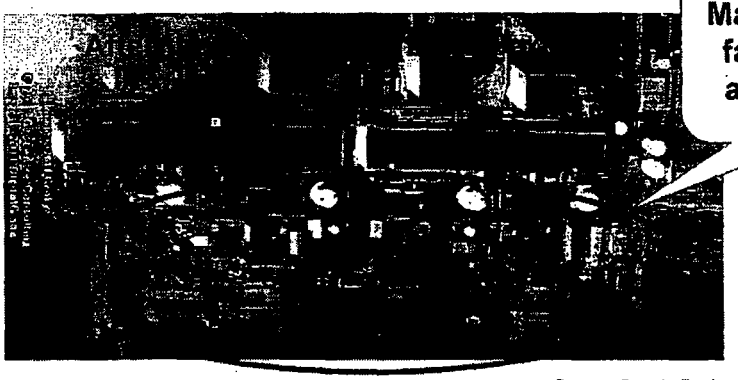


出典：http://ne.cache.hy.net/static/images/BWR_illustration.jpg

3. Report concerning incidents at Unit 1 through 6 in the Fukushima Dai-ichi NPS

3-1. Satellite view of Fukushima Dai-ichi NPP

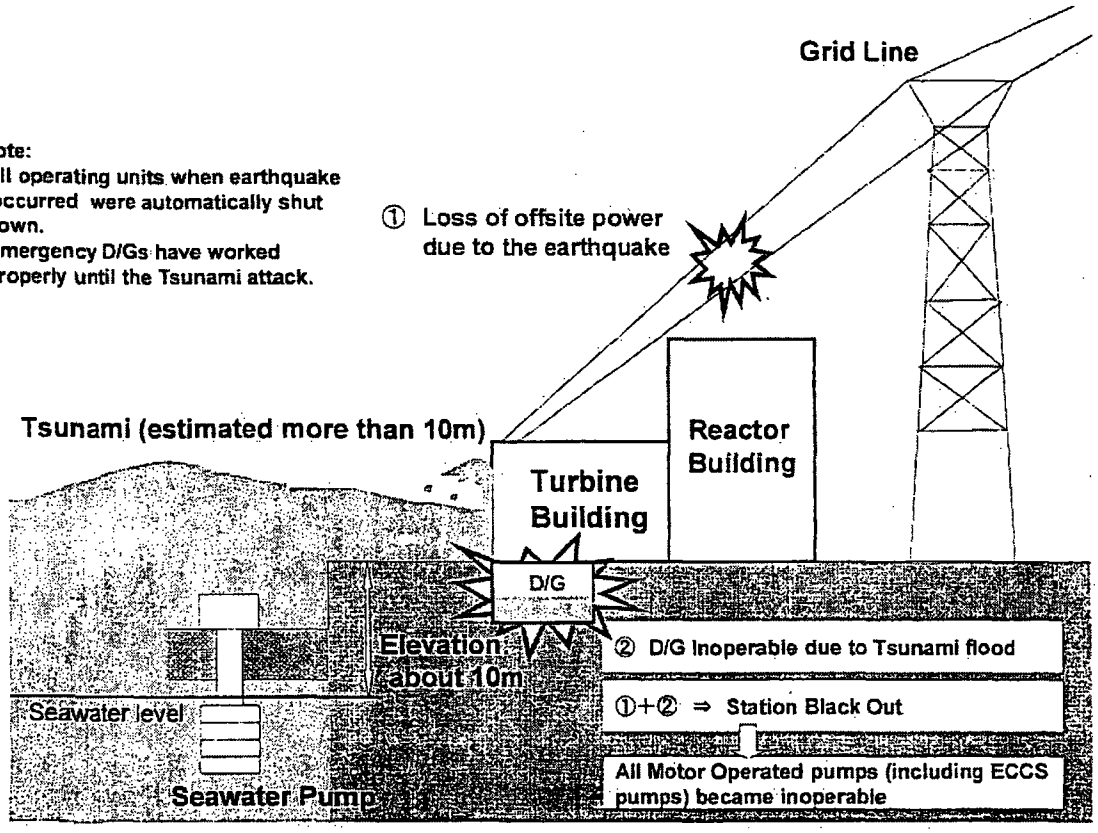




Many structures facing the bay are destroyed

Source: Google Earth

3-2. Major root cause of the damage



3-3. Accident Progression at Unit 1 Reactor

3-4. Chronology of Unit 1 after the earthquake

●*Unit 1*

11th
- ●Under operation, Automatic shutdown by the earthquake
- ●Loss of A/C power
- ●Loss of water injection function

12th
- ●Unusual increase of PCV pressure
- ●Started to vent
- ●Sound of explosion
- ●Started of injection of seawater and borated water to the core

22nd
- ●Rise of reactor temperature (383℃) → Drop (26th 05:00 144.3℃)

23rd
- ●Water supply line in addition to the Fire Extinguish line. Switched to water supply line only.(Flow rate: 7m³/h)

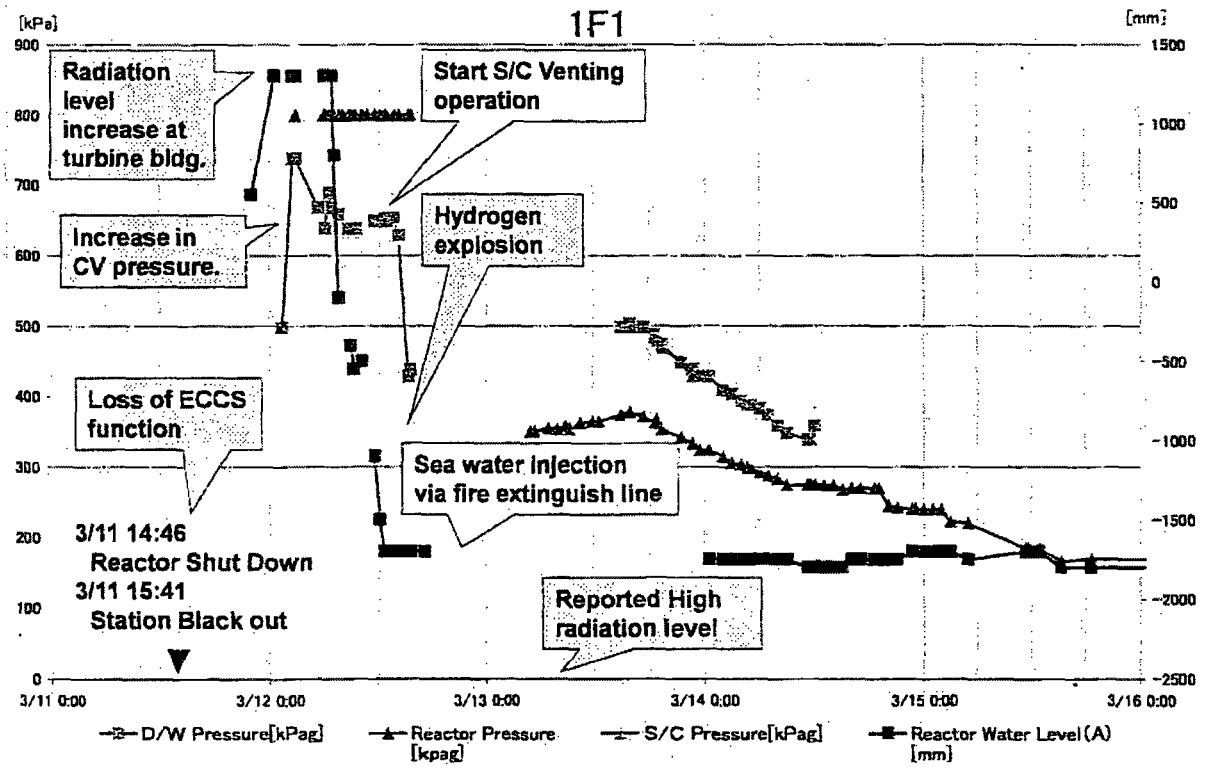
24th
- ●Lighting in the Central Control Room was recovered.

25th
- ●Started fresh water injection

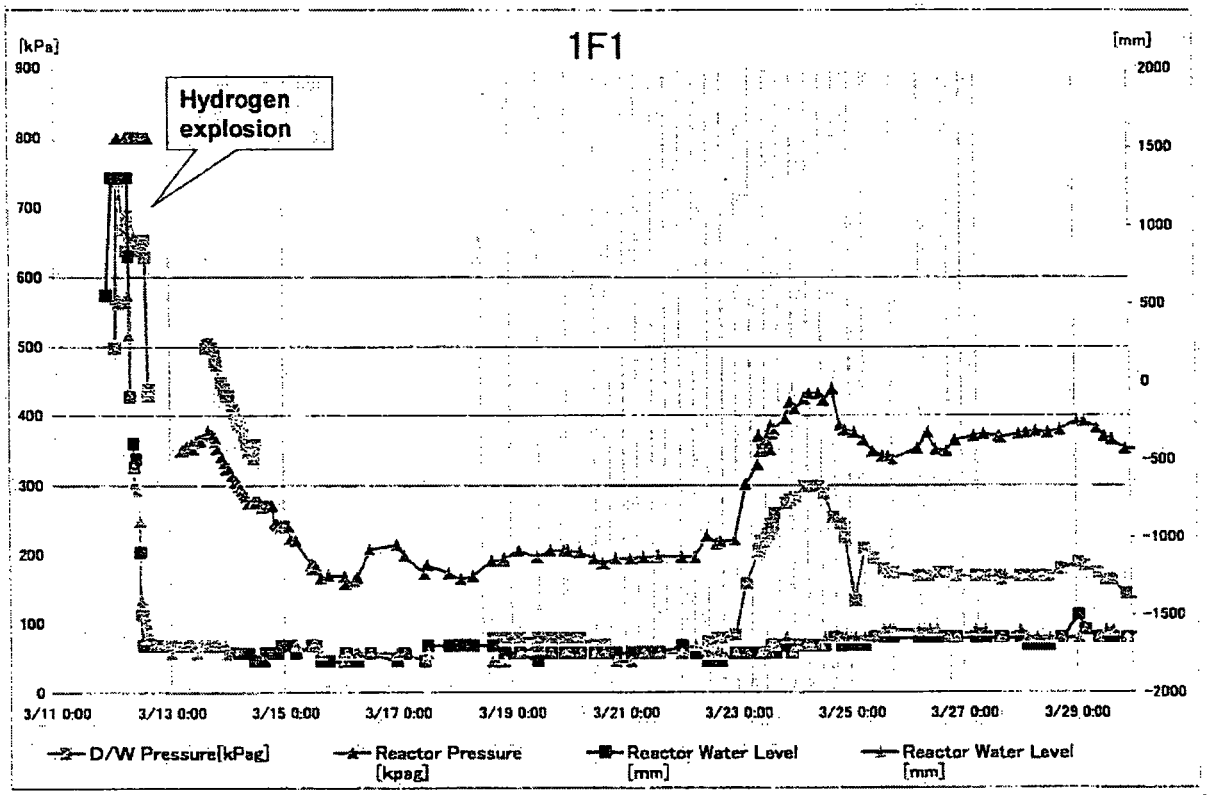
29th
- ●Switched to the water injection to the core using a temporary motor operated pump.

31st
- ●White smoke was confirmed to generate continuously
- ●Freshwater is being injected into the RPV

3-5. Trend data of Unit 1 until March 15

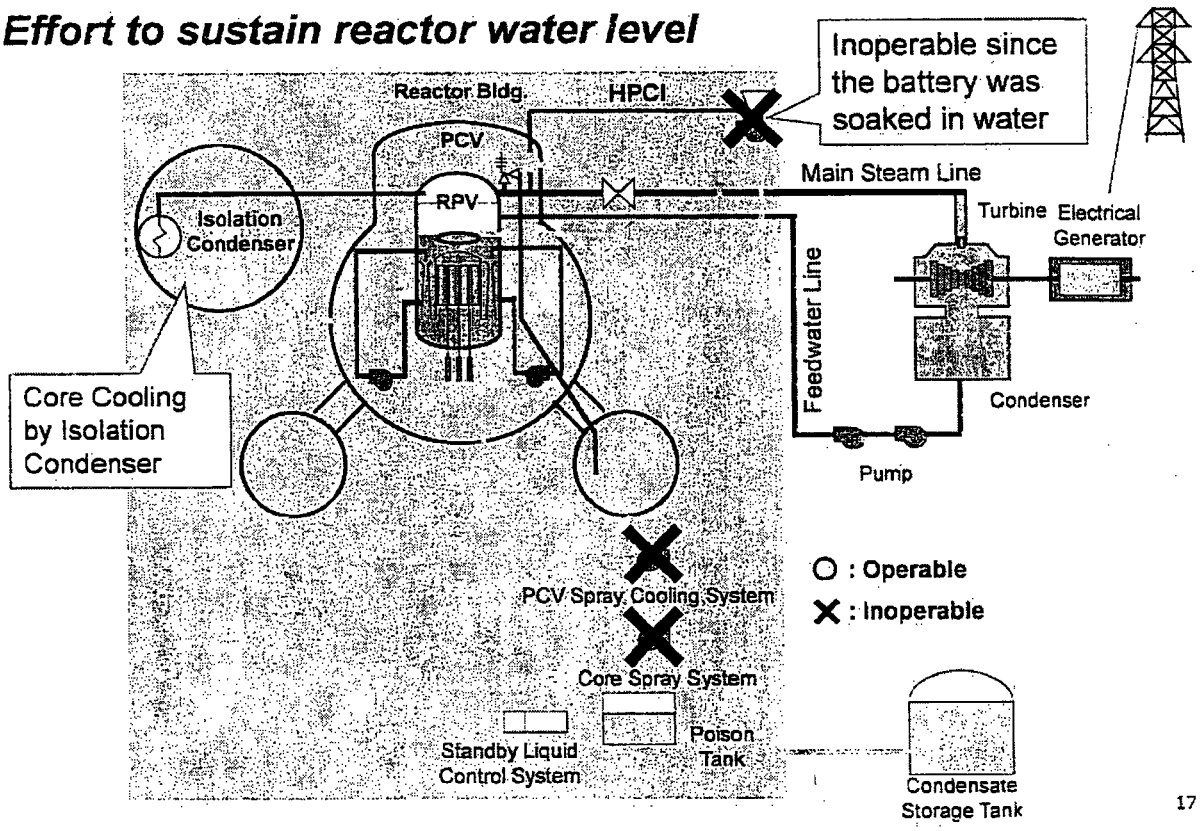


3-6. Trend data of Unit 1 until March 30



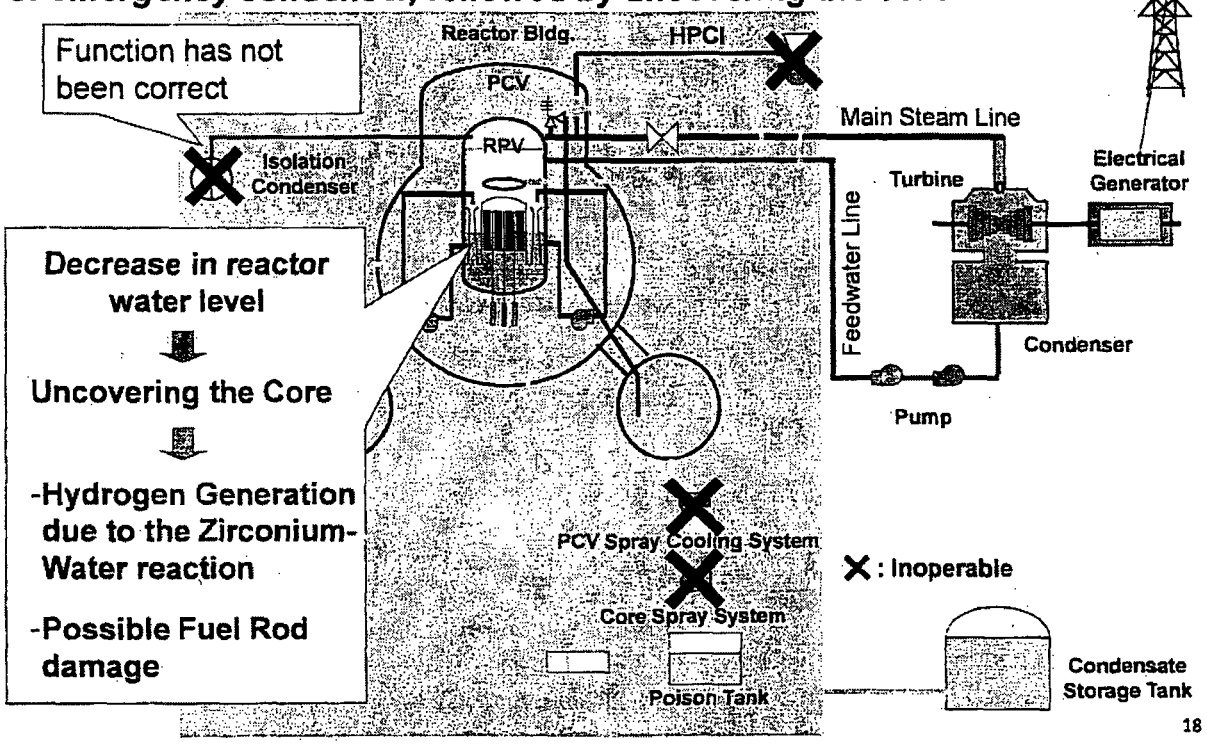
3-7. Major event progression at Unit 1 (1/4)

Effort to sustain reactor water level



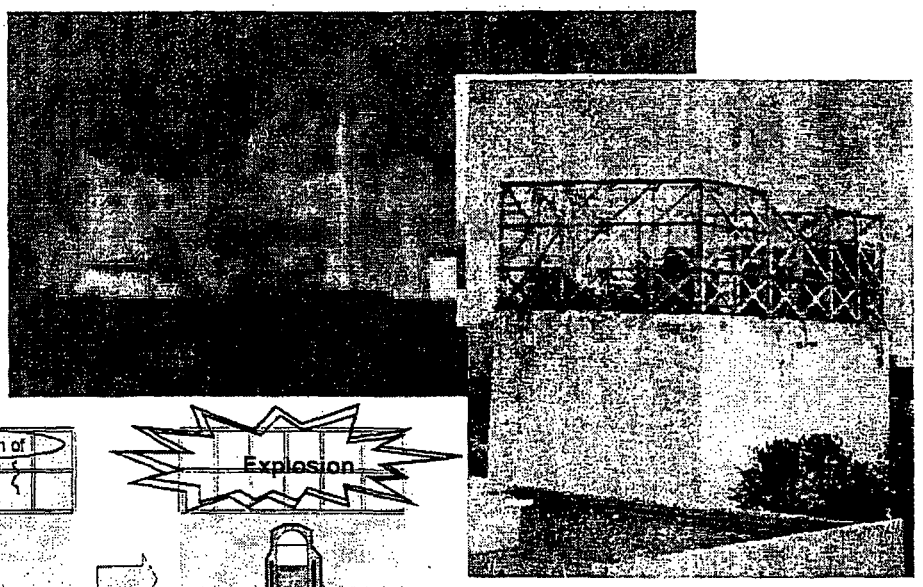
3-7. Major event progression at Unit 1 (2/4)

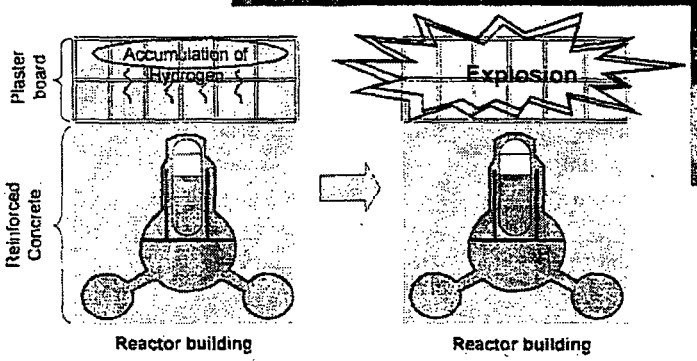
Decrease in reactor water level due to loss of cooling capability of emergency condenser, followed by uncovering the core



3-7. Major event progression at Unit 1 (3/4)

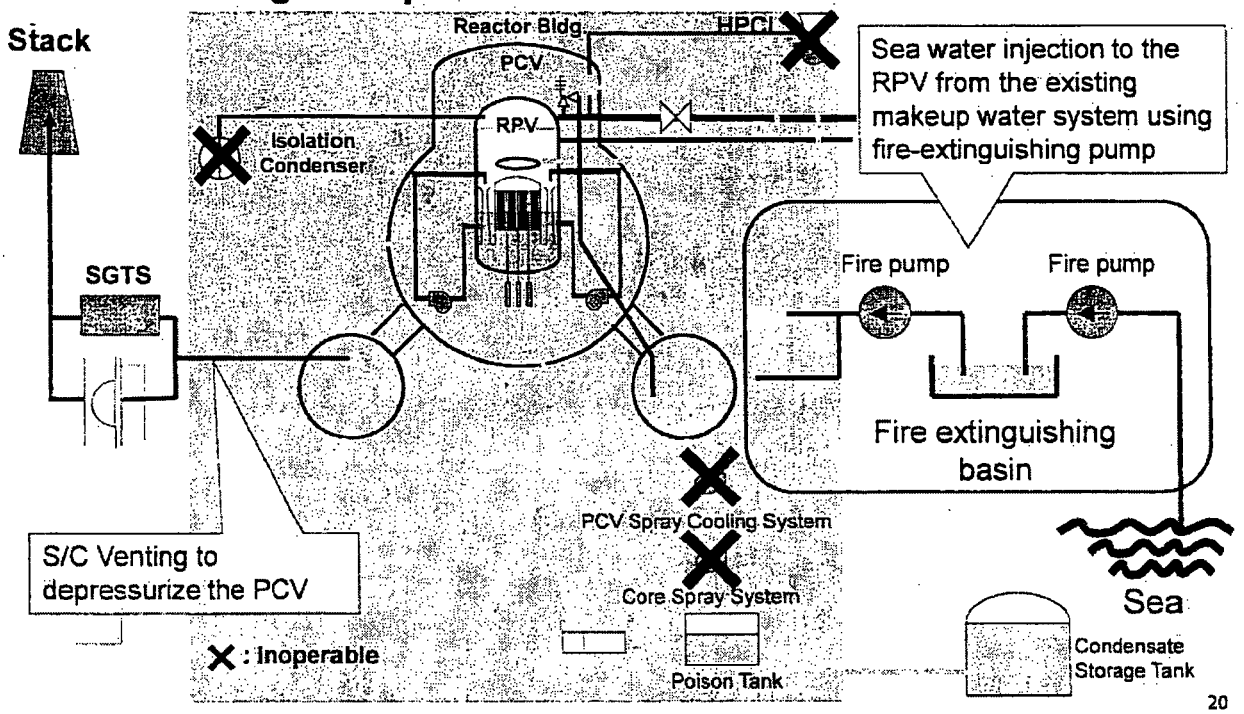
Hydrogen explosion in the operation floor



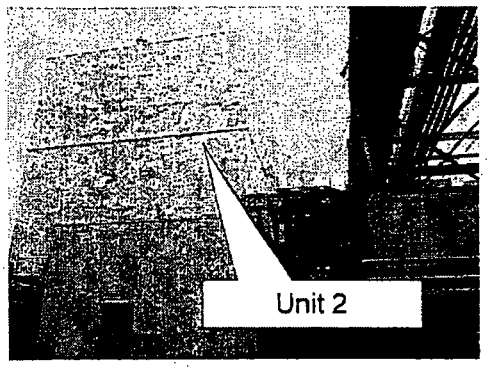


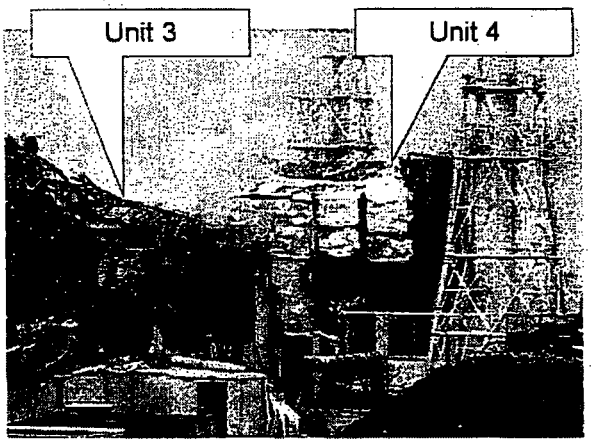
3-7. Major event progression at Unit 1 (4/4)

- Sea water injection using fire water pump
- S/C Venting to depressurize the PCV



3-8. Accident Progression at Unit 2 through 4 reactors





3-9. Chronology of Unit 2 after the earthquake (1/2)

● *Unit 2*

11th
- Under operation, Automatic shutdown by the earthquake
- Loss of A/C power
- Loss of water injection function

14th
- Loss of water cooling function
- Unusual increase in PCV pressure

15th
- Sound of explosion
- Possible damage of the suppression chamber

20th
- Injection of about 40 tons of seawater into SFP through fire extinguishing system.
- Injection of seawater to the Spent Fuel Pool (SFP)

21st
- White smoke generated

22nd
- Injection of seawater to the Spent Fuel Pool (SFP)

25th
- Injection of seawater to SFP

3-9. Chronology of Unit 2 after the earthquake (2/2)

● *Unit 2(Continued)*

26th
- Lighting in the Central Control Room was recovered

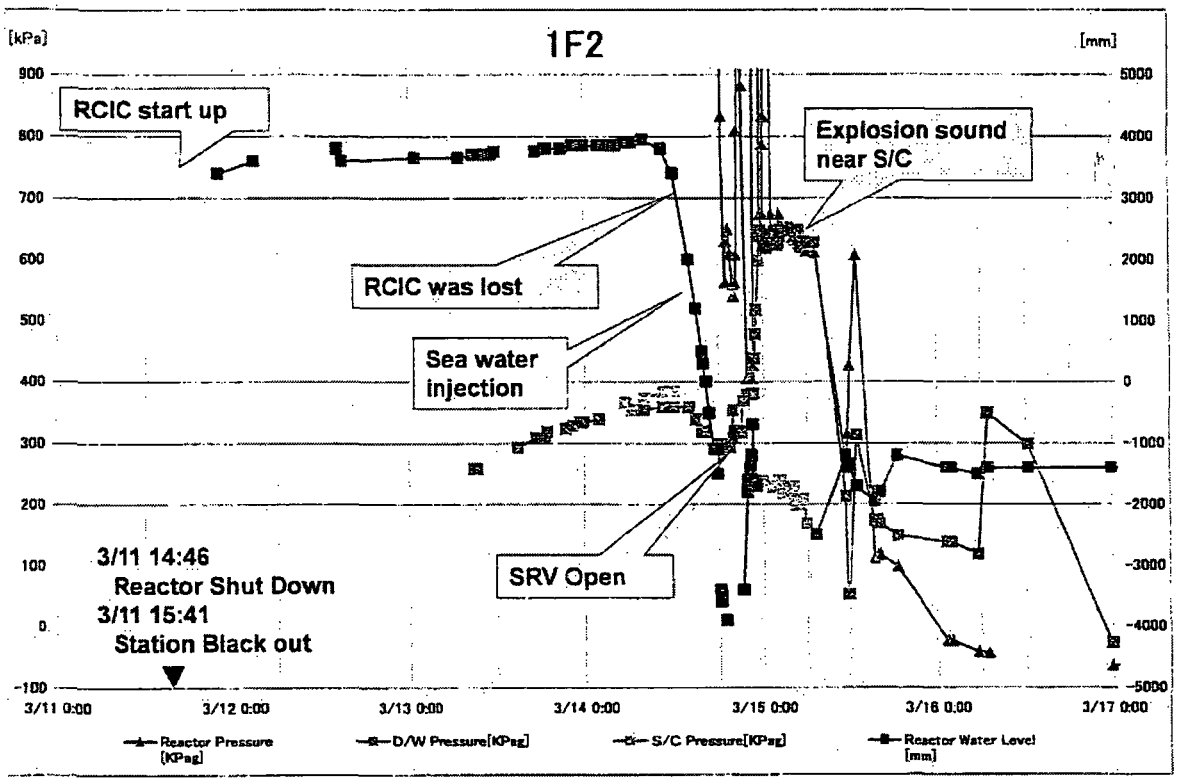
27th
- Switched to the water injection to the core using a temporary motor-driven pump.

29th
- The Seawater injection to the Spent Fuel Pool using the Fire Pump Truck was switched to the fresh water injection using the temporary motor-driven pump
- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water.

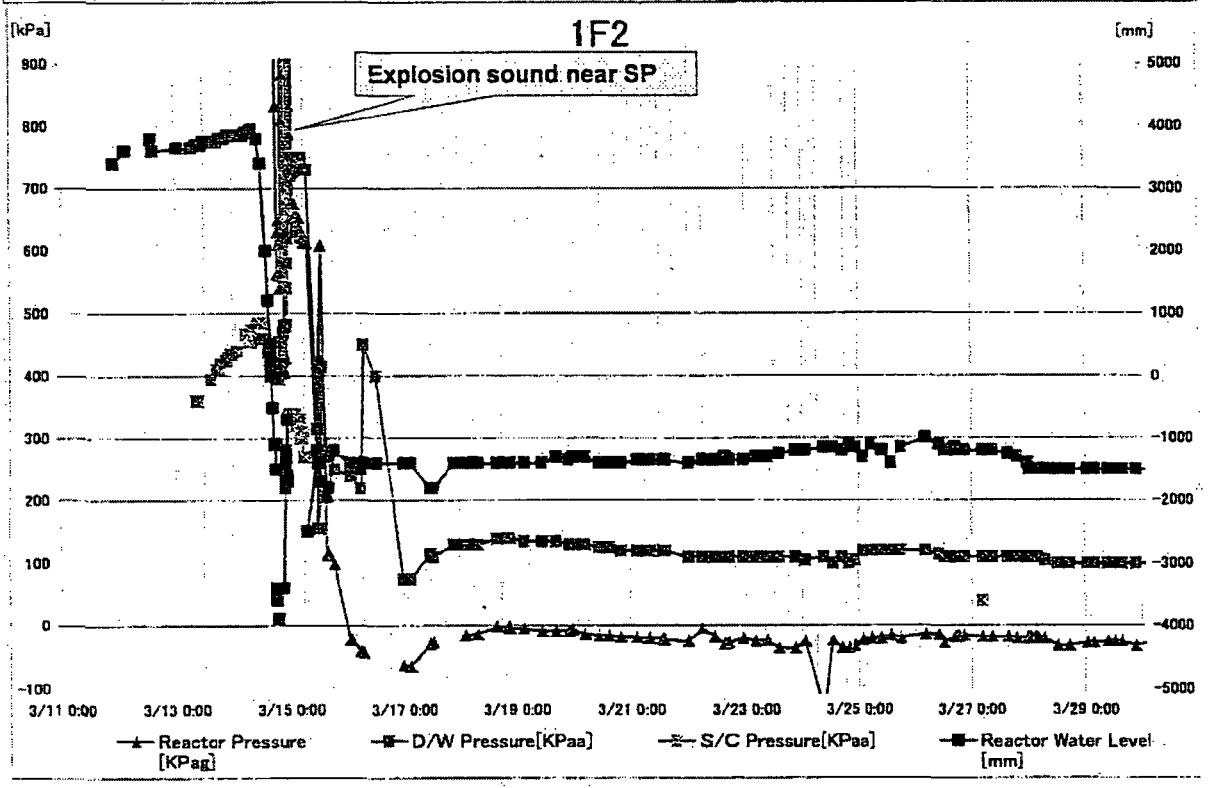
30th
- The injection pump was switched to the Fire Pump Truck. However, because cracks were confirmed in the hose (12:47 and 13:10 March 30th), the injection was suspended. The injection of fresh water resumed at 19:05 March 30th.

31st
- White smoke was confirmed to generate continuously.
- Fresh water is being injected to the spent fuel pool and the RPV

3-10. Trend data of Unit 2 until March 17



3-11. Trend data of Unit 2 until March 30



3-12. Chronology of Unit 3 after the earthquake (1/2)

● *Unit 3*

11th
- Under operation, Automatic shutdown by the earthquake
- Loss of A/C power

13th
- Loss of water injection function
- Started to vent

14th
- Unusual increase in PCV pressure
- Sound of explosion

16th
- White smoke generated

17th
- Water discharge by the helicopters of Self-Defense Force(4 times)
- Water spray from the ground by High pressure water-cannon trucks (Police: once, Self-Defense Force: 5 times)

18th
- Water spray from the ground by same trucks (Self-Defense Force: 6 times)

Water spray from the ground by US water-cannon trucks (US armed force:1 time)

19th
- Water spray from the ground by High pressure water-cannon trucks by Hyper Rescue Unit of Tokyo Fire Department.

3-12. Chronology of Unit 3 after the earthquake (2/2)

● *Unit 3(Continued)*

20th
- Sprayed by Hyper Rescue Unit of Tokyo Fire Department

22nd
- Lighting in the Central Control Room was recovered.

23rd
- Injection of seawater to the SFP

24th
- Injection of seawater to the SFP

25th
- Water spray (Emergency fire support team
- Started fresh water injection

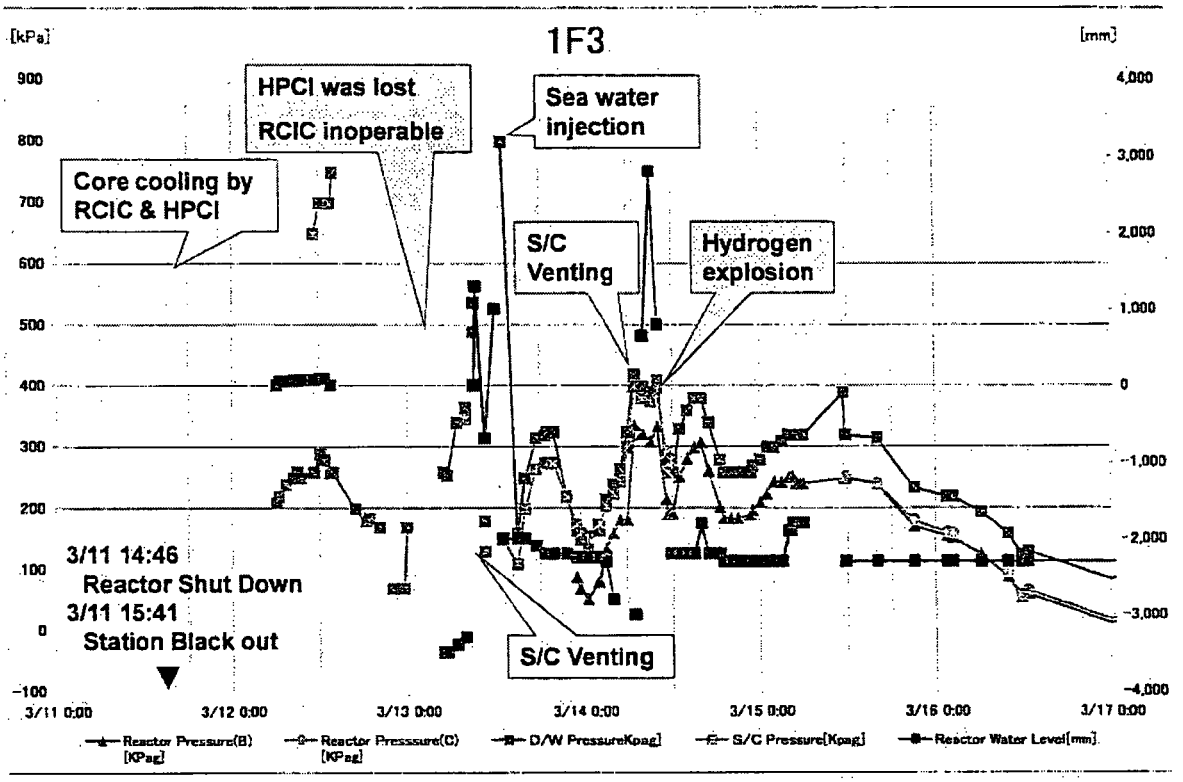
27th
- Water spray by Concrete Pump Truck

28th
- Switched to the water injection to the core using a temporary motor-driven pump
- in order to prepare for transfer the stagnant water on the basement floor of turbine building to the Condenser, the water in the Condensate Storage Tank is being transferred to the Surge Tank of Suppression Pool Water

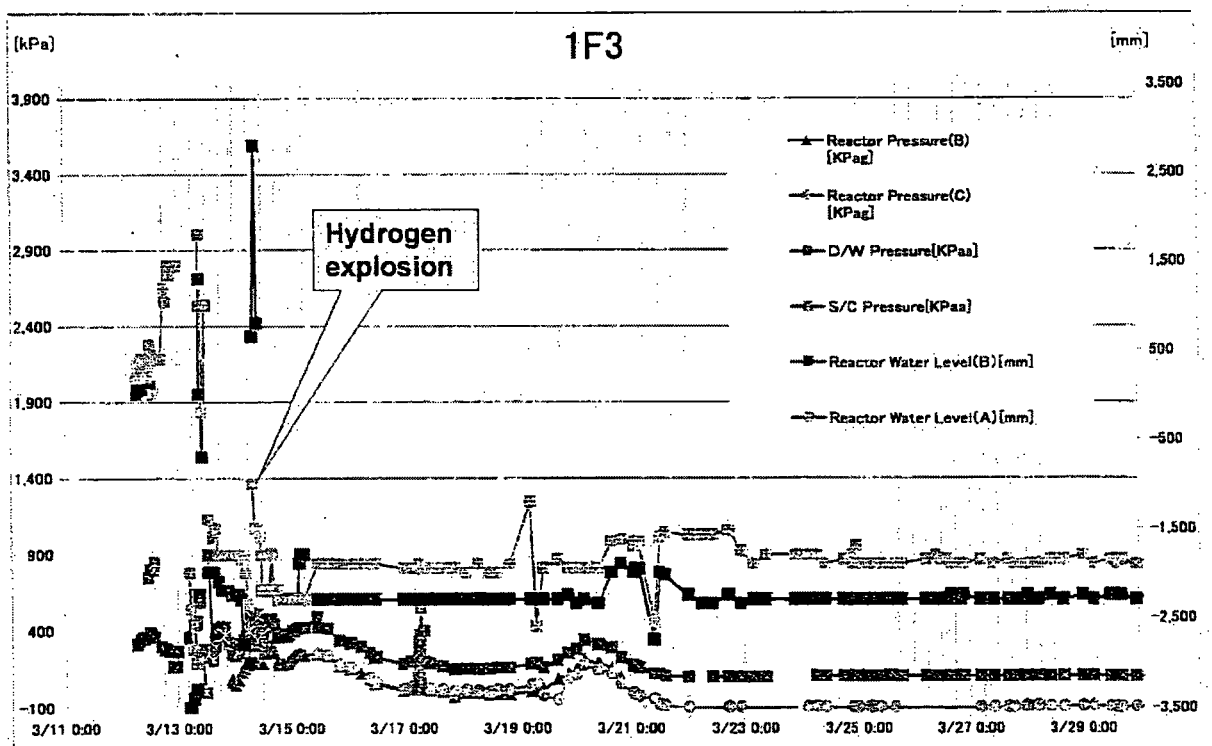
29th
- Started to spray freshwater by Concrete Pump Truck

31st
- White smoke was confirmed to generate continuously
- Fresh water is being injected to the spent fuel pool and the RPV

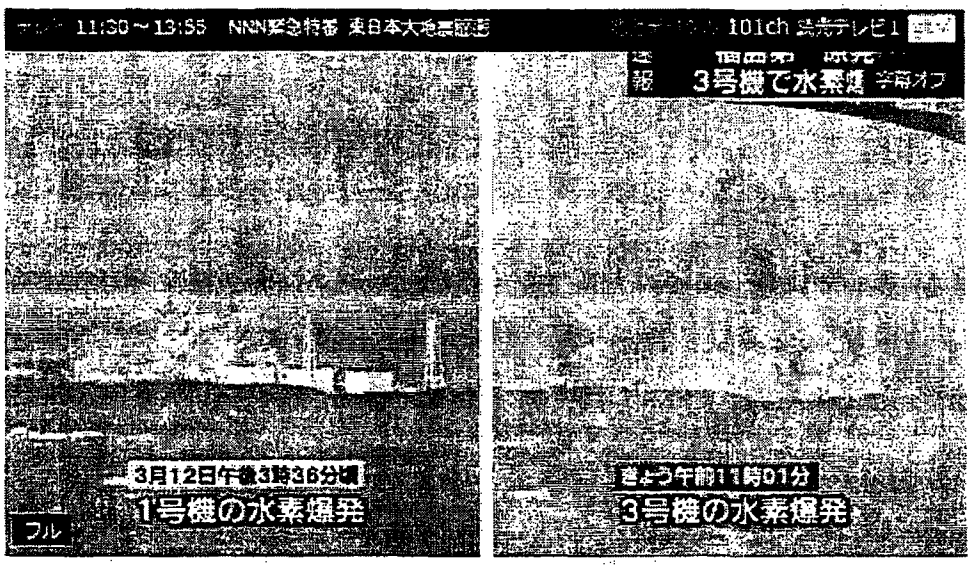
3-13. Trend data of Unit 3 until March 17



3-14. Trend data of Unit 3 until March 30



3-15. Hydrogen explosion at Unit 1 & 3



Unit 1 Unit 3

3-16. Chronology of Unit 4 after the earthquake

●*Unit 4*

14th	●Water temperature in the Spent Fuel Pool, 84℃
15th	●Damage of wall in the 4th floor confirmed ●Fire occurred in the 3rd floor (12:25 extinguished)
16th	●Fire occurred. TEPCO couldn't confirm any fire on the ground.
20th	●Water spray over the spent fuel pool by Self Defense Force
21st	●Water spray over the spent fuel pool by Self Defense Force
22nd-24th	●Water spray (Concrete Pump Track (3 times)
25th	●Injection of seawater to SFP via the Fuel Pool Cooling Line (FPC) ●Water spray (Concrete Pump Truck)
27th	●Water spray (Concrete Pump Truck)
29th	●Lighting in the Central Control Room was recovered.
3oth	●White smoke was confirmed to generate continuously. ●Spray of fresh water (Around 140t) over the Spent Fuel Pool using Concrete Pump Truck (50t/h) was carried out. ●Fresh water is being injected to the spent fuel pool

3-17. Chronology of Unit 5 & 6 after the earthquake

- ***Unit 5&6***

20th
- Unit 5 under cold shutdown (Water temperature of reactor water is less than 100℃)
- Unit 6 under cold shutdown (Water temperature of reactor water is less than 100℃)

21st
- Water spray over the Common Spent Fuel Pool started

22nd
- Recovering power supply of unit 5 and 6 is completed.

24th
- The power was started to be supplied. Cooling also started

30th
- Bach up power of Unit 6 is in working condition and external power was supplied to Unit 5 as of March 30th

4. Report concerning incidents at spent fuel pools in the Fukushima Dai-ichi NPS

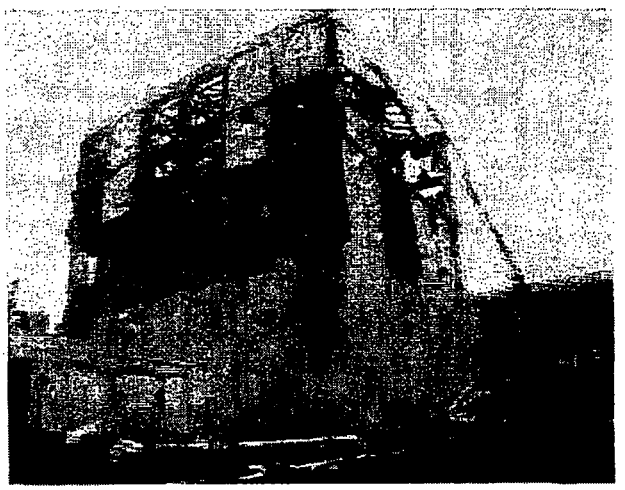
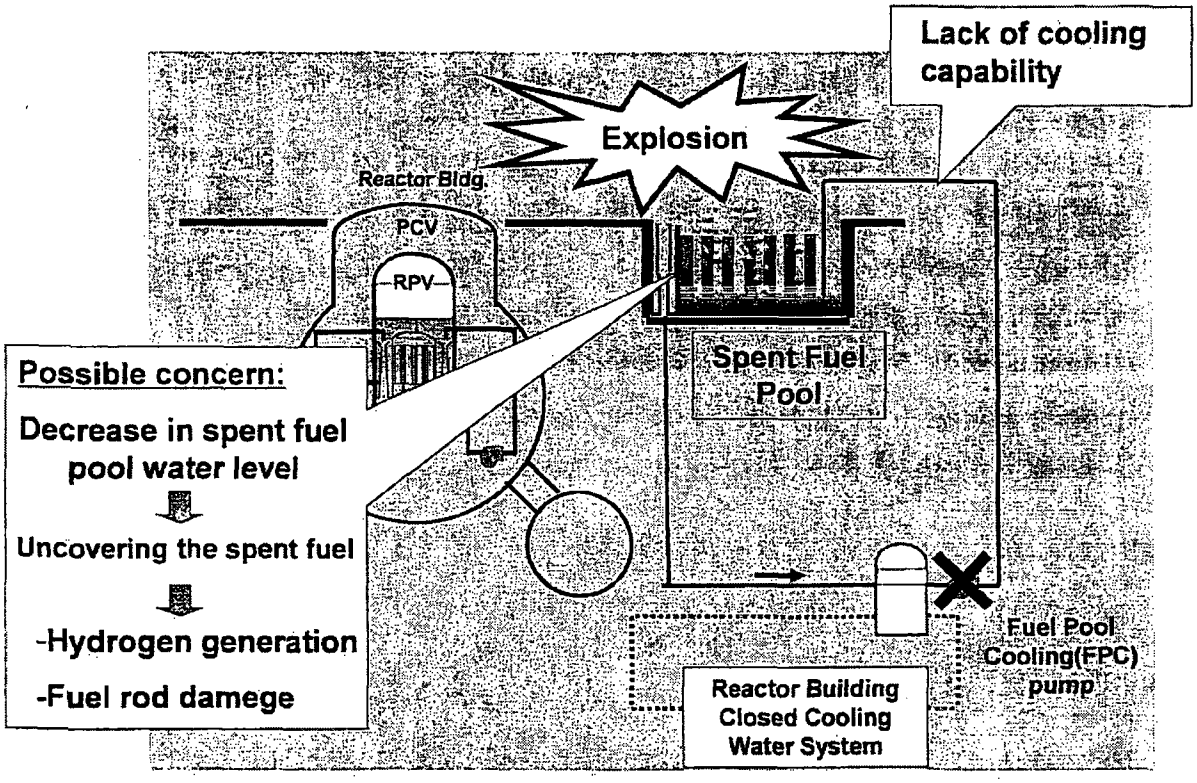


Photo: Water spray into the SFP in Unit 4 using concrete pump truck

4-1. Possible concerns about Spent Fuel Pool



4-2. Status of the Fuel as of March 11, 2011

Unit	1	2	3	4	5	6
Number of Fuel Assembly in the Core	400	548	548	-	548	764
Number of Spent Fuel Assembly in the Spent Fuel Pool	292	587	514	1,331	946	876
Number of New Fuel Assembly in the Spent Fuel Pool	100	28	52	204	48	64
Water Volume (m^3)	1,020	1,425	1,425	1,425	1,425	1,497

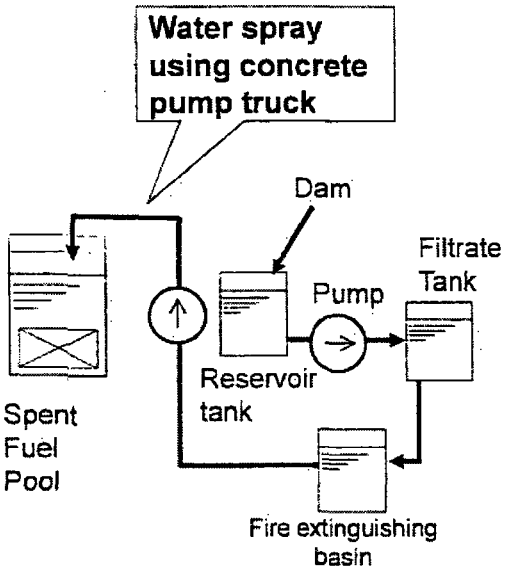
Condition of the fuel in the Spent Fuel Pool

Unit 1	Unit 2	Unit 3	Unit 4
-Most recent shut down was on Sep.27,2010	- Most recent shut down was on Nov.18,2010	- Most recent shut down was on Sep.23,2010	-Most recent shut down was on Nov.29,2010 -All fuel assembly was removed from the core and located in the pool due to the core shroud replacement

4-3. Measures taken to cool the Spent Fuel Pool (1/4)

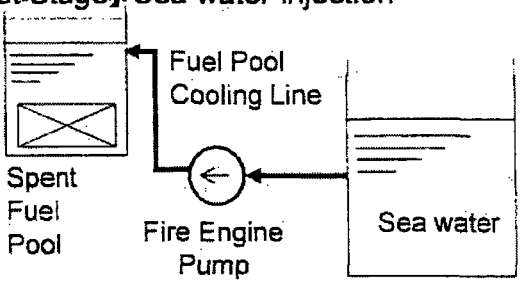
Unit 1

Fresh water injection

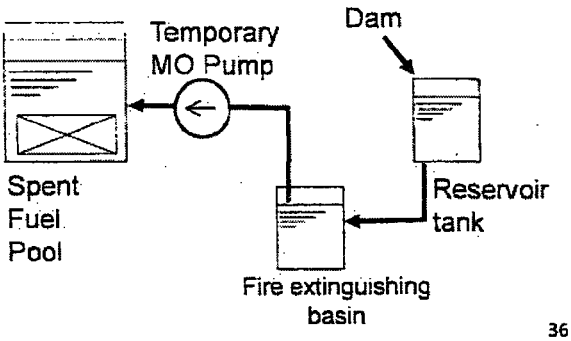


Unit 2

【1st Stage】 Sea water injection



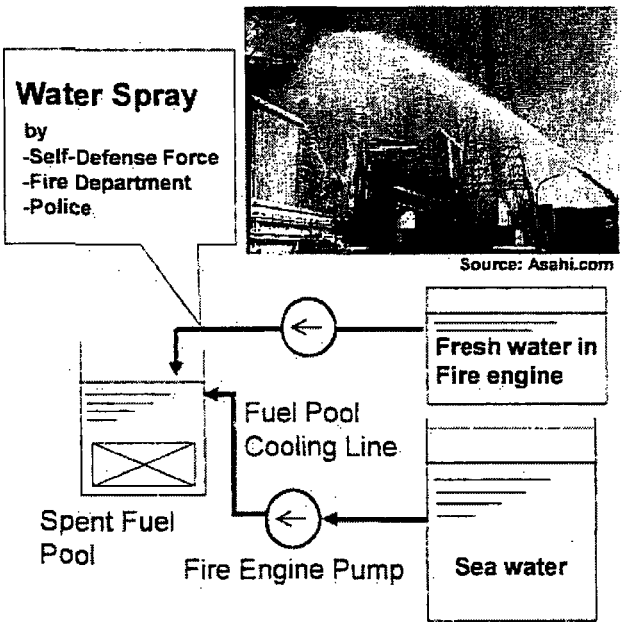
【2nd Stage】 Fresh water injection



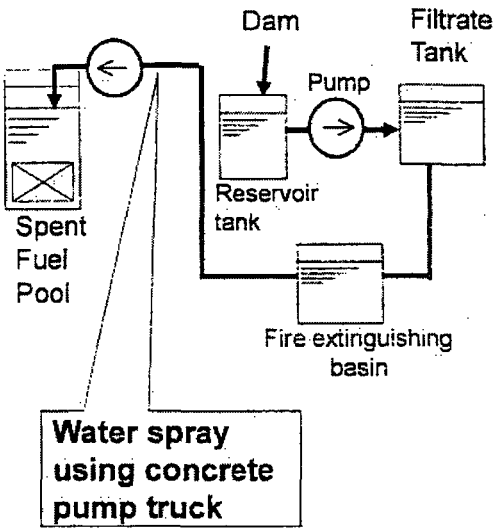
4-3. Measures taken to cool the Spent Fuel Pool (2/4)

Unit 3

【1st Stage】 Sea water injection



【2nd Stage】 Fresh water injection

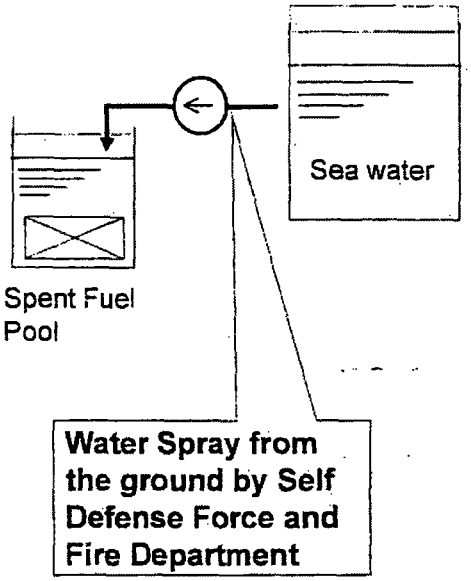


* Sea water discharge by helicopters of the Self Defense Force

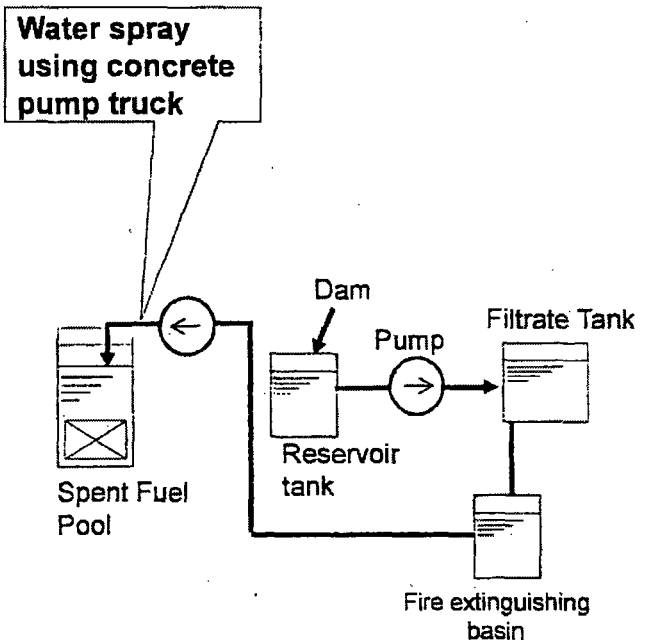
4-3. Measures taken to cool the Spent Fuel Pool (3/4)

Unit 4

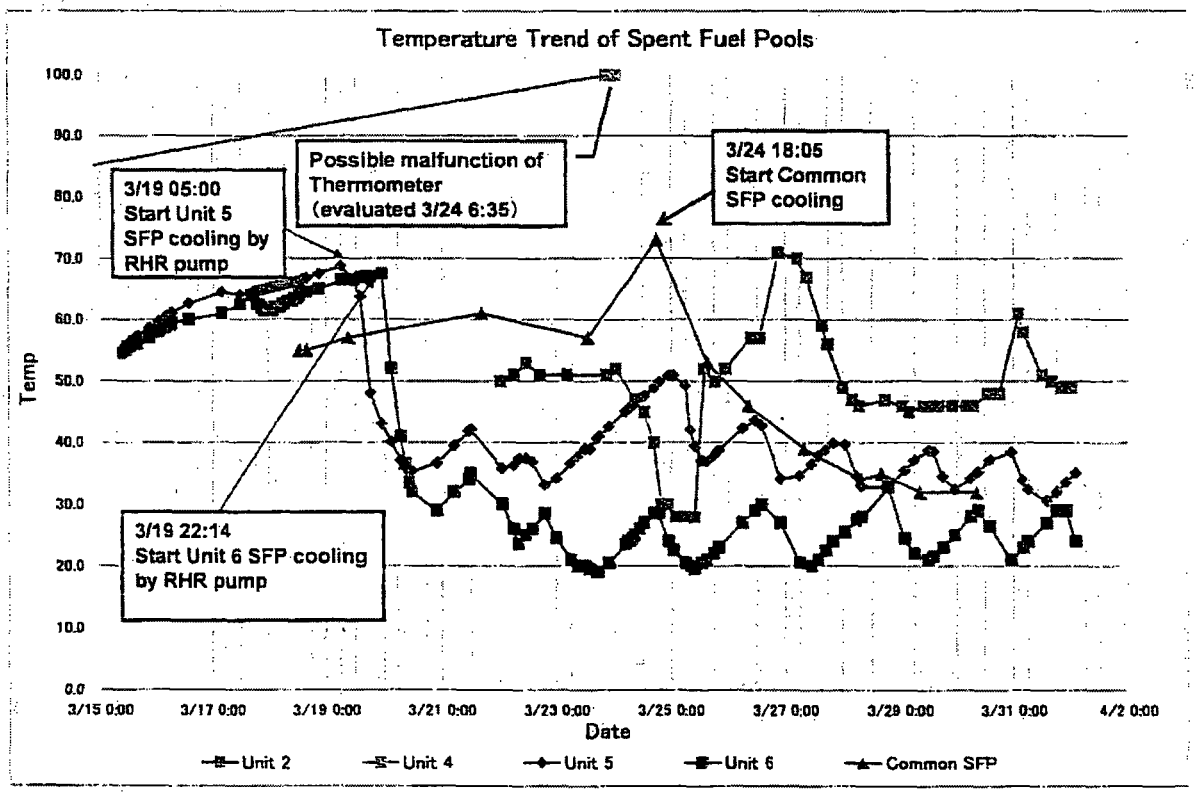
【1st Stage】 Sea water injection



【2nd Stage】 Fresh water injection



4-3. Measures taken to cool the Spent Fuel Pool (4/4)



4-4. INES Rating

- NISA issued temporary INES ratings 3 times. Those provisional ratings are provided based on "What is known" at the time.

- The first temporary rating was issued at 0:30 on March 12 (About 10 hours later from the earthquake attack)
  At that moment, Following units were rated as Level 3 since all heat removal function became inoperable based on "Defense in Depth" criteria.
  - Fukushima dai-ichi unit 1, 2 and 3
  - Fukushima dai-ni Unit 1, 2 and 4

- In the evening on March 12, the rating of Fukushima dai-ichi Unit 1 was re-evaluated to Level 4 base on the "Radiological Barriers and Control" criteria, since the radiation level in the site increased.

- On March 18, re-evaluation was carried out. The rating of Fukushima dai-ichi Unit 1, 2 and 3 were re-rated to Level 5 based on "Radiological Barriers and Control" criteria because the fuel damage was highly possible. Fukushima dai-ichi Unit 4 was evaluated to Level 3 based on the "Defense in Depth" criteria.

5. Action taken by the government

5. Action Taken by the Government(1/5)

March 11th, 2011

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

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

21:23 ●Directives from Prime Minister to the Governor of Fukushima Prefecture and heads of towns were issued regarding the eventoccurred at Fukushima Daiichi NPS, TEPCO, in accordance with the Acton Special Measures Concerning Nuclear Emergency Preparedness as follows:
- Direction for the residents within 3km radius from Unit 1 to evacuate
- Direction for the residents within 10km radius from Unit 1 to stay in-house

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

5. Action Taken by the Government(2/5)

March 12nd, 2011

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

07:45 ●Directives from Prime Minister to the Governor of Fukushima Prefecture and heads of towns were issued regarding the event occurred at Fukushima Dai-ni NPS, TEPCO, pursuant to 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

17:39 ●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

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

5. Action Taken by the Government(3/5)

March 13th, 2011

09:30 ●Directive was issued for the Governor of Fukushima Prefecture and heads of towns in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness on the contents of radioactivity decontamination screening.

March 15th, 2011

05:30 ●Prime Minister, Kan expressed to establish The Joint Headquarters to Fukushima Dai-ichi NPS accident

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

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 reactor situation

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.

March 20th, 2011

23:30 ●Directive from Local Emergency Response Headquarters to the Prefectural Governor and the heads of cities, towns and villages was issued regarding the change of the reference value for the screening level for decontamination of radioactivity

5. Action Taken by the Government(4/5)

March 21st, 2011

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.

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.

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 directs 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 25th, 2011

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

5. Action Taken by the Government(5/5)

March 25th, 2011

- Since there was a mistake in the evaluation regarding the concentration measurement of radioactive materials, NISA directed TEPCO orally to prevent the recurrence of such a mistake

13:50
- Receiving the suggestion by the special meeting of Nuclear Safety Commission, NISA directed TEPCO orally to add the sea water monitoring points and carry out the groundwater monitoring.
- Regarding the delay in the reporting of the water confirmed outside of the turbine buildings, NISA directed TEPCO to accomplish the communication in the company on significant information in a timely manner and to report it in a timely and appropriate manner.

March 29th, 2011

- In order to strengthen the system to assist the nuclear accident sufferers, the "Team to Assist the Lives of the Nuclear Accident Sufferer" headed by the Minister of Economy, Trade and Industry was established

March 30th, 2011

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

6. Current situation on resident evacuation and radiation exposure, etc

6-1. Current Situation on Resident Evacuation(1/2)

- At 5:44 on March 12, residents within 10km radius from Unit1 of Fukushima Dai-ichi NPS shall evacuate by the Prime Minister Directive.

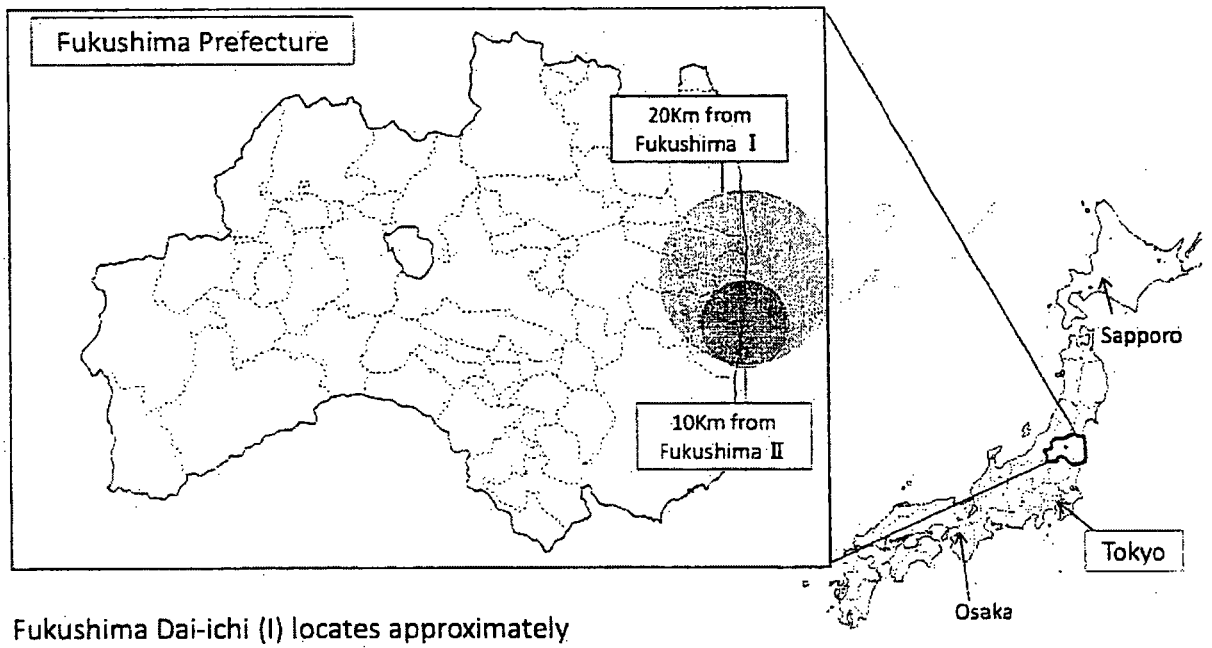
- At18:25 on March 12, Prime Minister directed evacuation of the residents within the 20 km radius from Fukushima Dai-ichi NPS.

- On March 15th, the Local Emergency Response Headquarter issued "the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefecture Governors and the heads of cities, towns and villages.

- Regarding the evacuation as far as 20 km from Fukushima Dai-ichi NPS and 10 km from Fukushima Dai-ni NPS, necessary measures have already been taken.
  - The sheltering stay in the area from 20km to 30km from Fukushima Dai-ichi NPS is made fully known to the residents concerned.
  - Cooperating with Fukushima Prefecture, livelihood support to the residents in the sheltering area are implemented.

- On March 25th, Chief Cabinet Secretary, Edano promoted voluntary evacuations for the residents within the area from 20 km to 30 km from Fukushima Dai-ichi NPS in a press conference.

6-1. Current Situation on Resident Evacuation(2/2)



Fukushima Dai-ichi (I) locates approximately
- 230 km from Tokyo
- 580 km from Osaka
- 600 km from Sapporo

6-2. Major Possibility on radiation exposure to residents (As of 15:30 April 1st)

- 95 patients of Futaba Welfare Hospital transferred by JSDF helicopters and commercial buses. If explosion occurred while 60 patients to be transferred by JSDF helicopters were standing by on Futaba High School playground. No exposure suspected. (19:00, March 16)

- Screening started at Off-site Center on Sat. March 12. 162 screened as of March 15. Against initially-set decontamination threshold of 6,000cpm, 110 patients registered below the threshold, 41 above it. Of 162 screened patients, 5 were given decontamination measures and transferred to hospital.

- Fukushima Prefecture conducted screening at 4 locations in the prefecture. Some 30 people registered above 13,000cpm. After measuring for the second time following decontamination they showed low values, therefore they were returned to shelters without examination.

- 3 women who lived around 10km radius of Fukushima Dai-ichi until March 14 were examined at Iwate Medial University Hospital. Simple decontamination procedure was given without surveying. They were hospitalized for follow-up.

6-3. Major exposure of workers (As of 15:30 April 1st)

- To date a total of 21 people have registered exposure dose above 100mSv. Following measures were taken.

-17 people had facial contamination on March 12 (9 TEPCO employees, 8 support company employees). Exposure identified upon their measurement after returning from Controlled Area. However, the level of exposure would not affect their health.

-At the time of ventilation operation at Unit 1 on March 12, one TEPCO employee registered above 100mSv (106.30mSv/h). As the level was below acute exposure he conducted work after self-air setting. As he afterwards complained of headache and other symptoms, he was transferred to hospital and placed at rest. He now has returned home.

-On March 24, dosage above approx. 170mSv was confirmed on 3 workers who were laying cables on 1st floor and basement of Unit 3 Turbine Bldg. Attachment of radioactive substances on the skin of both legs was confirmed on two of them. Examination showed that none of the 3 had any major systemic risk. Exposure dose on the legs of the 2 was estimated to be 2～3Sv. While the level of leg and internal exposure did not require treatment, they were hospitalized. They were discharged on March 28.

- On April 1st, a worker fell into the sea when he got into a barge of US. He was rescued by workers, and was not injured etc. However, he was confirmed surface contamination and decontaminated by the shower. He was confirmed the non-contamination by nasal smears.

6-4. Major Situation of the injured (As of 15:00 April 3rd)

<Death due to earthquake(Found on March 30)>

- Two employees found in the turbine building of Unit 4)

<Injury due to earthquake(March11)>

- Two employees (slightly)
- Two subcontract employees (one fracture in both legs)

<Injury due to the explosion of Unit 1 of Fukushima Dai-ichi NPS(March12)>

- 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.

<Injury due to the explosion of Unit 3 of Fukushima Dai-ichi NPS(March14)>

- Four TEPCO's employees
- Three subcontractor employees
- Four members of Self-Defence Force (The member was discharged from the institute on March 17th.)

<Other injuries>

- Two subcontractor's employees were injured during working at temporary control panel of power source in the Common Spent Fuel Pool(March22,23)

6-5. Directive regarding foods and drinks

(1) Agricultural Goods

- Ministry of Health, Labor and Welfare (MHLW) set provisional regulatory standards for foods detected with radioactive substances and notified prefectures, etc. as "Handling of food contaminated by radioactivity".
- MHLW notified prefectures, etc. regarding points to be mindful of in examining foods detected with radioactive substances.
- Prime Minister instructed local governments concerned to restrict distribution and/or consumption of foods concerned in accordance with Special Law of Nuclear Emergency Preparedness.
  - Fukushima Pref. (Distribution restricted→spinach, kakina, raw milk, etc.)
  - Ibaraki, Tochigi, Gunma Prefs. (Distribution restricted→spinach, kakina)

(2) Drinking Water

- MHLW notified water suppliers in prefectures concerned the followings regarding response to radioactive substances in tap water caused by the nuclear accident.
  - Refrain from drinking tap water exceeding index values (300Bq/kg for radioactive Iodine, 200Bq/kg for radioactive Cesium) .
  - In case radioactive Iodine exceeds 100Bq/kg, refrain from giving tap water to infants, including preparing infant formula.
  - There is no problem in using tap water for other domestic uses.
  - Lack of substitute drinking water.

7. Implementation Status of Radiation Monitoring

7-1. Implementation Status of Radiation Monitoring(1/2)

(1) On-site monitoring (1F) (conducted by TEPCO)

① Measurement of air dose rates

- On site, air dose rates were measured at 1 point using monitoring car and at 3 points using portable dosimeter.

② Analysis of soil samples

- Soils were sampled at 5 on-site points and analyzed.

③ Measurement of water in Turbine Bldg basement and Trench

- Measured concentration of radioactive substances in Turbine Bldg basement and Trench.

④ Sampling of seawater

- Measured concentration of radioactivity around South Flood Gate.

7-1. Implementation Status of Radiation Monitoring(2/2)

(2) Off-site Monitoring (conducted by MEXT and local nuclear emergency response HQ)

① Measurement of air dose rate

Measurement by monitoring car

- MEXT measured air dose rate beyond 20km from 1F using monitoring cars in cooperation with Fukushima Pref., National Police Agency, Defense Ministry, Electric Utility and others concerned.
- local nuclear emergency response HQs measured air dose rate beyond 30km from 1F.

② Measurement of cumulative dose

- MEXT measured cumulative dose rates by installing simplified dosimeters at 10 points.
- local nuclear emergency response HQs measured it by setting equipment 20~50km from 1F.

③ Measurement of radioactive substance concentration in soil, etc.

- MEXT collected dust and soils beyond 20km from 1F and analyzed radioactive substance concentrations in the air and soils.
- local nuclear emergency response HQs measured concentrations in tap water, leaf vegetables, soil and dust in Fukushima Pref.

④ Off-shore monitoring

- MEXT sampled seawater from surface water (1m from the sea surface) and sub-surface (10m above the sea bottom) around 30km off-shore Fukushima Pref. and measured radioactive substance concentrations and also measured air dose rates.

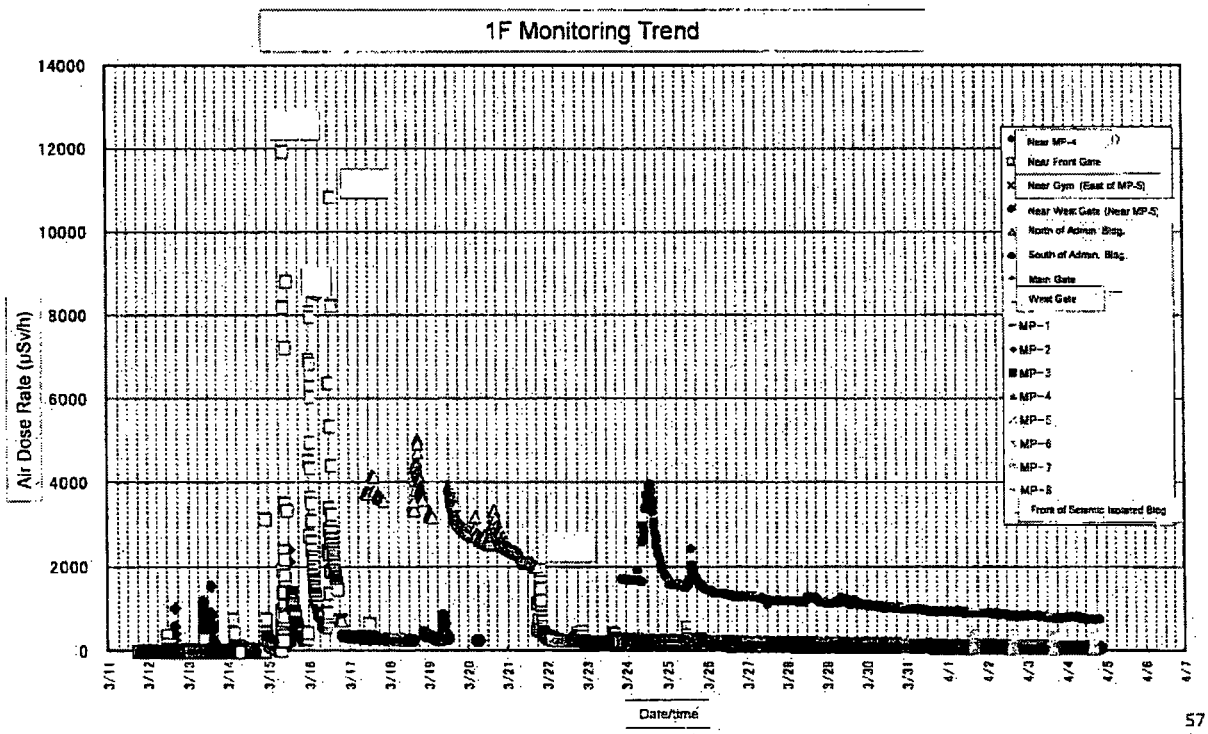
⑤ Aerial monitoring

- MEXT measured radioactive substance concentrations and dose rates in the air using aircrafts.

7-2.Monitoring On-site(1F) (conducted by TEPCO)(1/7)

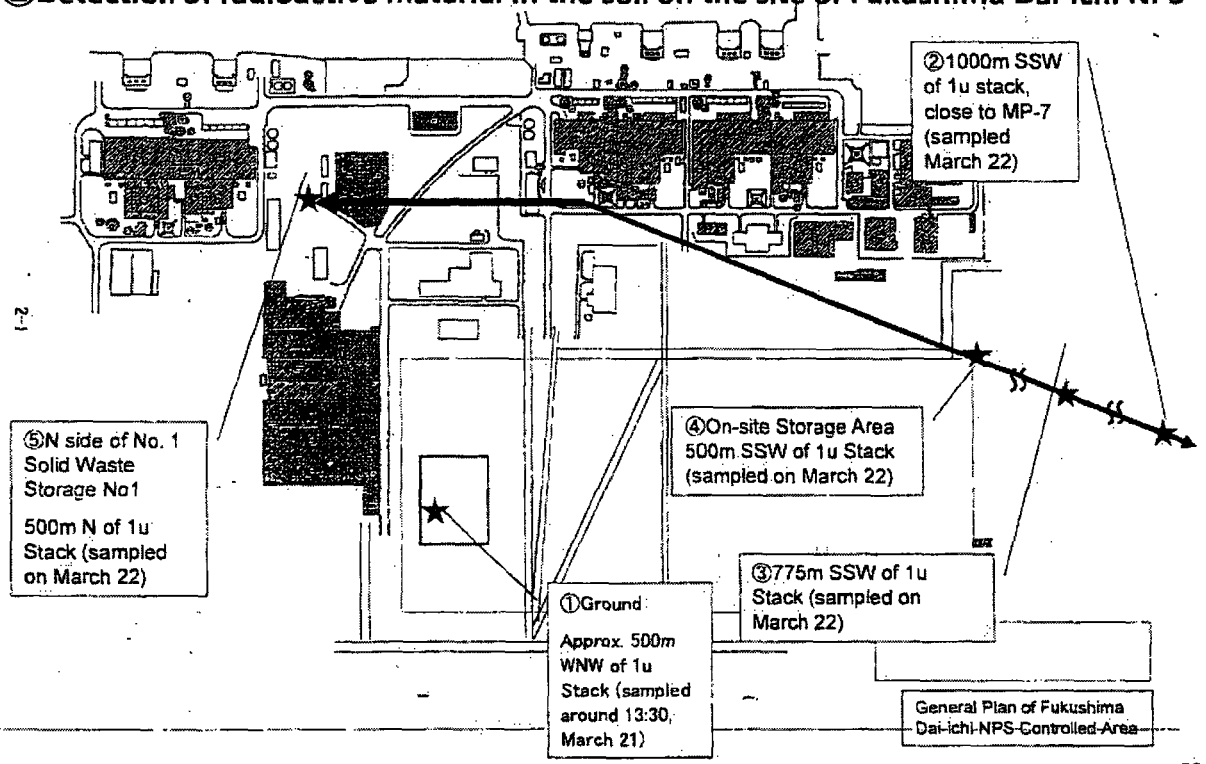
① Measurement of air dose rate

○Registered 11930μSv/h around Front Gate on March 15.



7-2.Monitoring On-site(1F) (conducted by TEPCO)(2/7)

②Detection of radioactive material in the soil on the site of Fukushima Dai-ichi NPS



7-2.Monitoring On-site(1F) (conducted by TEPCO)(3/7)

②Detection of radioactive materials in the soils on the site of Fukushima Dai-ichi

- Density of detected Pu-238, Pu-239 and Pu-240 are within the same level of the fallout observed in Japan after the atmospheric nuclear test in the past.
- Activity ratio of Pu-238 detected at the site field and solid waste storage against Pu-239 and Pu-240 are 2.0 and 0.94 respectively. Those Pus are considered to come from the recent incident.

(Unit. Bq/km·dry soil)

Sampling Spot	Time of sampling	Pu-238	Pu0239, Pu-240
①Site field	13:30, March21	(5.4±0.62)×10-1	(2.7±0.42)×10-1
②1km away from Unit ½ exhaust stack	7:00, March 22	N.D	(2.6±0.58)×10-1
③0.75km away from Unit ½ exhaust stack	7:10, March 22	N.D	1.2±0.12
④0.5 km away from unit ½ exhaust stack	7:18 March 22	N.D	1.2±0.11
⑤Solid waste storage	7:45 March 11	(1.8±0.33)×10-1	(1.9±0.34)×10-1
Ordinary domestic soil		N.D～1.5×10-1	N.D～4.5

7-2.Monitoring On-site(1F) (conducted by TEPCO)(4/7)

③Water in Turbine Bldg Basement (Results of nuclide analysis in the stagnant water in turbine building basement of each Unit)

- There is pool of water with high radioactive substance concentration in turbine bldg basement of Units 1~4. Above 1,000mSv/h dose has been measured at water surface in Unit 2.
- Water with approx. 100,000 times normal radioactivity concentration in reactor water was confirmed in turbine bldg basement of Unit 2.

Nuclide (half-life time)	Concentration of Radioactivity (Bq/cm³)			
	Unit 1 (2nd time) Sampled on March 26	Unit 2 Sampled on March 26	Unit 3 (2nd time) Sampled on March 26	Unit 4 Sampled on March 24
	Water level 195mm	Water level 1,000mm	Water level 1,500mm	Water level 940mm
	Dose rate on the surface of the water 60 mSv/h	Dose rate on the surface of the water >1,000 mSv/h	Dose rate on the surface of the water 750 mSv/h	Dose rate on the surface of the water 0.50 mSv/h
Co-56 (about 77 days)	N.D	N.D	N.D	N.D
Co-58 (about 71 days)	N.D	N.D	N.D	2.7×10^{-1}
Co-60 (about 5 years)	N.D	N.D	2.7×10^{2}	N.D
Mo-99 (about 66 hours)	N.D	N.D	N.D	1.0×10^{0}
Tc-99m (about 6 hours)	N.D	8.7×10^{4}	2.2×10^{3}	6.5×10^{-1}
Ru-106 (about 370 days)	N.D	N.D	N.D	3.3×10^{0}
Ag-108m (about 418 years)	N.D	N.D	N.D	N.D
Te-129 (about 70 minutes)	N.D	N.D	N.D	2.6×10^{1}
Te-129m (about 34 days)	N.D	N.D	N.D	1.3×10^{1}
Te-132 (about 3 days)	N.D	N.D	N.D	1.4×10^{1}
I-131 (about 8 days)	1.5×10^{5}	1.3×10^{7}	3.2×10^{5}	3.6×10^{2}
I-132 (about 2 hours)	N.D	N.D	N.D	1.3×10^{1}
I-134 (about 53 minutes)	N.D	N.D	N.D	N.D
Cs-134 (about 2 years)	1.2×10^{5}	2.3×10^{6}	5.5×10^{4}	3.1×10^{1}
Cs-136 (about 13 days)	1.1×10^{4}	2.5×10^{5}	6.5×10^{3}	3.7×10^{0}
Cs-137 (about 30 years)	1.3×10^{5}	2.3×10^{6}	5.6×10^{4}	3.2×10^{1}
Ba-140 (about 13 days)	N.D	4.9×10^{5}	1.9×10^{4}	N.D
La-140 (about 2 days)	N.D	1.9×10^{5}	3.1×10^{3}	7.4×10^{-1}

7-2.Monitoring On-site(1F) (conducted by TEPCO)(5/7)

③Stagnant Water in Trench

- High level of radiation dose was measured at the surface of water in the vertical pit of the tunnel called "trench" which extends from turbine bldg towards the sea.
- In particular, at Unit 2 ambient dosage around the vertical pit is 100~300mSv/h and dosage in surface water 1,000mSv/h, which are far greater than in Units 1 and 3.

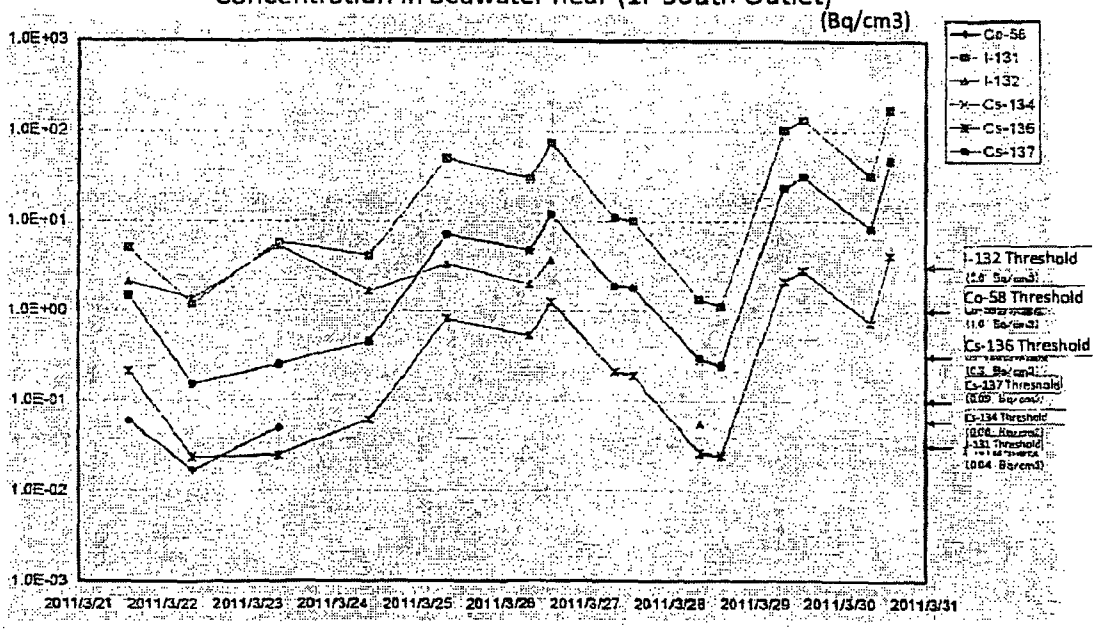
	Unit 1	Unit 2	Unit 3
Location of trench	○Approx. 56m to sea ○162m from turbine bldg (length of trench)	○Approx. 55m to sea ○76m from turbine bldg (length of trench)	○Approx. 69m to sea ○74m from turbine bldg (length of trench)
Trench volume (incl. vertical pit)	3,100m3	6,000m3	4,200m3
Depth of vertical pit	16.9m	16.3m	21.7m
Depth of water in vertial pit	16.8m	15.3m	20.2m
Dosage at water surface	0.4～1.9mSv/h	Above 1000mSv/h	Impossible to measure due to debris
Ambient dosage in vertical pit	0.4～1.0mSv/h	100～300mSv/h	0.8mSv/h

7-2.Monitoring On-site(1F) (conducted by TEPCO)(6/7)

④ Radioactivity Concentration of Seawater Samples Near 1 F South Outlet

- Concentration of radioactive iodine131 recorded on March 31th was approx. 4385 times the limit set for water outside the environmental monitoring area.

Concentration in Seawater near (1F South Outlet)

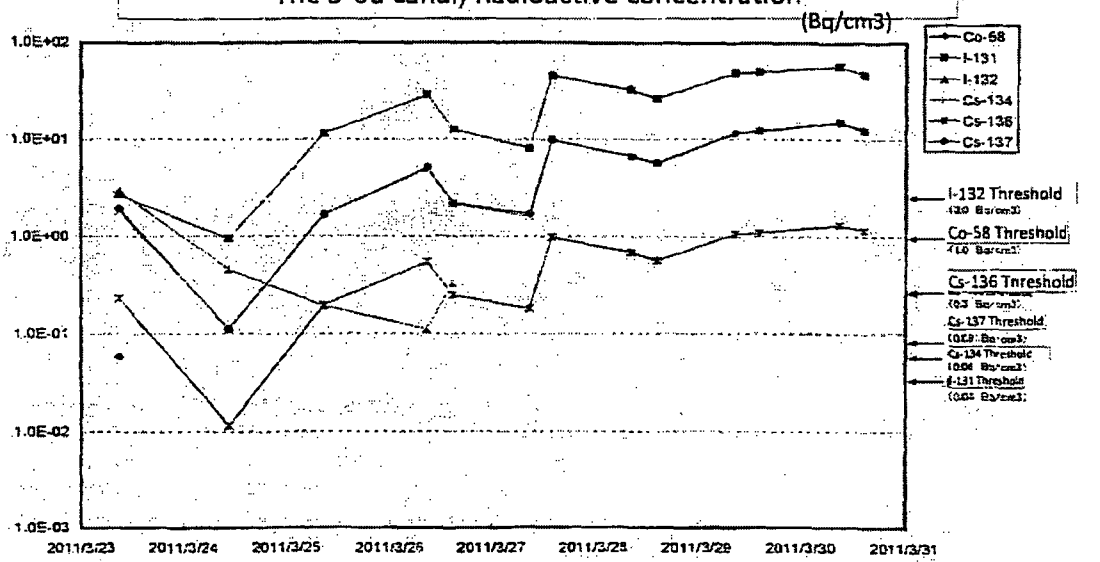


7-2.Monitoring On-site(1F) (conducted by TEPCO)(7/7)

⑤ Radioactivity Concentration of Seawater Samples Near Unit 5 and 6 of 1F in North Outlet

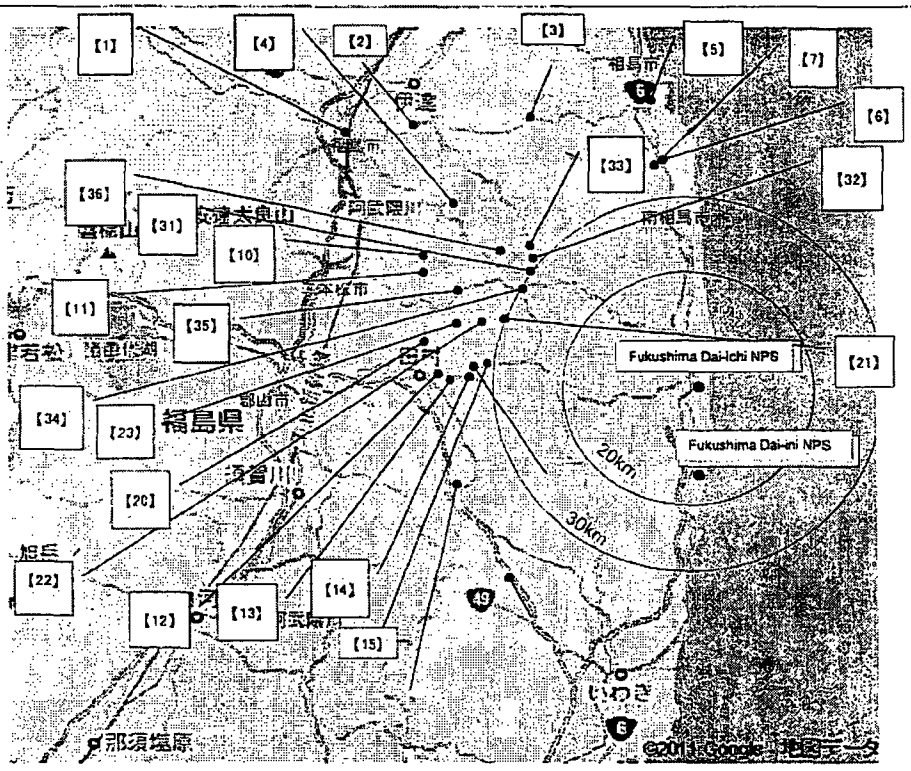
- Concentration of radioactive iodine131 recorded on March 31th was approx. 1425 times the limit set for water outside the environmental monitoring area.

1F 5-6 Northern Water Discharge Canal (Around 30 m north of The 5-6u canal) Radioactive concentration



7-3. Monitoring by MEXT and local nuclear emergency response HQ(1/6)

① Air Dose Rate Measuring Locations Using Monitoring Vehicles

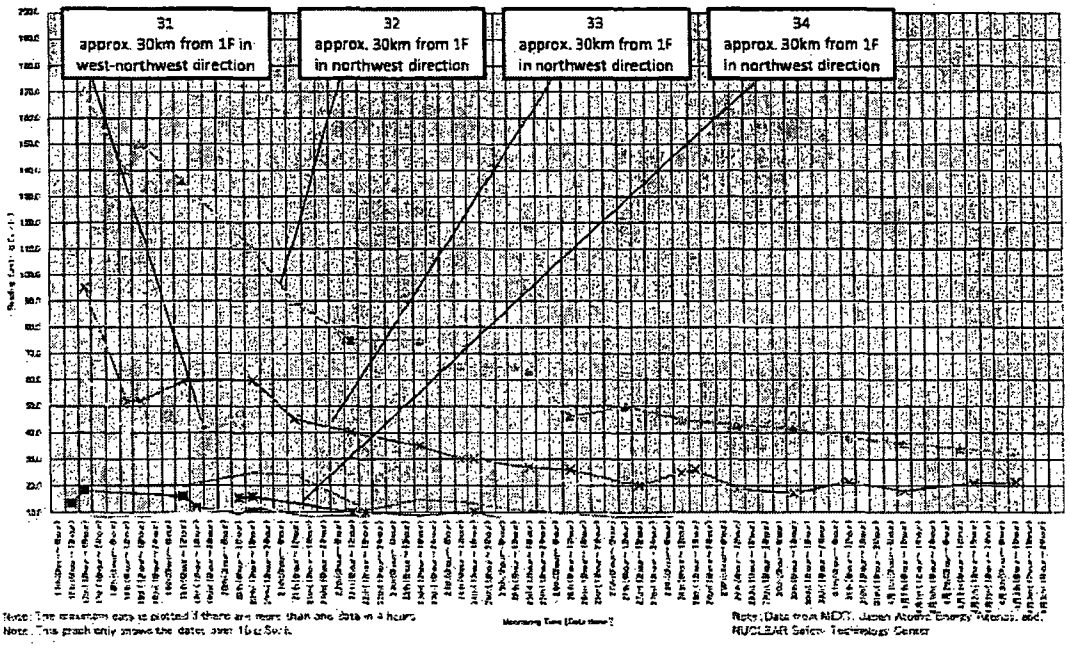


7-3. Monitoring by MEXT and local nuclear emergency response HQ(2/6)

①Air Dose Rate Measured Using Monitoring Vehicles

- Overall dose rate trending down since March 17th.
- E.g. The highest value recorded at Monitoring Point #32 has peaked out at approx. 170μSv/h and has been declining since, rendering no immediate health hazard.

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



Note: The measurement data is plotted if there are more than one data in 4 hours.
Note: This graph only shows the data over 10μSv/h.

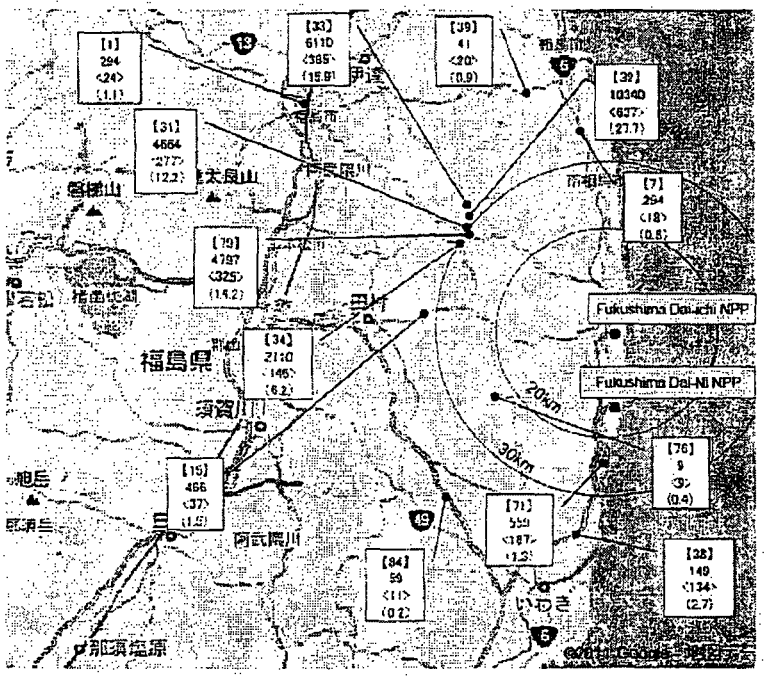
Note: Data from MEXT, Japan Atomic Energy Agency, etc.
NUCLEAR Safety Technology Center

7-3. Monitoring by MEXT and local nuclear emergency response HQ(3/6)

②Cumulative Doses Measured

- Air dose rate cumulatively measured since April 3 topped 10,340μSv at #32, approximately 30km North West from 1F.

Readings of Integrated Dose at Monitoring Post out of Fukushima Dai-ichi NPP



Monitoring Time
- March 23th~April 3rd (Monitoring Post: 7、31~34、79)
- March 23 th ~28th, April 3rd (Monitoring Post: 71)
- March 24 th ~April 3rd (Monitoring Post: 1、15)
- March 25 th ~April 1st, April 3 rd (Monitoring Post: 84)
- March 31 th ~April 1 st, April 3rd (Monitoring Post: 38)
- April 1 th ~April 3rd (Monitoring Post: 39)
- April 2 th ~April 3rd (Monitoring Post: 76)

● Monitoring Post

(explanatory note)

[Monitoring Post number]
Readings of Integrated Dose ※
<increment from the last monitoring>
(average dose per hour)

Readings of Integrated Dose indicate that accumulation of dose from each starting date till April 2nd, for 1 day to 10days.

Unit: μ Sv per hour

7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

③Concentration of Radioactive Materials

●Soil Samples

Sampling Point	Address of Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg) ^{131}I	^{137}Cs
[2-i] (About40kmNorthWest)	Iitate Village	Land Soil	Soil	2011/3/19 11:40	300,000	28,100
	Iitate Village	Land Soil	Soil	2011/3/20 12:40	1,170,000	163,000
	Iitate Village	Land Soil	Soil	2011/3/21 12:32	207,000	39,900
	Iitate Village	Land Soil	Soil	2011/3/22 12:00	256,000	57,400
	Iitate Village	Land Soil	Soil	2011/3/23 12:25	135,000	32,200
	Iitate Village	Land Soil	Soil	2011/3/24 13:05	43,500	1,870
	Iitate Village	Land Soil	Soil	2011/3/25 13:05	265,000	27,900
	Iitate Village	Land Soil	Soil	2011/3/26 12:00	564,000	237,000
	Iitate Village	Land Soil	Soil	2011/3/26 15:20	82,000	28,000
	Iitate Village	Land Soil	Soil	2011/3/27 11:40	169,000	29,100
	Iitate Village	Land Soil	Soil	2011/3/27 12:00	61,800	20,800
	Iitate Village	Land Soil	Soil	2011/3/28 11:50	14,000	2,040
	Iitate Village	Land Soil	Soil	2011/3/28 12:10	23,100	860
	Iitate Village	Land Soil	Soil	2011/3/29 11:50	53,700	5,650
	Iitate Village	Land Soil	Soil	2011/3/29 12:10	54,400	25,100
	Iitate Village	Land Soil	Soil	2011/3/30 12:25	88,600	39,300
	Iitate Village	Land Soil	Soil	2011/3/30 12:45	11,900	408
	Iitate Village	Land Soil	Soil	2011/3/31 11:30	149,000	29,600
	Iitate Village	Land Soil	Soil	2011/3/31 11:45	60,800	26,500
	Iitate Village	Land Soil	Soil	2011/4/1 11:30	146,000	43,700
	Iitate Village	Land Soil	Soil	2011/4/1 12:05	21,400	1,410
	Iitate Village	Land Soil	Soil	2011/4/2 11:24	53,500	8,140
	Iitate Village	Land Soil	Soil	2011/4/2 11:45	61,900	30,800

7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

③Concentration of Radioactive Materials

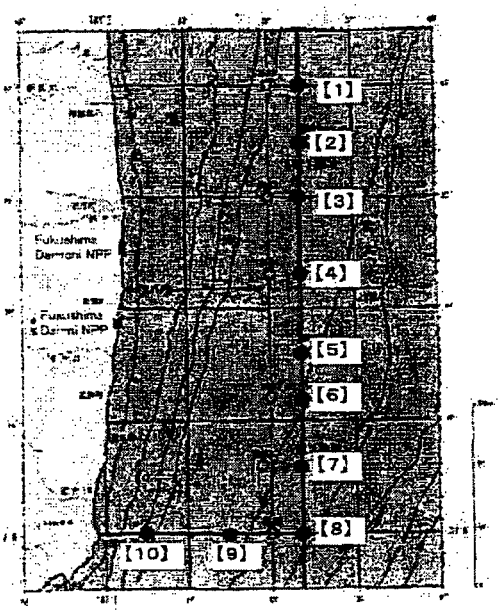
- Dust Samples

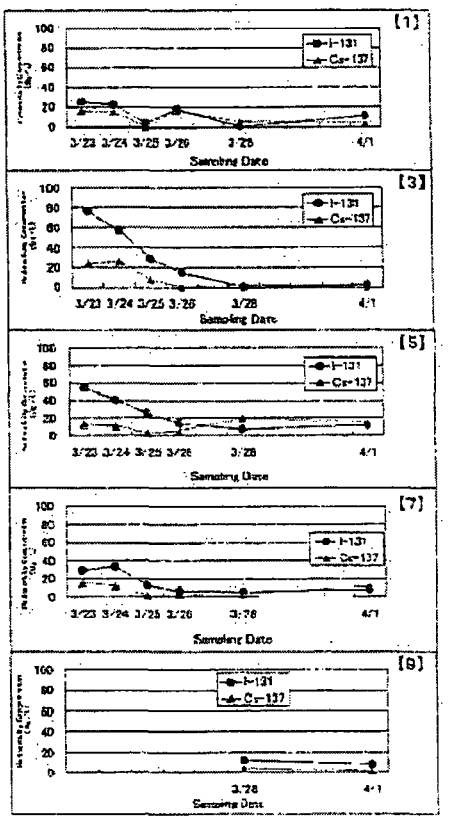
Sampling Point	Sampling Time and Date	Radioactivity Concentration:Bq/m3		Reading (μSv/h)
		^{131}I	^{137}Cs	
[2-1](About40 kmNorthWest)	3/21 13:00~13:20	12.80	2.37	4.1
	3/22 12:26~12:46	5.87	ND	4.2
	3/23 12:50~13:10	2.99	ND	16.8
	3/24 13:30~13:50	5.80	1.51	10.0
	3/25 12:45~13:05	5.87	ND	12.3
	3/26 12:26~12:46	5.39	1.33	7.8
	3/27 12:06~12:26	2.22	ND	11.2
	3/28 12:05~12:25	1.66	ND	9.6
	3/29 12:07~12:27	2.42	6.79	9.2
	3/30 13:22~13:42	3.47	LTD	8.5
	3/31 11:50~12:10	1.74	LTD	8.0
	4/1 12:00~12:20	1.78	1.69	7.7
	4/2 11:46~12:06	0.84	ND	8.6

7-3. Monitoring by MEXT and local nuclear emergency response HQ(5/6)

④Sea Water Monitoring Around Fukushima Dai-ichi NPS

- Concentration of radioactive materials at location #3 peaked at 76.8Bq/L, exceeding the limit for the environmental monitoring area.





Note: "Not Detectable" is illustrated as 0Bq/L.

7-3. Monitoring by MEXT and local nuclear emergency response HQ(6/6)

⑤Aerial Monitoring

- Flight Details : April 1st, from 11:02 to 13:45, cloudless skies with S winds. Average altitude 1070 meters above sea, average speed 220km/h

Main Reading Point	City	Latitude longitude	Altitude above sea level [above ground level] (m)	Monitoring Time	Readings (μSv/h)
[1]	Shirakawa (Fukushima Prefecture)	37° 03. 39 ′ N 140° 17. 38 ′ E	1193 [851]	11:45	0. 0409
[2]	Iwaki (Fukushima Prefecture)	36° 32. 19 ′ N 140° 53. 19 ′ E	1209 [1203]	11:57	0. 0261
[3]	Tamura (Fukushima Prefecture)	37° 27. 16 ′ N 140° 34. 19 ′ E	1267 [844]	12:13	0. 0281
[4]	Shinchi-cho (Fukushima Prefecture)	37° 46. 46 ′ N 140° 52. 50 ′ E	1182 [1117]	12:23	0. 0275
[5]	Fukushima (Fukushima Prefecture)	37° 47. 12 ′ N 140° 29. 47 ′ E	900 [842]	12:37	0. 0234
[6]	Koriyama (Fukushima Prefecture)	37° 26. 33 ′ N 140° 22. 46 ′ E	933 [691]	12:47	0. 0402
[7]	Shirakawa (Fukushima Prefecture)	37° 09. 40 ′ N 140° 12. 59 ′ E	898 [502]	12:56	0. 0402
[8]	Utunomiya (Tochigi Prefecture)	36° 35. 02 ′ N 140° 00. 49 ′ E	888 [737]	13:14	0. 0147

8. Provision of Relevant Information Overseas

8. Provision of relevant information overseas(1/2)

1. Communication to IAEA and its Member States

(1) ENAC Website

NISA has constantly been providing facility-related and other relevant information on the Emergency Notification and Assistance Convention Website, designed for member states to exchange information on nuclear accidents.

(2) IEC (IAEA)

NISA has constantly been providing the Incident and Emergency Centre of IAEA with press releases and other relevant information, as well as responses to questions on such communication.

(3) Others

-March 21st Technical Briefing

Following the special meeting of the IAEA Board of Governors, NISA officials briefed the member state representatives on the overview of the earthquake itself as well as the status of and ongoing measures to address the Fukushima NPS accident.

-IAEA Expert Missions

The Government of Japan has been receiving IAEA expert missions to Japan.

8. Provision of relevant information overseas(2/2)

2. To International Media in Japan

(1) Foreign Media Briefing

- NISA joins relevant government agencies in daily foreign media briefings at the PM's official residence on March 14, 17 and every day afterwards.
- NISA officials give account to damages suffered at Fukushima NPSs and respond to questions.
- English documents distributed include updates on earthquake-related damange, status of F1 NPSs and monitoring results in the vicinity.

(2) Briefings for Diplomatic Representatives in Tokyo

- NISA joined the Ministry of Foreign Affairs in briefing sessions for Diplomatic representatives in Tokyo.
- Distributed press releases (English), provided explanations and answered questions.

(3) English information on the Web

- Nuclear and Industrial Safety Agency: http://www.nisa.meti.go.jp/english/index.html
- Office of Prime Minister: http://www.kantei.go.jp/foreign/index-e.html

9. Remarks

9. Remarks

- Continue to make every possible efforts to bring the situation under control
- Will identify the cause of the accident completely and review safety assurance measures
- Offer the information as much as possible and share the experience and knowledge of the accident with the international community

From: Stahl, Eric
Sent: Tuesday, April 12, 2011 9:06 AM
To: ET02 Hoc
Subject: RE: help with our Japan team computer network - As requested the folder has been created.

Hi Karen –

Can you please remove me from the Liaison Japan email group? I returned from Tokyo yesterday.

Thanks for all of your help these past few weeks. We really appreciate all the work you and your group has done supporting the mission over there!

Eric

From: ET02 Hoc
Sent: Tuesday, April 12, 2011 9:03 AM
To: Liaison Japan
Cc: LIA02 Hoc; LIA08 Hoc; OST01 HOC; Reyes, Debra; Turner, Joseph
Subject: FW: help with our Japan team computer network - As requested the folder has been created.
Importance: High

Japan Team:
Please read the information below provided by OIS (Debra Reyes) concerning access to a shared folder on the Citrix server for your use. If you have any questions or need help, please contact the CSC at 301-415-1234. Thanks...Karen Jackson

---

From: Reyes, Debra
Sent: Tuesday, April 12, 2011 7:59 AM
To: ET02 Hoc
Cc: Reyes, Debra
Subject: RE: help with our Japan team computer network - As requested the folder has been created.

Good morning,

The NOC has created a folder named 'Liaison Japan' and a control group 'G-OIS-Liaison_Japan' on the existing HQ S: drive. Added the users from the spreadsheet provided to G-OIS-Liaison_Japan. Added G-OIS-Liaison_Japan to the folder Liaison Japan. Upon login the users in the group should receive a N: drive mapping to access the folder. The folder can also be accessed using the following link \\nrc.gov.nrc\hq\Shared\Liaison Japan. This can be copied to the desktop for use.

Please let me know if you need anything else.

debbie

From: ET02 Hoc
Sent: Monday, April 11, 2011 7:13 AM
To: Turner, Joseph; Reyes, Debra
Subject: FW: help with our Japan team computer network

LLL/270

Fyi...karen

From: Bernhard, Rudolph
Sent: Monday, April 11, 2011 6:27 AM
To: LIA08 Hoc; Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc
Subject: RE: help with our Japan team computer network

Jeff, thanks for kicking off the request. I had no clue who to ask.

A subdirectory that all in country Japan team members could be mapped to would be great. Since we are all from different offices, we have no common network drive that we share. We do not want to use Sharepoint, but want a subdirectory that we can map to a drive that all can reach when using Citrix. IT would have to be provided with names of those shipped over in the future, so they could be added to the access for the drive or subdirectory.

Thanks
Rudy

From: LIA08 Hoc
Sent: Monday, April 11, 2011 6:15 AM
To: Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc; Bernhard, Rudolph
Subject: help with our Japan team computer network

Good morning

Our Japan site team called us this morning and asked if a separate network could be created for them to use to store documents created by and used by the NRC site team in Japan, similar I think to the way we use the M drive in the NRC Ops Center to capture event info at our end.

Please let us know if this is possible and what the procedure is for this to occur.

Thanks for any help you can provide

Jeff Temple
NRC Operations Center
Liaison Team Coordinator
301-816-5185

To: Reyes, Debra
Subject: RE: help with our Japan team computer network - As requested the folder has been created.

Debbie:
Two things:
1. I

From: Reyes, Debra
Sent: Tuesday, April 12, 2011 7:59 AM
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Cc: Reyes, Debra
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debbie

From: ET02 Hoc
Sent: Monday, April 11, 2011 7:13 AM
To: Turner, Joseph; Reyes, Debra
Subject: FW: help with our Japan team computer network

Fyi...karen

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Sent: Monday, April 11, 2011 6:27 AM
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Thanks
Rudy

LLLL/271

From: LIA08 Hoc
Sent: Monday, April 11, 2011 6:15 AM
To: Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc; Bernhard, Rudolph
Subject: help with our Japan team computer network

Good morning

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Please let us know if this is possible and what the procedure is for this to occur.

Thanks for any help you can provide

Jeff Temple
NRC Operations Center
Liaison Team Coordinator
301-816-5185

From: RST09 Hoc
Sent: Tuesday, April 12, 2011 1:46 PM
To: Droggitis, Spiros
Cc: RST01 Hoc
Subject: FW: Question from Congressman Markey's staff

Spiros,

Attached are the pressure and radiation readings for Units 1, 2 and 3 as requested.

Ben Beasley
RST Accident Analyst

From: RST01 Hoc
Sent: Tuesday, April 12, 2011 10:49 AM
To: RST09 Hoc; RST08 Hoc
Subject: FW: Question from Congressman Markey's staff

From: Droggitis, Spiros
Sent: Tuesday, April 12, 2011 10:41 AM
To: RST01 Hoc
Cc: Riley (OCA), Timothy
Subject: Question from Congressman Markey's staff

A staffer from Congressman Markey's office has the following question:

She would like to know what the pressure and radiation readings are for Units 1 and 3 at Fukushima, and what can be inferred from those readings vis the readings at Unit 2.

Thanks

LLL/272

Fukushima Daiichi Information as of 1800 EDT 04/12/2011

	Reactor Vessel Pressure		Containment Status	Drywell Pressure (TEPCO 04/12/2011)	Drywell Radiation (TEPCO 04/12/2011)	Torus Pressure (TEPCO 04/12/2011)	Torus Radiation (TEPCO 04/12/2011)
	Channel A (TEPCO 04/12/2011)	Channel B (TEPCO 04/12/2011)					
Unit 1	60.3 psig	131.7 psig	Damage suspected, slow leakage, N_2 injection	12.9 psig	Uncertain	9.2 psig	1080 rem/hr
Unit 2	-3.3 psig	-3.6 psig	Damage suspected	-1.6 psig	2810 rem/hr	Uncertain	68.1 rem/hr
Unit 3	-2.8 psig	-11.5 psig	Damage suspected, N_2 injection planned	0.6 psig	1740 rem/hr	9.8 psig	67.1 rem/hr

Considering the damage that has been done to the site, instruments readings are suspect. Conjecture on the condition of the plant without further detailed information is not advisable. Instrument readings may be trusted for trends and approximate measurements. Furthermore, a comparison of Unit 1 to Unit 2 using the above information is speculative.

From: Heard, Robert
Sent: Tuesday, April 26, 2011 3:28 PM
To: Miller, Mark
Cc: Mitchell, Matthew; ET02 Hoc
Subject: Blackberry for Japan

Mr. Miller,
I was able to get your newly provisioned AT&T Blackberry device in the FedEx mail this afternoon. You should receive it tomorrow.

Thanks

Robert Heard Jr.
OIS/ICOD/ISPT
(301)415-6393
Robert.Heard@nrc.gov

LLLL/273

From: ET01 Hoc
Sent: Tuesday, April 12, 2011 6:26 PM
To: ET02 Hoc
Subject: FW: Question from Congressman Markey's staff
Attachments: Fukushima Daiichi Information as of 1800 EDT April 12 for Markey.doc

---

From: RST01 Hoc
Sent: Tuesday, April 12, 2011 6:26:08 PM
To: ET02 Hoc; ET01 Hoc
Subject: FW: Question from Congressman Markey's staff
Auto forwarded by a Rule

Please see below.

From: RST09 Hoc
Sent: Tuesday, April 12, 2011 6:02 PM
To: RST01 Hoc
Subject: RE: Question from Congressman Markey's staff

Information added qualifying table for Rep. Markey's office.

Antonios Zoulis
RST Severe Accident Analyst

From: RST01 Hoc
Sent: Tuesday, April 12, 2011 3:32 PM
To: RST09 Hoc; RST07 Hoc
Subject: FW: Question from Congressman Markey's staff

From: Riley (OCA), Timothy
Sent: Tuesday, April 12, 2011 3:31:32 PM
To: RST01 Hoc
Cc: Powell, Amy; Droggitis, Spiros
Subject: FW: Question from Congressman Markey's staff
Auto forwarded by a Rule

RST,
As I discussed over the phone with Mike Brown, OCA would like to provide the attached matrix of pressure and radiation readings from Fukushima to the staffer for Rep. Markey. However, OCA would also like to accompany the data with a statement explaining that the data does not lend itself readily to interpretation; that we cannot offer a comparison of Unit 1 to Unit 2 without relying overly on speculation.
So that I can send the data to Congressman Markey, can you provide me with approved language explaining this?

LLL/274

Fukushima Daiichi Information as of 1800 EDT 04/12/2011

	Reactor Vessel Pressure		Containment Status	Drywell Pressure (TEPCO 04/12/2011)	Drywell Radiation (TEPCO 04/12/2011)	Torus Pressure (TEPCO 04/12/2011)	Torus Radiation (TEPCO 04/12/2011)
	Channel A (TEPCO 04/12/2011)	Channel B (TEPCO 04/12/2011)					
Unit 1	60.3 psig	131.7 psig	Damage suspected, slow leakage, N_2 injection	12.9 psig	Uncertain	9.2 psig	1080 rem/hr
Unit 2	-3.3 psig	-3.6 psig	Damage suspected	-1.6 psig	2810 rem/hr	Uncertain	68.1 rem/hr
Unit 3	-2.8 psig	-11.5 psig	Damage suspected, N_2 injection planned	0.6 psig	1740 rem/hr	9.8 psig	67.1 rem/hr

Considering the damage that has been done to the site, instruments readings are suspect. Conjecture on the condition of the plant without further detailed information is not advisable. Instrument readings may be trusted for trends and approximate measurements. Furthermore, a comparison of Unit 1 to Unit 2 using the above information is speculative.

From: Bloom, Steven
Sent: Tuesday, April 12, 2011 3:11 PM
To: ET02 Hoc
Subject: RE: BB & Laptop for Thursday Traveler requested

Since not sure of his travel plans.....

From: ET02 Hoc
Sent: Tuesday, April 12, 2011 1:54 PM
To: Bloom, Steven
Subject: RE: BB & Laptop for Thursday Traveler requested

Why today?

From: Bloom, Steven
Sent: Tuesday, April 12, 2011 1:46 PM
To: ET02 Hoc
Subject: RE: BB & Laptop for Thursday Traveler requested

Trying to get BB for today...

From: ET02 Hoc
Sent: Tuesday, April 12, 2011 1:37 PM
To: Bloom, Steven
Subject: FW: BB & Laptop for Thursday Traveler requested

Sorry – here is the information for Tim's BB and laptop – we requested it for 9am tomorrow.

From: Reyes, Debra
Sent: Tuesday, April 12, 2011 7:02 AM
To: ET02 Hoc
Subject: RE: BB & Laptop for Thursday Traveler requested

Will do.

From: ET02 Hoc
Sent: Tuesday, April 12, 2011 7:02 AM
To: Reyes, Debra
Subject: FW: BB & Laptop for Thursday Traveler requested

Debbie:
Yes Mr. Lupold wants an air card per his response below. Thanks...karen

---

From: Lupold, Timothy
Sent: Monday, April 11, 2011 4:47 PM
To: ET02 Hoc
Subject: RE: BB & Laptop for Thursday Traveler requested

Yes.

LLLL/275

From: ET02 Hoc
Sent: Monday, April 11, 2011 3:26 PM
To: Lupold, Timothy
Subject: FW: BB & Laptop for Thursday Traveler requested
Importance: High

Do you want an air card to use for accessing Citrix to go along with the laptop? ...karen

---

From: Reyes, Debra
Sent: Monday, April 11, 2011 3:18 PM
To: ET02 Hoc
Subject: RE: BB & Laptop for Thursday Traveler requested

Just to confirm. Mr. Lupold would like an air card?

From: ET02 Hoc
Sent: Monday, April 11, 2011 12:55 PM
To: Reyes, Debra; Turner, Joseph
Subject: BB & Laptop for Thursday Traveler requested

Debbie:
Please see the e-mails shown below: Timothy Lupold would like to pick up the BB and now a laptop as well ready for pickup on Wednesday at 9am. Thanks...karen

---

From: LIA02 Hoc
Sent: Monday, April 11, 2011 12:22 PM
To: ET02 Hoc
Subject: FW: Blackberry

From: Lupold, Timothy
Sent: Monday, April 11, 2011 12:14 PM
To: LIA02 Hoc
Subject: RE: Blackberry

I will stop by the Ops Center at 9:00 am on Wednesday to pick up the blackberry. And, yes, a laptop would be very beneficial if it were possible to access the NRC website via CITRIX. If not, I can use my own personal laptop.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 11:46 AM
To: Lupold, Timothy
Subject: RE: Blackberry

Wednesday at your convenience. Let me know the time. Do you need a laptop.

From: Lupold, Timothy
Sent: Monday, April 11, 2011 11:44 AM
To: LIA02 Hoc
Subject: RE: Blackberry

I can do that anytime. I can come over this afternoon. Let me know what is convenient for you.

From: LIA02 Hoc
Sent: Monday, April 11, 2011 10:29 AM
To: Lupold, Timothy
Cc: ET02 Hoc
Subject: Blackberry

Tim,

Need to know when you can come over on Wednesday and get your international blackberry

Steve

Subject: RE: Blackberry request for SEAN MEIGHAN tickets 511705 & 511707 traveling to Japan.
Importance: High

Joe/Eric,

I am responding since Ryan appears to be away from his office. I am assuming the user needs a new International BB which will need involvement from TSC to issue a new phone with a new number and go through activation process.

regards

From: CSC
Sent: Tuesday, April 12, 2011 1:44 PM
To: L3_JAPAN
Subject: Blackberry request for SEAN MEIGHAN tickets 511705 & 511707 traveling to Japan.
Importance: High

Hello Ryan,

Steven.Bloom called stating that Sean Meighan needs an international blackberry for Japan. He needs us to deliver the blackberry to Sean by 2:30pm today at location O-8E11

Steven's number is 301-415-2431

Thank you,
Jude

LLLL/276

From: Reyes, Debra
Sent: Wednesday, April 27, 2011 2:47 PM
To: ET02 Hoc
Subject: RE: found BlackBerry

Just found out this is not the same one. Mr. Trapp's has not been located yet.

From: ET02 Hoc
Sent: Wednesday, April 27, 2011 2:46 PM
To: Reyes, Debra
Subject: RE: found BlackBerry

Good. I'm glad it wasn't really lost! ...karen

From: Reyes, Debra
Sent: Wednesday, April 27, 2011 1:15 PM
To: ET02 Hoc
Subject: found BlackBerry

Fyi

The BlackBerry that was reported lost in Japan (assigned to Jim Trapp) has been located in Region 2.

LLLL/277

From: OST01 HOC
Sent: Tuesday, April 12, 2011 11:58 AM
To: Dyer, Jim
Subject: One Pager 0600EDT 4-12-11
Attachments: One Pager 0600EDT 4-12-11.docx

LLLL/278

From: Holahan, Vincent
Sent: Tuesday, April 12, 2011 3:58 PM
To: OST01 HOC
Subject: RE: ACTION - NEW TICKET #4641 ISSUED TO NRR

Thanks.

I will forward this to PACOM, COL Traub. I will include email and phone numbers as well.

Cheers,
Vince

From: OST01 HOC
Sent: Tuesday, April 12, 2011 3:52 PM
To: Holahan, Vincent
Subject: FW: ACTION - NEW TICKET #4641 ISSUED TO NRR

Hi Vince,

Please see Pat Hiland's e-mail (below) regarding Action Item #4641 issued to NRR requesting a replacement for Tony Ulses while he is on vacation.

Please let us know if this information should be forwarded to others.

Thank You,
Executive Support Team

From: Hiland, Patrick
Sent: Tuesday, April 12, 2011 12:44 PM
To: OST01 HOC
Cc: Skeen, David; Westreich, Barry; Ulses, Anthony; Brown, Frederick
Subject: RE: ACTION - NEW TICKET #4641 ISSUED TO NRR
Importance: High

Replacements for Tony Ulses:
April 13 through April 15 = Barry Westreich.
April 17 through April 22 = David Skeen.

Understand the function to be performed is intended to take 1-2 hr./day M-W-F.

By this email, we consider the subject Red Ticket closed.

From: OST01 HOC
Sent: Monday, April 11, 2011 11:01 PM
To: Hiland, Patrick; Skeen, David
Subject: ACTION - NEW TICKET #4641 ISSUED TO NRR

Please see the attached "Red Ticket" (action assigned by HQ Operations Center) assigned to your Office.

LLLL-279

If you have any questions, please contact the Operations Center at 301-816-5100.

Thank You,
Executive Support Team

From: Correia, Richard
Sent: Wednesday, April 27, 2011 3:22 PM
To: OST01 HOC
Subject: Out of Office: Japan One Pager 1500 EDT 4-27-11.doc

From Wednesday, April 27, thru Monday May 2,2011, Doug Coe will be the Acting Director of the Division of Risk Analysis, RES.

LLLL/280

From: ET01 Hoc
Sent: Tuesday, April 12, 2011 7:01 AM
To: ET02 Hoc
Subject: FW: FYI - Draft Global Assessment slides
Attachments: JapenGlobalAssessment.pptx

From: Weber, Michael
Sent: Tuesday, April 12, 2011 7:00:28 AM
To: ET05 Hoc; ET01 Hoc; OST02 HOC
Subject: FYI - Draft Global Assessment slides
Auto forwarded by a Rule

From: Casto, Chuck
Sent: Tuesday, April 12, 2011 6:09 AM
To: HOO Hoc; Wiggins, Jim
Cc: Virgilio, Martin; Jaczko, Gregory; Weber, Michael; Hay, Michael; Bernhard, Rudolph; Collins, Elmo; Blamey, Alan
Subject: Draft Global Assessment slides

Folks,

Attached is a very draft presentation that we would use to brief out the content of our Global Assessment. It needs some context placed around it, so we can brief you on that soonest. This will accompany the Global Assessment. That Assessment is almost complete and will follow soon. Meanwhile this presentation represents the insights from it.

We had a Tasker to develop a presentation for VIPs.....this would serve as the content of that presentation.....

Casto

LLL/281

NRC GLOBAL ASSESSMENT of FUKUSHIMA EVENT

Background

- Consortium of U.S. nuclear organizations completed assessment
  - NRC; Department of Energy; Naval Reactors; Institute of Nuclear Power Operations; Electric Power Research Institute; General Electric
- Collaborated to complete technical assessments for safety issues for reactors and spent fuel pools
- All major assessments completed
- Provided results to TEPCO and NISA

Assessment Conclusions

- PARs remain conservative through all scenarios
  - Tokyo is not seriously threatened
- Unknown Ocean impacts
- Active releases ongoing
- Static but fragile accident conditions
- Mitigating features temporary and highly unconventional

Assessment Conclusions

- Timeline for action short upon loss of injection – less than 10 hours for Unit 1
- Fuel Damage estimates: U-1 67%; U-2 44%; U-3 30% (est.)
- Reliance on steam cooling for reactors
- Current situation results in a 1-10 to 1-100 probability of release
- Current situation could be improved to 1-1000 or greater by flooding
- Flooding reduces consequences by one-to-two orders of magnitude
- Containment flooding remains primary suggestion
- Feed and bleed assessment recommends more actions to mitigate additional events

Assessment Conclusions

- Stability requires more actions
  - Diversity and redundancy in feeding system
  - Automation of Giraffes and feeding systems
  - Additional feeding system injection points
  - Additional venting system
  - Completing actions to Phase 1 and Phase 2 stability
  - Procedures and training

From: Chandrathil, Prema
To: Hayden, Elizabeth
Subject: Out of Office: NEI Talking Points Comparing Chernobyl and Fukushima
Date: Wednesday, April 13, 2011 2:29:11 PM

I am out of the office but will be checking messages periodically. If you need to speak to someone immediately please contact 630-829-9856.

Thanks,
Prema

LLL4/282

From: Reyes, Debra
Sent: Wednesday, April 13, 2011 7:48 AM
To: ET02 Hoc
Subject: RE: New Travelers

Good morning,

Specific requests will need to be submitted to the CSC.

Thanks!

From: ET02 Hoc
Sent: Wednesday, April 13, 2011 7:38 AM
To: Reyes, Debra
Cc: Turner, Joseph
Subject: FW: New Travelers
Importance: High

Debbie:

As new travelers are identified who should we notified so their names can be added to the list of names who can access the "Liaison Japan" shared drive on Citrix? Will you do it automatically or does someone need to send a specific request? Thanks...karen

From: Bloom, Steven
Sent: Tuesday, April 12, 2011 4:04 PM
To: ET02 Hoc; Jackson, Karen
Subject: New Travelers

Please make sure that Sean Meighan, Tim Lupold and Don Norwood are added to Liaison Japan email address and are added to the network drive.

Thank you,

Steve

Steven Bloom, International Relations Specialist
International Cooperation and Assistance Branch (ICA)
301-415-2431
O-4F4
M/S O-4E21

LLLL/283

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 6:37 AM
To: ET02 Hoc
Subject: FW: FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi
Attachments: NRC Daily Assessment of Daiichi - 4-13-11.pdf

From: Weber, Michael
Sent: Wednesday, April 13, 2011 6:36:45 AM
To: ET05 Hoc; ET01 Hoc; Dyer, Jim
Cc: OST02 HOC; FOIA Response.hoc Resource
Subject: FYI - NRC's Daily Assessment of Conditions at Fukushima Daiichi
Auto forwarded by a Rule

From: Salay, Michael
Sent: Wednesday, April 13, 2011 6:16 AM
To: Jaczko, Gregory
Cc: Borchardt, Bill; Weber, Michael; Virgilio, Martin; Casto, Chuck; Leeds, Eric; RST01 Hoc
Subject: NRC's Daily Assessment of Conditions at Fukushima Daiichi

Dear Chairman,

Attached please find the NRC Japan Team's Daily Assessment of conditions at the Fukushima Daiichi nuclear power plants and spent fuel pools. There is one change of note today. Temperatures in the upper drywell and on the vessel of Unit 3 are slowly trending up. This is reflected by a down arrow in the attached for integrity of the Unit 3 containment. We will continue to discuss these issues with NISA and TEPCO.

If you have any questions, please don't hesitate to ask.

Best regards,
Mike Salay
NRC Japan Team

LLLL/284

NRC's Daily Assessment of Conditions at Fukushima Daiichi Nuclear Power Plant

Unit 1		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↔
	Integrity	Intact	Intact
		↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed
		↔	↔
	Integrity	Challenged	Challenged
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

Unit 2		Today	Yesterday
Vessel	Cooling	Challenged	Challenged
		↔	↓
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Inc./Needed	Inc./Needed
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Spent Fuel Pool	Cooling/Level	Adequate	Adequate
		↔	↔
	Integrity	Intact	Intact
		↔	↔

Unit 3		Today	Yesterday
Vessel	Cooling	Adequate	Adequate
		↔	↔
	Integrity	Failed	Failed
		↔	↔
Containment	Flooding	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↓	↔
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Challenged	Challenged
		↔	↔

Unit 4		Today	Yesterday
Spent Fuel Pool	Cooling/Level	Challenged	Challenged
		↔	↔
	Integrity	Failed	Failed
		↔	↔

		Today	Yesterday
Protective Measures	Exposure Risk	Low	Low
		↔	↔

Methodology for Developing the Fukushima Daiichi Daily Assessment Report

PURPOSE: The report is prepared to provide a qualitative high level assessment of daily conditions at Fukushima Daiichi that the U.S. Ambassador can use to assess the safety of American citizens in Japan.

DISCLAIMER: The development of the daily assessment report includes a number of inputs. Some of these are objective, such as plant data provided by TEPCO, while others are subjective, such as engineering insights from the NRC's reactor and protective measures specialists in Japan. It should be recognized that there are many unknowns and uncertainties associated with having a complete understanding of conditions in each of the Daiichi reactors and spent fuel pools. As such, this tool represents the collective judgment of the NRC staff in Japan based on all available data.

For each of the major plant parameters listed below, the NRC staff assesses its status daily and bins it into one of the three categories listed. The staff uses the listed plant information and conditions in making its assessment. The arrows on the report indicate the relative trend in plant conditions from the previous day.

1. Reactor Pressure Vessel
    a. Cooling – Adequate, Challenged, or Inadequate.
        i. Flow or Injection Rate
        ii. Reliability of Injection
        iii. Source of Water
    b. Integrity – Intact, Challenged, or Failed.
        i. Temperature indications
        ii. Pressure readings
2. Primary Containment
    a. Flooding Status – Complete/Not needed, Challenged, or Incomplete/Needed.
        i. Water Level
        ii. Sources
        iii. Injection capacity/rate
    b. Integrity - Intact, Challenged, or Failed.
        i. Pressure readings
        ii. Bypass evaluations
        iii. Temperature indications
3. Spent Fuel Pools
    a. Cooling/Level – Adequate, Challenged, or Inadequate.
        i. Flow or Injection Rate
        ii. Reliability of Injection
        iii. Source of Water
    b. Integrity – Intact, Challenged, or Failed. Due to limited available data, this assessment relies strongly on the NRC team's engineering judgment.
4. Protective Measures – Exposure Risk to American citizens in Japan outside the U.S. government's recommended 50-mile evacuation zone.
    a. Low – 50-mile recommendation remains sufficient
    b. Medium – New information has raised questions regarding the sufficiency of the 50-mile recommendation.
    c. High – 50-mile recommendation is no longer sufficient due to changing plant condition

From: ET02 Hoc
Sent: Wednesday, April 13, 2011 11:43 AM
To: Reyes, Debra; Block, Vicki
Cc: Oliver, Dawn; Brown, Cris; Khan, Omar
Subject: FW: QUESTION

Importance: High

Debbie and Vicki:
Please note that this request is not related to the Japan response currently going on in the Ops Center. Therefore, this request needs to follow the normal user request processing and approval. Thanks...karen jackson

-----Original Message-----
From: Kahler, Carolyn
Sent: Wednesday, April 13, 2011 11:00 AM
To: ET02 Hoc
Subject: RE: QUESTION

This is an EP need only, we are attempting to coordinate our counterpart calendars better with a shared outlook one. Not to be used for the Japan response.

From: ET02 Hoc
Sent: Wednesday, April 13, 2011 10:57 AM
To: Kahler, Carolyn
Subject: FW: QUESTION

Carolyn:
I was asked about the this request that you sent to Vicki Block who has passed it on to CSC. Does this have something to do with our Japan response or is it an EP need? Thanks...Karen jackson

From: Reyes, Debra
Sent: Wednesday, April 13, 2011 8:33 AM
To: ET02 Hoc
Subject: FW: QUESTION

Good morning,

fyi

From: Oliver, Dawn
Sent: Wednesday, April 13, 2011 8:25 AM
To: Jones, Laura
Cc: Reyes, Debra
Subject: QUESTION

Good morning,

LLLL/285

Debra Reyes is assisting NSIR people with a request to allow FEMA employees to access our NRC network in order to share calendars and schedules.

We told NSIR that the FEMA Security Officer would have to get in touch with you to transfer their personnel security information for review and possible granting of IT access.

Could you give us any idea at all of how long NSIR could expect the review process to take once FEMA provides the information?

Thank you!

From: ET02 Hoc
Sent: Wednesday, April 13, 2011 8:38 AM
To: Reyes, Debra
Subject: RE: QUESTION

Debbie:
Who in NSIR is making this request? Are you in your office so I can give you a call? Thanks...Karen

---

From: Reyes, Debra
Sent: Wednesday, April 13, 2011 8:33 AM
To: ET02 Hoc
Subject: FW: QUESTION

Good morning,

fyi

From: Oliver, Dawn
Sent: Wednesday, April 13, 2011 8:25 AM
To: Jones, Laura
Cc: Reyes, Debra
Subject: QUESTION

Good morning,

Debra Reyes is assisting NSIR people with a request to allow FEMA employees to access our NRC network in order to share calendars and schedules.

We told NSIR that the FEMA Security Officer would have to get in touch with you to transfer their personnel security information for review and possible granting of IT access.

Could you give us any idea at all of how long NSIR could expect the review process to take once FEMA provides the information?

Thank you!

LLL/286

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 2:52 AM
To: ET02 Hoc
Subject: FW: Question from Congressman Markey's staff
Attachments: Fukushima Daiichi Information as of 0230 EDT April 13 for Markey.doc

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From: RST01 Hoc
Sent: Wednesday, April 13, 2011 2:51:46 AM
To: ET02 Hoc; ET01 Hoc
Subject: FW: Question from Congressman Markey's staff
Auto forwarded by a Rule

From: RST09 Hoc
Sent: Wednesday, April 13, 2011 2:50 AM
To: RST01 Hoc
Subject: FW: Question from Congressman Markey's staff

Updated wording of table for Rep. Markey's office.

Larry Criscione
RST Severe Accident Analyst

From: RST09 Hoc
Sent: Tuesday, April 12, 2011 6:02 PM
To: RST01 Hoc
Subject: RE: Question from Congressman Markey's staff

Information added qualifying table for Rep. Markey's office.

Antonios Zoulis
RST Severe Accident Analyst

From: RST01 Hoc
Sent: Tuesday, April 12, 2011 3:32 PM
To: RST09 Hoc; RST07 Hoc
Subject: FW: Question from Congressman Markey's staff

From: Riley (OCA), Timothy
Sent: Tuesday, April 12, 2011 3:31:32 PM
To: RST01 Hoc
Cc: Powell, Amy; Droggitis, Spiros
Subject: FW: Question from Congressman Markey's staff
Auto forwarded by a Rule

LLLL/287

Fukushima Daiichi Information as of 0230 EDT 04/13/2011

	Reactor Vessel Pressure		Containment Status	Drywell Pressure (TEPCO 04/12/2011)	Drywell Radiation (TEPCO 04/12/2011)	Torus Pressure (TEPCO 04/12/2011)	Torus Radiation (TEPCO 04/12/2011)
	Channel A (TEPCO 04/12/2011)	Channel B (TEPCO 04/12/2011)					
Unit 1	60.3 psig	131.7 psig	Damage suspected, slow leakage, N_2 injection	12.9 psig	Uncertain	9.2 psig	1080 rem/hr
Unit 2	-3.3 psig	-3.6 psig	Damage suspected N_2 injection planned by 4/20	-1.6 psig	2810 rem/hr	Uncertain	68.1 rem/hr
Unit 3	-2.8 psig	-11.5 psig	Damage suspected,	0.6 psig	1740 rem/hr	9.8 psig	67.1 rem/hr

Considering the damage that has been done to the site, instruments may no longer be accurately calibrated, but instrument readings may be trusted for trends and approximate measurements. Comparison of Unit 1 to Unit 2 or 3 using the above information is speculative, but indicates Units 2 and 3 are not holding pressure. This may be due to an SRV remaining open on these units. The NRC Japan Team believes there is a stuck open SRV on the Unit 2 reactor. There are some NRC analysts who believe Unit 2 and possibly Unit 3 may have had a partial failure of one or more components of the lower vessel head and a release of some molten fuel into the drywell; GEH and TEPCo do not concur with this analysis.

Based on knowledge gained from several decades of analysis and research following the 1979 TMI-2 accident, the NRC has developed an understanding of potential severe accident progression paths (e.g. NUREG 1150, NUREG0933). The available instrument data is being evaluated by the NRC staff against the NRC's understanding of accident sequences. The NRC is making recommendations based on the best available information.

From: ET02 Hoc
Sent: Tuesday, April 26, 2011 9:55 AM
To: Fenton, Darlene
Subject: WORKSTATION

I was wondering if you wanted me to keep the workstation and monitor that was installed in the Ops Center guard station area during our response to Japanese events? Should we keep it there permanently or have it returned to OIS? Please let me know your thoughts on this. Thanks...Karen Jackson, response ops sys mgr

LLLL/288

From: OST01 HOC
Sent: Wednesday, April 13, 2011 7:32 AM
To: Dyer, Jim
Subject: FW:
Attachments: RE: Consensus view on risks to people living in the Tokyo area; RE: Consensus view on risks to people living in the Tokyo area

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From: ET02 Hoc
Sent: Wednesday, April 13, 2011 7:23 AM
To: OST01 HOC
Subject: FW:

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 7:23:20 AM
To: ET02 Hoc
Subject: FW:
Auto forwarded by a Rule

From: Sheron, Brian
Sent: Wednesday, April 13, 2011 7:23:33 AM
To: Weber, Michael; Virgilio, Martin; ET01 Hoc; PMT01 Hoc; Wiggins, Jim
Auto forwarded by a Rule

More.

LLLL/289

From: LIA03 Hoc
Sent: Wednesday, April 13, 2011 12:13 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: OUO -- 1200 EDT (April 13, 2011) USNRC Earthquake-Tsunami Update
Attachments: USNRC Earthquake-Tsunami Update.041311.1200EDT.pdf

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From: LIA07 Hoc
Sent: Wednesday, April 13, 2011 12:13 PM
To: LIA07 Hoc
Subject: OUO -- 1200 EDT (April 13, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 13, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is not intended to be shared outside of the Federal government without NRC approval.

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

Thank you,
Sara

Sara Mroz
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

LLLL/290

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 3:43 PM
To: ET02 Hoc
Subject: FW: FYI - TOP STORY IN TODAY'S GLOBAL SECURITTY NEWSWIRE
Attachments: image001.jpg

From: Weber, Michael
Sent: Wednesday, April 13, 2011 3:42:45 PM
To: Carpenter, Cynthia; ET05 Hoc; ET01 Hoc; OST02 HOC; OST01 HOC
Cc: Brenner, Eliot; Hayden, Elizabeth; Burnell, Scott; Doane, Margaret; Mamish, Nader; Virgilio, Martin; Merzke, Daniel
Subject: FYI - TOP STORY IN TODAY'S GLOBAL SECURITTY NEWSWIRE
Auto forwarded by a Rule

Japan Denies Withholding Evidence of Massive Radiation Release

Wednesday, April 13, 2011

Japanese authorities on Tuesday attempted to deflect criticism for withholding over a period of weeks indications of significant radioactive material leakages from the Fukushima Daiichi nuclear power plant, the *New York Times* reported (see GSN, April 12).

(Apr. 13) - *A perimeter fence, shown on Tuesday, restricts access to Japan's Fukushima Daiichi nuclear power plant. Tokyo last month did not release calculations pointing to major radioactive material releases from the severely damaged facility due to concerns over their accuracy, officials said this week (Athit Perawongmetha/Getty Images).*

Japan on Tuesday upgraded the plant's incident level from 5 to 7, a classification reserved for the most severe nuclear crises. The government took the action in large part in response to calculations showing that extreme quantities of radioactive iodine and cesium had escaped from the six-reactor facility in the first week after it was crippled by the 9.0-magnitude earthquake and devastating tsunami that hit Japan on March 11. The confirmed death toll from those events now exceeds 12,000 people.

LLLL/291

Uncertainty over the calculations' accuracy held up their release, Japanese Nuclear Safety Commission official Seiji Shiroya said. In addition, the official suggested the government was concerned the measurements could exacerbate public fear over the atomic crisis.

"Some foreigners fled the country even when there appeared to be little risk," Shiroya said. "If we immediately decided to label the situation as level 7, we could have triggered a panicked reaction."

"At first, the calculations could have been off by digits," the official added. "It was only when there was certainty that the margin of error was within two to three times that we made an announcement" (*New York Times*, April 12).

Japanese Chief Cabinet Secretary Yukio Edano said he knew last month that the plant's incident level might be raised to 7, though details on radiation escaping from the facility were unclear at the time, Kyodo News reported. The Nuclear Safety Commission had measurements from only three sites away from the facility at that point, and the country's Nuclear and Industrial Safety Agency collects its own figures for verification.

The two organizations "said they could not vouch for the certainty of their estimates, so I told them to make a thorough, reliable analysis as soon as possible," Edano said, noting he was informed on Monday of the updated assessment (Kyodo News I, April 12).

The plant has released between 370,000 and 630,000 terabecquerels of radiation, Reuters reported, quoting estimates by both government offices.

"If that is the total radiation so far from the time of first leakage, that amount is very serious. It's undoubtedly very bad. That is close to one-tenth of Chernobyl's radiation in a month," said Lam Ching-wan, a member of the American Board of Toxicology and a chemical pathologist with the University of Hong Kong. "It means there is damage to soil, ecosystem, water, food and people. People receive this radiation. You can't escape it by just shutting the window."

"The radiation threat is there and there must be national radiation surveillance for health purposes ... they must decide if there should be regular screening for cancer," the expert said. Iodine 131, cesium 134 and cesium 137 can all produce cancer years after exposure (Tan Ee Lyn, Reuters I, April 12).

Japanese Prime Minister Naoto Kan on Tuesday denied concealing radiation data, the *Times* reported.

"What I can say for the information I obtained -- of course the government is very large, so I don't have all the information -- is that no information was ever suppressed or hidden after the accident," Kan said. "There are various ways of looking at this, and I know there are opinions saying that information could have been disclosed faster. However, as the head of the government, I never hid any information because it was inconvenient for us."

Separately, a senior executive for the plant's operator suggested the facility might eventually emit more radioactive material than was released in the 1986 Chernobyl disaster. The plant has so far hemorrhaged roughly 10 percent of the amount of radioactive contaminants released by the incident in the former Soviet Union, according to the Japanese government.

"The radiation leak has not stopped completely, and our concern is that it could eventually exceed Chernobyl," Tokyo Electric Power executive Junichi Matsumoto said on Tuesday.

NISA Deputy Director General Hidehiko Nishiyama, though, said he "cannot understand" the company's stance. He suggested the operator was being "prudent and thinking about the worst-case scenario," noting, "I think they don't want to be seen as optimistic."

The plant has now leaked "almost all" of the total amount of radioactive material that would escape, Nishiyama said, adding the level of contaminants leaving the facility has fallen by nine-tenths since the first days of the crisis (*New York Times*).

A senior International Atomic Energy Agency official said the "Fukushima accident and Chernobyl are very different," Kyodo News reported.

The Chernobyl reactor was running at the time of the incident, whereas operations at the Japanese plant were rapidly suspended following last month's earthquake and tsunami, IAEA Deputy Director General Denis Flory said (Kyodo News II, April 12).

The Fukushima disaster's designation at the same level as the Chernobyl incident points to the need to revise the IAEA International Nuclear and Radiological Event Scale, Reuters on Wednesday quoted a specialist as saying.

"Fukushima was not as bad as Chernobyl. If Fukushima is a level 7 accident, maybe we need to go back and recalibrate the scale and add a level 8 or 9," said Najmedin Meshkati, a civil and environmental engineering professor with the University of Southern California (DiSavino/O'Grady, Reuters II, April 12).

Meanwhile, plant personnel as of Wednesday morning had pumped nearly one-third of a 700-ton quantity of radiation-tainted water out of an underground area of the No. 2 reactor's turbine area and another passage into a steam condenser, Kyodo News reported. The operation, slated for completion by Thursday, had reduced the water's depth in the passage .

Recovery efforts were unaffected by a 5.8-magnitude earthquake on Wednesday morning, the Japanese atomic safety agency said.

Contaminated water has hindered efforts to restore cooling mechanisms needed to help prevent additional radioactive material from escaping the site. Workers intend to eventually transfer 60,000 tons of fluid flooding underground portions of the facility, including turbine areas at the plant's No. 1, No. 2 and No. 3 reactors.

The plant operator overnight fired 195 tons of fresh water into a spent nuclear fuel cooling point in the reactor 4 structure after the water was found on Tuesday to be approaching boiling temperature. The site's water depth has fallen as a series of tremors rocked the plant, according to the company (Kyodo News III, April 13).

Tokyo Electric Power said a number of the spent fuel rods in storage at the reactor have been harmed, but most of the fuel seemed stable (Kyodo News IV, April 13).

The firm intends on Wednesday to complete the deployment of seven steel radiation containment barriers close to a No. 2 reactor pipe for receiving ocean water. "Silt fence" installations were slated for placement near similar pipes at the No. 3 and No. 4 reactors (Kyodo News III).

Japan on Monday announced plans to establish "planned evacuation areas" and "evacuation-prepared areas" outside the exclusion zone extending 12.4 miles from the plant, the International Atomic Energy Agency said. Residents are expected to leave planned evacuation areas within one month, while individuals in evacuation-prepared areas could be asked to remain indoors or potentially to leave their homes (International Atomic Energy Agency release, April 12).

The government has announced plans to evacuate five additional jurisdictions, possibly including more areas in the town of Miniamisoma located partially within the exclusion zone, the London *Guardian* reported. All but 10,000 of the town's 71,000 residents have already left (Justin McCurry, London *Guardian*, April 12).

Radioactivity in Tokyo on Wednesday was found at levels typical prior to the Fukushima plant crisis, Kyodo News reported (Kyodo News V, April 13).

A longer-term plan for containing plant radiation was still in development, Reuters quoted Tokyo Electric Power President Masataka Shimizu as saying on Wednesday.

"As instructed by Prime Minister Kan we are working out the specific details of how to handle the situation so they can be disclosed as soon as possible," Shimizu said. "We are making the utmost effort to bring the reactors at Fukushima Daiichi to a cold shutdown and halt the spread of radiation" (Fujioka/Uranaka, Reuters III, April 13).

Machinery operated from a distance has begun taking radioactive detritus from the area surrounding the plant, the *Asahi Shimbun* reported (*Asahi Shimbun*, April 13).

Japan on Wednesday prohibited deliveries of shiitake mushrooms grown in exposed areas close to the facility, Kyodo News reported (Kyodo News VII, April 13).

In South Korea, plutonium traces turned up in 12 ocean water samples taken between March 23 and April 6, the Yonhap News Agency reported.

"The amount detected is negligible with concentration levels being more than a millionth-to-one of the 1 millisievert safety standard set by the government," Korea Institute of Nuclear Safety President Yun Choul-ho said, adding the plutonium did not appear to have originated in Japan.

"Instead of carrying out biannual tests on seawater, Seoul will check for radiation every month starting in April," Yun said (Yonhap News Agency, April 13).

Chinese Premier Wen Jiabao on Tuesday pressed Prime Minister Kan to provide faster updates on the disaster, *China Daily* reported (*China Daily*, April 13).

Japanese Foreign Minister Takeaki Matsumoto on Wednesday said the government had not provided advance notice of a recent radioactive water release to all governments that have diplomatic ties with Tokyo, Kyodo News reported.

"It is true that our notification was sent after the water discharge started, but communication channels have since been improved," he said (Kyodo News VIII, April 13).

Tokyo is expected to dispatch a delegate to provide information on the crisis at a number of international atomic safety meetings in Ukraine (Kyodo News IX, April 13).

Mike

Michael Weber
Deputy Executive Director for Materials, Waste, Research,
State, Tribal, and Compliance Programs

U.S. Nuclear Regulatory Commission

301-415-1705
Mail Stop O16E15

fyi

Karen will be submitting a request to have the air cards reactivated.

Debbie

From: ET02 Hoc
Sent: Wednesday, April 13, 2011 1:36 PM
To: Reyes, Debra
Subject: NEED TO JAPANESE LAPTOP & STATUS OF AIR CARDS RE-ACTIVATION
Importance: High

Debbie:

Where/whom should I returned one of the Japan travelers' laptop to – Rob Taylor returned his to me and I have it in the Ops Center. I can deliver it to whomever / wherever you like. I couldn't remember Serge's last name in order to include him on this e-mail.

Also I wanted to check to make certain someone was going to work on re-activating the air cards that are currently still in Japan? Do I need to put in a request? Thanks for your help...Karen

LLLL/292

From: ET01 Hoc
Sent: Wednesday, April 13, 2011 5:46 PM
To: ET02 Hoc
Subject: FW: Unit 4 pool--why is the water level so low?
Attachments: slosh_sketch.png

From: Sheron, Brian
Sent: Wednesday, April 13, 2011 5:45:47 PM
To: ET01 Hoc; RST01 Hoc
Subject: FW: Unit 4 pool--why is the water level so low?
Auto forwarded by a Rule

More.....

From: Per F. Peterson [mailto:peterson@nuc.berkeley.edu]
Sent: Wednesday, April 13, 2011 5:11 PM
To: Fetter, Steve
Cc: DL-NITsolutions
Subject: Re: Unit 4 pool--why is the water level so low?

Steve,

High dose rates above the surface of the water pool, with this much water inventory, would be consistent with cesium aerosols being deposited on surfaces above the pool that would have been released when fuel uncovered, overheated, and oxidized to release hydrogen. A more unambiguous assessment could be obtained if the remote equipment could be used to take some swipes from the surfaces of debris above the pool to check for cesium contamination.

The temperature instrumentation in the Unit 4 pool is at a high elevation and would read the air temperature if a significant fraction of the pool water inventory had been lost. Since there was steam coming from the pool on March 16, the 82°C temperature measurement on March 16 was clearly the air temperature, not the water temperature.

The evidence is beginning to accumulate that the water level on March 12 was already low, and thus the 32°C measurement could have been an air temperature measurement then. If the temperature sensor was covered on March 12, then there should have been a slow heating up to around 100°C before the evaporation rate would have become rapid enough to uncover the sensor. I'm not sure how frequently they were taking temperature measurements between March 12 and 16, but it would be helpful to see the data if its available.

We're working on the design of a scaled sloshing experiment to put on our shake table in our Civil Engineering department (see attached sketch). It would be very helpful to get a plan-view drawing of the refueling deck. Also, if anyone has a digital record of the ground motion observed at Fukushima, that would be very helpful; otherwise we'll work with some records from near-by locations.

-Per

LLLL/293

According to the news report:

The Tokyo Electric Power Company, or TEPCO, says the water temperature in the spent fuel storage pool at the No. 4 reactor in the crippled Fukushima nuclear plant has risen to about 90 degrees CelsiusŠ.TEPCO took the temperature on Tuesday using an extending arm on a special vehicleŠTo cool the fuel, TEPCO sprayed 195 tons of water for 6 hours on Wednesday morningŠThe company thinks the pool's water level was about 5 meters lower than normal, but 2 meters above the fuel rodsŠTEPCO believes the water level is likely to rise by about one meter after the water spraying on WednesdayŠTEPCO says high levels of radiation at 84 millisieverts per hour were detected above the water surface, where radiation is rarely detected.

First, a dose rate of 84 mSv/h (8.4 rem/h) does not appear to be consistent with a water level of 2 m above the top of the fuel rods. The calculations that were presented two days ago indicated dose rates of 0.02 rem/h for a water level of 6 m, which is less than 2 m above the top of the fuel. Based on the slides, a dose rate of 8.4 rem/h is more consistent with a water level of 5.1 m, which is only 0.5 m above the top of the fuel. How is TEPCO estimating the water level? Is it using dose rate as an indicator? If TEPCO is correct about the water level, could the higher dose rate be due to radioactive material (even pieces of spent fuel dispersed by the explosion) on the service floor? If so, that could make it difficult to use dose rate as a measure of water level.

Second, temperature measurements as of 12 April indicated a temperature of 37 C. The rate of temperature increase can indicate water level. I estimate a maximum rate of 33 C/day for a full pool (12 m), so a rise of 53 C in one day would indicate a water level of about 7.5 m.

Third, I do not understand why the water level is so low in the unit 4 pool. There are daily reports of TEPCO adding water to the pool. Is TEPCO unable to get the water in the pool? Is the pool leaking? The concrete truck reportedly pumps 50 t/h, so it should take 18 hours to fill the pool starting from the top of the fuel and less than 2 hr/d to keep it full. (Assuming a heat rate of 2.3 MW, about 88 tons/day of water must be added to compensate for evaporation; it would take about 10 days for the top of the fuel to become exposed, starting with a full pool.)

From: Kelly, John E (NE) [mailto:JohnE.Kelly@Nuclear.Energy.Gov]
Sent: Wednesday, April 13, 2011 11:18 AM
To: Lyons, Peter; Holdren, John P.; Fetter, Steve; Trautman, Stephen J SES CIV NAVSEA 08 NR; Aoki, Steven; Sheron, Brian
Cc: Russel, Daniel R.; Zerr, Thomas J.; Reed, Richard A.; Bader, Jeffrey A.
Subject: RE: Consensus view on risks to people living in the Tokyo area

btw - reports from TEPCO indicate that pool # 4 temperature has increased to 90C and high radiation levels were detected above the pool

http://www3.nhk.or.jp/daily/english/13_35.html

--

Per F. Peterson
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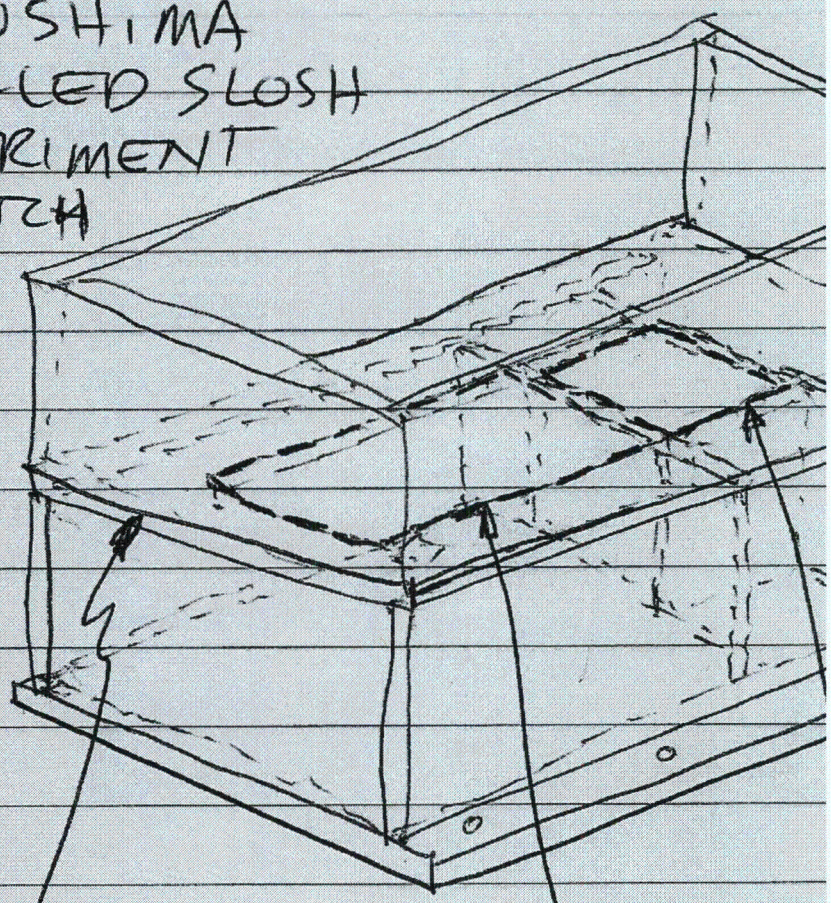
http://www.nuc.berkeley.edu/People/Per_Peterson

FUKUSHIMA
SCALED SLOSH
EXPERIMENT
SKETCH



P.E. PE

Lee, Richard

From: Powers, Dana A [dapower@sandia.gov]
Sent: Wednesday, April 13, 2011 4:42 PM
To: Lee, Richard
Subject: RE: Chemical Reactions of Sand with Spent Fuel

Thanks - I sent to Mike and Katie as well. Now that fuel is underwater in the spent fuel pools - at least in Unit 4 - we had probably get to looking at fuel leaching. We should have some stuff from WIPP. Dana

-----Original Message-----
From: Lee, Richard [mailto:Richard.Lee@nrc.gov]
Sent: Wednesday, April 13, 2011 2:39 PM
To: Powers, Dana A
Subject: RE: Chemical Reactions of Sand with Spent Fuel

Dana:

Thanks a lot. Appreciate you getting this done so fast. I will forward this to John Kelly and the NRC OP Center. I added a date to your document under your name.

Richard

-----Original Message-----
From: Powers, Dana A [mailto:dapower@sandia.gov]
Sent: Wednesday, April 13, 2011 4:23 PM
To: Lee, Richard
Cc: Gauntt, Randall O; Salay, Michael
Subject: Chemical Reactions of Sand with Spent Fuel

Richard, here is a brief write-up on the reactions of sand with clad reactor fuel. Dana

LLL/294

Benner, Eric

From: Ordaz, Vonna
Sent: Friday, April 01, 2011 6:16 PM
To: Weaver, Doug; Rahimi, Meraj; Garcia-Santos, Norma; Pstrak, David; Benner, Eric; Waters, Michael; White, Bernard; Easton, Earl; Bjorkman, Gordon; Witt, Kevin
Subject: Fw: Task force support and outline
Attachments: Task Force Report Outline.docx; Charter.docx

Importance: High

Follow Up Flag: Follow up
Flag Status: Completed

Categories: SFST - Routine

From: Haney, Catherine
To: Kinneman, John; Kokajko, Lawrence; Ordaz, Vonna; Pulliam, Timothy; Smith, Shawn; Doolittle, Elizabeth
Sent: Fri Apr 01 15:50:38 2011
Subject: FW: Task force support and outline

From: Miller, Charles
Sent: Friday, April 01, 2011 3:32 PM
To: Leeds, Eric; Johnson, Michael; Wiggins, Jim; Sheron, Brian; Moore, Scott; Zimmerman, Roy; Dean, Bill; McCree, Victor; Satorius, Mark; Collins, Elmo; Haney, Catherine; Doane, Margaret
Cc: Virgilio, Martin; Weber, Michael; Borchardt, Bill; Grobe, Jack; Holahan, Gary; Williamson, Edward; Spencer, Mary; Cubbage, Amy; Sanfilippo, Nathan; Dorman, Dan
Subject: Task force support and outline
Importance: High

Over the course of the past week, the task force has been chartered (attached) and begun its work. We have developed a working outline (also attached) that the task force will follow in pursuing this task. During this effort, we will need support from various agency technical experts from many of your offices or regions. We expect this input to largely be in the form of technical advice, informal briefings, and pulled from existing documents which will aid us in formulating our recommendations to the Commission. Please let me know the best way to coordinate support with your office. One method would be to identify a primary point of contact to coordinate support for the task force; however, I'm open to other suggestions to suit your needs. We will try to minimize the impact on your offices and regions resources so that you can continue to go about your normal agency responsibilities and duties.

To date, the task force has had the benefit of interviewing some members of the team dispatched to Japan to gain their insights and seek their feedback on the scope of our efforts (included in the attached outline). In addition, Dan Dorman will be joining the task force upon return from Japan which will further inform our efforts.

I appreciate your continued cooperation to ensure the success of this agency effort. For example, we have already been able to schedule meetings next week with agency seismic and flooding experts. We will keep you informed as the review progresses, particularly on matters that could affect your programs.

LLL/295

To date, the task force has had the benefit of interviewing some members of the team dispatched to Japan to gain their insights and seek their feedback on the scope of our efforts (included in the attached outline). In addition, Dan Dorman will be joining the task force upon return from Japan which will further inform our efforts.

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Draft – 4/1/11

Organization of the Fukushima Task Force Report

1. Introduction

2. Commission Direction – Task Force Charter

3. Summary of the Events at Fukushima Daiichi

    a. Earthquake
    b. Tsunami
    c. Long-term loss of AC power
    d. Loss of cooling
    e. Core and spent fuel damage
    f. Hydrogen explosions
    g. Radiological releases

    We will write at the summary level. We need to collect information from other sources, create our write-up, and then have others review for validity (NRR OpE?).

4. Discussion of Approach to Formulating Recommendations
    a. Use of safety goals?
    b. Use of regulatory analysis guidelines?

5. Evaluation of NRC regulatory requirements, programs, and processes, and their implementation at U.S. plants (generically, by type/location, individually as appropriate)

    a. Screening Discussion
        i. Short-term review vs. long-term review
        ii. What is in scope vs. out of scope?
    b. Protection from Natural Phenomena
        i. Evaluation of the design basis and safety margins for seismic events
            1. Have U.S. plants considered the right bounding conditions for seismic events? (Does GI-199 need to be accelerated? Is current action enough?)
        ii. Evaluation of the design basis and safety margins for external events to protect against long-term station blackout (core and SFP?)
            1. Seismic
            2. Tsunami
            3. Other Flooding Issues
                a. Hurricanes (storm surge)
                b. Dam failures (flooding level)

c. Probable maximum precipitation (rivers and stream flooding, blizzard)
d. Internal flooding

4. External Fires
5. High Winds
   a. Hurricane winds
   b. Tornado winds
   c. Tornado missile
6. Sequentially related external events (e.g., earthquake causes tsunami)

iii. Evaluation of the design basis and safety margins for spent fuel pool integrity and cooling

c. Mitigation

i. Strategies for mitigating accidents at single or multiple units; including challenges from unit interactions

1. Strategies to Prevent Core Damage during a Long-Term Station Blackout (SBO)
   a. SBO rule and implementation
   b. SBO restoration capabilities and issues
   c. Instrumentation availability
   d. Staffing availability/effectiveness/protection
   e. Emergency operating procedures (EOPs) for coping with loss of A/C
   f. Severe accident management guidelines (SAMGs) for coping with loss of A/C
   g. 10 CFR 50.54(hh)(2)-type measures for coping with loss of A/C
2. Strategies to Prevent Fuel Damage in the Spent Fuel Pool
   a. SBO rule and implementation
   b. SBO restoration capabilities and issues
   c. Instrumentation availability
   d. Staffing availability/effectiveness/protection
   e. Emergency operating procedures (EOPs) for coping with loss of A/C
   f. Severe accident management guidelines (SAMGs) for coping with loss of A/C
   g. 10 CFR 50.54(hh)(2)-type measures for coping with loss of A/C
   h. Other spent fuel pool failure mechanisms
3. Strategies for Maintaining Reactor Containment Function
   a. SAMGs
   b. 10 CFR 50.54(hh)(2)-type measures
   c. Instrumentation availability
   d. Staffing availability/effectiveness/protection

e. Containment Performance Improvement program
    i. Containment venting capabilities
    ii. Hardened vents
f. Hydrogen control measures
g. SAMG training and procedures

4. Strategies for Maintaining Spent Fuel Pool Containment Function
    a. SAMGs
    b. 10 CFR 50.54(hh)(2)-type measures
    c. Instrumentation availability
    d. Hydrogen combustion control measures
    e. SAMG training and procedures

d. Preparedness and Response to Emergencies (note: consider MOX)
    i. Evaluation of Planning Framework
        1. Protection from Plume Exposure
            a. Emergency Planning Zone
            b. Protective Action Recommendations
            c. Use and availability of KI
            d. External event challenges/infrastructure damage
            e. Evacuation Time Estimates
        2. Protection from Ingestion Pathways
            a. Emergency Planning Zone
            b. Protective Action Recommendations
            c. Measures to control food and water exposures
            d. External event challenges/infrastructure damage
    ii. Licensee Dose Projection Capability
    iii. Radiation Monitoring (onsite/offsite)
    iv. Emergency Communications During Natural Disasters and SBO
        1. Emergency Response Data System
        2. Availability and capability of communications equipment
    v. Command and Control
        1. Agreements with outside organizations to support utility
        2. Impact on licensee when NRP is invoked

e. Evaluation of NRC Programs
    i. Reactor inspection
    ii. Near-term licensing impacts
    iii. Safety/security interface

6. International Cooperation and Coordination

7. Information Provided by Stakeholders

8. Conclusions and Recommendations
    a. Applicability regardless of initiating event
    b. Sufficiency of structure to ensure safety goals remain met

c. Priority?
d. Recommendations
    i. Near-term/immediate operational or regulatory issues
    ii. Long-term recommendations for follow-up
        1. Issues
        2. Research
        3. Resources
e. Conclusions

CHARTER FOR THE NUCLEAR REGULATORY COMMISSION TASK FORCE

TO CONDUCT A NEAR-TERM EVALUATION OF THE NEED FOR AGENCY ACTIONS

FOLLOWING THE EVENTS IN JAPAN

Objective

The objective of this task force is to conduct a methodical and systematic review of relevant NRC regulatory requirements, programs, and processes, and their implementation, to recommend whether the agency should make near-term improvements to our regulatory system. This task force will also identify a framework and topics for review and assessment for the longer-term effort.

Scope

The task force review will include the following:

a. A near-term review to:

- 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 actions affecting domestic reactors of all designs, including their spent fuel pools. The task force will evaluate, at a minimum, the following technical issues and determine priority for further examination and potential agency action:
    - External event issues (e.g. seismic, flooding, fires, severe weather)
    - Station blackout
    - Severe accident measures (e.g., combustible gas control, emergency operating procedures, severe accident management guidelines)
    - 10 CFR 50.54 (hh)(2) which states, "Each licensee shall develop and implement guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with loss of large areas of the plant due to explosions or fire, to include strategies in the following areas: (i) Fire fighting; (ii) Operations to mitigate fuel damage; and (iii) Actions to minimize radiological release." Also known as B.5.b.
    - Emergency preparedness (e.g., emergency communications, radiological protection, emergency planning zones, dose projections and modeling, protective actions)
- Develop recommendations, as appropriate, for potential changes to NRC's regulatory requirements, programs, and processes, and recommend whether generic communications, orders, or other regulatory actions are needed.

ENCLOSURE

b. Recommendations for the content, structure, and estimated resource impact for the longer-term review.

Coordination and Communications

The near-term task force will:

- Solicit stakeholder input as appropriate, but remain independent of industry efforts.
- Coordinate and cooperate where applicable with other domestic and international efforts reviewing the events in Japan for additional insights.
- Provide recommendations to the Commission for any immediate policy issues identified prior to completion of the near-term review.
- Provide recommendations to program offices for any immediate actions not involving policy issues, prior to completion of the near-term review.
- Identify resource implications of near-term actions.
- Consider information gained from Temporary Instruction 2515/183, "Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Events."
- Develop a communications plan.
- Update and brief internal stakeholders, as appropriate.

Expected Product and Schedule

The task force will provide its observations, conclusions, and recommendations in the form of a written report to the Deputy Executive Director for Reactor and Preparedness Programs at the completion of the 90-day near-term review.

During the development of its report, the task force will brief the Commission on the status of the review at approximately the 30- and 60-day points.

The report will be transmitted to the Commission via a SECY paper, and the task force will brief the Commission on the results of the near-term effort at approximately the 90-day point. The report will be released to the public via normal Commission processes.

The task force will recommend a framework for a longer-term review as a part of the near-term report. The longer-term review will begin as soon as the NRC has sufficient technical information from the events in Japan (with a goal of beginning by the end of the near-term review).

Staffing

The task force will consist of the following members:

Leader	Charles Miller	FSME
Senior Managers	Daniel Dorman	NMSS
	Jack Grobe	NRR
	Gary Holahan	NRO
Senior Staff	Amy Cubbage	NRO
	Nathan Sanfilippo	OEDO
Administrative Assistant	Cynthia Davidson	OGC

Additional task force members will be added as needed. For the near-term review, other staff members may be consulted on a part-time basis.

EDO Interface

The task force will keep agency leadership informed on the status of the effort and provide early identification of significant findings. The task force will report to Martin J. Virgilio, Deputy Executive Director for Reactor and Preparedness Programs.

Lee, Richard

From: Dozier, Jerry
Sent: Wednesday, April 13, 2011 9:23 AM
To: Aissa, Mourad; Algama, Don; Alter, Peter; Armstrong, Kenneth; Bajorek, Stephen; Beasley, Benjamin; Blumberg, Mark; Caruso, Mark; Cheok, Michael; Coe, Doug; Coyne, Kevin; Dorn, Jaclyn; Dozier, Jerry; Drozd, Andrzej; Dube, Donald; Elkins, Scott; Esmaili, Hossein; Fuller, Edward; Gavrilas, Mirela; Ghosh, Tina; Gilmer, James; Harrison, Donnie; Hart, Michelle; Hasselberg, Rick; Helton, Donald; Howe, Andrew; Hudson, Nathanael; Kauffman, John; Kelly, Joseph; Koshy, Thomas; Krepel, Scott; Lane, John; Lee, Richard; Lee, Samson; Lien, Peter; Malliakos, Asimios; Marshall, Shawn; Mitman, Jeffrey; Mrowca, Lynn; Notafrancesco, Allen; Phan, Hanh; Rini, Brett; Rodriguez, Veronica; Rubin, MichaelB; Rubin, Stuart; Salay, Michael; Schaperow, Jason; Skarda, Raymond; Staudenmeier, Joseph; Thomas, Eric; Thurston, Carl; Tinkler, Charles; Velazquez-Lozada, Alexander; Wong, See-Meng; Yarsky, Peter; Zoulis, Antonios
Subject: Accident Analysts needed from April 17th to May 15th

Thank you very much for supporting the severe accident (SA) position in the operations support center. I am now trying to complete the watch bill for the severe accident position from April 17th to May 15th. Please note that the reactor safety team has been decreased to only the accident analyst and the BWR analyst. Therefore, you need to have served previously and be very comfortable working independently in the operations center.

Due to this new manning, I have been asked to fill the positions with analysts serving at least 4-5 consecutive shifts.

I have placed an excel spreadsheet at S:\HOCSAWatchbillvolunteers to provide you with the progress so far at filling the time slots. If you are available and would like to serve during this time period please place your name in the empty time slots of the accident analyst column corresponding to the shift that you would like to serve(Please fill in all of the colored spots in the consecutive sequence). Please do not erase any ones name (first come-first served) unless you have permission from them. Please close the Excel file when you are complete so that others may have access to the file. If you cannot serve on consecutive shifts...please let me know if you can be a substitute for a shorter duration.

Please make sure that your volunteering is during a time frame approved by your supervisor.

Again thank you very much for serving!

Jerry Dozier
Sr. Risk and Reliability Analyst
Division of Risk Assessment
Room 010D10 MS 010C15
(301) 415-3925
Jerry.Dozier@nrc.gov

LLLL/296

Lee, Richard

From: Lee, Richard
Sent: Wednesday, April 13, 2011 8:55 AM
To: Esmaili, Hossein
Subject: FW: 1F4 SFP Calculations

FYI

From: Gauntt, Randall O [mailto:rogaunt@sandia.gov]
Sent: Tuesday, April 12, 2011 6:58 PM
To: kcw@dycoda.com; Goldmann, Andrew S; Lachance, Jeffrey Lynn
Cc: Burns, Shawn; Pickering, Susan Y; Orrell, Stanley A; Tinkler, Charles; Lee, Richard; Salay, Michael; Kelly, John E (NE)
Subject: RE: 1F4 SFP Calculations

KC,

I wonder if vigorous boiling in some assemblies, perhaps grouped together, collectively reduce the local overlying hydro head such that local flashing could occur in some assemblies? I visualize a frothed up region of the pool that presents a reduced head due to high void fraction. Could such flashing increase pressure drop and depress the water level in affected assemblies such that the burn could initiate even with overlying water? Maybe it's a dynamic or cyclic process that becomes unstable - kind of like TY Chu's lower head boiling tests showed.

Perhaps multi-dimensional effects in the water above the canned assemblies. John Kelly got me thinking about this on our call last night.

Looking for some way to initiate hydrogen generation with water still overlying the larger pool area.

Randy

From: Casey Wagner [kcw@dycoda.com]
Sent: Tuesday, April 12, 2011 2:38 PM
To: Goldmann, Andrew S
Cc: Burns, Shawn; Pickering, Susan Y; Gauntt, Randall O
Subject: 1F4 SFP Calculations

These are the 1F4 SFP calculations I performed a few weeks ago. In the first one, the water boils off from the nominal level. In the second one, there is a 10" hole that quickly drains the SFP to 5 m, then a boil-off occurs. The model correctly reflects the number of assemblies and fresh fuel in the SFP. The decay heat was 2.4 MW from a ORNL ORIGEN calculation. Recently got information where TEPCO estimates 1F4 SFP is 1.8 MW. 2.4 MW conservatively assumed that 548 assemblies were at 105 dats and the remaining 814 at ~500 days.

I did the same type of calculations for 1F3.

Please excuse my confusion. I did these calculations over 2 weeks ago and had accidently over-wrote the plotting results with other requests from NRC or Gauntt. If you need something else, let me know.

Casey

LLL/297

From: ET02 Hoc
Sent: Thursday, April 14, 2011 1:42 PM
To: Wilkinson, Tracy
Subject: FW: help with our Japan team computer network - As requested the folder has been created.

From: Reyes, Debra
Sent: Tuesday, April 12, 2011 7:59 AM
To: ET02 Hoc
Cc: Reyes, Debra
Subject: RE: help with our Japan team computer network - As requested the folder has been created.

Good morning,

The NOC has created a folder named 'Liaison Japan' and a control group 'G-OIS-Liaison_Japan' on the existing HQ S: drive. Added the users from the spreadsheet provided to G-OIS-Liaison_Japan. Added G-OIS-Liaison_Japan to the folder Liaison Japan. Upon login the users in the group should receive a N: drive mapping to access the folder. The folder can also be accessed using the following link \\nrc.gov.nrc\hq\Shared\Liaison Japan. This can be copied to the desktop for use.

Please let me know if you need anything else.

debbie

From: ET02 Hoc
Sent: Monday, April 11, 2011 7:13 AM
To: Turner, Joseph; Reyes, Debra
Subject: FW: help with our Japan team computer network

Fyi...karen

From: Bernhard, Rudolph
Sent: Monday, April 11, 2011 6:27 AM
To: LIA08 Hoc; Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc
Subject: RE: help with our Japan team computer network

Jeff, thanks for kicking off the request. I had no clue who to ask.

A subdirectory that all in country Japan team members could be mapped to would be great. Since we are all from different offices, we have no common network drive that we share. We do not want to use Sharepoint, but want a subdirectory that we can map to a drive that all can reach when using Citrix. IT would have to be provided with names of those shipped over in the future, so they could be added to the access for the drive or subdirectory.

Thanks
Rudy

LLLL/298

From: LIA08 Hoc
Sent: Monday, April 11, 2011 6:15 AM
To: Rich, Thomas; Paradiso, Karen
Cc: ET02 Hoc; Bernhard, Rudolph
Subject: help with our Japan team computer network

Good morning

Our Japan site team called us this morning and asked if a separate network could be created for them to use to store documents created by and used by the NRC site team in Japan, similar I think to the way we use the M drive in the NRC Ops Center to capture event info at our end.

Please let us know if this is possible and what the procedure is for this to occur.

Thanks for any help you can provide

Jeff Temple
NRC Operations Center
Liaison Team Coordinator
301-816-5185

From: Shoop, Undine
Sent: Thursday, April 14, 2011 1:59 PM
To: Hoc, PMT12; Brown, Frederick
Cc: Hiland, Patrick; OST01 HOC; Conatser, Richard
Subject: RE: Ingestion Pathway categorization for the Japan Team (Task 4701)

Kathy,

Richard will be able to help in this effort.

Undine

From: Hoc, PMT12
Sent: Thursday, April 14, 2011 12:39 PM
To: Shoop, Undine; Brown, Frederick
Cc: Hiland, Patrick; OST01 HOC; Conatser, Richard
Subject: FW: Ingestion Pathway categorization for the Japan Team (Task 4701)

Hi Undine and Fred.

I just talked with Richard about taking on this task. He agreed it was something he could do, but wanted to make sure his management was on board. I'm also cc'ing Pat H. because he was identified as the NRR point of contact for tasks going from the Ops Center to NRR. For reference, this is task #4701.

I told Richard that the short description of the task was a bit confusing to me and that it would probably be a good idea to start off by contacting the Japan Team directly to discuss expectations. The Executive Team has a daily call with JTeam management (Casto) at 08:30, so I suggest that Richard work through the Protective Measures Team to arrange to talk with the JTeam, perhaps at 08:00 one day to get further instruction. Emails to the JTeam are also a good mode of communication.

Please let the PMT know what your plan is to move forward with this task. Even thought the task is for NRR, please be sure to keep PMT aware of the status.

Thanks, and please let me know if I can help.

Kathy

From: Conatser, Richard
Sent: Thursday, April 14, 2011 6:11 AM
To: Hoc, PMT12
Cc: McKenney, Christepher; Schaffer, Steven; Dehmel, Jean-Claude
Subject: RE: Ingestion Pathway categorization for the Japan Team

Sandra,

Yes, I would be interested in supporting the team effort. Please contact my branch chief, Undine Shoop and my division director, Fred Brown to arrange for my support.

Best Regards,

LLLL/299

Richard L. Conatser
Health Physicist
Nuclear Regulatory Commission
301-415-4039
Richard.Conatser@NRC.gov

From: Hoc, PMT12
Sent: Wednesday, April 13, 2011 10:34 PM
To: Conatser, Richard
Cc: McKenney, Christepher; Schaffer, Steven; Dehmel, Jean-Claude
Subject: Ingestion Pathway categorization for the Japan Team
Importance: High

Richard

The Japan team has requested that NRC begin categorizing/tabulating different ingestion pathways (meat, seafood, dairy, etc.) and compiling corresponding data to give insights into long term consequences. It was suggested that we don't assume the normal US assumptions for pathways, because Japan's may be different - for example the dairy pathway is on a recent development in Japan.

In the 2100 pm call, the Japan Team identified several individuals with the expertise to accomplish this - Rich Canaster, NRR; John Claude Demille, NRO; Steve Schaffer, RES; and Chris McKenney, FSME. Heather, who just joined the team in Japan, indicated that you had offered your services if she needed assistance. Can you provide assistance with this task?

The Op Ctr is now operating on a limited staff with senior management wanting action items and task to now be pushed into the line organization. The PMT PAAD is to coordinate between the line organization and the Op Ctr. Therefore, if you can assist, please let the PMT know who in your management chain should we contact to let them know this task is being requested.

There is no specific due date for this task, the team is beginning to look toward the long term, so this isn't needed immediately but it was something that will be needed in the near future as we look to understand the long term consequences.

Sandra Wastler
PMT/PADD

From: Wiggins, Jim
Sent: Thursday, April 14, 2011 6:46 AM
To: OST01 HOC
Subject: RE: ACTION: PLEASE EMAIL ME THIS MORNING'S ONE-PAGE EVENT SUMMARY

thx

From: OST01 HOC
Sent: Thursday, April 14, 2011 6:45 AM
To: Wiggins, Jim
Subject: RE: ACTION: PLEASE EMAIL ME THIS MORNING'S ONE-PAGE EVENT SUMMARY

Jim,

Please see attached One-Pager. It will go out to the Chairman in a few minutes as well.

Highlighted items were new this shift.

Thanks,
-Nick

From: Wiggins, Jim
Sent: Thursday, April 14, 2011 6:38 AM
To: OST01 HOC
Subject: ACTION: PLEASE EMAIL ME THIS MORNING'S ONE-PAGE EVENT SUMMARY

I have a couple Commissioner periodics today and I could use the 1-pager as an aid.

LLLL/300

From: LIA08 Hoc
Sent: Tuesday, April 26, 2011 12:30 PM
To: OST01 HOC
Subject: FW: USNRC Earthquake-Tsunami Update 042611 1200 EDT (Final email distrubution)
Attachments: USNRC Earthquake-Tsunami Update 042611 Revision 00, 1200 EDT.pdf

LLLL/301

From: OST01 HOC
Sent: Thursday, April 14, 2011 5:21 AM
To: RST08 Hoc
Subject: RE: Comments on Transition Plan?

Excellent. Thanks Tim. I will pass it on to the ET Director.

-Nick

From: RST08 Hoc
Sent: Thursday, April 14, 2011 5:14 AM
To: OST01 HOC
Subject: RE: Comments on Transition Plan?

Comments provided.
Thanks,
Tim Kolb

From: RST01 Hoc
Sent: Thursday, April 14, 2011 4:29 AM
To: RST09 Hoc; RST07 Hoc; RST08 Hoc
Subject: FW: Comments on Transition Plan?

From: OST01 HOC
Sent: Thursday, April 14, 2011 4:28:59 AM
To: RST01 Hoc
Subject: Comments on Transition Plan?
Auto forwarded by a Rule

I am working on compiling the comments / changes to the Transition Plan Document to be vetted before the end of shift. Please see the attached file that contains changes from PMT, LT, and one change requested by the ET Director.

Does RST have anything to add? It looks like PMT made a formatting change to the RST section for consistency, but didn't change any content...

Thanks,
-Nick

LLLL/302

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

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

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

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

Messaging on Transition

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

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

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

Actions by Team:

Executive Team

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

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Executive Briefing Team

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

ET Support Team

1. ~~Update list of calls for ops center.~~ Manage updates to the ET one pager.
   ~~1.~~a. Receive updates from each team and vet them through ET Director before end of each shift.
2. Support staff should have appropriate coordination skills to work with the entire team to facilitate the completion of actions and provide support as needed.
3. Teams should provide information so that support staff can be aware of the existence and location and nomenclature of important documents.

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4. Coordinate with the HOOs to schedule and announce non-routine Commissioner Assistance briefings for emergent issues as directed by ET Director (HOOs need 2 hrs to make notifications and setup the voice conferencing system for CA calls).

NSIR Incident Response Staff (weekday dayshift; as part of the line organization)

1. Implement a process for capturing relevant items from various workstations and emails (an auto-forward or bounce-back message may help for emails).
2. Provide SharePoint and WebEOC access and instruction to support staff so that SharePoint can be utilized once the briefing products are consolidated/discontinued.
3. Determine an effective method to track actions, information, and decisions if Chronology is to be discontinued.
4. Address Ops Center operational issues (facility and Ops Center computer system issues)
5. Determine computer work station usage and how to transition to the 6 person team functions.

Protective Measures Team

1. Staff the Protective Measures Team (PMT) with a single individual/shift from the following qualified emergency response organization (ERO) roster positions:
   a. PMT Director
   b. PMT Deputy Director
   c. Protective Action Asst. Director
   d. Radiological Assessment Asst. Director

2. Responsibilities of the PMT include:
   a. Lead the overall PMT activities for the Japan Event
   b. Lead periodic calls with Japan site team PMT counterparts, PACOM counterpart, and other contacts
   c. Develop assessments on PMT activities for Japan site team and appropriate stakeholders.
   d. Provide recommendation on release of PMT assessments to the ET director.
   e. Develop taskings for line organization to assist site team.

~~1.~~3. Notify participants on 0930 call – change to weekly. Consider moving to line organizations for conducting weekly calls.

~~2.~~4. Agree with recommendation to go to weekly calls for information exchange on monitoring data (1100).

~~3.~~5. Modify calls with the Japan team to once per day, but team should select the best time. Recommend 0300 EDT.

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~~4.~~6. Maintain 1545 radiological community of interest call with PACOM – done in SCIF, supported by Whitney, Ulses, and V. Holahan.

~~5.~~7. Modify PACOM J2 calls to on an as-needed basis from 1700 daily.

8. Maintain daily calls w/ V. Holahan, and PACOM.

~~6.~~9. Provide updates to ET One Pager to ET Support (OST01). These will be compiled and vetted with ET Director.

~~7.~~10. ~~Determine computer work station usage and how to transition to person/shift.~~

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Reactor Safety Team

1. Staff the BWR Expert position with a person with the following skills: Strong BWR experience and continuity in the Japan event in RST area. Responsibilities include:
   a. Lead the overall RST activities for the Japan Event
   b. Lead periodic calls with the consortium and Japan site team
   c. Develop assessments on RST activities for Japan site team and appropriate stakeholders.
   d. Provide recommendation on release of RST assessments to the ET director.
   e. Develop taskings for line organization to assist site team.

   ~~2.~~

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2. Staff a Severe Accident/BWR Analyst position with the following skills in priority order: (1) severe accident/PRA, (2) BWR experience, and (3) Ops center function and equipment experience. Responsibilities include:
   a. Provide support to the BWR expert on RST assessments
   b. Provide updates to Fukushima status update chart
   c. Coordinate and track external requests going to line organizations
   d. Maintain RST task tracker

   ~~3.~~

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~~4.3.~~ ~~Assign to the BWR expert the primary responsibility to:~~

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~~a.4.~~ ~~Lead the overall RST activities for the Japan Event~~

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~~b.5.~~ ~~Lead periodic calls with the consortium and Japan site team~~

~~c.6.~~ ~~Develop assessments on RST activities for Japan site team and appropriate stakeholders.~~

~~d.7.~~ ~~Provide recommendation on release of RST assessments to the ET director.~~

~~e.8.~~ ~~Develop taskings for line organization to assist site team.~~

~~5.9.~~ ~~Assign to the Severe Accident/BWR analyst the primary responsibility to:~~

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   a. ~~Provide support to the BWR expert on RST assessments~~
   b. ~~Provide updates to Fukushima status update chart~~
   c. ~~Coordinate and track external requests going to line organizations~~
   d. ~~Maintain RST task tracker~~

~~6. Move responsibility of the UK/Canada/France call to the line organization or discontinue. Notify participants on Monday, 4/11/11.~~

10. Consolidate two calls with the industry consortium/Japan team (one at 0300, and one at 1700). Include PMT in both calls. Suspend 1100 consortium call on Tuesday.

11. Provide updates to ET One Pager to ET Support (OST01). These will be compiled and vetted with ET Director.

~~7.~~12.

Liaison Team

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

1. The LT member will participate on the following calls:

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

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

2. Maintain the Recurring Actoins and Calls List.

3. Manage resolution of Task Tracker items assigned to the LT.

4. Provide updates to ET One Pager to ET Support (OST01). These will be compiled and vetted with ET Director.

Actions to Implement Prior to Transition

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

1. Issue new roster for the revised staffing (Completed 4/9/11 for interim staffing; longer-term staffing will be worked week of April 11).
2. Brief new team on roles/responsibilities
3. Identify POC's for Offices to provide as "reach-back" access, Brief Offices on transition and implications including need for close communications (M. Evans requested Office POCs by email dated 4/9/11)
    a. FSME – Rich Turtil for State Liaison Functions

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From: Bloom, Steven
Sent: Thursday, April 14, 2011 8:11 AM
To: Foggie, Kirk; LIA08 Hoc
Cc: ET02 Hoc; Jackson, Karen
Subject: RE: need up to date list of NRC Japan Team

Jane is updating the list this morning and will get it to you as soon as it is done.

As for the new drive, need to confirm with Karen Jackson, believe it is done.

From: Foggie, Kirk
Sent: Thursday, April 14, 2011 8:08 AM
To: LIA08 Hoc
Cc: Bloom, Steven
Subject: RE: need up to date list of NRC Japan Team

Not sure we are still keeping that list, but I make sure to get you one by noon today. Is that ok?

From: LIA08 Hoc
Sent: Thursday, April 14, 2011 6:23 AM
To: Foggie, Kirk
Subject: need up to date list of NRC Japan Team

On the 0300 phone call this AM, the Japan Team asked the RST to make sure that all new members of the Japan site team were on the access list for the new N drive provided by OIS to store Japan team documents in one location.

There used to be a list on the OIP desk in the LT room, but I cannot find it. Can you email me a list?

Thanks

Jeff Temple

LLLL/303

From: Reyes, Debra
Sent: Thursday, April 14, 2011 1:28 PM
To: ET02 Hoc
Subject: Re: Citrix Drive Help

Tracy wilkinson

From: ET02 Hoc
To: Reyes, Debra
Sent: Thu Apr 14 13:26:43 2011
Subject: Citrix Drive Help

Debbie:

Jim Shilling isn't in the office today so is there someone else I can talk to regarding the Liaison Japan Citrix drive? Thanks...karen

LLLL/304

From: LIA03 Hoc
Sent: Thursday, April 14, 2011 12:23 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: OUO -- 1200 EDT (April 14, 2011) USNRC Earthquake-Tsunami Update
Attachments: USNRC Earthquake-Tsunami Update.041411.1200EDT.pdf

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From: LIA07 Hoc
Sent: Thursday, April 14, 2011 12:23 PM
To: LIA07 Hoc
Subject: OUO -- 1200 EDT (April 14, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 14, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is ~~"Official Use Only" and~~ is not intended to be shared outside of the Federal government without NRC approval.

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

Thank you,
Jim

Jim Anderson
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

LLLL/305

From: Reyes, Debra
Sent: Thursday, April 14, 2011 1:13 PM
To: ET02 Hoc
Subject: Re: Ticket # 512057

The NOC is working to resolve. Waiting for additional info from the user.

From: ET02 Hoc
To: Reyes, Debra
Sent: Thu Apr 14 12:21:23 2011
Subject: Ticket # 512057

Debbie:

Do you know if anyone has worked on this request? I'm unclear as to what the Japan Site Team is requesting. Are they looking for the Ops Center M drive? Under Status it shows "Responded" but I'm not certain what that means. Thanks...karen

LLLL/306

From: ET02 Hoc
Sent: Thursday, April 14, 2011 2:51 PM
To: Reyes, Debra
Subject: RE: Ticket # 512057

No – CSC is waiting for more information from Mike Call which will happen later tonight when he gets up for the day. Thanks...karen

---

From: Reyes, Debra
Sent: Thursday, April 14, 2011 2:29 PM
To: ET02 Hoc
Subject: RE: Ticket # 512057

Did this get resolved?

From: ET02 Hoc
Sent: Thursday, April 14, 2011 12:21 PM
To: Reyes, Debra
Subject: Ticket # 512057

Debbie:

Do you know if anyone has worked on this request? I'm unclear as to what the Japan Site Team is requesting. Are they looking for the Ops Center M drive? Under Status it shows "Responded" but I'm not certain what that means. Thanks...karen

LLLL/307

Lee, Richard

From: Lee, Richard
Sent: Thursday, April 14, 2011 8:23 PM
To: 'shunsuke.kondo@cao.go.jp'; 'akira.omoto@cao.go.jp'
Subject: Request to send handouts to NRC for the U.S.-Japan conference call

Dear Drs. Kondo and Omoto:

I appreciate it if it possible to transmit the handouts used for the conference call to NRC beforehand. Thank you.

Best regards,
Richard Lee

LLLL/308

Lee, Richard

From: Lee, Richard
Sent: Thursday, April 14, 2011 8:06 PM
To: 'Kelly, John E (NE)'
Subject: Documents received from Japan

Hi, John:

When you have a chance, please send documents to me.
Thx, Richard

LLLL/309

Lee, Richard

From: Lee, Richard
Sent: Thursday, April 14, 2011 5:54 PM
To: 'Kelly, John E (NE)'
Subject: RE: Call to Japan today?

Ok. I will call in. Thx.

From: Kelly, John E (NE) [mailto:JohnE.Kelly@Nuclear.Energy.Gov]
Sent: Thursday, April 14, 2011 5:54 PM
To: Lee, Richard
Subject: RE: Call to Japan today?

yes

From: Lee, Richard (NRC)
Sent: Thursday, April 14, 2011 5:53 PM
To: Kelly, John E (NE)
Subject: Call to Japan today?

Hi, John:

Do we have a call today at 8:00pm?

Richard

LLLL/310

Lee, Richard

From: Salus, Amy
Sent: Thursday, April 14, 2011 2:24 PM
To: Temps, Robert; Ahn, Tae; Arndt, Steven; Barrett, Harold; Boska, John; Brown, David; Bucholtz, Kristy; Buckley, John; Caballero, Bruno; Cahill, Christopher; Cameron, Jamnes; Circle, Jeff; DAbate, David; Drozd, Andrzej; Dube, Donald; Erb, Delson; Essig, Thomas; Faraz, Yawar; Fuller, Edward; Garry, Steven; Hamzehee, Hossein; Hardies, Robert; Hart, Michelle; Hinson, Charles; Jenkins, Ronaldo; Jolicoeur, John; Kammerer, Annie; Karas, Rebecca; Kelly, Glenn; Lane, John; Lee, Richard; Lynch, James; McGhee, James; McHugh, James; McKinley, Raymond; Mendiola, Anthony; Miller, Mark; Mitchell, Matthew; Munday, Joel; Murphy, Martin; Nimitz, Ronald; Noggle, James; Norton, Charles; Orth, Steven; Parillo, John; Reichard, Michael; Ring, Mark; Roach, Edward; Rubin, Stuart; Salley, MarkHenry; Schaperow, Jason; Schlapper, Gerald; Schmidt, Wayne; Shams, Mohamed; Spitzberg, Blair; Watson, Bruce; Wertz, Geoffrey; Wilson, George; Yarsky, Peter
Cc: Sheron, Brian; Uhle, Jennifer; Leeds, Eric; Boger, Bruce; Ruland, William; Wiggins, Jim; Moore, Scott; Lewis, Robert; Haney, Catherine; Kokajko, Lawrence; Doane, Margaret; Mamish, Nader; Muessle, Mary; Andersen, James; Johnson, Michael; Flanders, Scott; Cohen, Miriam; Tracy, Glenn; Zimmerman, Roy; Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Satorius, Mark; Pederson, Cynthia; Collins, Elmo; Evans, Michele; Holahan, Patricia; Weber, Michael; Virgilio, Martin
Subject: Thank You for Volunteering to Provide Support in Japan

Thank you to everyone who volunteered to support the NRC's Japan Site Team over the past month. While you were not deployed, your offer to support did not go unnoticed and was greatly appreciated by management. There will be additional requests for Site Team support in the near future. While the size and skill set of the team in Japan beyond May 1 has not been finalized I encourage you to continue to express your interest if the request is for a time frame that you can support.

Sincerely,

Michele Evans
Acting Deputy OD, NSIR

LLLL/311

Lee, Richard

From: Lee, Richard
Sent: Thursday, April 14, 2011 8:46 PM
To: 'Powers, Dana A'
Subject: salt water model setup in the RPvV

Dear Dana:

You mentioned that you will setup a model to predict what sea water in doing in the RPV for the Fukushima case. How is that coming around?

Today, during the U.S. Conference call with Japan, they ask

(1) How to remove the salt from the reactor system?
(2) How TMI-2 did the water sampling of the reactor coolant system?
(3) How to remove damaged fuel from the vessel?

Wasn't there some information from the OECD TMI-2 examination project?

Richard

LLLL/312

Lee, Richard

From: Marksberry, Don
Sent: Thursday, April 14, 2011 9:50 AM
To: RST01 Hoc; Tinkler, Charles; Schaperow, Jason; Esmaili, Hossein; Helton, Donald; Salay, Michael; Thorp, John; Garmon, David
Cc: Lee, Richard; Demoss, Gary; Coyne, Kevin; Stutzke, Martin; Salley, MarkHenry; Siu, Nathan; Joy L Rempe; Correia, Richard; Coe, Doug
Subject: Plant Status Chronologies of Units 1, 2, and 3
Attachments: RES (4-14-2011) Fukushima Daiichi Chronology, Units 1,2,3.xlsx

Here is this morning's edition of the plant status chronology and data tables for Units 1, 2, and 3. It does not include radiological information.

Please note that the info sources are official press releases from TEPCO and NISA. No other sources or speculations were included.

NOTES:

4/14/11 The TEPCO reference column for Unit 2 was inadvertently shifted a line or two. I believe this has been corrected.

4/14/11 We are considering stopping the updates of the parameter spreadsheets, since other more current sources are becoming readily available. More to come....

4/14/11 INL-DOE has started a timeline for all 6 units at Fukushima Daiichi. We will assess whether our efforts can be combined with INL's to avoid duplication and conflicts within the Federal community. More to come....

4/13/11 Earlier event descriptions were revised to match the press release text a little closer. Also, select Article 15 reports and emergency declarations (from TEPCO to NISA) were added for those that may imply change in unit status.

Don

Don Marksberry

Division of Risk Analysis
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
21 Church Street
Rockville, Maryland 20850-4207

Phone: 301-251-7593
E-mail: Don.Marksberry@nrc.gov

USPS & Express Mail Address:
Mail Stop: C-4C07M
Washington, D.C. 20555-0001

LLLL/313

Lee, Richard

From: Marksberry, Don
Sent: Thursday, April 14, 2011 9:57 AM
To: Lee, Richard; Esmaili, Hossein
Subject: FW: Revised time line
Attachments: Unit chronology.xlsx

Can we get an update to SANDIA's timeline, if available?

Should we forward it to Joy?

From: Lee, Richard
Sent: Monday, April 11, 2011 10:19 AM
To: Marksberry, Don; Esmaili, Hossein
Subject: FW: Revised time line

fyi

From: Gauntt, Randall O [mailto:rogaunt@sandia.gov]
Sent: Monday, April 11, 2011 10:03 AM
To: Tinkler, Charles; Lee, Richard; Salay, Michael
Subject: FW: Revised time line

From: Lachance, Jeffrey Lynn
Sent: Monday, April 11, 2011 7:45 AM
To: M.T. Leonard
Cc: Gauntt, Randall O
Subject: Revised time line

Mark

We looked at the Unit 3 timeline and to our best knowledge we think RCIC may have been delayed slightly since vessel level appears to be at TAF around 10 hours after scram. There is one notation that RCIC started at 9 hours after scram but if that were true the RPV level would have decreased significantly leading to core damage. I believe RCIC operated for about 20 hours and then HPCI took over. I think the HPCI operation resulted in an RPV vessel depressurization that took about 7 hours to decrease the pressure from normal pressure down to 150 psi. HPCI looks to have operated at this low pressure (hard to believe) for 15 hours before finally tripping. Core uncovery began at 37.5 hrs and seawater reflooded the core at 42.3 hours. It later was uncovered (there is no recorded coolant injection decrease when the core uncovers).

For Unit 2, as we discussed on the phone, seawater injection appeared to occurred about 78.5 hours (maybe an hour earlier).

Randy will send some graphs showing key parameters that seem to support the attached timelines.

Jeff

LLLL/314

Lee, Richard

Subject: FW: Discuss Roles and Responsibilities for Japan transition - POCs
Location: OPS Center

Start: Thu 4/14/2011 11:00 AM
End: Thu 4/14/2011 12:00 PM
Show Time As: Tentative

Recurrence: (none)

Meeting Status: Not yet responded

Organizer: Salus, Amy

Importance: High

When: Thursday, April 14, 2011 11:00 AM-12:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: OPS Center

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

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

Meeting in Ops Center tomorrow

-----Original Appointment-----
From: Salus, Amy
Sent: Wednesday, April 13, 2011 2:01 PM
To: Salus, Amy; Evans, Michele; Virgilio, Martin; Weber, Michael; Case, Michael; Skeen, David; Harrington, Holly; Emche, Danielle; Weaver, Doug; Deegan, George; Dudek, Michael; McDermott, Brian; Morris, Scott; Marshall, Jane; Ciocco, Jeff; Gibson, Kathy; Hiland, Patrick; Lewis, Robert; Kevern, Thomas; Bloom, Steven
Subject: Discuss Roles and Responsibilities for Japan transition - POCs
When: Thursday, April 14, 2011 11:00 AM-12:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: OPS Center

POC Michael Dudek
Posted by ASalus

LLLL/315

Lee, Richard

From: RST09 Hoc
Sent: Thursday, April 14, 2011 1:20 PM
To: Hogan, Rosemary
Cc: Lee, Richard
Subject: FW: QUERY: Question on Fukushima seismic design basis

FYI

From: RST09 Hoc
Sent: Thursday, April 14, 2011 1:20 PM
To: Kammerer, Annie; Ake, Jon
Cc: Wagner, Katie; Ghosh, Tina
Subject: QUERY: Question on Fukushima seismic design basis

Dear Annie and Jon,

A question has come up, which I am sure has come up before:
What was the earthquake design basis for Fukushima (and what are the units -- in ground motion, or some other measure)?

I apologize that you may have already answered this question, but I forgot where the seismic FAQ are located.

We very much appreciate your assistance!

Tina Ghosh/Reactor Safety Team

LLLL/316

Lee, Richard

From: Esmaili, Hossein
Sent: Thursday, April 14, 2011 7:54 AM
To: Chang, Richard
Cc: Santiago, Patricia; Lee, Richard
Subject: RE: SOARCA insights relevant to Japan 4711.docx .

Richard,

I already gave you the timeline we are keeping based on press releases, etc. I do not have any new information for now – but I will keep you informed.

hossein

From: Chang, Richard
Sent: Thursday, April 14, 2011 7:47 AM
To: Esmaili, Hossein
Cc: Santiago, Patricia
Subject: RE: SOARCA insights relevant to Japan 4711.docx

Hossein,

Thanks for the discussion with me yesterday. Based on what I think I heard, you advised me to hold off on getting my timetable to Kathy, because another timetable is in the works. Would you be free to talk a little more about this today (<10min)?

Regards,
Richard

From: Esmaili, Hossein
Sent: Wednesday, April 13, 2011 4:59 PM
To: Chang, Richard
Cc: Marksberry, Don
Subject: RE: SOARCA insights relevant to Japan 4711.docx

Richard,

Don is keeping an unofficial chronology of events (see attached email). We are still trying to figure out what went on.

Thanks

hossein

From: Chang, Richard
Sent: Wednesday, April 13, 2011 4:11 PM
To: Esmaili, Hossein
Subject: RE: SOARCA insights relevant to Japan 4711.docx

Hossein,

I was wondering if you had a chance to look through this?

LLLL/317

Thanks,
Richard

From: Chang, Richard
Sent: Thursday, April 07, 2011 1:43 PM
To: Esmaili, Hossein; Tinkler, Charles
Cc: Schaperow, Jason
Subject: SOARCA insights relevant to Japan 4711.docx

Charlie and Hossein,

Kathy recommended that I send this over to you guys to look at in regards to the timeline...she was wondering if there was another timeline floating around that this may match. I got my information from 2 sources GRS and a 3/28/11 DOE Presentation.

The bullets I have essentially cannibalized from a previous writeup from Charlie (except for the bullet that starts SOARCA insights that may be relevant to Japan).

Thanks,
Richard

Lee, Richard

From: Salay, Michael
Sent: Thursday, April 14, 2011 1:56 AM
To: 'Gauntt, Randall O'; Lee, Richard; Tinkler, Charles; Joy.Rempe@inl.gov; Powers, Dana A
Cc: Esmaili, Hossein; kcw@dycoda.com; Mark Leonard; Burns, Shawn; Orrell, Stanley A; Pickering, Susan Y; Goldmann, Andrew S; Lachance, Jeffrey Lynn; Kelly, John E (NE)
Subject: RE: Unit 4 Spent Fuel Pool Floor Dose Rate

TEPCO provided us with data today (11:00 JST April 14) on the SFP4 water samples taken on 4/12:
(In bq/cm^3)

Cs-134 88
Cs-137 93
I-131 220

-Mike

From: Gauntt, Randall O [mailto:rogaunt@sandia.gov]
Sent: Thursday, April 14, 2011 12:36 AM
To: Lee, Richard; Tinkler, Charles; Joy.Rempe@inl.gov; Powers, Dana A
Cc: Salay, Michael; Esmaili, Hossein; kcw@dycoda.com; Mark Leonard; Burns, Shawn; Orrell, Stanley A; Pickering, Susan Y; Goldmann, Andrew S; Lachance, Jeffrey Lynn; Kelly, John E (NE)
Subject: RE: Unit 4 Spent Fuel Pool Floor Dose Rate

One more thing,

I estimate that the observed operating floor dose rate level of ~80mSv per hour would be roughly what one expects if the water level falls below 2 meters over top of fuel. Note 3 meters of water over the fuel drops the dose rate at the floor by almost a factor 100 relative to 2 meters of water cover. I think this dose rate could easily be attributed to the limited water shielding from the gamma emission from the relatively undamaged spent fuel.

Randy

From: Gauntt, Randall O
Sent: Wednesday, April 13, 2011 9:12 PM
To: Lee, Richard; charles.tinkler@nrc.gov; Joy.Rempe@inl.gov; Powers, Dana A
Cc: Salay, Michael; Hossein Esmaili; kcw@dycoda.com; Mark Leonard; Burns, Shawn; Orrell, Stanley A; Pickering, Susan Y; Goldmann, Andrew S; Lachance, Jeffrey Lynn; Kelly, John E (NE)
Subject: FW: Unit 4 Spent Fuel Pool

Hard to imagine how any fuel from unit 4 pool contributed to the recently announced measured water activity. Perhaps there is a lot of dilution going on up to now - still, we are orders of magnitude off from significant release from a SFP assembly - would probably require hundreds of dilutions to get down to 5 curies.

What's wrong with this picture?

Is the reported specific activity of 400 Bq/cc missing a 1E4 exponent?

A Bq is 1 disintigration per second and a Curie is 3.7x10^10 right?

400 Bq/cc is 0.01 curies/cu meter.

Perhaps they did not actually sample the pool water.

Looking for additional sanity check.

LLLL/318

I'm not going to look at this any more until I get some feedback or comment.

Randy

From: Gauntt, Randall O
Sent: Wednesday, April 13, 2011 8:10 PM
To: Kelly, John E (NE); Orrell, Stanley A
Cc: Pickering, Susan Y; Burns, Shawn; Lachance, Jeffrey Lynn; kcw@dycoda.com
Subject: Unit 4 Spent Fuel Pool

The reported water activity of the spent fuel pool 4 is total: 400 Bq/cc
If this is the specific activity of all of the pool water (approximately 6x10^5 liters), then the total activity is only 6 curies. This is literally nothing.

The reported ratio of I131/Cs134 in the water sample is: 220/88 = 2.7

One fuel assembly has about 30,000 curies iodine 131 and Cs 134/137
One Assembly of 105 day offload fuel: I-131 - 14 curies, Cs-134 - 34,000 curies, Cs-137 - 28,000 curies

Note: I131/Cs134 ratio for 105 day offload fuel is 4E-4
I131/Cs134 ratio for fuel 7 days after shutdown is 2.3

So the pool isotopic does not look like decayed spent fuel.
It looks like reactor source.

Not sure it could be pool criticality origin because probably not time to build in iodine.

My usual dosclaimer - someone by all means check me.
Randy

From: Kelly, John E (NE) [JohnE.Kelly@Nuclear.Energy.Gov]
Sent: Wednesday, April 13, 2011 9:07 AM
To: Gauntt, Randall O; Orrell, Stanley A
Cc: Pickering, Susan Y; Burns, Shawn
Subject: RE: Fukushima summary for Aioki

Latest news regarding pool #4 is rather disturbing. See link below

http://www3.nhk.or.jp/daily/english/13_35.html

From: Gauntt, Randal
Sent: Wednesday, April 13, 2011 9:19 AM
To: Kelly, John E (NE); Orrell, Stanley A
Cc: Pickering, Susan Y; Burns, Shawn
Subject: RE: Fukushima summary for Aioki

We intend to conduct a number of analyses for each plant and don't really want any one of them at this point selected as the answer. I am including a range of releases expected from these sequences giving consideration of suppression pool subcooling or not and other known changes we are making to the calculations. We will adjust 1F3 the most.

We understand that they were not able to vent on the line that they wanted for 1F1. Vented from the drywell.

We will have to triple check things and do not intend to give the impression that we have showed up after a week and have final answers for all scenarios. That said, I don;t think things are going to change drastically. Releases will probably go up on the accidents in retrospect as we more fully account for containment performance issues such as head flange leakage (1F1) and likely siesmically induced wet well bellows leak (1F2).

I evaluated the ground dose rates reported by the AMS overflights and come up with 5x10^5 curies - there must be more actually released as the main land deposition was to the north west and likely from unit 1 owing to the direction the wind was blowing. This number is in the ballpark of numbers reported by the IAEA and the regulator.

The spent fuel pool 4 is probably damaged in some way - seems that full these days is 6 meters from the operations floor.

I think that the pool fire must have been limited in extent and localized, and took place with water near the tops of the assemblies. I think that there may have been some kind of geysering effect involving subcooled boiling that flashes as overlying head loss from varying void fraction takes place.

Randy

From: Kelly, John E (NE) [JohnE.Kelly@Nuclear.Energy.Gov]
Sent: Tuesday, April 12, 2011 8:04 PM
To: Orrell, Stanley A
Cc: Pickering, Susan Y; Burns, Shawn; Gauntt, Randall O
Subject: RE: Fukushima summary for Aioki

Thanks
We had a question from our science experts about drywell venting. There wanted to know the source of this info. They thought venting would have been through wetwell vent.

I'd ask that you double check everything and consider how the calculation might be in error, since people tend to believe them once they see the results. I see this type of analysis as very different from the usual risk studies, where people accept bounding behaviors with little questioning, since the accidents are allowed to proceed without mitigation.

From: Orrell, Stanley A [mailto:sorrell@sandia.gov]
Sent: Tuesday, April 12, 2011 7:11 PM
To: Kelly, John E (NE)
Cc: Pickering, Susan Y; Burns, Shawn; Gauntt, Randal
Subject: FW: Fukushima summary for Aioki

John,

Attached is a very quick attempt at trying to summarize some modeling insights and what they might mean (environmental consequence) if certain events unfold going forward. It needs some explanation, so don't hesitate to ask. I'm asking to have some of this cross-checked against other 'ground truth' information (e.g. reported total est. Bq released thus far, etc.), so I wouldn't take action on it until we've had a chance to calibrate. We should have that mid-morning I hope, but wanted to give this to you as a result of the thinking that occurred after the Aoiki meeting today.

Andrew

From: OST01 HOC
Sent: Friday, April 15, 2011 2:13 PM
To: Hoc, PMT12
Subject: FW: Update of forecast wind conditions for Fukushima Daiichi 1
Attachments: WRF_Fukushima_NPP_Forecast_2011-04-15_12Z (5km).xlsx

-----Original Message-----
From: HOO Hoc
Sent: Friday, April 15, 2011 2:13 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: Update of forecast wind conditions for Fukushima Daiichi 1

Headquarters Operations Officer
U.S. Nuclear Regulatory Commission
Phone: (301) 816-5148
Fax: (301) 816-5151
Email: hoo.hoc@nrc.gov
Secure Email: hoo@nrc.sgov.gov

-----Original Message-----
From: Simpson, Matthew D. [mailto:simpson35@llnl.gov]
Sent: Friday, April 15, 2011 2:04 PM
To: HOO Hoc; PMT02 Hoc; PMT01 Hoc; CMHT@nnsa.doe.gov; nitops@nnsa.doe.gov; alan.remick@nnsa.doe.gov; 'McMichael, Lukas C CIV SEA 08 NR'; na30ecc@nr.doe.gov; Christopher.hanson@yokota.af.mil
Cc: narac@llnl.gov
Subject: Update of forecast wind conditions for Fukushima Daiichi 1

A spreadsheet is attached containing the latest forecast wind conditions at the Fukushima Power Plant.

The forecast time series is derived from the latest NARAC WRF simulation with 5 km horizontal grid spacing.

NOTE: Onshore winds and precipitation during forecast period

Fukushima Power Plant Forecast Summary:

15 April 18:00 Z to 16 April 08:00 Z: Southwesterly to westerly winds at 3 - 15 m/s.

LLLL/319

16 April 08:00 Z to 17 April 06:00 Z: Northwesterly winds at 5 - 7 m/s. Brief period of light precipitation is possible.

17 April 06:00 Z to 17 April 10:00 Z: Southeasterly (onshore) winds around 3 to 6 m/s.

17 April 10:00 Z to end of forecast period: Westerly winds at 3 m/s.

Matthew Simpson
NARAC Atmospheric Scientist

==========

Forecast Model: WRF
Horizontal Grid Spacing: 5 km
Vertical Levels: 44
Forecast Location: Fukushima NPP, Japan
Data Produced by Matthew Simpson (NARAC, 925 / 422-7627)

YEAR	MO	DY	HR	WSP	WDR	CLASS	Temp (2m)	RAIN
----	--	--	(UTC)	(m/s)	---	----	(C)	(in/hr)
2011	4	15	18	2	250	F	10	0
2011	4	15	19	2.2	254	F	10	0
2011	4	15	20	2.8	238	F	9	0
2011	4	15	21	3.7	230	E	10	0
2011	4	15	22	2.8	206	C	15	0
2011	4	15	23	1.8	171	C	17	0
2011	4	16	0	1.8	254	C	20	0
2011	4	16	1	2.9	227	C	22	0
2011	4	16	2	3.4	185	C	22	0
2011	4	16	3	4.7	179	C	22	0
2011	4	16	4	8.1	297	D	19	0
2011	4	16	5	17.4	282	D	15	0.02
2011	4	16	6	16.9	280	D	13	0
2011	4	16	7	10.9	293	D	12	0
2011	4	16	8	7	7	D	11	0
2011	4	16	9	5.3	7	D	8	0
2011	4	16	10	5.6	18	D	6	0
2011	4	16	11	6.3	354	D	6	0
2011	4	16	12	8	320	D	5	0
2011	4	16	13	7.7	327	D	4	0
2011	4	16	14	6.7	335	D	4	0
2011	4	16	15	6.1	334	D	3	0
2011	4	16	16	5	330	D	3	0
2011	4	16	17	4.9	322	D	2	0
2011	4	16	18	4.9	303	D	2	0
2011	4	16	19	5.1	293	D	2	0
2011	4	16	20	4.5	285	D	1	0
2011	4	16	21	5.2	290	D	2	0
2011	4	16	22	6.7	306	C	6	0
2011	4	16	23	7.3	321	C	7	0
2011	4	17	0	7	328	C	9	0
2011	4	17	1	6.7	332	C	11	0
2011	4	17	2	6	332	C	12	0
2011	4	17	3	5.4	334	C	13	0
2011	4	17	4	3.9	342	C	14	0
2011	4	17	5	2.7	253	C	14	0
2011	4	17	6	7.3	158	C	11	0
2011	4	17	7	6.7	157	C	9	0

2011	4	17	8	5.3	152	D	8	0
2011	4	17	9	3.2	161	E	7	0
2011	4	17	10	1.9	210	F	6	0
2011	4	17	11	2.9	266	E	5	0
2011	4	17	12	3.3	260	E	4	0

From: Virgilio, Martin
Sent: Friday, April 15, 2011 7:49 AM
To: Casto, Chuck; Dyer, Jim; ET02 Hoc; Wiggins, Jim; Evans, Michele; Holahan, Patricia; Zimmerman, Roy
Cc: Merzke, Daniel
Subject: global assessment presentation
Attachments: global assessment presentation

Jim/Michele/Roy

Please ensure this is assigned to whoever has the lead for reviewing the Global Assessment. Who has the lead for that review? We need to confirm with Chuck the timeline for the review of this presentation material. I believe he is looking to use the slides to brief the SoS.

Marty

From: Casto, Chuck
Sent: Friday, April 15, 2011 6:11 AM
To: Virgilio, Martin; Dyer, Jim; ET02 Hoc
Subject: global assessment presentation

Attached is the draft presentation

LLLL/320

From: Casto, Chuck
Sent: Friday, April 15, 2011 6:11 AM
To: Virgilio, Martin; Dyer, Jim; ET02 Hoc
Subject: global assessment presentation
Attachments: JapenGlobalAssessmentFinalApril15.pptx

Attached is the draft presentation

NRC INTERIM COMPREHENSIVE ASSESSMENT of FUKUSHIMA EVENT

Background

- Consortium of U.S. nuclear organizations completed assessment
  - NRC; Department of Energy; Naval Reactors; Institute of Nuclear Power Operations; Electric Power Research Institute; General Electric
- Collaborated to complete technical assessments for safety issues for reactors and spent fuel pools
- All major technical assessments completed
- Provided results to TEPCO and NISA

Assessment Conclusions

- U.S. Protective Action decisions remain conservative through all scenarios
  - Tokyo is not seriously threatened
- Unknown Ocean impacts
- Active radiation releases ongoing
- Accident conditions static but fragile
- Mitigating features temporary and highly unconventional

Assessment of Conditions

- Fuel Damage estimates: U-1 67%; U-2 44%; U-3 30% (est.)
- Reliance on steam cooling for reactors
- Time to react on a loss of injection is short – less than 10 hours for Unit 1
- Current situation results in a 1-10 to 1-100 probability of release
- Probability driven by seismic events without diversity or redundancy of injection system
- Can get 1-100,000 probability with training & preplanning of fire equipment and diverse & redundant injection system
- Containment flooding remains primary suggestion – especially for Units 1 & 3
- Flooding reduces consequences by one-to-two orders of magnitude

Next Steps

- Feed and bleed assessment recommends more actions to mitigate additional events
  - Diversity and redundancy in feeding system
  - Automation of Giraffes and feeding systems
  - Additional feeding system injection points
  - Additional venting system

- Stability requires more actions
  - Completing actions to Phase 1 and Phase 2 stability
    - For example - decay heat removal system

From: Reyes, Debra
Sent: Friday, April 15, 2011 9:45 AM
To: ET02 Hoc
Subject: Re: NAME

Winsongo

From: ET02 Hoc
To: Reyes, Debra
Sent: Fri Apr 15 09:35:09 2011
Subject: NAME

Debbie:

What is Serge's last name? I want to send him some corrections to the asset spreadsheet. Thanks...karen

LLLL/321

From: LIA07 Hoc
Subject: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update
Date: Monday, March 21, 2011 6:16:10 PM
Attachments: USNRC Earthquake-Tsunami Update.032111.1800EDT.pdf

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Attached, please find an 1800 EDT (March 21, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz
Communications and Outreach
Office of Nuclear Security and Incident Response
US Nuclear Regulatory Commission
Sara.Mroz@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

LLL/322

From: OST01 HOC
Sent: Friday, April 15, 2011 1:42 PM
To: RST01 Hoc; RST09 Hoc; LIA08 Hoc; Zimmerman, Roy
Subject: Reminder: Please provide updates to last shifts one pager by 2pm. Thanks! <eom>

LLLL/323

From: Foggie, Kirk
Sent: Friday, April 15, 2011 11:22 AM
To: ET02 Hoc
Cc: Bloom, Steven
Subject: RE: Laptop

Here you go.

Asset Tags
212723
209519
215067

From: ET02 Hoc
Sent: Friday, April 15, 2011 11:17 AM
To: Foggie, Kirk
Cc: Bloom, Steven
Subject: RE: Laptop

Kirk:
Could you send me the asset tags as well for the laptops? Thanks...karen

---

From: Bloom, Steven
Sent: Friday, April 15, 2011 11:11 AM
To: ET02 Hoc
Subject: FW: Laptop

From: LIA02 Hoc
Sent: Friday, April 15, 2011 11:08 AM
To: Bloom, Steven
Subject: FW: Laptop

From: Monninger, John
Sent: Friday, April 15, 2011 11:08:23 AM
To: Foggie, Kirk; LIA02 Hoc
Subject: RE: Laptop
Auto forwarded by a Rule

Thanks Kirk. I definitely carried one over to Japan and left it there for the team to use. I just wasn't clear on whether I actually signed the paperwork or not.

From: Foggie, Kirk
Sent: Friday, April 15, 2011 11:04 AM

LLLL/324

To: Monninger, John; LIA02 Hoc
Subject: RE: Laptop

Yes, this is what I recall. Although, I thought one was signed out to you and the rest were under my name. I provided Serge W. with 3 asset tags of the laptops I thought were my responsibility.

Kirk

From: Monninger, John
Sent: Friday, April 15, 2011 11:01 AM
To: LIA02 Hoc
Cc: Foggie, Kirk
Subject: RE: Laptop

Steve,

All the laptop computers and air cards that Kirk Foggie and I took over to Japan were left there.

I believe (but could be incorrect) that all the laptops and air cards were signed out in Kirk's name. Was one signed out in my name? I remember that on Monday 3/14, Kirk, Brooke, and I were in the Ops Center and all the equipment was given to us, but I don't recall exactly on who signed for what. Nevertheless, all the equipment was left in Japan for the team to use.

Kirk – Does that match with your recollection?

John M.

From: LIA02 Hoc
Sent: Friday, April 15, 2011 10:32 AM
To: Monninger, John
Subject: Laptop

John,

Did you bring back your laptop and air card.

Steve Bloom

From: ET02 Hoc
Sent: Friday, April 15, 2011 9:54 AM
To: Wisongo, Serge
Cc: Reyes, Debra
Subject: FW: LAPTOP AND AIR CARD

Serge:

Please see the e-mails below – the laptop and air card assigned to Jean Trefethan are not part of the Japan response and therefore should not be on the asset list. Thanks...karen

---

From: Trefethen, Jean
Sent: Friday, April 15, 2011 9:26 AM
To: ET02 Hoc
Subject: RE: LAPTOP AND AIR CARD

Hi Karen,

These are both checked out to me. The laptop is part of the work from anywhere program and is my primary work computer. The air card is so that I can use this in places I can't plug in to the internet.

When you have a chance we should have some coffee.

Jean

From: ET02 Hoc
Sent: Friday, April 15, 2011 9:22 AM
To: Trefethen, Jean
Subject: LAPTOP AND AIR CARD
Importance: High

Jean:

I noticed in the logs that OIS is maintaining regarding the hardware they have been providing to the Ops Center for the Japanese event response and I see that they have a laptop and air card listed in your name. They are tickets 508374 for the air card and 510383 for the laptop. I was wondering if these are a part of the Japan response or are they for you personally. If they are a part of the Japanese response, where are they located? Thanks very much...karen

LLLL1325

Lee, Richard

From: Powers, Dana A [dapower@sandia.gov]
Sent: Friday, April 15, 2011 3:06 PM
To: Lee, Richard
Subject: TMI Sampling

Richard, I got the following message from Eric Haskins on sampling during the accident at TMI. I think the basic answer for the Japanese is the TMI experience won't help them much.

I have a call into the visual aid people to see if I can get my video tape of the fuel removal from TMI converted into a disk. I snagged some DOE money to pay for the transfer IF it can be done.

Dana

" I don't know the specifics, but there were sample lines connected to sample stations that were used during normal operation. In fact, it was high radiation levels in the vicinity of these sample lines (600 mrem/hr), which first prompted them to declare a site area emergency before the general emergency at TMI-2.

You recall the difficulty they had getting hydrogen out of the reactor coolant system via the makeup tank between Thursday and Sunday at TMI-2. I believe the sample lines came off of the letdown line somewhere between it's containment penetration and the makeup tank in the Auxiliary Building.

Of course, you also recall that TMI-2 was pressurized, which provided a natural driving force for letdown flow, so I don't know that the TMI-2 information will do the Japanese much good."

LLLL/326

Lee, Richard

From: Powers, Dana A [dapower@sandia.gov]
Sent: Friday, April 15, 2011 10:50 AM
To: Lee, Richard
Subject: RE: salt water model setup in the RPvV

I am assembling the data base for the water model to look specifically at precipitation of magnesium phosphate and calcium phosphate. (We will need all this for our iodine model so it is not wasted effort.)

I have a tape of the TMI fuel recovery effort. That may be exactly what they need. I did not pay a lot of attention to the TMI water sampling effort from the RPV while the head was on. After the head was removed water sampling was easy. I was focused on water composition in the sump. But, surely we can find something on water sampling during TMI. I will fire off a note to Haskin – he was there. He probably did pay attention to water sampling, but he might know who did. It probably will not be useful for a BWR. Dana

---

From: Lee, Richard [mailto:Richard.Lee@nrc.gov]
Sent: Thursday, April 14, 2011 6:46 PM
To: Powers, Dana A
Subject: salt water model setup in the RPvV

Dear Dana:

You mentioned that you will setup a model to predict what sea water in doing in the RPV for the Fukushima case. How is that coming around?

Today, during the U.S. Conference call with Japan, they ask

(1) How to remove the salt from the reactor system?
(2) How TMI-2 did the water sampling of the reactor coolant system?
(3) How to remove damaged fuel from the vessel?

Wasn't there some information from the OECD TMI-2 examination project?

Richard

LLLL/327

From: LIA08 Hoc
Sent: Friday, April 15, 2011 2:13 PM
To: Hoc, PMT12; RST01 Hoc; ET07 Hoc
Subject: FW: TEPCO Earthquake Information Update on April 15 (2): Result of discharge of low level radioactive water to the sea
Attachments: ATT00001..png; ATT00002..png; ATT00003..png

From: LIA02 Hoc
Sent: Friday, April 15, 2011 2:06 PM
To: LIA08 Hoc
Subject: FW: TEPCO Earthquake Information Update on April 15 (2): Result of discharge of low level radioactive water to the sea

---

From: Michael W. Chinworth [mailto:michael-chinworth@jnes-usa.org]
Sent: Friday, April 15, 2011 2:05 PM
To: LIA02 Hoc
Cc: yamachika-hidehiko@jnes-usa.org; aono-kenjiro@jnes-usa.org
Subject: Fwd: TEPCO Earthquake Information Update on April 15 (2): Result of discharge of low level radioactive water to the sea

-------- Original Message --------
Subject:[Spam] TEPCO Earthquake Information Update on April 15 (2): Result of discharge of low level radioactive water to the sea
Date: Fri, 15 Apr 2011 17:28:28 +0000
From:matsuo.kenji@tepco.co.jp <matsuo.kenji@tepco.co.jp>
To:matsuo.kenji@tepco.co.jp <matsuo.kenji@tepco.co.jp>

Dear Friends,

TEPCO has announced the result of discharge of low level radioactive water to the sea.
Please see details below.

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

Result of discharge of low level radioactive water to the sea

LLLL/328

As to the low level radioactive wastewater stored at the Central Radioactive Waste Treatment Facility, we began discharging at 7:03PM, April 4th to the south of the water discharge channel and finished at 5:40PM, April 10th.

At 9:55AM, April 11th, we confirmed that the wastewater in the building had been discharged sufficiently so that the preparation work to accept high level radioactive wastewater in the building could be done.

In relation to the low level radioactive water in sub-drain pits of Units 5 and 6, we began discharging from 9 PM, April 4th via the water discharge channel of Units 5 and 6 and finished by 6:52PM, April 9th.

In terms of the discharge of low level radioactive water to the sea, as instructed by NISA, we have been conducting ocean monitoring in a steadfast manner. We have been increasing the number of monitoring points and the frequency to investigate and confirm the influence of the dispersion of radioactive substances and have been notifying the result.

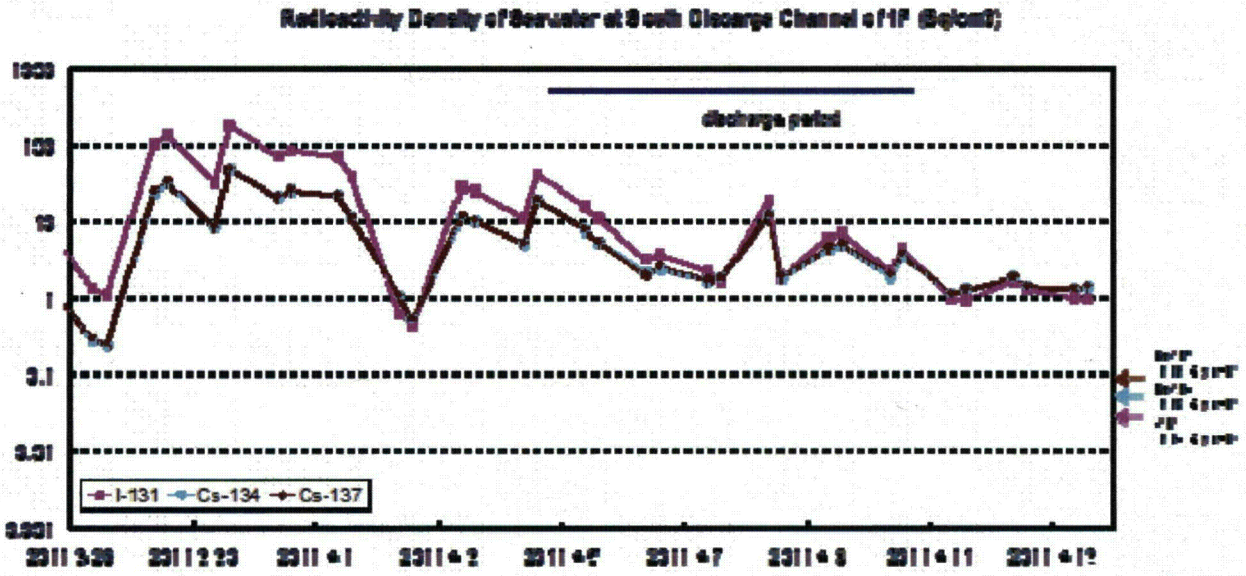
The radioactive density monitored at the measurement points including near the power station did not indicate significant fluctuation in comparison with the trend one week before the discharge.

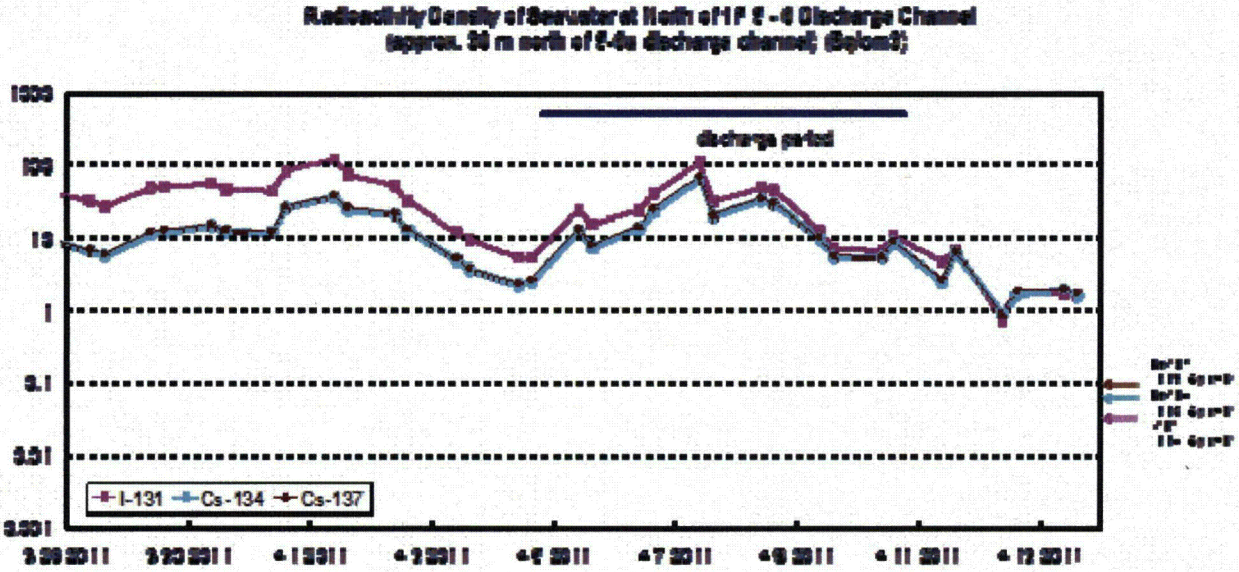
The amount of low level radioactive wastewater discharged to the sea this time was approx 9,070 tons from the Central Radioactive Waste Treatment Facility and approx 1,323 tons from the sub-drain pits of Units 5 and 6 (Unit 5: approx 950 tons, Unit 6: approx 373 tons). The total radiation discharged was approx 1.5×10^{11} Bq.

We evaluate approximately 0.6 mSv of effective radioactive doses per year for adults as the impact on the discharge of the low radioactive wastewater 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-forth of annual radioactive dose to which the general public is exposed in nature. The level is similar to the evaluation we made before the discharge to the sea.

With the completion of discharge, as soon as the preparation work completed to accept high level radioactive wastewater at the Central Radioactive Waste Treatment Facility, we will transfer the extremely highly radioactive wastewater in the turbine building of Unit 2 to the Central Radioactive Waste Treatment Facility and store under stable conditions.

Also, from now on, as to the low level radioactive water in sub-drain pits of Units 5 and 6, we will transfer to a temporary outdoor tank and consider an appropriate radiation mitigation plan.





[Estimation of Discharged Radioactivity]

Nuclide analysis of accumulated water and sub-drain water. Fukushima Daiichi NPS

Time and Date of sample collection	16:30, Mar 29th, 2011	16:00, March 29th, 2011	10:30, March 30th, 2011	10:40, March 30th, 2011
Place of sampling	Accumulated water. Centralized Radiation Waste Treatment Facility (non RCA)	Accumulated water. Centralized Radiation Waste Treatment Facility (RCA)	Sub-drain pit water. Unit 5	Sub-drain pit water. Unit 6
Detected Nuclides (Half-life)	Density of Sample (Bq/cm3)			
I-131 (approx 8 days)	6.3E+00	6.7E-01	1.6E+00	2.0E+01
Cs-134 (approx 2 years)	2.7E+00	4.4E+00	2.5E-01	4.7E+00
Cs-137 (approx 30 years)	2.6E+00	4.4E+00	2.7E-01	4.6E+00

※I-131,Cs-134,Cs-137 are fixed figures. Data of other nuclides are under evaluation.

Radioactive Materials Density (***Bold italic*** number (Bq/cm3) in above Table is used,)

	Radioactive Material Density (Bq/cm3)			
	I-131	Cs-134	Cs-137	Total
Central R/W Treatment	6.3×10^{0}	4.4×10^{0}	4.4×10^{0}	1.5×10^{1}
Sub-Drain unit 5	1.6×10^{0}	2.5×10^{-1}	2.7×10^{-1}	2.1×10^{0}

Sub-Drain unit 6	2.0×10^{1}	4.7×10^{0}	4.9×10^{0}	3.0×10^{1}

Discharged Radioactivity

	Discharged Radioactivity (Bq)			
	I-131	Cs-134	Cs-137	Total
Central R/W Treatment	5.7×10^{10}	4.0×10^{10}	4.0×10^{10}	1.4×10^{11}
Sub-Drain unit 5	1.5×10^{9}	2.4×10^{8}	2.6×10^{8}	2.0×10^{9}
Sub-Drain unit 6	7.5×10^{9}	1.8×10^{9}	1.8×10^{9}	1.1×10^{10}
Total	6.6×10^{10}	4.2×10^{10}	4.2×10^{10}	**1.5×10^{11}**

[Calculation of Effective Radioactive Dose]

--Annual Effective Dose (Whole Body) per 1 Bq/cm3 is based on "Regulatory Guide for the Annual Dose Target for the Public in the Vicinity of Light Water Nuclear Power Reactor Facilities"

I-131 : 2.42 x E+0 mSv/yr
Cs-134 : 4.99 x E+1 mSv/yr
Cs-137 : 3.41 x E+1 mSv/yr

--Sea water flow rate near Fukushima Daiichi NPS is 10 cm/sec. In this case, sea water radioactive density is diluted to 1/10 at 1 km down stream. Since discharge period was 5 days, annual average radioactive density in the ocean areas is estimated by (radioactive density at discharge point) x (1/10) x (5/365).

--Conclusion

I-131 : (1/10) x (5/365) x 2.42 (mSv/yr) x 20 (Bq/cm3) = 0.066 mSv/yr
Cs-134 : (1/10) x (5/365) x 49.9 (mSv/yr) x 4.7 (Bq/cm3) = 0.321 mSv/yr
Cs-137 : (1/10) x (5/365) x 34.1 (mSv/yr) x 4.9 (Bq/cm3) = 0.229 mSv/yr
Total dose = 0.066 + 0.321 + 0.229 = <u>0.616 mSv/yr</u>

From: Virgilio, Martin
Sent: Saturday, April 16, 2011 4:21 PM
To: Borchardt, Bill; Weber, Michael; Ash, Darren; Muessle, Mary; Andersen, James; Landau, Mindy; Leeds, Eric; Boger, Bruce; Ruland, William; Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Holahan, Patricia; Johnson, Michael; Zimmerman, Roy; Moore, Scott; Haney, Catherine; Casto, Chuck; Reynolds, Steven; Burns, Stephen; Dean, Bill; McCree, Victor; Satorius, Mark; Collins, Elmo; Coggins, Angela; Dyer, Jim; Golder, Jennifer; Givvines, Mary; Monninger, John; Boyce, Thomas (OIS); Stewart, Sharon; Doane, Margaret; Mamish, Nader; OST01 HOC; McDermott, Brian; Merzke, Daniel; Miller, Charles; Sanfilippo, Nathan; Cubbage, Amy; Brenner, Eliot; Schmidt, Rebecca; Batkin, Joshua; Powell, Amy
Subject: Estimating Fukushima Costs

All

As a follow up to the March 31st hearing we have been asked by OCFO to estimate the costs going forward associated with our response to the events in Japan
As a first step we need to agree on the assumptions around the work. I have taken a shot at a set of assumptions and would value your comments. Once we agree on the assumptions we can assign resource estimates.

Please make a conscience decision that you are likely starting a conversation if you elect to respond to all.

Marty

Assumptions

Site Team remains at full strength until the following conditions are met (assume until June 1st)

- Site conditions are stable
- reliable diverse makeup with independent power
- flooded containment

Prompt reduction in size of Site Team when stability is achieved and releases are minimal (assume June 1st)

- downsize to 3 NRC personnel in Japan
- Experts travel to Japan as needed to support site team (assume 2 per week - June through August)

Site team transition from 3 to 1 SLS Attaché (assume September 1st)

- Attaché remains in Japan throughout 2012

Ops center manned 24/7 at current level until site team is reduced (assume June 1st)

HQ Line organization support continues at current levels until site team is reduced (assume June 1st)

Task Force Continues until it completes its 90 day assessment and transitions work to line (assume August 1st)

HQ Line organization develops regulatory products to support implementation of the Task Force recommendations (assume work starts in 2011 and continues through 2012)

- Assume multiple orders are developed and issued to reactors and fuel cycle facilities

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- Assume work begins and continues through 2011 on 6 rules – external events, SBO, severe accident measures, B5b, spent fuel storage and emergency preparedness.

Regions inspect implementation of orders (assume 1 inspection per facility in 2012)

HQ Line organization and OIP support domestic and international meetings/conferences (Starts April 2011 and continues throughout 2012 at the rate of 2/month).

HQ Line organization, OPA and OCA support special congressional interactions (Starts April 2011 and continues throughout 2012 at the rate of 1/week)

HQ Line organizations and OPA support special interactions with States, local officials and members of the public ((Starts April 2011 and continues throughout 2012 at the rate of 1/week)

Corporate and overhead costs will be incurred in scheduling and hosting meetings, arranging travel, responding to FOIA requests and more.

From: Moore, Scott
Sent: Tuesday, April 26, 2011 6:15 PM
To: Dean, Bill; McCree, Victor; Satorius, Mark; Collins, Elmo; Lew, David; Pederson, Cynthia; Howell, Art; Ogle, Chuck; Wert, Leonard
Cc: Piccone, Josephine; Jackson, Deborah; Lewis, Robert; Turtil, Richard; Weber, Michael; Virgilio, Martin; Wiggins, Jim; OST01 HOC; Evans, Michele
Subject: Distribution of Japan Event SitReps

Regional Administrators and Deputy Regional Administrators:

I've spoken to some of you regarding distribution of the Japan Event Situation Reports (SitReps) that are being issued by the Operations Center staff, but I wanted to close-the-loop with everyone, so that we're all working with the same information. It's my understanding that FSME staff have communicated with the Regional State Liaison Officers (RSLOs) on this same issue.

Early during the Japan event, there was a variety of guidance regarding sharing the written SitReps with State representatives. We understand that the States want information regarding the unfolding events in Japan, and at times, the Federal Government has not been able to completely address their requests for information. That said, the SitReps are Official Use Only documents, and are marked as such. They are not intended to be shared with anyone outside the Federal government [without prior NRC approval]. NRC's position with regard to distribution of the SitReps is:

The SitReps are not to be forwarded/provided to anyone outside of the Federal family. States are not to receive these reports. RSLOs may speak with States as to information in the SitReps that may be of useful interest to State representatives (i.e., share information verbally).

We believe that this is well understood by the staff here and in the Regions, and I wanted to bring it to your attention. This has not been an issue for the past couple weeks, and it appears to be working well now. If you have any questions, please feel free to call me. I'd be glad to discuss.

Scott

Scott W. Moore, Acting Director
Office of Federal and State Materials and
Environmental Management Programs
301-415-7875
Scott.Moore@nrc.gov

LLL/ 330

From: Library Resource
To: EPUB - Nuclear News Flashes
Subject: FW: Platts Nuclear News Flashes
Date: Friday, April 08, 2011 7:03:45 PM
Attachments: NNF_20110408.txt

From: Platts[SMTP:SUPPORT@PLATTS.COM]
Sent: Friday, April 08, 2011 7:03:03 PM
To: Library Resource
Subject: Platts Nuclear News Flashes
Auto forwarded by a Rule

Dear Subscriber,

This email contains your Platts newsletter subscription.

Nuclear News Flashes
Friday, Apr 08, 2011

[Inside This Issue:]

*** Onagawa, Rokkasho, Higashidori bear brunt of latest earthquake

The three-unit Onagawa plant in Japan was maintaining cooling capability

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using one external power line
April 8 following a magnitude 7.1 earthquake off the country's northeast coast late April 6, Japan's
NHK national broadcasting company reported.

Also, the earthquake caused a total of about 3.8 liters of water to spill from the reactors' spent
fuel storage pools, and a device to control pressure inside a turbine building was damaged, it said.
It also said blowout panels designed to control pressure were damaged at the Onagawa-3 turbine building.

NHK also reported the earthquake disabled all external power lines at Japan Nuclear Fuel Ltd.'s Rokkasho
reprocessing plant in Aomori Prefecture, with the cooling systems still running on emergency diesel power
April 8. The plant was originally to be completed in 1997, but major construction delays have pushed
the schedule out. As of late last year, JNFL was targeting commercial operation in October 2012. Spent
fuel is in interim storage at Rokkasho awaiting reprocessing.

NHK also said external power was restored to Tohoku Electric's Higashidori-1, which had used emergency
diesel generators "for some hours" after the earthquake knocked out power lines.

Meanwhile, Tokyo Electric Power Co. said April 8 the latest earthquake had not caused additional problems
at its Fukushima I nuclear power plant, which it is trying to stabilize following the March 11 earthquake
and tsunami. Tepco said it was continuing to inject nitrogen gas into the unit 1 primary containment
vessel to prevent an explosion of hydrogen gas. It also said it was providing cooling to the unit 3 spent
fuel pool by spray water by "concrete pump vehicle."

The epicenter of the April 6 earthquake was 20 km (about 12 miles) from Onagawa and about 120 km from
the Fukushima I and II nuclear power plants, the IAEA said April 8.

*** NRC says UniStar's foreign ownership a bar to building Calvert Cliffs-3

NRC has told EDF-owned UniStar Nuclear Energy, which wants to build and operate a third reactor at
the Calvert Cliffs site in Maryland, that its governance plan fails to mitigate the agency's ban on foreign
control of US reactors.

In an April 6 letter released publicly April 8, David Matthews, director of NRC's division of new reactor
licensing, told UniStar President and CEO George Vanderheyden that UniStar "does not meet the requirements"
of federal law governing reactor ownership. UniStar is 100% owned by EDF, which is 85% owned by the French
government, and "EDF has the power to exercise foreign ownership, control, or domination over UniStar,"
Matthews said.

In February, UniStar submitted the governance plan, which it said would "mitigate" Atomic Energy Act
provisions that bar NRC from issuing an operating license to any entity that is "owned, controlled or
dominated by an alien, a foreign corporation, or a foreign government."

EDF in early November bought the 50.1% of UniStar that it did not already own from Constellation after
the Baltimore-based company decided it did not want to participate in the Calvert Cliffs-3 project.

Matthews said NRC will continue to review UniStar's combined construction permit-operating license application for Calvert Cliffs-3, but that a license will not be issued unless the foreign ownership requirements are met.

UniStar said in an April 8 statement that Calvert Cliffs-3 "will ultimately have a US partner." UniStar said it and EDF disagree with NRC's conclusion regarding UniStar's present governance structure, but "we are pleased that the NRC will continue to review all other aspects of our pending application."

*** Little progress on I&C issues at Olkiluoto-3, Finnish regulator says

Little progress on approving documentation for instrumentation and control design at Olkiluoto-3 has been made since summer 2010, the head of the reactor safety division of Finland's nuclear regulator said in an interview April 8.

Petteri Tiippana said the Finnish Radiation & Nuclear Safety Authority has still not received information from Teollisuuden Voima Oy, or TVO, and Areva about the independence of different components of the I&C systems and information about how other systems interact with I&C.

Areva and Siemens are building the 1,600-MW Olkiluoto-3 EPR for TVO. The unit is about four years behind schedule, in part because of lack of documentation for the I&C system.

*** Swedish Greens seek to shut two reactors

Sweden's Greens filed a parliamentary motion April 8 calling for two nuclear units to be permanently shut before 2014.

In the motion, the Greens said they have forecasts that show Sweden will have surplus electricity in the coming years and that the reactors can be closed without an economic impact or electricity shortages. They did not identify the reactors to be closed or the time frame for surplus electricity.

If Sweden needed to replace generation from the two closed units, the Greens said that could be done by using more renewable energy and improving energy efficiency.

*** NRC announces contingency plan for government shutdown

The NRC said April 8 that it "will continue operating for at least one week with available funds" if the federal government shuts down due to a budget impasse in Congress.

The agency said in a statement that it will follow interim guidance in Management Directive 4.5, "Contingency Plan for Periods of Lapsed Appropriations," in case of such a shutdown. That guidance is on NRC's Adams document system under accession number ML110950109.

"The interim guidance identifies functions that are considered excepted from shutdown for the safety of human life or the protection of property, a timetable for implementing a

shutdown, and general guidance
on employee rights, obligations and benefits," the agency said.

Some of the "excepted functions" that would continue during a shutdown, the guidance said, include
processing of event and emergency notifications from licensees; emergency response, including the Operations
Center at NRC headquarters; resident inspectors at 104 operating power reactors; issuance of enforcement
orders, if needed; investigations of "possible wrongdoings;" and processing of emergency licensing actions.

*** Waxman urges Shimkus to cancel visit to Yucca Mt.

Representative Henry Waxman, the top Democrat on the House Energy and Commerce Committee, April 8 urged
his Republican colleague John Shimkus of Illinois to cancel a site visit to the proposed Yucca Mountain
repository in Nevada, saying the trip could cost taxpayers at least $200,000.

Shimkus, who chairs the panel's subcommittee on environment and economy, opposes DOE's termination
of the repository project, roughly 95 miles outside Las Vegas, and had proposed that committee members
visit the site in a March 31 letter to Secretary of Energy Steven Chu.

"At a time when the government is facing a shutdown over funding, it seems completely inappropriate
to incur these needless expenses," Waxman said. Waxman opposed DOE's plan to site a nuclear waste repository
at Yucca Mountain.

Yucca Mountain has been closed for nearly two years, Waxman said, noting that the main tunnel at the
proposed disposal site "would need to be reopened, equipment would need to be restarted and confirmed
to be functional, and the facility would have to be tested for silica and radon."

The cost of those activities has been projected at $175,000, "which we would need to commit within
the week,'" Waxman said. He added the cost of transporting 12 committee members from Las Vegas to Yucca
Mountain via helicopters has been estimated at $25,000. The use of less costly transport options, such
as small aircraft and bus, would take too long, Waxman said.

Shimkus' office did not respond to a request for comment by press time.

*** Reactor report

Indian Point-3 synchronized to the grid April 8 following a 30-day refueling and maintenance outage,
Entergy spokesman Jerry Nappi said in a statement.

***

| Tel: 800-PLATTS-8 (toll-free) |
| +1-212-904-3070 (direct) |

| Latin America |
| Tel: + 54-11-4804-1890 |

| Europe & Middle East |
| Tel: +44-20-7176-6111 |

| Asia Pacific |
| Tel: +65-6530-6430 |

Lee, Richard

From: Gibson, Kathy
Sent: Sunday, April 17, 2011 11:24 AM
To: Case, Michael
Cc: Lee, Richard
Subject: Re: ACTION - New Ticket for Japanese Event Task Tracking (JETT) Process

Go ahead and respond for us Mike since you did the work. :-)

From: Case, Michael
To: Gibson, Kathy
Cc: Lee, Richard
Sent: Sun Apr 17 11:00:41 2011
Subject: Fw: ACTION - New Ticket for Japanese Event Task Tracking (JETT) Process

Hi Kathy. Are you going to respond to this tasking? I read through it from an RST perspective and I didn't have any comments. I didn't see anything of technical detail that would warrant specific involvement of our technical staff
Sent from Blackberry
Michael Case.

From: OST01 HOC
To: Deegan, George; Lewis, Robert; Weaver, Doug; Hiland, Patrick; Skeen, David; Dudek, Michael; Milligan, Patricia; Gibson, Kathy; Case, Michael; Anderson, James; Tracy, Glenn
Sent: Sun Apr 17 03:54:27 2011
Subject: ACTION - New Ticket for Japanese Event Task Tracking (JETT) Process

******Please note: All attachments are Official Use Only**********

The Operations Center has identified a task that falls in the purview of the Line Organization. You were provided as a POC for NRR/NSIR/RES/FSME/NMSS.

NSIR: Please provide the latest version of the composite document to Marty Virgilio by 0900 Monday morning 4/18.

NRR/FSME/NMSS/RES: Please review and provide comments to Trish Milligan, NSIR and OST 01 HOC by 4/17/2011, 1500 EDT

This ticket is being tracked in the Japan SharePoint page (http://nsir-ops.nrc.gov/Lists/HOC%20Red%20Tickets/AllItems.aspx) under ticket number **4771**.

Please provide a response to this email to confirm receipt. Thank you,

Executive Support Team

******Please note: All attachments are Official Use Only**********

LLLL/332

Lee, Richard

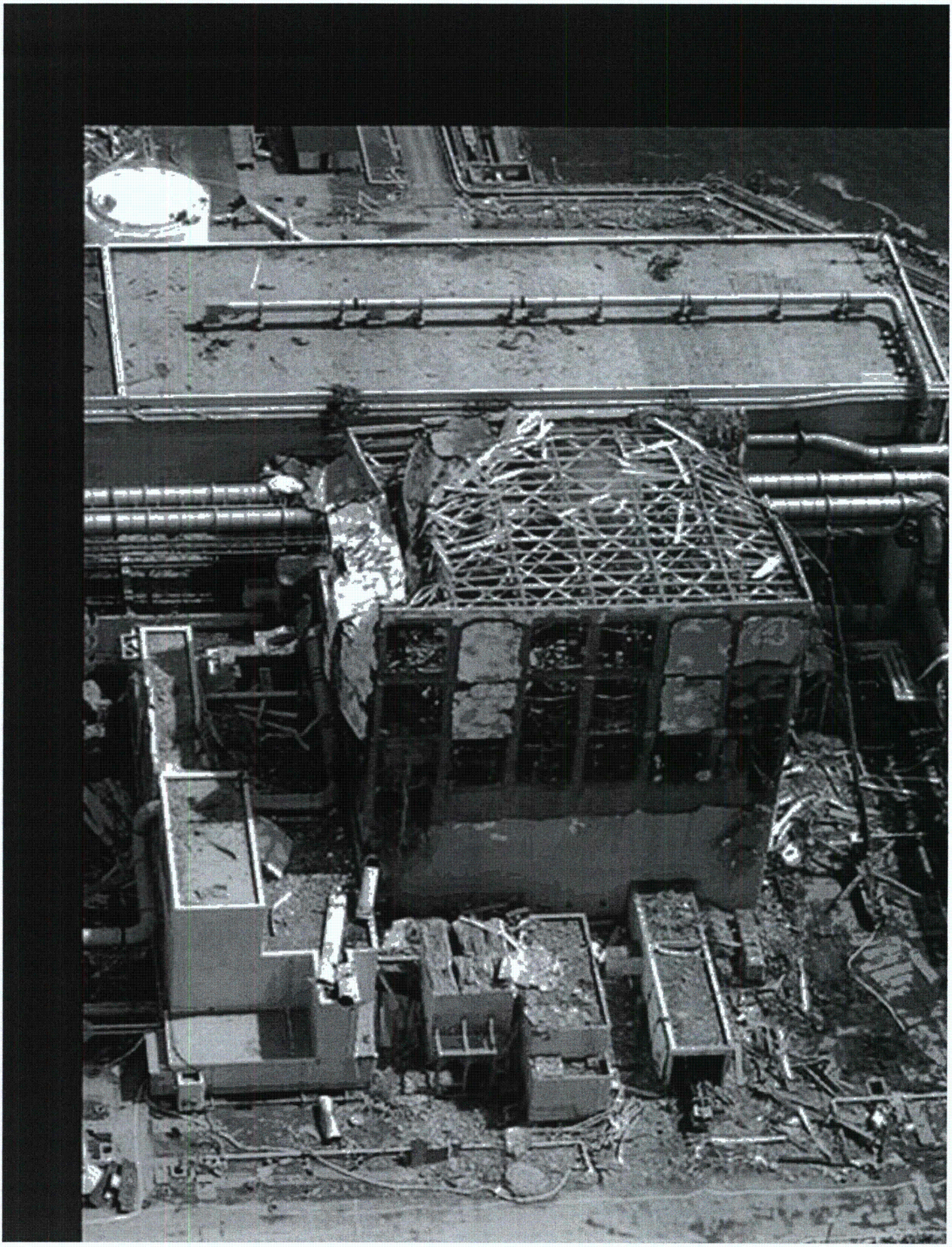
From: Richard L Garwin [rlg2@us.ibm.com]
Sent: Sunday, April 17, 2011 4:25 PM
To: Larzelere, Alex
Cc: Caponiti, Alice; Busby, Jeremy T; DL-NITsolutions; Schneider, Steve
Subject: Useful presentation from http://allthingsnuclear.org of April 14, and a SUGGESTION for improving our BWRs
Attachments: ATT00001..gif; ATT00002..gif

Dear Colleagues,

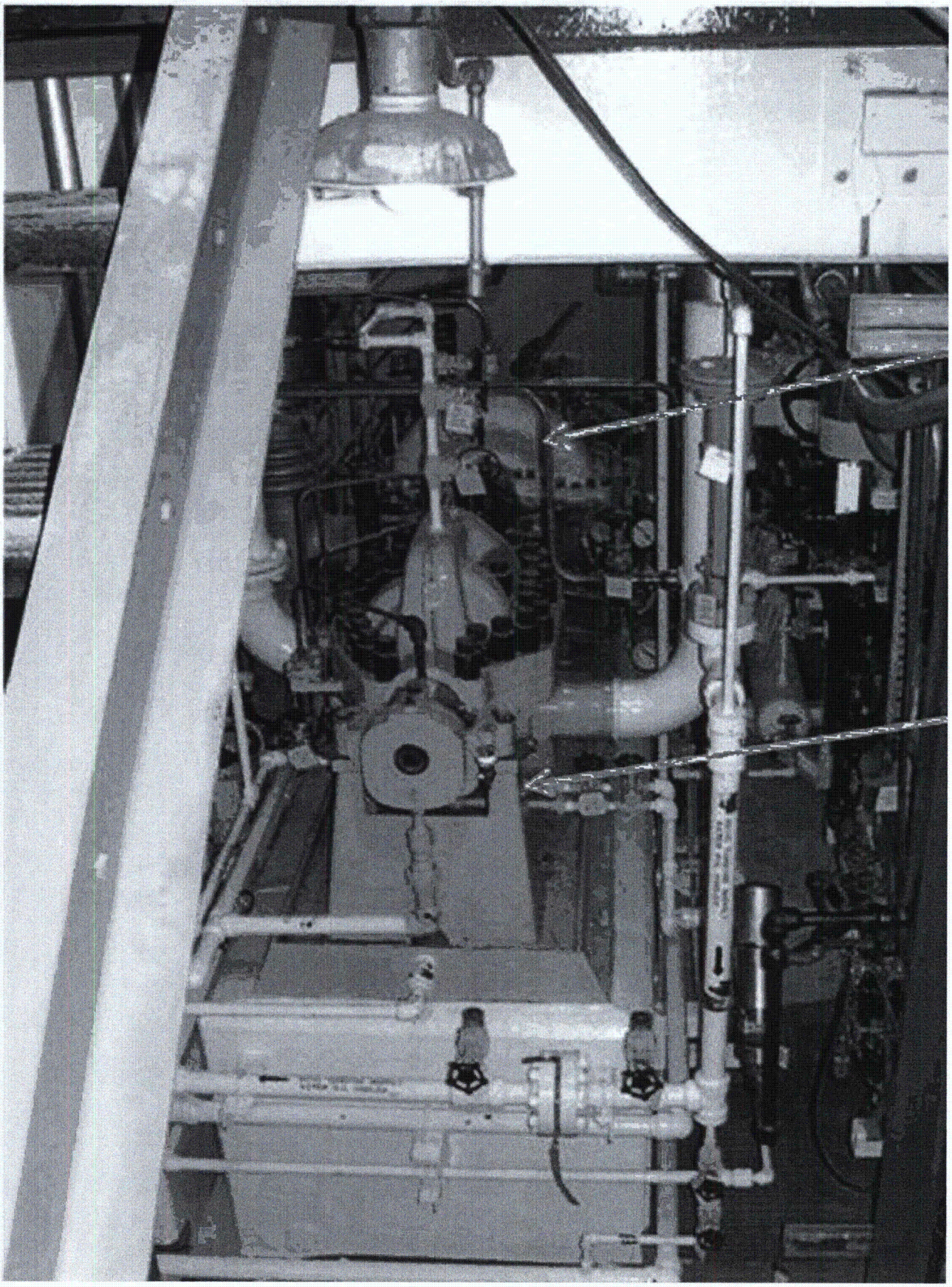
http://allthingsnuclear.org of April 14 has a very useful presentation of the Fukushima Dai-ichi problem.

I attach the first slide and also a detail of the steam-driven "isolation turbine and pump," and provide also
a SUGGESTION by Bill Press.

LLLL / 333



Reactor Core Isolation Co



Bill Press (William H. Press, University of Texas at Austin, and LANL) asks why the RCIC turbine/pump does not have a "magneto" on the shaft, like that on a piston-driven aircraft engine, so that whenever the pump is running there is electrical power generated for the RCIC valves and other emergency loads. This might well be used to charge the batteries, too, and operate the control room indicators and lights.

This seems to me an eminently practical suggestion, which I am passing on for communication to NE and NRC.

Dick Garwin

Lee, Richard

From: Lee, Richard
Sent: Monday, April 18, 2011 3:17 PM
To: 'Kelly, John E (NE)'
Subject: TMI de-fueling

HI, John:

During last week conference call with Japan, Japan AEC asked for TMI-2 de-fueling operation. I spoke to Dana about it. He has a video tape on TMI2 de-fueling operation. He is having the information from the video tape transfer to a diskette. When it is done, we will provide a copy to Japan AEC.

Dana is also assembling the data base for the water model to look specifically at precipitation of magnesium phosphate and calcium phosphate (use of Na phosphate as a buffer agent in the primary system for pH control). When it is ready, we can also provide it to Japan AEC as well.

Richard

LLLL / 334

Lee, Richard

From: Lee, Richard
Sent: Monday, April 18, 2011 3:02 PM
To: 'Larzelere, Alex'
Subject: RE: Request for handouts from US-Japn conf. call on 4/14

Hi, Alex:
No problem.
Thx, Richard

From: Larzelere, Alex [mailto:alex.larzelere@nuclear.energy.gov]
Sent: Monday, April 18, 2011 2:44 PM
To: Lee, Richard
Subject: RE: Request for handouts from US-Japn conf. call on 4/14

Richard,

I have not forgotten you – it is just taking a bit longer than I thought to get this information.

Alex

From: Lee, Richard (NRC)
Sent: Monday, April 18, 2011 9:24 AM
To: Larzelere, Alex
Subject: Request for handouts from US-Japn conf. call on 4/14

Hi, Alex:

Could you or ask John Kelly for the handouts that Japan AEC sent to DOE for the U.S.-Japan conf. call on 4/14. Please also check when this week conf. call will take place.

Appreciate it.

Best,
Richard

LLL4335

Lee, Richard

From: Salay, Michael
Sent: Monday, April 18, 2011 3:37 PM
To: Lee, Richard
Cc: Marksberry, Don; Esmaili, Hossein
Subject: RE: ACTION: ASSIGN A ITEM TO NRR

Richard,

Some thoughts on nitrogen inerting follow for feedback to the RST.

Don, Hossein: This should reflect the discussions from this morning. Let me know if you guys agree with this or if you think it should be changed.

If this question came from the meeting that I'm thinking of, the original suggestion was that, if plants were being continuously steam purged, no nitrogen inerting is necessary. It seems that this question changed by the time it came from the RST to NRR and RES. It has turned into "if plants are steam inerted, what benefit would there be to nitrogen inert?"

The situation of purging with a leaky containment should be considered separately from an intact, but steam inerted, containment. In the leaky case, flammable gases would tend to be removed from the containment whereas these flammable gases would remain in a steam-inerted intact containment. For a well purged situation in a leaky environment, it would be expected that air would ingress upon condensing the steam but flammable gases would not be present. When the steam-inerted intact containment is cooled, a previously combustible mixture would become combustible again as the steam condenses.

In general, as the system is cooled down, it is desirable to replace the condensing steam with nitrogen instead of air to ensure that any flammable gases do not have an opportunity to combust. Whether or not a combustible mixture remains depends on the location of any leak in the containment. If it is known that steam is purging the containment through a leak at a high rate (a few thousands of m^2/hr), the additional volume addition by the nitrogen injection (28 m^3/hr) would not make much of a difference. If the primary leak from containment is the suppression pool, it may be possible that the DW could retain a combustible atmosphere. For example, the temperature profiles in F2 show superheated temperatures in the drywell and both boiling and slightly cooler temperatures in the SC. It does not seem evident that steam is necessarily purging the DW through leaks but could rather be exiting through the SC, especially if steam from RPV is being released to the SC through the SRVs instead of through some vessel breach.

When nitrogen inerting: If the DW is being steam purged the injected nitrogen is purged with steam and flammable gases. If the DW is not being steam purged, the nitrogen inerts the atmosphere. Both situations are acceptable.

When not nitrogen inerting: If the DW is being steam purged the flammable gases are purged with steam. If the DW is not being steam purged, a flammable gas mixture could possibly exist, especially after any air ingress. The second situation is not acceptable.

The recommendation is:

1) If steam purging of DW is certain, N2 inerting would not add benefit for ensuring a non-combustible mixture

2) When it is not completely certain that the DW is being steam purged, nitrogen should be used to inert.

LLLL/336

3) In any case, when system is cooled enough to condense steam, the DW should be nitrogen inerted. N2 inerting would prevent air ingress as the steam is condensed either through leak or through reactor building vacuum breakers. N2 inerting would reduce the likelihood of a combustible mixture existing.

-Mike

From: Marksberry, Don
Sent: Monday, April 18, 2011 1:22 PM
To: Lee, Richard; Salay, Michael; Esmaili, Hossein
Subject: FW: ACTION: ASSIGN A ITEM TO NRR

FYI.

From: Demoss, Gary
Sent: Monday, April 18, 2011 11:59 AM
To: Marksberry, Don
Subject: FW: ACTION: ASSIGN A ITEM TO NRR

From: Harrison, Donnie
Sent: Monday, April 18, 2011 10:38 AM
To: Drouin, Mary
Cc: Demoss, Gary; Coe, Doug; Correia, Richard
Subject: RE: ACTION: ASSIGN A ITEM TO NRR

Thanks Mary. I think I have consensus as NRO is giving me a similar response.

From: Drouin, Mary
Sent: Monday, April 18, 2011 10:34 AM
To: Harrison, Donnie
Cc: Demoss, Gary; Coe, Doug; Correia, Richard
Subject: RE: ACTION: ASSIGN A ITEM TO NRR

Donnie,

As we discussed:

The ability to maintain ***effective*** steam inerting requires you to know what is the atmospheric makeup, that is, are they able to get reliable information. In the "short term" (see Note), it can be effective. However, given the uncertainties, it would be very prudent to start nitrogen inerting as soon as possible before the steam starts condensing, etc. and you start to build up a combustible atmosphere.

Note: To get a handle on the time frame, I would recommend that someone do some "back of the envelope calculations" on several scenarios:

- Assuming immediate loss of steam inerting, and given the volume (and making other as needed conservative assumptions), how long before a combustible atmosphere is built up?
- Do a couple of additional estimations, perhaps assuming different steam generation rates to get some other estimates of timing.

Hope this helps, tks mary

From: Harrison, Donnie
Sent: Monday, April 18, 2011 9:02 AM

To: Drouin, Mary
Cc: Demoss, Gary
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Mary,

Can you help me out on this activity with your Brookhaven folks. Need ASAP.

Donnie

From: Cheok, Michael
Sent: Monday, April 18, 2011 8:33 AM
To: Harrison, Donnie
Cc: Hiland, Patrick; Lee, Samson
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Donnie – from your past life as a SAMG person, can you help out? Thanks

Mike

From: Hiland, Patrick
Sent: Monday, April 18, 2011 8:04 AM
To: Cheok, Michael
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Mike, anyone in your group available/qualified?

From: Hiland, Patrick
Sent: Monday, April 18, 2011 7:36 AM
To: Bahadur, Sher; Giitter, Joseph; Howe, Allen; Lubinski, John; Nelson, Robert; Dennig, Robert
Cc: Brown, Frederick
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Can anyone nominate an individual to followup on the below action item? Due at 11:00 a.m. this morning.

From: RST01 Hoc
Sent: Monday, April 18, 2011 4:59 AM
To: Hiland, Patrick; OST01 HOC
Cc: RST01 Hoc; Skeen, David; Ruland, William
Subject: ACTION: ASSIGN A ITEM TO NRR

Please assign the following action thru task tracker:

As a result of discussion with the Site team at the 0300, 18 April 2011 call the issues associated with the nitrogen inerting were clarified. The site team needs information on the advantages (if any) of nitrogen inerting if steam inerting is already in place. The concern is the resources needed to start nitrogen inerting, when TEPCO believes that they have effective steam inerting in units 2 and 3.

The SAMG's say to purge with nitrogen and we have been recommending purging with nitrogen. We need to provide the site team with a discussion of the advantages (if any) of nitrogen inerting if a plant (general discussion not specific to Fukushima Daiichi Unit 2 and 3) is steam inerted with venting.

If possible provide input to RST before 1100 18 April 2011. If this is not possible please provide RST with estimated completion time.

Lee, Richard

From: Scott, Michael
Sent: Monday, April 18, 2011 11:39 AM
To: RES_DSA
Subject: EXTERNAL INTERACTIONS REGARDING FUKUSHIMA

For those participating in interactions outside the Agency, and particularly international interactions, please be careful not to (1) speak for the Agency regarding Fukushima, or (2) make any commitments to activities addressing Fukushima, without discussing with your BC and the DSA front office first.

While we are all interested in this subject and many may be working on something related to it at some point, it is important that we continue to focus on our important existing work. The task force addressing lessons learned from Fukushima will help guide the Agency's future actions in that regard. Also, given the significance and outside interest regarding this issue, it is important that our external discussions on the subject be well planned and well informed.

Thanks for your understanding.

Mike

LLLL/337

Lee, Richard

From: Powers, Dana A [dapower@sandia.gov]
Sent: Monday, April 18, 2011 11:32 AM
To: Lee, Richard
Subject: RE: The need of N2 inerting when steam inerting is believed to be in place

The only real advantage of nitrogen inerting is that you have no risk of nitrogen condensation. Steam inerting is thermodynamically more efficient than nitrogen inerting because of the higher heat capacity. But steam can be condensed by cooling. So, nitrogen inerting can provide an operational convenience. Dana

---

From: Lee, Richard [mailto:Richard.Lee@nrc.gov]
Sent: Monday, April 18, 2011 7:52 AM
To: Powers, Dana A
Subject: The need of N2 inerting when steam inerting is believed to be in place
Importance: High

Dear Dana:

I just learned of this 10 minutes ago.

The site team needs information on the advantages (if any) of nitrogen inerting if steam inerting is already in place. The concern is the resources needed to start nitrogen inerting, when TEPCO believes that they have effective steam inerting in units 2 and 3. [There is also "dose" to workers as well to setup the injection]

The SAMG's say to purge with nitrogen and we have been recommending purging with nitrogen. We need to provide the site team with a discussion of the advantages (if any) of nitrogen inerting if a plant (general discussion not specific to Fukushima Daiichi Unit 2 and 3) is steam inerted with venting.

We were asked to provide our input by 11:00 EST. Your thoughts on this is appreciate.

Thanks, Dana.

LLLL/338

Lee, Richard

From: Case, Michael
Sent: Monday, April 18, 2011 10:37 AM
To: RST01 Hoc; Gibson, Kathy
Cc: Rebstock, Paul; Lee, Richard; Sydnor, Russell; Richards, Stuart
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.
Attachments: image001.png; image002.png

Hi Larry. The report can be ordered from the link below:

http://www.ntis.gov/search/product.aspx?ABBR=DE87002273

From: RST01 Hoc
Sent: Sunday, April 17, 2011 2:01 PM
To: Case, Michael; Gibson, Kathy
Subject: FW: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Mike,

We haven't heard from DOE regarding the INL document requested by INPO in the email below. We will continue to pursue this through our DOE consortium member.

Is there anyone in your division who might have the requested document or might have a contact at INL (or another lab) who could get us the document. The document INPO wants is:

> Mayo, C.W., et. al. *TMI-2 Instrumentation and Electrical Program Final Evaluation Report*. GEND-056. Idaho Falls, ID: E&G Idaho, Inc. November 1986

This is not a weekend endeavor, but please follow up with the RST members on Monday morning as to whether or not someone from RES has an INL contact who can get us this document.

Do you want a Task Tracking item?

Thanks,
Larry Criscione
NRC Reactor Safety Team

From: RST01 Hoc
Sent: Sunday, April 17, 2011 1:31 PM
To: 'Caponiti DOE'
Cc: 'INPOERCTech'
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

LLLL/339

Alice,

Do you have a contact at INL who can obtain the requested paper for INPO?

Larry Criscione
NRC Reactor Safety Team

From: Cimorelli, Kevin J. (INPO) [mailto:CimorelliKJ@inpo.org] **On Behalf Of** INPOERCTech
Sent: Sunday, April 17, 2011 1:25 PM
To: RST01 Hoc
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Larry,

We were searching for information on instrument failures that occurred at TMI following the accident and found a publication in the GEND-056. Idaho National Lab. Could you forward this request to the DOE contact who may be able to obtain a copy of this report and send it back to for review?

Thank you,
Kevin Cimorelli
INPO technical coordinator

So this is the report on instrument accuracy we have been searching for GEND-056 reference below. Looks like it is an EG&G Idaho National Lab and requires access. Can we request DOE to get the report from INL?

Mayo, C.W., et al. *TMI-2 Instrumentation and Electrical Program Final Evaluation Report.* GEND-056. Idaho Falls, ID: EG&G Idaho, Inc. November 1986.

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ational Laboratory Research Library

site wants to run the following add-on: 'MSXML 5.0' from 'Microsoft Corporation'. If you trust the website and the add-on and want to all

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Fax: 208-526-0211
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Hours:
8 am - 5 pm Monday - Thursda
8 am - 5 pm on alternate Friday

Lee, Richard

From: Lee, Richard
Sent: Monday, April 18, 2011 9:56 AM
To: RES_DSA_FSTB
Subject: FW: Japan work
Attachments: image001.jpg

Since, I input Mike' hours for the week of March 28 to April 9, I had used K81196 fro SA and ZG0064 for Japan-related work.
Please see if any of you need to do correction cards as Carol mentioned in her e-mail.

From: Greenwood, Carol
Sent: Monday, April 18, 2011 9:34 AM
To: Zaki, Tarek; Lee, Richard; Santiago, Patricia
Subject: Japan work

I know you all worked on some Japan stuff but none of you claimed it under a Japan TAC, I am sure that the OCFO wants to know who worked on Japan stuff and how many hours so you might want to think about either doing a corrected timecard or just ensuring you claim under a Japan TAC for all future work.....

Regards

Carol Greenwood
Lead Administrative Assistant
RES/DSA
U.S. Nuclear Regulatory Commission
Phone: 301-251-7499

LLLL/340

Lee, Richard

From: Powers, Dana A [dapower@sandia.gov]
Sent: Monday, April 18, 2011 11:33 AM
To: Lee, Richard
Subject: RE: The need of N2 inerting when steam inerting is believed to be in place

Another advantage of nitrogen inerting is that you don't have high partial pressures of steam attacking steel and seals.
Dana

From: Lee, Richard [mailto:Richard.Lee@nrc.gov]
Sent: Monday, April 18, 2011 7:52 AM
To: Powers, Dana A
Subject: The need of N2 inerting when steam inerting is believed to be in place
Importance: High

Dear Dana:

I just learned of this 10 minutes ago.

The site team needs information on the advantages (if any) of nitrogen inerting if steam inerting is already in place. The concern is the resources needed to start nitrogen inerting, when TEPCO believes that they have effective steam inerting in units 2 and 3. [There is also "dose" to workers as well to setup the injection]

The SAMG's say to purge with nitrogen and we have been recommending purging with nitrogen. We need to provide the site team with a discussion of the advantages (if any) of nitrogen inerting if a plant (general discussion not specific to Fukushima Daiichi Unit 2 and 3) is steam inerted with venting.

We were asked to provide our input by 11:00 EST. Your thoughts on this is appreciate.

Thanks, Dana.

LLLL/341

Lee, Richard

From: Salay, Michael
Sent: Monday, April 18, 2011 9:35 AM
To: Lee, Richard
Cc: Esmaili, Hossein
Subject: RE: Plant data tables and charts from TEPCO

I still get daily emails from Lee Gard on this. I can save provided info.
-Mike

From: Lee, Richard
Sent: Monday, April 18, 2011 9:33 AM
To: Salay, Michael
Cc: Esmaili, Hossein
Subject: RE: Plant data tables and charts from TEPCO

Mike:

Could you have Lee Gard form INPO to add you to its e-mail distribution? And, you can upload it to our share point site.

Thx, Richard

From: Salay, Michael
Sent: Monday, April 18, 2011 9:08 AM
To: Lee, Richard
Cc: Esmaili, Hossein
Subject: RE: Plant data tables and charts from TEPCO

We receive this from two sources:

1) Direct from Japanese to head of RST in Japan – the individual receiving this when I was there was Alan Blamey. Currently Steve Garchow would be receiving this. Occasionally this is provided in color.
2) Scanned from paper copies from INPO. Recently Lee Gard has been transmitting these documents.

I have a few recent ones from the past few days. I haven't received any from Steve since he took over from Alan. It is possible that Randy may be receiving the files from Steve.

-Mike

From: Lee, Richard
Sent: Monday, April 18, 2011 8:50 AM
To: Salay, Michael
Cc: Esmaili, Hossein
Subject: FW: Plant data tables and charts from TEPCO

Mike:

Do you know who distribute this daily?
Richard

From: Marksberry, Don
Sent: Sunday, April 17, 2011 1:20 PM

LLLL/342

To: Lee, Richard
Cc: Esmaili, Hossein
Subject: Plant data tables and charts from TEPCO

Richard

A couple of things:

- I was unable to get into your Outlook folder. Any ideas on how to do this?

- Can we (RES) get onto a daily distribution for the attached plant data tables and charts in Japanese (assume from TEPCO)? Joy has not seen these.

Lee, Richard

From: Larzelere, Alex [alex.larzelere@nuclear.energy.gov]
Sent: Monday, April 18, 2011 9:33 AM
To: Lee, Richard
Subject: RE: Request for handouts from US-Japn conf. call on 4/14

Richard,

I will check and get back to you.

Alex

From: Lee, Richard (NRC)
Sent: Monday, April 18, 2011 9:24 AM
To: Larzelere, Alex
Subject: Request for handouts from US-Japn conf. call on 4/14

Hi, Alex:

Could you or ask John Kelly for the handouts that Japan AEC sent to DOE for the U.S.-Japan conf. call on 4/14. Please also check when this week conf. call will take place.

Appreciate it.

Best,
Richard

LLL/343

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Friday, April 08, 2011 6:33:42 AM

News **1** new result for **"Nuclear Regulatory Commission"**

Fukushima Meltdown Confirmed
Bay Area Indymedia
Edward Markey told a House hearing on the disaster, saying: "I have been informed by the **Nuclear Regulatory Commission** (NRC) that the core has gotten so hot that part of it has probably melted through the reactor pressure vessel. ...
See all stories on this topic »

Tip: Use site restrict in your query to search within a site (site:nytimes.com or site:.edu). Learn more.

Remove this alert.
Create another alert.
Manage your alerts.

LLL/344

Lee, Richard

From: Marksberry, Don
Sent: Monday, April 18, 2011 9:13 AM
To: Tinkler, Charles; Lee, Richard
Cc: Demoss, Gary
Subject: FW: ACTION: ASSIGN A ITEM TO NRR

Importance: High

Charlie: Any thoughts?

From: Demoss, Gary
Sent: Monday, April 18, 2011 9:10 AM
To: Marksberry, Don
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Can anybody over here help?

From: Harrison, Donnie
Sent: Monday, April 18, 2011 9:02 AM
To: Drouin, Mary
Cc: Demoss, Gary
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Mary,

Can you help me out on this activity with your Brookhaven folks. Need ASAP.

Donnie

From: Cheok, Michael
Sent: Monday, April 18, 2011 8:33 AM
To: Harrison, Donnie
Cc: Hiland, Patrick; Lee, Samson
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Donnie – from your past life as a SAMG person, can you help out? Thanks

Mike

From: Hiland, Patrick
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To: Cheok, Michael
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Mike, anyone in your group available/qualified?

From: Hiland, Patrick
Sent: Monday, April 18, 2011 7:36 AM

LLLL/345

To: Bahadur, Sher; Giitter, Joseph; Howe, Allen; Lubinski, John; Nelson, Robert; Dennig, Robert
Cc: Brown, Frederick
Subject: FW: ACTION: ASSIGN A ITEM TO NRR
Importance: High

Can anyone nominate an individual to followup on the below action item? Due at 11:00 a.m. this morning.

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Cc: RST01 Hoc; Skeen, David; Ruland, William
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If possible provide input to RST before 1100 18 April 2011. If this is not possible please provide RST with estimated completion time.

Lee, Richard

From: Case, Michael
Sent: Monday, April 18, 2011 6:50 AM
To: RST01 Hoc; Gibson, Kathy
Cc: Lee, Richard
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.
Attachments: image001.png; image002.png

Good morning Larry. I'll check this out with our I&C folks. I don't feel like I'll have much luck.

From: RST01 Hoc
Sent: Sunday, April 17, 2011 2:01 PM
To: Case, Michael; Gibson, Kathy
Subject: FW: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Mike,

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Do you want a Task Tracking item?

Thanks,
Larry Criscione
NRC Reactor Safety Team

From: RST01 Hoc
Sent: Sunday, April 17, 2011 1:31 PM
To: 'Caponiti DOE'
Cc: 'INPOERCTech'
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Alice,

Do you have a contact at INL who can obtain the requested paper for INPO?

LLL/346

Larry Criscione
NRC Reactor Safety Team

From: Cimorelli, Kevin J. (INPO) [mailto:CimorelliKJ@inpo.org] **On Behalf Of** INPOERCTech
Sent: Sunday, April 17, 2011 1:25 PM
To: RST01 Hoc
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Larry,

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INPO technical coordinator

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INL and its associates

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Fax: 208-526-0211
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Hours:
8 am - 5 pm Monday - Thursda
8 am - 5 pm on alternate Friday

Lee, Richard

From: Case, Michael
Sent: Monday, April 18, 2011 6:53 AM
To: Sydnor, Russell
Cc: Richards, Stuart; Rivera-Lugo, Richard; Gibson, Kathy; Lee, Richard
Subject: FW: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.
Attachments: image001.png; image002.png

Hi Russ. This request is from the Ops Center. It looks pretty much like a long shot but maybe some of the older folks may have a lead to the document. Let me know the status before 2 and I can update the Ops Center before the 3 o'clock shift change.

From: RST01 Hoc
Sent: Sunday, April 17, 2011 2:01 PM
To: Case, Michael; Gibson, Kathy
Subject: FW: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Mike,

We haven't heard from DOE regarding the INL document requested by INPO in the email below. We will continue to pursue this through our DOE consortium member.

Is there anyone in your division who might have the requested document or might have a contact at INL (or another lab) who could get us the document. The document INPO wants is:

> Mayo, C.W., et. al. *TMI-2 Instrumentation and Electrical Program Final Evaluation Report*. GEND-056. Idaho Falls, ID: E&G Idaho, Inc. November 1986

This is not a weekend endeavor, but please follow up with the RST members on Monday morning as to whether or not someone from RES has an INL contact who can get us this document.

Do you want a Task Tracking item?

Thanks,
Larry Criscione
NRC Reactor Safety Team

From: RST01 Hoc
Sent: Sunday, April 17, 2011 1:31 PM
To: 'Caponiti DOE'
Cc: 'INPOERCTech'
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Alice,

LLL/347

Do you have a contact at INL who can obtain the requested paper for INPO?

Larry Criscione
NRC Reactor Safety Team

From: Cimorelli, Kevin J. (INPO) [mailto:CimorelliKJ@inpo.org] **On Behalf Of** INPOERCTech
Sent: Sunday, April 17, 2011 1:25 PM
To: RST01 Hoc
Subject: RE: 174. Search for a post-TMI era paper that addresses pending instrument failures that occurred at TMI following the accident.

Larry,

We were searching for information on instrument failures that occurred at TMI following the accident and found a publication in the GEND-056. Idaho National Lab. Could you forward this request to the DOE contact who may be able to obtain a copy of this report and send it back to for review?

Thank you,
Kevin Cimorelli
INPO technical coordinator

So this is the report on instrument accuracy we have been searching for GEND-056 reference below. Looks like it is an EG&G Idaho National Lab and requires access. Can we request DOE to get the report from INL?

Mayo, C.W., et al. *TMI-2 Instrumentation and Electrical Program Final Evaluation Report*. GEND-056. Idaho Falls, ID: EG&G Idaho, Inc. November 1986.

ational Laboratory Research Library - Windows Internet Explorer

https://inlportal.inl.gov/portal/server.pt/community/research_library/263/general_information

Suggested Sites ▾ Web Slice Gallery ▾

ational Laboratory Research Library

site wants to run the following add-on: 'MSXML 5.0' from 'Microsoft Corporation'. If you trust the website and the add-on and want to all

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CONTACT US

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Box 1625
Idaho Falls, ID 83415-2300

Telephone: 208-526-1185
Fax: 208-526-0211
Email: lib@inl.gov

Hours:
8 am - 5 pm Monday - Thursda
8 am - 5 pm on alternate Friday

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "nuclear power"
Date: Friday, April 08, 2011 6:13:40 AM

News **10** new results for **"nuclear power"**

'Unusual event' declared at Wash. nuclear plant
msnbc.com
>> reporter: good morning. nuclear regulators say us **nuclear power** plants are built to with stand significant earthquakes and tsunamis and that current safeguards are adequate to protect the public. but the japanese officials would have said the seem **...**
See all stories on this topic »

Japan: strong 7.4 aftershock kills four and triggers second nuclear plant leaks
Telegraph.co.uk
A strong aftershock in Japan has killed four people and resulted in toxic water leakages from a second **nuclear power** plant. By Danielle Demetriou, in Tokyo 9:20AM BST 08 Apr 2011 A further 100 people were also injured in the 7.4 magnitude aftershock **...**
See all stories on this topic »

Telegraph.co.uk

Tokyo Shares End Up 1.9% As Quake Damage Fears Abate; Tepco Up 24%
Wall Street Journal
By Brad Frischkorn Of DOW JONES NEWSWIRES TOKYO (Dow Jones)--Tokyo stocks rose on Friday, on relief that a powerful overnight earthquake in Japan's northeast region did not lead to massive damage, particularly to the area's **nuclear power** facilities. **...**
See all stories on this topic »

Russia's Gas Beckons Germany as Merkel Seeks Alternative to **Nuclear Power**
Bloomberg
By Tony Czuczka - Thu Apr 07 22:00:01 GMT 2011 Chancellor Angela Merkel's shift away from **nuclear power** is set to make Germany more reliant on Russian gas and Merkel more dependent on her predecessor, Gerhard Schroeder. **...**
See all stories on this topic »

Developments in Japan's disasters, nuclear crisis
Fox News
The Fukushima Dai-ichi **nuclear power** plant reported no new problems since the aftershock. Six conventional power plants were knocked out, but three have resumed operations and the others should within hours. — SEARCH FOR BODIES. **...**
See all stories on this topic »

Tracing Tracy Territory: Local fission
Tracy Press
by Sam Matthews / TP publisher emeritus The ongoing problems that were encountered at a Japanese **nuclear power** plant following the March 11 earthquake and tsunami will, without a doubt, delay development of **nuclear power** in the US, but won't completely **...**
See all stories on this topic »

Inspectors Say Byron **Nuclear Power** Plant's Back-Up Pumps are Inoperable
MyStateline.com

LLLL/348

The Byron **Nuclear Power** Plant is being investigated following reports that back-up cooling pumps might not work in the event of a system failure. Safety is a number one concern at the Byron **Nuclear Power** Plant, especially after the recent disaster in **...**
See all stories on this topic »

Hitachi to cut back on new **nuclear power** projects

Asahi Shimbun
BY SATOSHI DAIGUJI STAFF WRITER Hitachi Ltd. will scale back its **nuclear power** projects following the crisis at the Fukushima No. 1 **nuclear power** plant, but will continue this key business line by strengthening safety features for current and planned **...**
See all stories on this topic »

Washington reports "unusual events" at its Nuclear Plant

International Business Times
By IBTimes Staff Reporter | April 8, 2011 5:20 AM EDT A spokesman for a Washington **nuclear power** plant has said that a small amount of hydrogen gas trapped in a pipe ignited in a brief, six-inch flame Thursday when workers cut into the pipe, **...**
See all stories on this topic »

Investigative report: NE's nuclear money pit

Bennington Banner
BOSTON -- New England's electricity consumers and **nuclear power** plant owners have poured close to $1 billion into a federal waste fund for the past three decades, honoring their end of a 1982 bargain with the government to finance the permanent storage **...**
See all stories on this topic »

Tip: Use a plus sign (+) to match a term in your query exactly as is. Learn more.

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Lee, Richard

From: Lyons, Peter [Peter.Lyons@Nuclear.Energy.gov]
Sent: Monday, April 18, 2011 8:03 AM
To: Larzelere, Alex; DL-NITsolutions
Cc: Busby, Jeremy T; Caponiti, Alice; Burns, Douglas
Subject: RE: Fukushima Science Experts Meeting - Change of Days

It is unlikely that I can participate, I'll be at Idaho in the Western Governors meeting.
pete

-----Original Message-----
From: Larzelere, Alex
Sent: Monday, April 18, 2011 7:58 AM
To: DL-NITsolutions
Cc: Busby, Jeremy T; Caponiti, Alice; Burns, Douglas
Subject: Fukushima Science Experts Meeting - Change of Days

Everybody,

A change of plans - instead of the Science Experts meeting on Thursday, April 21st, the teleconference will be held on:

Wednesday, April 20th

This will allow Secretary Chu to be able to attend the meeting. The time (5pm EDT) and number (202-586-2535) will remain the same.

Please let me know if you have any questions and we are looking forward to your participation.

Regards,

Alex

Alex R. Larzelere

Director, Advanced Modeling and Simulation Office

Office of Nuclear Energy (NE-71)

LLLL/349

U.S. Department of Energy

202-586-1906

Alex.Larzelere@nuclear.energy.gov <mailto:Alex.Larzelere@nuclear.energy.gov>

AMSO_LogoFinal_Word-PPT

Lee, Richard

From: Grandy, Christopher [cgrandy@anl.gov]
Sent: Monday, April 18, 2011 12:13 AM
To: Joy L Rempe; Bari, Robert A; Bill.McCaughey@nuclear.energy.gov; binderjl@ornl.gov; Busby, Jeremy Todd; Christine E White; dddixon@lanl.gov; donald.marksberry@nrc.gov; Douglas E Burns; Hackett, Edwin; Elizabeth A Connell; Farmer, Mitchell T.; flanagangf@ornl.gov; gehinjc@ornl.gov; Harold Finley McFarlane; Horak, Bill; james.buelt@pnl.gov; JohnE.Kelly@nuclear.energy.gov; Flack, John; kbsoren@sandia.gov; ks@bnl.gov; Kurt L Davis; patrick.schwab@nuclear.energy.gov; Lee, Richard; Richard.Reister@nuclear.energy.gov; RobertP.Martin@inl.gov; Robert.Youngblood@inl.gov; Rogaunt@sandia.gov; spburns@sandia.gov; tom.miller@nuclear.energy.gov; Cook, Trevor Lynn; wagnerjc@ornl.gov; William C Phoenix; Yang, Won Sik; Hoffman, Edward A.
Subject: Updated CAMS plot
Attachments: CAMS_apr15.ppt

All,

Attached is an updated CAMS plot.

Chris

LLLL/350

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Friday, April 08, 2011 5:23:37 AM

News **2** new results for **"Nuclear Regulatory Commission"**

Uncertain data led to call for US citizens within 50 miles (80 km) of Japanese ...
The Canadian Press
Members of the **Nuclear Regulatory Commission's** Advisory Committee on Reactor Safeguards pressed officials Thursday to explain how they concluded that 50 miles was a safe distance from the crippled reactors. The Japanese government had set a 12-mile ...
See all stories on this topic »

Yucca Mountain politics
Las Vegas Sun
Mike Simpson of Idaho grilled Gregory Jaczko, chairman of the **Nuclear Regulatory Commission**. Jaczko came under fire because he told staff to quit working on the technical review of the plans to store the nation's nuclear waste at Yucca Mountain, ...
See all stories on this topic »

LLLL/351

From: OST01 HOC
Sent: Monday, April 18, 2011 6:24 AM
To: OST01 HOC; Jaczko, Gregory; Virgilio, Martin; Weber, Michael; Boger, Bruce; Johnson, Michael; Zimmerman, Roy; Uhle, Jennifer; Tracy, Glenn; Wiggins, Jim; Carpenter, Cynthia; Moore, Scott
Cc: Orders, William; Snodderly, Michael; Franovich, Mike; Castleman, Patrick; Hipschman, Thomas; RST01 Hoc; Hoc, PMT12; LIA08 Hoc
Subject: Japan One Pager 0700 EDT 4-18-11
Attachments: Japan One Pager 0700 EDT 4-18-11.pdf

LLLL/352

From: OST01 HOC
Sent: Monday, April 18, 2011 10:13 PM
To: Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy
Cc: Boger, Bruce
Subject: Japan One Pager 2300 EDT 4-18-11
Attachments: Japan One Pager 2300 EDT 4-18-11.pdf

Greetings…

Attached, please find the April 18, 2011 – 2300 EDT One-Pager – Fukushima Daiichi.

Please note that this information is "Official Use Only."

Regards…
Mary Glenn Crutchley
Executive Support Team
US Nuclear Regulatory Commission
email: ost01hoc@nrc.gov
Desk Ph: 301-816-5100, ext. 5801

LLL/353

From: LIA03 Hoc
Sent: Monday, April 18, 2011 1:31 PM
To: LIA08 Hoc; LIA02 Hoc; LIA10 Hoc
Subject: FW: RESEND: USNRC Emergency Operations Center Status Update
Attachments: USNRC Earthquake-Tsunami Update 041811 1200EDT.docx

---

From: LIA08 Hoc
Sent: Monday, April 18, 2011 1:30 PM
To: Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitis, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Giitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Logaras, Harral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR_DDSP_ILTAB_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Nelson, Robert; ROO hoc; Rothschild, Trip; RST01 Hoc; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffry; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tifft, Doug; Kolb, Timothy; Ulses, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp; Trapp, James; Trojanowski, Robert; Turtil, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zimmerman, Roy; Zorn, Jason
Subject: RESEND: USNRC Emergency Operations Center Status Update

Resent to internal NRC to include missed contacts.

*** Attachment is Official Use Only ***

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

LLL/354

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Friday, April 08, 2011 1:43:34 AM

News **2** new results for **"Nuclear Regulatory Commission"**

Strong Aftershock Jolts Japan; Workers at Nuclear Plant Take Cover
New York Times
The **Nuclear Regulatory Commission** speculated Wednesday that some of the core of the No. 2 reactor had flowed from its steel pressure vessel into the bottom of the containment structure. The theory implies more damage at the unit than previously **...**
See all stories on this topic »

New York Times

Meeting becomes a public evaluation of NRC supervision
TriCities.com
The **Nuclear Regulatory Commission** held a public meeting on Thursday night to review safety inspections at Nuclear Fuel Services. (more) By George Jackson The **Nuclear Regulatory Commission** held a public meeting on Thursday night to review safety **...**
See all stories on this topic »

Tip: Use a minus sign (-) in front of terms in your query that you want to exclude. Learn more.

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LLL/365

From: ET02 Hoc
Sent: Monday, April 18, 2011 4:29 PM
To: Reyes, Debra
Subject: BB Telephone #

Importance: High

Can you give me the BB number for Sean Meighan? I thought I had everyone who's in Japan's BB number but I can't find his. Thanks very much....karen

LLLL/356

From: Bloom, Steven
Sent: Monday, April 18, 2011 4:18 PM
To: ET02 Hoc
Subject: RE: BB for last week's travelers

No I do not have them either.

From: ET02 Hoc
Sent: Monday, April 18, 2011 3:58 PM
To: Bloom, Steven
Subject: BB for last week's travelers

Steve:
I was pretty certain I wrote down the BB numbers for the travelers from last week but I can't seem to find it anywhere. Do you by chance have the BB numbers for Meighan, Mitman, and Norwood. Thanks...karen

LLLL/357

From: Reyes, Debra
Sent: Monday, April 18, 2011 7:42 AM
To: ET02 Hoc; Heard, Robert
Subject: FW: Identification and Establishment for Operations Center Backup Space

FYI...

From: Grimes, Charemagne
Sent: Thursday, April 14, 2011 3:03 PM
To: Turner, Joseph; McKoy Moore, Larniece; Goode, Dale; Williams, Evelyn; Rheaume, Cynthia; Abraham, Susan; Paradiso, Karen; Morris, Scott; Kundrat, Christine
Cc: Heck, James; Rich, Thomas; Ficks, Ben; Cullison, David; McDermott, Brian; Richardson, Sheron; Rabideau, Peter
Subject: RE: Identification and Establishment for Operations Center Backup Space

Attendees at Thursday's meeting:

NSIR: Evelyn Williams, Larniece McCoy, Scott Morris, Cynthia Rheaume
OIS: William Padilla, Debra Reyes, Dale Good
DAS: Christina Kundrat
ADSC: Charemagne Grimes

Listed below are notes from the meeting:

- NSIR approves of identified space (conference room HQ-TWFN-10-C02), as the backup location for the Japan Fukushima Team
- NSIR will require a 24 hour response in having this location set up and fully operational, only when room is needed as a backup location.
- Laptops will require the "M" drive
- Colored printer required (only one printer required in room)
- Network TV will require access to NHK World

Listed below are the necessary actions taking place to build out the room:

- **Telecom** will be providing connectivity for a color printer & laptops (6), Polycom conference phone, ISDN phone, NRC Broadband, and fax machine. We will have this done by 4/20.
- **OIS** has notified the CSC of the matters listed below on 4/14/11:
  - Please create two tickets for following. These requests will allow portion of staff in the Ops Centers to be located at T10C2 in order to provide continued support for crisis in Japan.

    - Ticket 1 assigned to NOC (Complete by NLT 10am Monday, 4/18)
    - Request to activate the network port in T10C2
    - Procure a switch (at least 8 ports) and cables (6 laptops and a printer) to support below request
    - Please provide a static ip for the network printer to be used at the location and reference it in the second ticket.

    - Ticket 2 assigned to Desktop Support (Complete by NLT 5pm Monday, 4/18)
    - 6 Domestic Imaged Laptops & a Color Printer (please provide the printer IP and model to Kevin McGowan)
    - Desktop support, please configure each laptops to print to the color printer

LLLL/358

- **DAS** is checking availability to store a TV in the Operations Center (TWFN 4th floor), for immediate use. However, If TV not available, DAS will ensure a TV should the need arise.
- **ADSC** is scheduling a "test drill" on Wednesday, April 20, 2011 at 3:00 pm in HQ-TWFN-10-C02.

From: World Nuclear News
To: Burnell, Scott
Subject: WNN Daily: Tsunami countermeasures for Kashiwazaki Kariwa
Date: Friday, April 08, 2011 11:42:13 AM

View the WNN Daily in your browser.

8 April 2011

REGULATION & SAFETY: Tsunami defences for Kashiwazaki Kariwa
Tokyo Electric Power Company has released details of steps it is taking to protect the seven-unit Kashiwazaki Kariwa nuclear power station from future tsunamis. The company has also lifted a program of rolling power blackouts.

REGULATION & SAFETY: New Earthquake disrupts grid power
Another powerful off shore earthquake has hit Japan's northeast. Diesel generators have replaced grid power at Higashidori and Onagawa nuclear power plants as well as the Rokkasho reprocessing facility but there has been no effect on safety at Fukushima Daiichi.

INDUSTRY TALK: Fuel loading begins again at Bushehr
The reloading of fuel assemblies into Iran's Bushehr nuclear power plant has begun, Russia's AtomStroyExport has announced. Reactor internals and main circulation pipeline station have now been flushed through and inspected.

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World Nuclear Association
Carlton House, 22a St James's Square
London, Westminster SW1Y4JH

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LLL/359

From: RST01 Hoc
Sent: Tuesday, April 26, 2011 10:18 PM
To: OST01 HOC
Subject: Japan One Pager 2300 EDT 4-26-11.doc
Attachments: Japan One Pager 2300 EDT 4-26-11.doc

RST 1 pager

LLL/360

From: Khan, Omar
Sent: Tuesday, April 26, 2011 4:33 PM
To: ET02 Hoc
Subject: FW: ACCESS TO JAPAN SHAREPOINT SITE

Importance: High

From: Graziose, Catherine
Sent: Tuesday, April 26, 2011 4:27 PM
To: Khan, Omar
Cc: Jones, Evan
Subject: FW: ACCESS TO JAPAN SHAREPOINT SITE
Importance: High

Omar,

I just left you a voice mail message with a bit of detail, but I wanted to follow-up with this message. BlackBerry device users cannot access any of the SharePoint sites that require user authentication. This is due to the method by which SharePoint checks the user authentication against Active Directory (AD). Since Blackberry devices never login to the NRC network, users cannot access SharePoint from the BlackBerry device.

I am happy to discuss further if necessary.

Thanks,
Cathy

Catherine Graziose, PMP
IT Specialist
US Nuclear Regulatory Commission
301-415-6954
Catherine.Graziose@nrc.gov

From: ET02 Hoc
Sent: Tuesday, April 26, 2011 4:21 PM
To: Patel, Bhavin
Cc: Graziose, Catherine; Reyes, Debra; Turner, Joseph; Rich, Thomas; Jackson, Karen; Khan, Omar; OST01 HOC
Subject: ACCESS TO JAPAN SHAREPOINT SITE
Importance: High

Managers using Blackberries want to be able to access the Japan SharePoint site (nsir-ops.nrc.gov) but when they try they are being prompted for a username and password. We tried using a blackberry and received an error message after several minutes of "requesting" . Can something be done to correct this situation asap? Please contact either Omar Khan or Karen Jackson if you have any questions. Please reply to this e-mail as well as Omar and Karen regarding the status of this request.

LLLL/361

Lee, Richard

From: Dozier, Jerry
Sent: Tuesday, April 19, 2011 2:56 PM
To: Aissa, Mourad; Algama, Don; Alter, Peter; Armstrong, Kenneth; Bajorek, Stephen; Beasley, Benjamin; Blumberg, Mark; Caruso, Mark; Cheok, Michael; Coe, Doug; Coyne, Kevin; Dorn, Jaclyn; Dozier, Jerry; Drozd, Andrzej; Dube, Donald; Elkins, Scott; Esmaili, Hossein; Fuller, Edward; Gavrilas, Mirela; Ghosh, Tina; Gilmer, James; Harrison, Donnie; Hart, Michelle; Hasselberg, Rick; Helton, Donald; Howe, Andrew; Hudson, Nathanael; Kauffman, John; Kelly, Joseph; Koshy, Thomas; Krepel, Scott; Lane, John; Lee, Richard; Lee, Samson; Lien, Peter; Malliakos, Asimios; Marshall, Shawn; Mitman, Jeffrey; Mrowca, Lynn; Notafrancesco, Allen; Phan, Hanh; Rini, Brett; Rodriguez, Veronica; Rubin, MichaelB; Rubin, Stuart; Salay, Michael; Schaperow, Jason; Skarda, Raymond; Staudenmeier, Joseph; Thomas, Eric; Thurston, Carl; Tinkler, Charles; Velazquez-Lozada, Alexander; Wong, See-Meng; Yarsky, Peter; Zoulis, Antonios
Subject: Urgent: We are still needing Accident Analysts for day shift starting tomorrow....If you can fill in one of these days it is greatly appreciated.

Importance: High

Thank you very much for supporting the severe accident (SA) position in the operations support center. I am now trying to complete the watch bill for the severe accident position from April 17th to May 15th. Please note that the reactor safety team has been decreased to only the accident analyst and the BWR analyst. Therefore, you need to have served previously and be very comfortable working independently in the operations center.

Due to this new manning, I have been asked to fill the positions with analysts serving at least consecutive shifts.

I have placed an excel spreadsheet at S:\HOCSAWatchbillvolunteers to provide you with the progress so far at filling the time slots. If you are available and would like to serve during this time period please place your name in the empty time slots of the accident analyst column corresponding to the shift that you would like to serve(Please fill in all of the colored spots in the consecutive sequence). Please do not erase any ones name (first come-first served) unless you have permission from them. Please close the Excel file when you are complete so that others may have access to the file. If you cannot serve on consecutive shifts...please let me know if you can be a substitute for a shorter duration.

Please make sure that your volunteering is during a time frame approved by your supervisor.

Again thank you very much for serving!

Jerry Dozier
Sr. Risk and Reliability Analyst
Division of Risk Assessment
Room 010D10 MS 010C15
(301) 415-3925
Jerry.Dozier@nrc.gov

LLL/362

Lee, Richard

From: Santiago, Patricia
Sent: Tuesday, April 19, 2011 5:43 PM
To: Wagner, Katie
Cc: Tinkler, Charles; Gibson, Kathy; Lee, Richard
Subject: Sharepoint Site pending actions

Hi Katie

I gave Charlie the pending list to mark up and didn't get any further comments. I recommend closing the actions and may have told Kathy that we have completed all so we can begin SOARCA again pending the SF pool issues and April 29 briefing items.

Charlie if you think actions on the Japan work matrix listed as pending should remain open, please let Katie know. We can keep any work you want as open but I did close all for Jason after speaking with him and most included your name as well.

Thanks,

Pat

Patricia A. Santiago
Chief, Special Projects Branch
Division of Systems Analysis
Office of Nuclear Regulatory Research
Phone- 301-251-7982
Fax- 301-251-7426
Patricia.Santiago@nrc.gov

LLLL/ 363

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 7:44 AM
To: Bloom, Steven
Subject: RE: Please call me asap (eom)

Importance: High

Steve:
Were able to get help with Alan's BB?

From: Bloom, Steven
Sent: Tuesday, April 19, 2011 7:13 AM
To: ET02 Hoc; Jackson, Karen
Subject: Please call me asap (eom)

Steve

Steven Bloom, International Relations Specialist
International Cooperation and Assistance Branch (ICA)
301-415-2431
O-4F4
M/S O-4E21

LLLL/364

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 8:40 AM
To: Bloom, Steven
Subject: RE: Updated list

Thanks...karen

From: Bloom, Steven
Sent: Tuesday, April 19, 2011 8:15 AM
To: ET02 Hoc; LIA08 Hoc
Subject: Updated list

Steve

Steven Bloom, International Relations Specialist
International Cooperation and Assistance Branch (ICA)
301-415-2431
O-4F4
M/S O-4E21

LLLL/365

From: Bloom, Steven
Sent: Tuesday, April 19, 2011 10:42 AM
To: ET02 Hoc
Subject: RE: JACK GROBE

Karen,

Last week he was in Vienna at the CNS, and now is on the Lessons Learned team, but is not going to Japan. He got back on Monday from Vienna.

steve

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 9:43 AM
To: Bloom, Steven
Subject: RE: JACK GROBE

His name shows up on OIS' asset list for a international loaner laptop for the Japan activities. I wonder if he went someplace overseas and OIS thinks it was to Japan? Do you know if he is or did foreign travel recently? ...karen

---

From: Bloom, Steven
Sent: Tuesday, April 19, 2011 9:35 AM
To: ET02 Hoc
Subject: RE: JACK GROBE

Not that I know???

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 9:24 AM
To: Bloom, Steven
Subject: JACK GROBE

Is Jack Grobe in Japan? Thanks...karen

LLLL/366

From: LIA08 Hoc
Sent: Tuesday, April 19, 2011 11:45 AM
Subject: USNRC Earthquake-Tsunami Update 041911 DRAFT 1200EDT
Attachments: USNRC Earthquake-Tsunami Update 041911 DRAFT 1200EDT.pdf

LLLL / 367

From: LIA11 Hoc
Sent: Wednesday, March 23, 2011 12:36 PM
To: RST06 Hoc
Cc: Cook, William; RST01 Hoc; Sloan, Scott
Subject: Bechtel Pumping System Chronology/Description
Attachments: Streamline Chronology and Description of Bechtel Pumping System.docx

Mike,

Attached is the subject document. I HIGHLY recommend waiting until we receive a "blessing" from the site team before we use this in any public forum, as I am unclear regarding the logistical details in Japan.

This is a very high-level summary, and I am more than happy to provide finer detail if desired.

Also, Fred Brown asked me to make sure that Mike Weber received a copy. I am passing that request to you.

Please let me know if PAO/ET/others would like further explanation, as I am happy to help.

Thanks,
Scott Sloan

LLL/368

Streamlined Chronology and Description of Bechtel Pumping System

In the middle of last week, the NRC team in Japan, acting on a request from the Government of Japan, requested that the NRC Headquarters team work on a concept for a pumping system that could be immediately shipped to Japan to aid in their efforts to cool the spent fuel pools at the Daiichi Nuclear Power Station. The Reactor Safety Team developed a basic functional diagram, which involved taking seawater directly from the Daiichi shoreline and delivering it to the spent fuel pools through a series of high capacity pumps. Representatives from Naval Reactors identified the types of pumps that could be used that would be readily available, either in country or via immediate shipment.

The NRC headquarters team and Naval Reactors contacted Bechtel, who had offered to volunteer their time to conduct design work on any effort that may aid in the ongoing events at the Daiichi site. Bechtel took the preliminary concept and conducted a detailed engineering design, developed a list of recommended equipment, and located all required equipment within 24 hours. Understanding that the situation at Daiichi continued to be dynamic, Bechtel provided a design that was intended to be modular and able to incorporate additional assets that may be available at the site to improve upon its baseline performance and water delivery capabilities.

As Bechtel provided the final design details of the pumping system, the NRC contacted USAID regarding material procurement and shipping to Japan. As costs were finalized, the Department of Defense agreed to pick up the cost of the entire system and coordinate all logistics to get the equipment from its point of origin, Australia, to Yokota Air Force Base, just outside of Tokyo.

DoD coordinated with the Australian Ministry of Defence to deliver all pieces of equipment from their individual suppliers to Royal Australian Air Force Base Pearce, located about 30 miles north of Perth. The RAAF then provided 2 C-17 Globemasters to ferry pieces of equipment to Japan, which landed hours apart on March 22 – taking less than one week to go from a hand-drawn idea to having equipment delivered in theater. Vendor representatives accompanied the equipment to Japan and remain on the ground to train the Japanese operators who will put this system to use at Daiichi.

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 11:10 AM
To: Dempsey, Jeanne
Subject: INFO

Jeanne:

Did you contact OIP regarding pre-traveler checklist? I wasn't the one who created this document but OIP did. If you still would like to talk, please contact me at the Ops Center (301-816-5100 and ask for extension 5802). Sorry I've been working in the Ops Center every day so I haven't got back in touch with you. Thanks...karen

LLLC/369

Wagner, Katie

From: Wagner, Katie
Sent: Wednesday, March 23, 2011 5:24 PM
To: Lee, Richard
Subject: RE: RST Requested Evaluations to be Performed by RES

Ok

From: Lee, Richard
Sent: Wednesday, March 23, 2011 5:22 PM
To: Wagner, Katie
Subject: RE: RST Requested Evaluations to be Performed by RES

Katie:

I have responded to all 3 items. I plan to send additional info. on #4. Will let you know after I sent them.

Richard

NO

From: Wagner, Katie
Sent: Wednesday, March 23, 2011 4:50 PM
To: Lee, Richard
Subject: RE: RST Requested Evaluations to be Performed by RES

Richard - Is the item below "Completed" or still "Pending"? – Thanks, Katie

36	3/23/2011	Ops Center (RST) ! NEW	Email: RST01 Hoc	Richard Lee x7526	FSTB	To investigate the topics related to queries 1, 3, and 4 from the NRC Site Team located over in Japan. 1. Sea water injection continues to reactors 1-3. NISA is concerned about the radiolytic disassociation of H2 and O2. NISA would like NRC's perspective on the significance of this concern and how to treat this concern as they transition to freshwater injection. 3. NISA is conducting simulations to project the extent of damage to fuel in the reactors. Has NRC developed any views on the extent of fuel damage? 4. NISA is interested to obtain any reference material regarding core-concrete interaction (not because they think they have a current issue but against that eventuality) including the conditions under which that occurs and any associated data.	Respond with answers to the 3 questions raised.	Pending

---

From: Lee, Richard
Sent: Wednesday, March 23, 2011 11:07 AM
To: RST01 Hoc
Cc: Wagner, Katie
Subject: RE: RST Requested Evaluations to be Performed by RES

This is the response to item 4. Please forward this to our team in Japan. If we get more information on this subject, we will send them later.

From: RST01 Hoc
Sent: Wednesday, March 23, 2011 5:39 AM
To: Lee, Richard

LLLL/370

Cc: Gibson, Kathy; RST01 Hoc
Subject: FW: RST Requested Evaluations to be Performed by RES

From: Hoc, RST16
Sent: Wednesday, March 23, 2011 5:37 AM
To: RST01 Hoc
Subject: RST Requested Evaluations to be Performed by RES

RST Coordinator,

Please forward the e-mail text below to Richard Lee and cc: Kathy Gibson from RES.

Thank you,

RST Communicator

****

NO

Dear Mr. Lee,

The Reactor Safety Team (RST) in the Operations Center has been given your name as the lead Point of Contact (POC) for the Office of Research to manage all incoming requests from the RST.

As such, here is a request to investigate the topics related to queries 1, 3, and 4 from our Site Team located over in Japan. FYI, this request was entered into the WEB EOC Task Tracker software as Record # 2098 on 3/22/2011 @ 11:42 AM. Items 2 and 5 have been evaluated by our team and other sources and have been determined to be complete and require no further action.

Per Site Team e-mail, they would like RST to provide input on the following:

1. Sea water injection continues to reactors 1-3. NISA is concerned about the radiolytic disassociation of H2 and O2. NISA would like NRC's perspective on the significance of this concern and how to treat this concern as they transition to freshwater injection.
2. At what point does salt deposits become a problem for flow during pending freshwater injection?
3. NISA is conducting simulations to project the extent of damage to fuel in the reactors. Has NRC developed any views on the extent of fuel damage?
4. NISA is interested to obtain any reference material regarding core-concrete interaction (not because they think they have a current issue but against that eventuality) including the conditions under which that occurs and any associated data.
5. In addition to the H2/O2 disassociation in item 1 above, they are concerned that there may be residual H2 in the containments and welcome NRC's thoughts on how to treat such a condition.

The RST requests an progress update via e-mail, at least once daily in order for us to be able to track your progress for each of the three issues.

Thank you for your time and consideration.

Bill Roggenbrodt
RST Communicator
301-816-5504

From: LIA08 Hoc
Sent: Tuesday, April 19, 2011 12:00 PM
To: OST01 HOC
Subject: USNRC Earthquake-Tsunami Update 041911 DRAFT 1200EDT
Attachments: USNRC Earthquake-Tsunami Update 041911 DRAFT 1200EDT.pdf

LLLL/371

From: Brown, Michael
Sent: Tuesday, April 19, 2011 12:32 PM
To: OST01 HOC
Subject: RE: SITREP Distribution??

Thanks

From: OST01 HOC
Sent: Tuesday, April 19, 2011 10:35 AM
To: Anderson, James; LIA08 Hoc
Cc: Brown, Michael
Subject: RE: SITREP Distribution??

Mr. Brown has been added to SitRep distribution.

Thank you,

EST Support

From: Anderson, James
Sent: Tuesday, April 19, 2011 10:03 AM
To: LIA08 Hoc; OST01 HOC
Cc: Brown, Michael
Subject: FW: SITREP Distribution??

LT/EST,

Please see below for a request to be added to the Status Update distribution.

Thank you,

Jim Anderson

From: Brown, Michael
Sent: Tuesday, April 19, 2011 9:25 AM
To: Anderson, James
Subject: SITREP Distribution??

Jim,

Mike Brown here, I work in the BWR Expert's group in the RST, would it be possible for me to be put on distribution for the daily SITREP that you guys put out at noon?

It would help reduce my turnover time when I come back on-shift.

Thanks,

Mike

LLLL/372

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 12:58 PM
To: Bloom, Steven
Subject: Liaison Japan Group

Steve:

When do I remove people's names from the Liaison Japan group that is being used in Outlook? Will you send me an e-mail when to remove folks from the list since I don't always know or get told when people come home? Any other ideas to help this process? Thanks...karen

LLLL/373

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 12:40 PM
To: Reyes, Debra
Cc: Turner, Joseph
Subject: ANOTHER REQUEST

Importance: High

Debbie:

I created ticket 512972 with the following request: "Japan response request: When trying to access the nrc.gov\nrc\hq\shared\liaison japan from within the Ops center we get the message "Account has been locked out." This caused the following accounts to be locked: ET07 ET03 LIA09 . Please unlock the accounts and advise on how we should access this shared from within the center."

The reason for this request is that the PMT and RST staffs here at HQ want to be able to share this folder along with the Japan Site Team (which is who it was created for). I sent another ticket in earlier today (512876) asking for a list of staff to be granted access to the shared drive (these are the staff here in HQ you will need to access the shared folder). I am able to get into the shared drive from an agency workstation. The only problem is that these people will need to access the shared folder from within the Ops Center and when we try to do that it locks us out – hence the above trouble ticket. I hate to ask but I need to get the 3 accounts unlocked ASAP in case we have another event we need to be able to access those accounts.

Thanks very much for your help...karen

LLL/374

From: ET02 Hoc
Sent: Tuesday, April 19, 2011 10:24 PM
To: Zimmerman, Roy; Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Orders, William; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim
Cc: RST01 Hoc; Hoc, PMT12; LIA08 Hoc
Subject: April 19 - 2200 EDT One-Pager - Fukushima Daiichi
Attachments: Japan One Pager 2200 EDT 4-19-11 (3).pdf

Attached, please find the April 19 - 2200 EDT One-Pager - Fukushima Daiichi

**********Please note that this information is "Official Use Only."**********

Tracking:

LLLL/375

Recipient	Recall
Zimmerman, Roy	
Batkin, Joshua	
Boger, Bruce	
Carpenter, Cynthia	
Castleman, Patrick	
Franovich, Mike	Succeeded: 4/29/2011 2:14 AM
Gibbs, Catina	
Hipschman, Thomas	
Hoc, PMT12	Succeeded: 4/29/2011 2:14 AM
Jaczko, Gregory	
Johnson, Michael	
LIA08 Hoc	Succeeded: 4/29/2011 2:14 AM
Marshall, Michael	Succeeded: 4/29/2011 2:14 AM
Moore, Scott	
Orders, William	Succeeded: 4/29/2011 2:14 AM
Pace, Patti	Succeeded: 4/29/2011 2:14 AM
RST01 Hoc	Failed: 4/29/2011 2:14 AM
Snodderly, Michael	
Speiser, Herald	
Tracy, Glenn	Failed: 4/29/2011 2:14 AM
Uhle, Jennifer	Succeeded: 4/29/2011 2:14 AM
Virgilio, Martin	
Weber, Michael	
Wiggins, Jim	
RST01 Hoc	
Hoc, PMT12	
LIA08 Hoc	

Kock, Andrea

From: Herr, Linda
Sent: Wednesday, April 13, 2011 8:10 AM
To: Droggitis, Spiros
Cc: Nieh, Ho
Subject: RE: setting up meetings with the commissioners again

Hi Spiros:

Cmr. Ostendorff could meet with these folks as follows:
April 26th: 3:30-4:00pm;
May 1st: 1:00-1:30pm;
May 2nd: 2:00-2:30pm;
May 5th: 11:00-11:30am or 1:00-3:00pm (in ½ increments);
May 6th: 9:30-11:30am or 1:00-3:30pm (in ½ increments).

Linda

From: Droggitis, Spiros
Sent: Tuesday, April 12, 2011 3:25 PM
To: Lepre, Janet; Blake, Kathleen; Crawford, Carrie; Herr, Linda
Cc: Sharkey, Jeffry; Sosa, Belkys; Bubar, Patrice; Nieh, Ho; Batkin, Joshua; Helton, Shana
Subject: FW: setting up meetings with the commissioners again

The Safe Energy Coalition has made the following request to meet with as many Commissioners as possible the weeks of April 25 or May 2. The probable participants are listed below and they would like to talk to the Commissioners about the status of the situation at Fukushima, the 90 day Task Force review and the long-term review. I note on the SECY calendar that April 26 is the only day that it appears that all the Commissioners are in or the following week they could see 3 of the 4. Please let me know if the Commissioners are interested/available. Thanks, Spiros

---

From: Morgan Pinnell [mailto:mpinnell@psr.org]
Sent: Tuesday, April 12, 2011 3:03 PM
To: Droggitis, Spiros
Subject: Re: setting up meetings with the commissioners again

Hi Spiros,

Sorry it took so long to get this info to you--had to herd some cats.

Here are probable participants:
Michele Boyd, PSR
Paul Gunter, Beyond Nuclear
Tom Cochran, NRDC
Michael Mariotte, NIRS
Erich Pica, FOE

Potential dates:
Weeks of April 24, May 1 (whatever dates work best to do the combo of folks).

Topics:
Status of situation in Fukushima

LLLL/376

- 90-day review by NRC Task Force
- Long-term review

So let me know if there's interest on the part of the commissioners.

Morgan

--

Morgan Pinnell
Safe Energy Program Manager
Physicians for Social Responsibility
Phone: 202-587-5232
Email: mpinnell@psr.org
Website: www.nuclearbailout.org
Error! Filename not specified.

Lee, Richard

From: Lee, Richard
Sent: Wednesday, April 20, 2011 11:11 AM
To: 'Larzelere, Alex'
Subject: DOE Sci. Council call and U.S.-Japan call

Hi, Alex:

(1) Do we have a DOE Sci. Call today at 5:00pm?
(2) Do we have a conf. call with Japan today or tomorrow at 8:00pm? Please send me last week handouts and this week (if any).

Thanks, Richard

LLLL/377

Lee, Richard

From: Marksberry, Don
Sent: Wednesday, April 20, 2011 1:56 PM
To: Lee, Richard
Subject: 1F drawings and P&IDs

Richard

In one of your e-mails, it was mentioned that you have a zipfile of drawings and P&IDs for 1F.

Is this true?

don

LLLL/378

Lee, Richard

From: Lee, Richard
Sent: Wednesday, April 20, 2011 3:48 PM
To: Marksberry, Don
Subject: RE: 1F drawings and P&IDs

Don:

I uploaded them into the folder "Plant design info." on the FSTB share point site. I don't think I have seen a zipfile. Jeff Binder sent me many figures as attachment to multi e-mails.

Richard

From: Marksberry, Don
Sent: Wednesday, April 20, 2011 1:56 PM
To: Lee, Richard
Subject: 1F drawings and P&IDs

Richard

In one of your e-mails, it was mentioned that you have a zipfile of drawings and P&IDs for 1F.

Is this true?

don

LLLL/379

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Thursday, April 07, 2011 5:36:41 PM

News **1** new result for **"Nuclear Regulatory Commission"**

Japan offers lessons to NJ
Gloucester County Times - NJ.com
By Elliot Goldberg By Jeff Tittel Once again the **Nuclear Regulatory Commission** (NRC) shows it cares more about protecting industry interests than the public in a brief the agency filed with the Third Circuit Court of Appeals, which is hearing an appeal **...**
See all stories on this topic »

Tip: Use a minus sign (-) in front of terms in your query that you want to exclude. Learn more.

Remove this alert.
Create another alert.
Manage your alerts.

LLLL/380

From: Hoc, PMT12
Sent: Wednesday, April 20, 2011 1:37 PM
To: OST01 HOC
Subject: one pager -- PMT re-do
Attachments: Japan One Pager 1500 EDT 4-20-11___ PMT edits.doc

Follow Up Flag: Follow up
Flag Status: Flagged

LLLL/381

From: Weber, Michael
Sent: Wednesday, April 20, 2011 7:22 PM
To: Temple, Jeffrey
Cc: LIA08 Hoc; OST01 HOC; Boger, Bruce
Subject: RESPONSE - WHITE HOUSE DEPUTIES COMMITTEE ACTION ITEMS MATRIX

Thanks, Jeff

From: Temple, Jeffrey
Sent: Wednesday, April 20, 2011 2:58 PM
To: Virgilio, Martin; Weber, Michael; Vietti-Cook, Annette
Cc: Khan, Omar; Jessie, Janelle; Franovich, Rani
Subject: WHITE HOUSE DEPUTIES COMMITTEE ACTION ITEMS MATRIX

Marty and Mike

Enclosed is an updated "Summary of White House Deputies Meeting Action Item Resolution for NRC" matrix as requested by Marty.

This matrix will be embedded as a separate board in WebEOC (Omar Kahn), and will be maintained for you by the Liaison Team (me, Janelle Jesse and Rani Franovich)

Annette – please copy me (Jeffrey.temple@nrc.gov) as you obtain new WH deputies meeting action items and IPC action items/meeting minutes so I can keep this document updated.

Thanks to all

Jeff Temple
Response Program Manager

LLL/382

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Thursday, April 07, 2011 6:44:47 PM

News **1** new result for **"Nuclear Regulatory Commission"**

Surry County residents assured of nuclear plant's safety
Daily Press
Officials from the US **Nuclear Regulatory Commission** tried to dispel safety concerns residents had due to the recent earthquake, tsunami and nuclear disaster in northeast Japan. "It was a perfect storm" of events, said Roger Hannah with the commission. **...**
See all stories on this topic »

This as-it-happens Google Alert is brought to you by Google.

Remove this alert.
Create another alert.
Manage your alerts.

6666/383

From:	LIA07 Hoc
Cc:	LIA07 Hoc
Subject:	USNRC Earthquake-Tsunami Update 03.21.11--0600 EDT
Date:	Monday, March 21, 2011 6:13:17 AM
Attachments:	NRC Status Update 3.21.11--0600.pdf

Attached, please find the **0600 EDT March 21, 2011** status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

Jim Anderson
Office of Nuclear Security and Incident Response
U.S. Nuclear Regulatory Commission
James.anderson@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

LLL/384

From: Hayden, Elizabeth
To: Sheehan, Neil
Cc: Screnci, Diane; Harrington, Holly; Burnell, Scott; McIntyre, David
Subject: EPZ Statement
Date: Tuesday, March 22, 2011 9:19:35 AM

Neil,

I understand you are drafting a blog on EPZ & NY and thought this might help from Eric Leeds as our message following this morning's meeting with NY.

There are two EPZs; a 10 mile EPZ for plume exposure and a 50 mile EPZ for food exposure. The 10 mile EPZ is the area established as a basis for planning because the projected doses from most accident sequences would not exceed the EPA protective action dose guidelines (1-5 rem) at 10 miles. However, the 10 mile EPZ was always considered a basis for emergency planning that could be expanded if the situation warranted. The situation in Japan, with three reactors and two fuel pools experiencing exceptional difficulties simultaneously, along with a dearth of radiological monitoring information surrounding the plant, led to the decision to expand the evacuation beyond the 10 mile radius.

Beth Hayden
Senior Advisor
Office of Public Affairs
U.S. Nuclear Regulatory Commission
--- Protecting People and the Environment
301-415-8202
elizabeth.hayden@nrc.gov

LLLL/385

From: ET02 Hoc
Sent: Wednesday, April 20, 2011 3:42 PM
To: LIA08 Hoc
Subject: RE: April 20, 2011 NRC Emergenciy Operations Center Status Update

Please make certain that OST01 is sent a copy of this document so it can be uploaded to the SharePoint site. Thanks...karen

---

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 12:59 PM
To: LIA08 Hoc
Subject: FW: April 20, 2011 NRC Emergenciy Operations Center Status Update

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 12:58 PM
To: Temple, Jeffrey
Subject: April 20, 2011 NRC Emergenciy Operations Center Status Update

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

LLLL/386

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 11:12 AM
To: ET02 Hoc; Bernhard, Rudolph; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Dorman, Dan; Emche, Danielle; Garchow, Steve; Gepford, Heather; Hay, Michael; Holahan, Vincent; Huffert, Anthony; Lupold, Timothy; Meighan, Sean; Mitman, Jeffrey; Moore, Carl; Norwood, Donald; Reynolds, Steven; Salay, Michael; Wittick, Brian
Cc: Bloom, Steven; RST01 Hoc; Hoc, PMT12; Zimmerman, Roy
Subject: RE: LIAISON JAPAN SHARED DRIVE

That should work.

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: ET02 Hoc
Sent: Wednesday, April 20, 2011 11:11 AM
To: Bernhard, Rudolph; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Dorman, Dan; Emche, Danielle; Garchow, Steve; Gepford, Heather; Hay, Michael; Holahan, Vincent; Huffert, Anthony; Lupold, Timothy; Meighan, Sean; Mitman, Jeffrey; Moore, Carl; Norwood, Donald; Reynolds, Steven; Salay, Michael; Wittick, Brian
Cc: Bloom, Steven; RST01 Hoc; Hoc, PMT12; LIA08 Hoc; Zimmerman, Roy
Subject: LIAISON JAPAN SHARED DRIVE

FYI:

It was suggested by Rudy Bernhard to give the HQ PMT and RST responders access to the Japan Site Team's "Liaison Japan" shared drive/folder for document sharing and collaboration. It would also mean that the Japan Site Team would not have to e-mail attachments to HQ; instead they could reference a file in the e-mail to the shared drive/folder.

I worked with OIS to accomplish this task and it was completed this morning. Now the RST and PMT responders have been granted access. Please let me know if there is anything else I can do to assist with this situation.

....karen jackson, est response ops sys mgr

LLLL/387

From: RMTPACTSU_ELNRC
To: LIA06 Hoc; LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; LIA12 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; ET07 Hoc
Subject: FYI -- FW: Japan News (Reuters): Japan eyes 20 pct cut in foreign aid to fund disaster relief-media
Date: Thursday, April 07, 2011 2:30:45 PM

From: RMTPACTSU_INC
Sent: Thursday, April 07, 2011 10:19 AM
To: RMT_PACTSU
Cc: Lapp, Alison (DCHA/OFDA) [USAID]
Subject: Japan News (Reuters): Japan eyes 20 pct cut in foreign aid to fund disaster relief-media

Source: Reuters
April 7, 2011

Japan eyes 20 percent cut in foreign aid to fund disaster relief-media

TOKYO, April 7 (Reuters) - Japan, the world's No. 5 donor, is considering cutting foreign aid by 20 percent this fiscal year to help fund its extra budget for disaster relief after last month's massive quake and tsunami, media reported on Thursday.
The government is unlikely to issue new debt to fund the initial extra budget of more than $35 billion for disaster relief, domestic media reported this week, in a sign the authorities are wary of alarming bond investors by adding too much to Japan's already huge debt pile.
For the current fiscal year to next March, Japan has set aside 572.7 billion yen ($6.7 billion) for official development assistance (ODA). Now, the ruling Democratic Party and the government are considering cutting that by 20 percent to help fund the extra budget, the Yomiuri newspaper reported.
Japan, the world's No.1 donor in the 1990s, has been cutting official development assistance in recent years as Tokyo focuses on tackling a mountain of public debt that is nearly twice the size of its $5 trillion economy.
The more than 3 trillion yen ($35 billion) in the supplemental budget will pay for repairing roads, ports and schools, as well as helping those in quake-hit regions in Japan's northeast find new jobs, the Asahi newspaper reported on Wednesday. ($1 = 85.475 Japanese Yen) (Reporting by Yoko Nishikawa, editing by Jonathan Thatcher)

Lily Frey
Information Coordinator
Pacific Tsunami and Japan Earthquake Response Management Team
RMTPACTSU_INC@ofda.gov
202-712-0039

From: Harrington, Holly
To: Burnell, Scott
Subject: FW: ERROR in your answers to faqs related to Japan document
Date: Tuesday, March 22, 2011 8:53:00 AM

If this has finally been changed, can you please respond directly?

From: Janbergs, Holly **On Behalf Of** OPA Resource
Sent: Tuesday, March 22, 2011 7:27 AM
To: Harrington, Holly
Subject: FW: ERROR in your answers to faqs related to Japan document

From: Christine Goulet [mailto:goulet@berkeley.edu]
Sent: Monday, March 21, 2011 7:15 PM
To: OPA Resource
Subject: Fwd: ERROR in your answers to faqs related to Japan document

Good afternoon,

Trying this e-mail address now, see my original post below.

I think it would help the NRC credibility if the error I report here was correctly promptly.

Sincerely,

Christine Goulet, PhD
Assistant Researcher
NGA East TI team co-chair
Pacific Earthquake Engineering Research Center (PEER),
University of California, Berkeley

Tel (510) 374-4620
goulet@berkeley.edu

-------- Original Message --------
Subject: ERROR in your answers to faqs related to Japan document
Date: Sat, 19 Mar 2011 14:54:29 -0700
From: Christine Goulet <goulet@berkeley.edu>
Reply-To: goulet@berkeley.edu
To: opa administrators <opa@nrc.gov>

Good afternoon,

I just opened your pdf at http://www.nrc.gov/japan/faqs-related-to-japan.pdf and found a **major error** in the answer to question 1.
At the bottom of the answer, "ten times" should be replaced by "approximately 32 times":
"Magnitude is measured on a log scale and so a magnitude 9 earthquake is ten times larger

LLLL/389

than a magnitude 8 earthquake."

I hope this can be corrected soon!

Sincerely,

Christine Goulet, PhD
Assistant Researcher
NGA East TI team co-chair
Pacific Earthquake Engineering Research Center (PEER),
University of California, Berkeley

Tel (510) 374-4620
goulet@berkeley.edu

On 3/19/11,12:31 PM 12:31 PM, opa administrators wrote:

From:	RMTPACTSU_ELNRC
To:	LIA06 Hoc; LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; LIA12 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; ET07 Hoc
Subject:	FW: DART PACTSU Updated Safety and Security Plan Apr 7 2011
Date:	Thursday, April 07, 2011 2:23:45 PM
Attachments:	Pacific Tsunami DART Safety and Security Plan.docx Pacific Tsunami Safety and Security Plan.xlsx

---

From: Hughart, Joe
Sent: Wednesday, April 06, 2011 10:19 PM
To: RMT_PACTSU
Subject: FW: DART PACTSU Updated Safety and Security Plan Apr 7 2011

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

From: Hughart, Joe
Sent: Wed 4/6/2011 9:02 PM
To: DART_PACTSU
Cc: RMTPACTSU_CORE@0fda.gov; Cohen, Harold(GC/DCHA) [USAID]; Catlin, Steve(DCHA/OFDA) [USAID]; Bardwell, Shawn(DCHA/OFDA) [USAID]; Kearns, Jason (DCHA/OTI) [USAID]
Subject: DART PACTSU Updated Safety and Security Plan Apr 7 2011

Word document (general provisions): no changes.

Excel spreadsheet: DOE, NRC & DART comings & goings updated; rad monitoring and dosimetry updated.

Best,

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

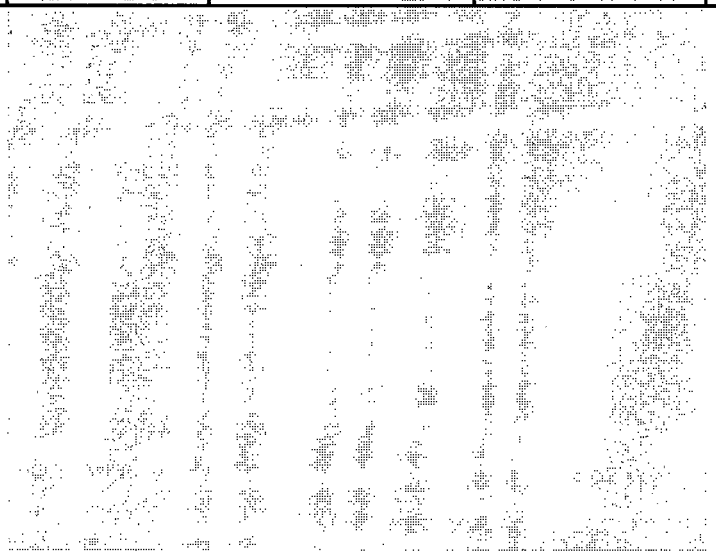
LLLL/390

Attachment Pacific Tsunami DART Safety and Security Plan.docx (90926 Bytes) cannot be converted to PDF format.

IONIZING RADIATION MONITORING

ADM-300 Beta/Gamma Radiation Detection Meter Calib 7/2010

Site:	DART at U.S. Embassy Tokyo			USARs		
Date	Sampler:	Location:	µR/hr	Sampler:	Location:	µR/hr
3/11/2011	USA	NA	No measurement	NA	USA	NA
3/12/2011	USA	NA	No measurement	NA	USA	NA
3/13/2011	DART CBRNE	Embassy 4th Fl USAID	17-22 (background)	NA	Japan	NA
3/14/2011	DART CBRNE	Embassy 4th Fl USAID	19-21 (background)	CATF2, VATF1	Misawa	Background
3/15/2011	DART CBRNE	Embassy 4th Fl USAID	18-23 (background	CATF2, VATF1	Ofunato	Background
3/16/2011	DART CBRNE	Embassy 4th Fl USAID	20-22 (background)	CATF2, VATF1	Ofunato	Background
3/17/2011	DART CBRNE	Embassy 4th Fl USAID	18-21 (background)	CATF2, VATF1	Kamaishi	Background
3/18/2011	DART CBRNE	Embassy 4th Fl USAID	9-19 (background)	CATF2, VATF1	Misawa	Background
3/19/2001	DART CBRNE	Embassy 4th Fl USAID	10-18 (background)	CATF2, VATF1	Misawa	Background
3/20/2011	DART CBRNE	Embassy 4th Fl USAID	14-19 (background)	NA	Departed	NA
3/21/2011	DART CBRNE	Embassy 4th Fl USAID	13-19 (background)	NA	Departed	NA
3/22/2011	DART CBRNE	Embassy 4th Fl USAID	12-18 (background)	NA	Departed	NA
3/23/2011	DART CBRNE	Embassy 4th Fl USAID	11-18 (background)	NA	Departed	NA
3/24/2011	DART CBRNE	Embassy 4th Fl USAID	03-13 (background)	NA	Departed	NA
3/25/2011	DART CBRNE	Embassy 4th Fl USAID	13-16 (background)	NA	Departed	NA
3/26/2011	DART CBRNE	Embassy 4th Fl USAID	10-14 (background)	NA	Departed	NA
3/27/2011	DART CBRNE	Embassy 4th Fl USAID	9-12 (background)	NA	Departed	NA
3/28/2011	DART CBRNE	Embassy 4th Fl USAID	13-33 (background)	NA	Departed	NA
3/29/2011	DART CBRNE	Embassy 4th Fl USAID	16-19 (background)	NA	Departed	NA
3/30/2011	DART CBRNE	Embassy 4th Fl USAID	09-19 (background)	NA	Departed	NA
3/31/2011	DART CBRNE	Embassy 4th Fl USAID	07-15 (background)	NA	Departed	NA
4/1/2011	DART CBRNE	Embassy 4th Fl USAID	09-17 (background)	NA	Departed	NA
4/2/2011	DART CBRNE	Embassy 4th Fl USAID	13-20 (background)	NA	Departed	NA
4/3/2011	DART CBRNE	Embassy 4th Fl USAID	8-12 (background)	NA	Departed	NA
4/4/2011	USMC	Embassy rooftop	16-19 uR/hr	NA	Departed	NA
4/5/2011	USMC	Embassy rooftop	19-30 uR/hr	NA	Departed	NA
4/6/2011	DART CBRNE	Embassy 4th Fl USAID	10-15 (background)	NA	Departed	NA
4/7/2011	DART CBRNE	Embassy 4th Fl USAID	9-14 (background)	NA	Departed	NA
4/8/2011				NA	Departed	NA
4/9/2011				NA	Departed	NA
4/10/2011				NA	Departed	NA
4/11/2011				NA	Departed	NA



MLOs at Yokota				MLO at Sendai			Daiichi Nuclea	
Sampler:	Location:	Range uR/hr	Mean uR/hr	Sampler:	Location:	µR/hr	Sampler:	Location:
NA	USA		NA	NA	USA	NA	TEPCO	Main Gate
NA	USA		NA	NA	USA	NA	TEPCO	Main Gate
NA	Japan		NA	NA	USA	NA	TEPCO	MP 4
NA	Japan		NA	NA	USA	NA	TEPCO	Main Gate
USAF	CATM	55-494,	123	NA	Tokyo	NA	TEPCO	Main Gate
USAF	CATM	25-117	25	NA	Tokyo	NA	TEPCO	Main Gate
USAF	CATM	25-120	31	NA	Tokyo	NA	TEPCO	N Main Bldg
USAF	CATM	0-36	22	No data reported			TEPCO	N Main Bldg
USAF	CATM	19-50	23	No data reported			TEPCO	N Main Bldg
USAF	CATM	20-155	115	No data reported			TEPCO	N Main Bldg
				No data reported			TEPCO	N Main Bldg
				No data reported			TEPCO	Main Gate
				No data reported			TEPCO	Main Gate
				No data reported			TEPCO	Main Gate
				USMC III MEF	Sendai	17-48	TEPCO	Main Gate
				USMC III MEF	Yamagata & S	3-36	TEPCO	Main Gate
							TEPCO	Main Gate

ır Power Plant	
µSv/hr	µR/hr
56 nGy/hr	
21.6	
905.1	
751.2	
11,930.0	
10,850.0	
3700	
5055	
3565	
3054	
2385	
472.7	
420.4	
222.3	
540	
146.6	
140	

Date	µR/hr
3/11/2011	0
3/12/2011	2162
3/13/2011	90510
3/14/2011	75120
3/15/2011	1193000
3/16/2011	1085000

[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

From: Reyes, Debra
Sent: Thursday, April 21, 2011 7:23 AM
To: ET02 Hoc
Subject: Re: upcoming travelers to Japan

Thank you!

From: ET02 Hoc
To: Reyes, Debra
Sent: Thu Apr 21 07:15:22 2011
Subject: RE: upcoming travelers to Japan

Debbie:
As soon as I know the names I'll get them to you. ...karen

From: Reyes, Debra
Sent: Wednesday, April 20, 2011 3:44 PM
To: ET02 Hoc
Subject: upcoming travelers to Japan

Hello,

Can you please provide me with the list of the next team that will be traveling to Japan.

Thanks!

LLLL/391

From: Dorman, Dan
Sent: Thursday, April 21, 2011 1:20 PM
To: ET02 Hoc
Subject: RE: Liaison Japan E-Mail Group

Karen,

With my ongoing responsibilities on the lessons learned TF, I would like to stay in this loop. Please keep me on the Liaison Japan group.

Thanks

Dan

From: ET02 Hoc
Sent: Thursday, April 21, 2011 12:12 PM
To: Bernhard, Rudolph; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Dorman, Dan; Emche, Danielle; Garchow, Steve; Gepford, Heather; Hay, Michael; Holahan, Vincent; Huffert, Anthony; Lupold, Timothy; Meighan, Sean; Mitman, Jeffrey; Moore, Carl; Norwood, Donald; Reynolds, Steven; Salay, Michael; Wittick, Brian
Cc: Schwartzman, Jennifer; Bloom, Steven; LIA08 Hoc
Subject: Liaison Japan E-Mail Group
Importance: High

Hello, this e-mail is from Karen Jackson in the Operations Center. I am the owner of the Liaison Japan e-mail group and would like to keep it up to date. I have been adding new travelers to the list as I get their name but I'm uncertain as to when to remove someone from the group. Should I remove your name based on your departure date or wait until I hear from OIP that you have returned home?

I haven't removed the last group of returnees. Since I'm pretty certain they are home, I will remove the following from the group today unless I hear otherwise: Bernhard, Blamey, Call, Collins, Dorman, Emche, Hay, and Salay.

Thanks for your help....karen

LLLL/392

From: OST01 HOC
Sent: Thursday, April 21, 2011 1:34 PM
To: FOIA Response.hoc Resource
Subject: FW: sharepoint info

From: Zimmerman, Roy
Sent: Thursday, April 21, 2011 12:24 PM
To: Kowalczik, Jeffrey; OST01 HOC
Subject: FW: sharepoint info

From: Virgilio, Martin
Sent: Thursday, April 21, 2011 9:58 AM
To: Zimmerman, Roy
Cc: Weber, Michael; Tracy, Glenn; Holonich, Joseph; Johnson, Michael; Carpenter, Cynthia; Wiggins, Jim; Uhle, Jennifer
Subject: RE: sharepoint info

Roy

Please go ahead and make the sharepoint site the primary location for our documents and notify our internal stakeholders.

Marty

From: Zimmerman, Roy
Sent: Wednesday, April 20, 2011 1:33 PM
To: Virgilio, Martin
Cc: Weber, Michael; Tracy, Glenn; Holonich, Joseph; Johnson, Michael; Carpenter, Cynthia; Wiggins, Jim; Uhle, Jennifer
Subject: FW: sharepoint info

Marty, with your agreement, we will send the sharepoint info as an attachment to commission offices, etc, making that location the primary place we post reports and other information.

From: ET02 Hoc
Sent: Wednesday, April 20, 2011 1:21 PM
To: Zimmerman, Roy
Subject: sharepoint info

FYI

LLLL/393

From: Bernhard, Rudolph
Sent: Thursday, April 21, 2011 3:14 PM
To: ET02 Hoc
Subject: RE: Liaison Japan E-Mail Group

I would like to stay on the group for the time being, as I still have correspondence with the current team. I came home last Saturday.

Rudy Bernhard

From: ET02 Hoc
Sent: Thursday, April 21, 2011 12:12 PM
To: Bernhard, Rudolph; Blamey, Alan; Call, Michel; Casto, Chuck; Collins, Elmo; Dorman, Dan; Emche, Danielle; Garchow, Steve; Gepford, Heather; Hay, Michael; Holahan, Vincent; Huffert, Anthony; Lupold, Timothy; Meighan, Sean; Mitman, Jeffrey; Moore, Carl; Norwood, Donald; Reynolds, Steven; Salay, Michael; Wittick, Brian
Cc: Schwartzman, Jennifer; Bloom, Steven; LIA08 Hoc
Subject: Liaison Japan E-Mail Group
Importance: High

Hello, this e-mail is from Karen Jackson in the Operations Center. I am the owner of the Liaison Japan e-mail group and would like to keep it up to date. I have been adding new travelers to the list as I get their name but I'm uncertain as to when to remove someone from the group. Should I remove your name based on your departure date or wait until I hear from OIP that you have returned home?

I haven't removed the last group of returnees. Since I'm pretty certain they are home, I will remove the following from the group today unless I hear otherwise: Bernhard, Blamey, Call, Collins, Dorman, Emche, Hay, and Salay.

Thanks for your help....karen

LLLL/394

From: LIA08 Hoc
Sent: Thursday, April 21, 2011 11:28 AM
To: Schwartzman, Jennifer
Cc: Jackson, Karen; ET02 Hoc
Subject: RE: Current Japan traveler list

Thanks Jennifer. Then is it safe to assume that what you sent is a complete list of the NRC folks currently in Japan? There are no others? Thanks again!

Clyde Ragland

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: Schwartzman, Jennifer
Sent: Thursday, April 21, 2011 11:08 AM
To: LIA08 Hoc; ET02 Hoc
Cc: Jackson, Karen
Subject: Current Japan traveler list

As requested, please find attached a list of current travelers on the Japan team. We do not yet have the new list for the next team but we are expecting to receive it from NSIR today. Will keep you posted.

Jennifer Schwartzman Holzman
Office of International Programs
U.S. Nuclear Regulatory Commission
+1-301-415-2317
jennifer.schwartzman@nrc.gov

NOTE: Please note new email address above. My old email address, jks1@nrc.gov, will no longer work on this system. Please update your contact lists accordingly.*

LLL/395

From: RST01 Hoc
Sent: Thursday, April 21, 2011 10:28 PM
To: OST01 HOC
Subject: Japan One Pager 1500 EDT 4-21-11.doc
Attachments: Japan One Pager 1500 EDT 4-21-11.doc

LLLL/396

From: OST01 HOC
Sent: Thursday, April 21, 2011 2:38 PM
To: FOIA Response.hoc Resource
Subject: FW: USNRC Earthquake-Tsunami Update - 1200 EDT (April 21, 2011)
Attachments: USNRC Earthquake-Tsunami Update 042111, 1200 EDT.pdf

---

From: LIA08 Hoc
Sent: Thursday, April 21, 2011 1:53 PM
To: LIA08 Hoc
Subject: USNRC Earthquake-Tsunami Update - 1200 EDT (April 21, 2011)

*********NOTE: THE ATTACHED IS FOR OFFICAL USE ONLY**********

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

LLLL/397

From: RST01 Hoc
Sent: Thursday, April 21, 2011 3:59 PM
To: OST01 HOC
Subject: FW: Plant data

Can you add Joy to distribution for the IAEA distributed documents information?

Thanks,

Mike

Mike Brown
Reactor Safety Team

From: Marksberry, Don
Sent: Thursday, April 21, 2011 3:04 PM
To: RST01 Hoc
Cc: Lee, Richard; Esmaili, Hossein; Salay, Michael
Subject: RE: Plant data

Mike

Joy Rempe, INL (also ACRS member). Can we provide her with the detailed Japanese data sheets on a routine basis (including RES)?

Also, what was the website that was mentioned at the 11:00 call that provided data?

FYI, RES will provide the RST with comments on potential gaps to the TEPCO roadmap (by COB tomorrow). Richard Lee was tasked by the DOE Science Council to provide input.

Thanks,

Don

From: RST01 Hoc
Sent: Thursday, April 21, 2011 2:52 PM
To: Marksberry, Don
Subject: RE: Plant data

Where does the Fukushima Plant Data Charts come from?

Thanks,

Mike

Mike Brown
Reactor Safety Team

LLLL/398

From: Marksberry, Don
Sent: Thursday, April 21, 2011 12:45 PM
To: RST01 Hoc
Cc: Lee, Richard; Salay, Michael; Esmaili, Hossein
Subject: Plant data

Mike, Dave

INL through DOE is maintaining spreadsheets of plant parameter data that they extract from the NISA press releases and other public sources. The end product is a daily set of trend plots that I started to forward to RST01 (see attached). They (and us in RES) would like to get on the distribution list for the detailed data tables that are in Japanese (see attached). If INL can get these on a routine basis, they may be willing to share the spreadsheets of raw data, as well as provide an expanded set of plots.

The INL-DOE plots are marked OUO, so a DOE will have to approve the distribution to the Consortium.

Don

Don Marksberry

Division of Risk Analysis
Office of Nuclear Regulatory Research
U.S. Nuclear Regulatory Commission
21 Church Street
Rockville, Maryland 20850-4207

Phone: 301-251-7593
E-mail: Don.Marksberry@nrc.gov

USPS & Express Mail Address:
Mail Stop: C-4C07M
Washington, D.C. 20555-0001

From: OST01 HOC
Sent: Thursday, April 21, 2011 1:32 PM
To: FOIA Response.hoc Resource
Subject: FW: [METI Japan](Apr_21)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 21_0800_Seismic Damages to the NPSs.pdf; Apr_21 Radioactivity Level Map Chart.pdf

-----Original Message-----
From: HOO Hoc
Sent: Thursday, April 21, 2011 1:08 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_21)Update on Seismic and Tsunami Damage Information

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: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Thursday, April 21, 2011 12:46 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_21)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Thursday, the following information has been updated.

---- Today's news ----
1. Ministry of Health, Labor and Welfare (MHLW) sent out press release on restriction of distribution and consumption of Juvenile sand lance landed at Fukushima Prefecture, in relation to the accident at Fukushima Nuclear Power Plant. [Please refer to 9.]

LLLL/399

2. OECD Secretary-General Angel Gurria visited Japan and met with Japan's Foreign Minister Matsumoto. [Please refer to 10.]

---- Updates from METI ----
3. [METI] Apr 21_0800_Seismic Damages to the NPSs [Please refer to the attached file]

4. [METI] Apr 21_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----
5. [NISA] Apr 21 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
http://www.meti.go.jp/press/2011/04/20110421001/20110421001-3.pdf

[NISA] Apr 15 1500_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English versioin) http://www.nisa.meti.go.jp/english/files/en20110416-11-1.pdf

6. [NISA] Apr 20 1300_Fukushima Dai-ichi Major Parameters of the Plant (English version)
http://www.nisa.meti.go.jp/english/files/en20110421-1-3.pdf

---- Major Updates from other agencies of Japanese Government --- 7. [MLIT] Apr 21 AM_Measurement of Radiation Doses in the Ports around Tokyo Bay http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawaski City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

8. [MLIT] Apr 21 PM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

9. [MHLW] Apr 20 Restriction of distribution and consumption of Juvenile sand lance landed at Fukushima Prefecture, in relation to the accident at Fukushima Nuclear Power Plant.
http://www.mhlw.go.jp/english/topics/2011eq/dl/food-110420.pdf

10. [MOFA] Apr 21 OECD Secretary-General Angel Gurria visited Japan and met with Japan's Foreign Minister Matsumoto. (only Japanese version is now
available)
http://www.mofa.go.jp/mofaj/kinkyu/2/20110421_224241.html

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

==========
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
==========

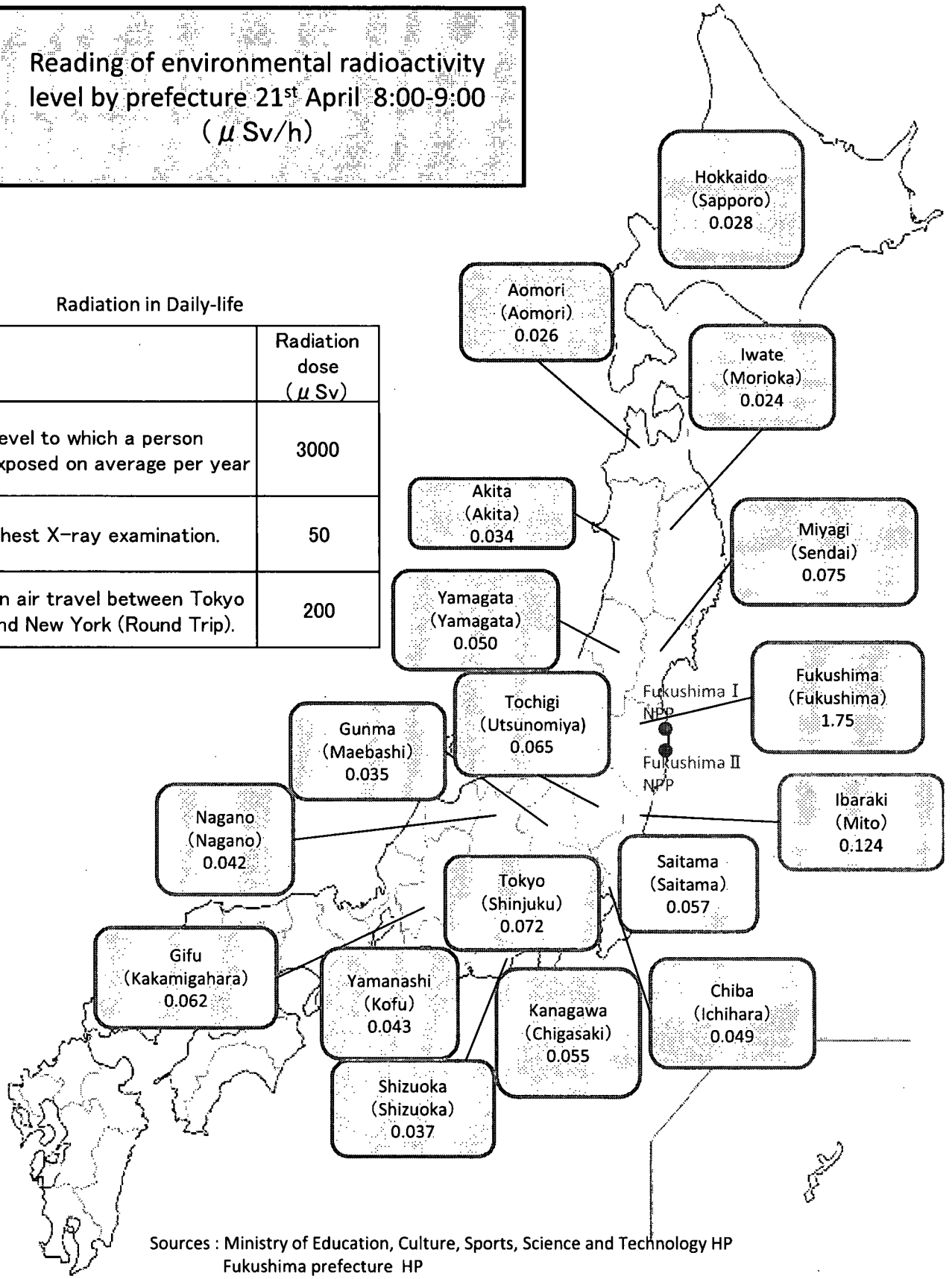
(See attached file: [METI] Apr 21_0800_Seismic Damages to the NPSs.pdf)

(See attached file: Apr_21 Radioactivity Level Map Chart.pdf)

Reading of environmental radioactivity level by prefecture 21st April 8:00-9:00 (μSv/h)

Radiation in Daily-life

	Radiation dose (μSv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

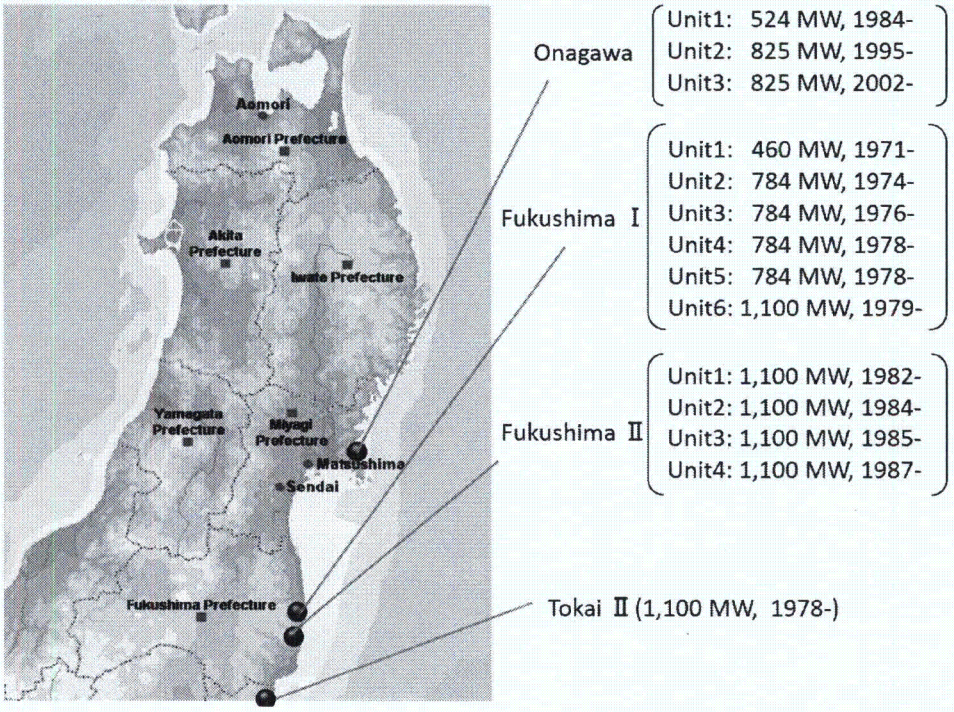
Great East Japan Earthquake and the seismic damage to the NPSs

As of 8:00am April 21st, 2011 (JST)
Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Great East Japan Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS; Units 1, 2 and 3 at Fukushima I NPS; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS; and an unit of Tokai Dai-ni (II) NPS) were automatically shut-down.



Tsunami damaged the emergency generators and the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation.

Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast. The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 14 meters high from the seawater level.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor.

After the reactor was automatically shut-down and the Tsunami disabled the equipments. The pressure of containment vessel unusually increased and the water level inside the reactor pressure vessel dropped. Vent of the primary containment vessel was operated at 10:17am on March 12th; thereafter, hydrogen explosion occurred at the upper-part of the reactor building at 15:36.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 12th; thereafter, fresh water has been injected since March 25th, instead of seawater.

Water injection to the spent fuel pool

- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out.

Power supply

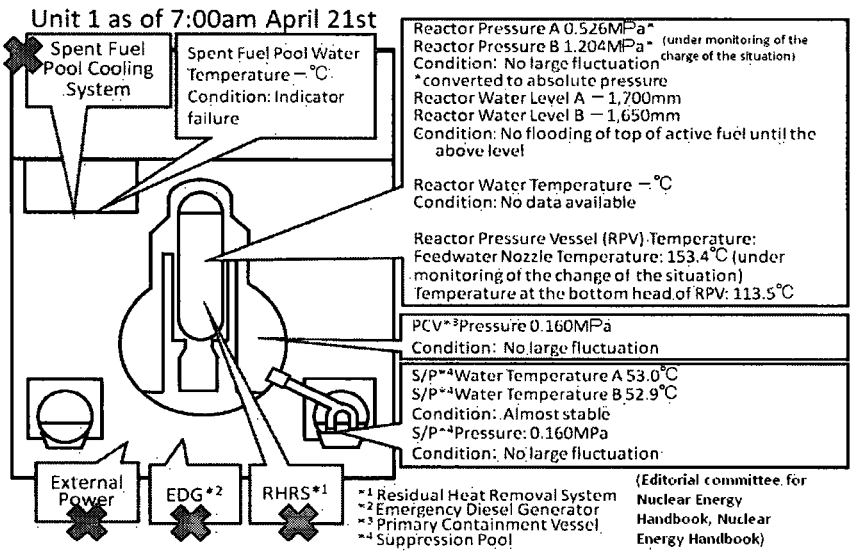
- Lighting in the main control room was recovered on March 24th. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, 2.1×10^{5}Bq/cm^{3} of ^{131}I (Iodine) and 1.8×10^{6}Bq/cm^{3} of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since March 24th, the stagnant water has been transferred to the condenser until it was fulfilled.
- In order to prepare to transfer the stagnant water in the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water and finished on April 2nd. The transfer of the water in the condenser to the condensate storage tank was completed on April 10th.

Nitrogen injection

- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th. The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, the water injection function was sustained. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th. But the reactor water level tended to decrease. At 6:10am on March 15th, there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 14th; thereafter, fresh water has been injected since March 26th, instead of seawater.

Water injection to the spent fuel pool

- The seawater injection to the spent fuel pool using the fire pump truck started on March 20th. On March 29th, the injection was switched to the fresh water injection using the temporary motor-driven pump.
- The work of sampling water that flowed out in the skimmer surge tank from the spent fuel pool of Unit 2 was carried out in order to grasp the condition of water in the pool. (April 16th) As a result of nuclide analysis of radioactive materials regarding the sampled water of the pool, 4.1×10^{3}Bq/cm³ of ^{131}I (Iodine), 1.6×10^{3}Bq/cm³ of ^{134}Cs (Cesium), 1.5×10^{3}Bq/cm³ of ^{137}Cs (Cesium) were detected. (April 17th)

Power supply

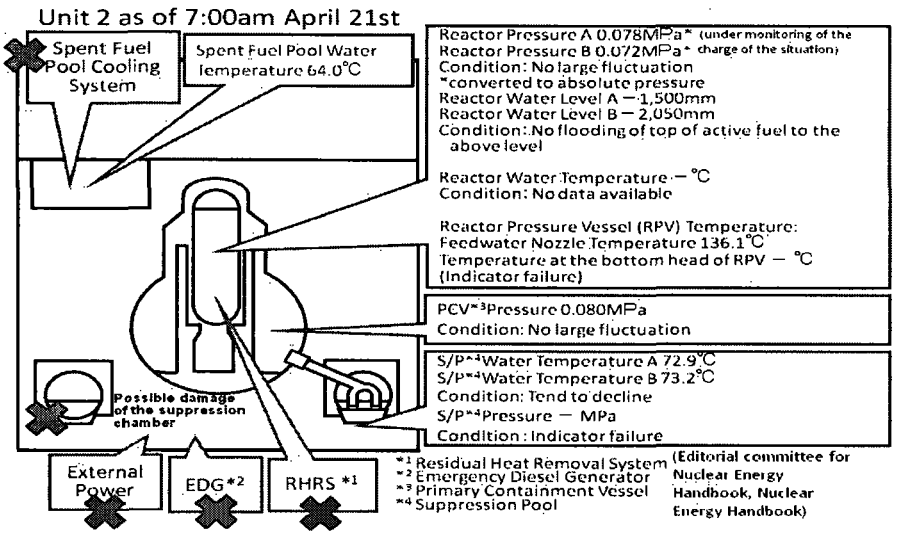
- On March 26th, lighting of the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- After transferring the water in the condenser to the condensate storage tank, the stagnant water in the trench of the turbine building was transferred to the condenser from April 12th till 13th. Then, stagnant water (stagnant water with high-level radioactivity) in the turbine building of Unit 2 was started to be transferred to the radioactive waste treatment facilities at 10:08am on April 19th.

Water in the pit

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) located near the intake channel of Unit 2. In addition, the outflow from the crack(20cm) in the concrete portion of the lateral surface of the pit into the sea was confirmed on April 2nd. In order to stop the outflow the coagulant (soluble glass) was injected from the holes around the pit from April 5th, the outflow was confirmed to stop on 6th. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (April 6th)
- Injection of the coagulant to the power cable trench of Unit 2 was carried out on April 18th and 19th.



Unit 3 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel. And vent of the primary containment vessel was operated on March 13th and 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

Water injection to the reactor pressure vessel

- The seawater had been injected into the reactor pressure vessel since March 13th, thereafter; fresh water has been injected since March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

Water injection to the spent fuel pool

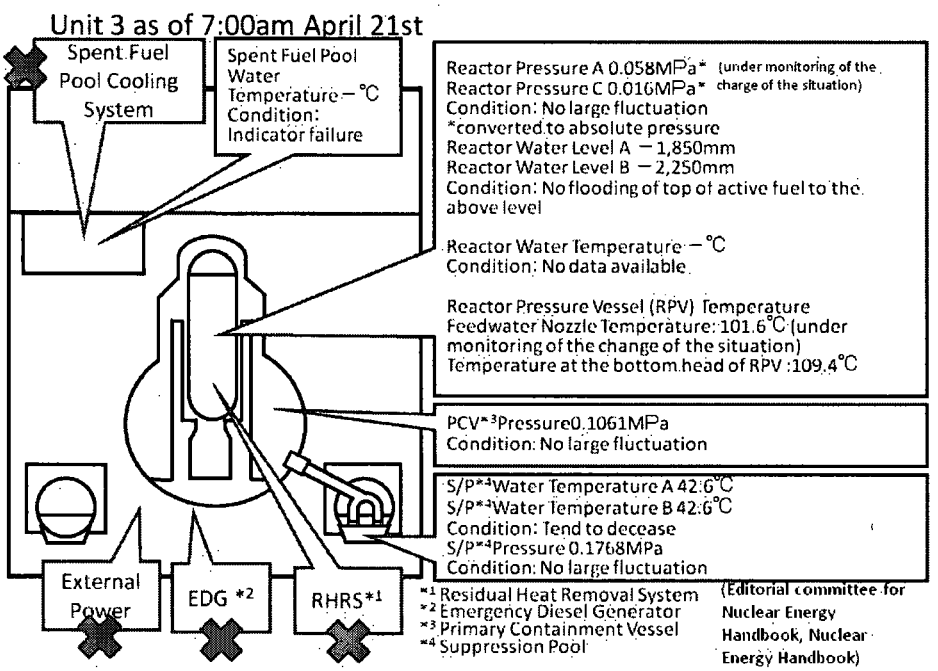
- In order to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Since March 29th till April 18th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out.

Power supply

- On March 22nd, lighting in the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from March 28th till March 31st.



Unit 4 No fuel is in the reactor. Fresh water is being injected to the spent fuel pool.

There is no fuel in the reactor pressure vessel due to replacement of the shroud. It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am March 15th, but the fire was extinguished spontaneously as of 11:00am. Another fire took place on March 16th, but no fire could be confirmed from the ground.

Water injection to spent fuel pool

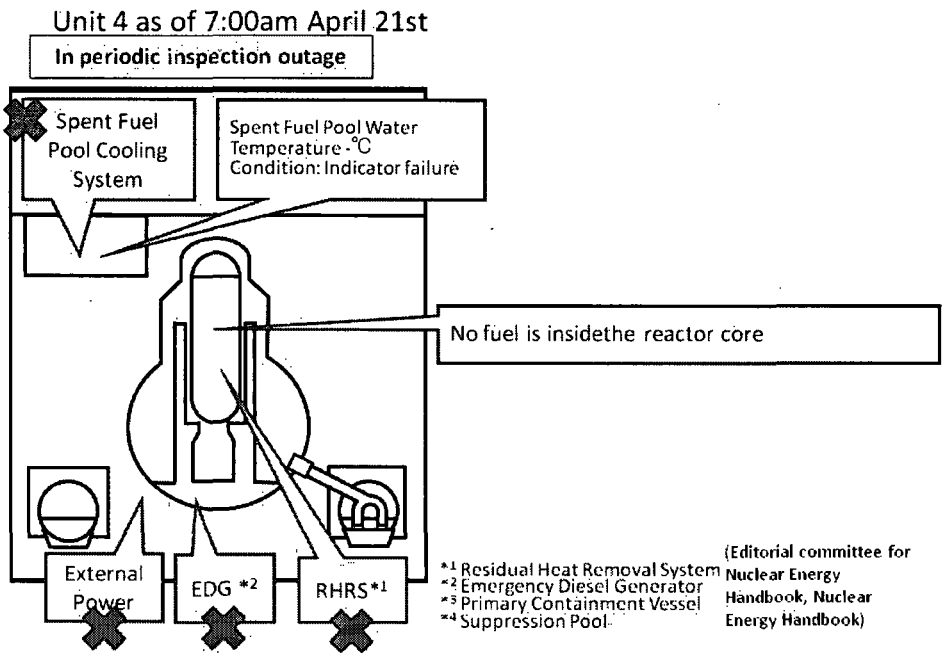
- Water spray using fire engine with seawater over the spent fuel pool of Unit 4 was carried out from March 20th till March 21st. And water spray using a concrete pump truck had been carried out five times with seawater from March 22nd till March 27th and eleven times with fresh water from March 30th till April 20th.

Power supply

- On March 29th, lighting in the main control room was recovered.

Stagnant water

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from April 3rd, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

One of the emergency generators for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

Cold shut down

- The pump for residual heat removal system (RHR) for Unit 5 and the pump for RHR for Unit 6 started up on March 19th and recovered heat removal function.
- Unit 5 was under cold shut down at 14:30 on March 20th and Unit 6 was under cold shut down at 19:27 on the same day.

Power supply

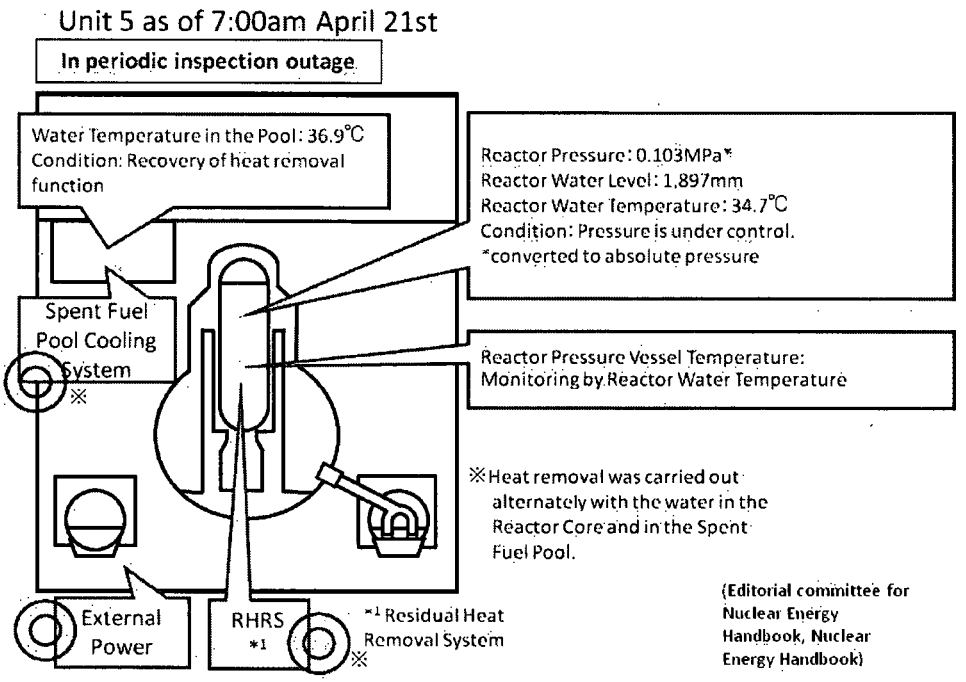
- Unit 5 and 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and 6 was switched from the emergency diesel generators to the external power supply on March 21st and March 22nd.
- Power supply for the temporary pumps for RHR seawater system of Unit 5 and 6 were switched from the temporary to the permanent on March 24th and 25th.

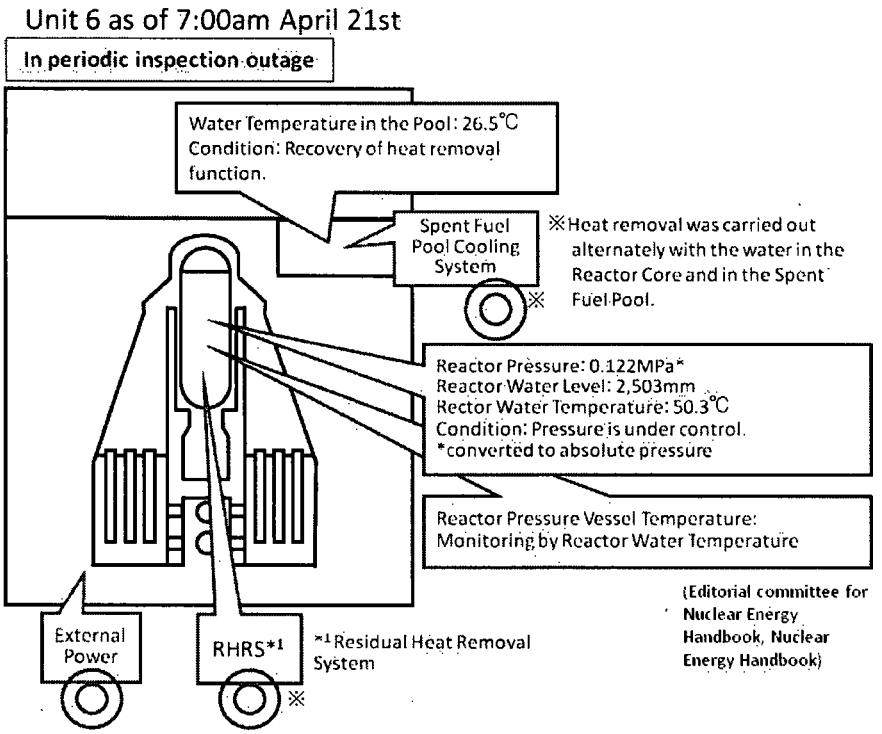
Low-level radioactivity water discharge

- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,300t) was discharged through the water discharge canal to the sea from April 4th till 9th in order to protect the critical safety facilities of the reactors. The water was beginning to leak out to the reactor building and other buildings of Unit 6 and there was no further capacity to accommodate it.

Stagnant water

- The stagnant water in the basement floor of the turbine building of Unit 6 was transferred to the condenser. (From 11:00 till 15:00 April 19th)





Common Spent Fuel Pool

- The power supply was started at 15:37 on March 24th and cooling was also started at 18:05 on the same day.
- The power supply was stopped due to short-circuiting of the end of the power supply circuit. (14:34 April 17th) Thereafter the facility inspection was carried out and the power supply was recovered. (17:30 April 17th)

Other

Nuclide analysis at water discharge canal

- As the result of nuclide analysis at around the southern water discharge canal, 7.4×10^{1}Bq/cm^3 of ^{131}I (1850.5 times higher than the limit of consentration of water outside the Environmental Monitoring Area) was detected on March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
  As the result of the analysis at the northern water discharge canal, 4.6×10^{1}Bq/ cm^3 of ^{131}I (1262.5 times higher) was detected on March 29th.

Water in the trenches

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench on March 27th. The rate of the Unit 3's trench could not measure because of the rubble.

Nuclide analysis of soil

- In the samples of soil collected on March 21st, 22nd, 25th, 28th, 31nd and April 4th on the site of Fukushima I, ^{238}Pu (Plutonium), ^{239}Pu and ^{240}Pu were detected. The concentration of the detected plutonium was at the equivalent level of the fallout that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at

the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

Stagnant water

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^{1} Bq/cm^3 in the controlled area and that of 2.2×10^{1} Bq/cm^3 in the non-controlled area were detected in March 29th.

Barges loading fresh water

- Two barges of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force on March 31st and April 2nd. The transfer of fresh water from the barges to the filtrate tank was started.

Low-level radioactive water discharge

- The wastewater with high concentration of radioactive materials was trapped on the basement floor of the turbine building of Unit2 and it was necessary to immediately be transferred to another location as it was leaking out to the surrounding environment. But there was no further capacity to accommodate it.
- In order to use the main building of radioactive waste treatment facilities for accommodating the wastewater of the turbine building of Unit2, the stagnant water with low-level radioactivity in the radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea from April 4th till 10th.Confirmation of the remaining water is being carried out. (Total amount of discharged water is around 9,070t.)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps.(From April 6th till 7th)
- The watertight measures in the buildings of the radioactive waste treatment facilities were completed. (April 18th)

Countermeasures for Tsunami

- The distribution boards, etc. for the pumps injecting water to the reactors of Units 1 to 3 were transferred to a hill on April 15th.

Other

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS on April 5th.
- 3 sandbags filled with Zeolite were placed between the inlet screen pump room of Unit 3 and that of Unit 4 on April 15th. Thereafter, 2 sandbags were placed between the inlet screen pump room of Unit 1 and that of Unit 2, and 5 sandbags were placed between that of Unit 2 and that of Unit 3 on April 17th.
- The silt fences to prevent the contaminated water from being scattered were completed to be doubly installed at the appropriate part of the seawall on the south side of the NPS on April 11th. Other silt fences were installed in front of the screen of Units 3 and 4 on April 13th, and at the curtain wall and in front of the screen of Unit 1 and 2 on April 14th.
- The test scattering of anti-scattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool and other areas from April 1st till 20th.
- Removal of the rubble using remote-control heavy machineries was carried out from April 10th till 20th.
- On the ocean-side of the inlet bar screen of Unit 2, temporary boards to stop water were installed on April 12th, 13th and 15th.
- Work of strengthening connection of the power supplies between Units 1 and 2 and Units 3 and 4 was completed. (10:23 April 19th)
- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 1, 2 and 3 on April 17th and 18th.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram "Fukushima prefecture"). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.

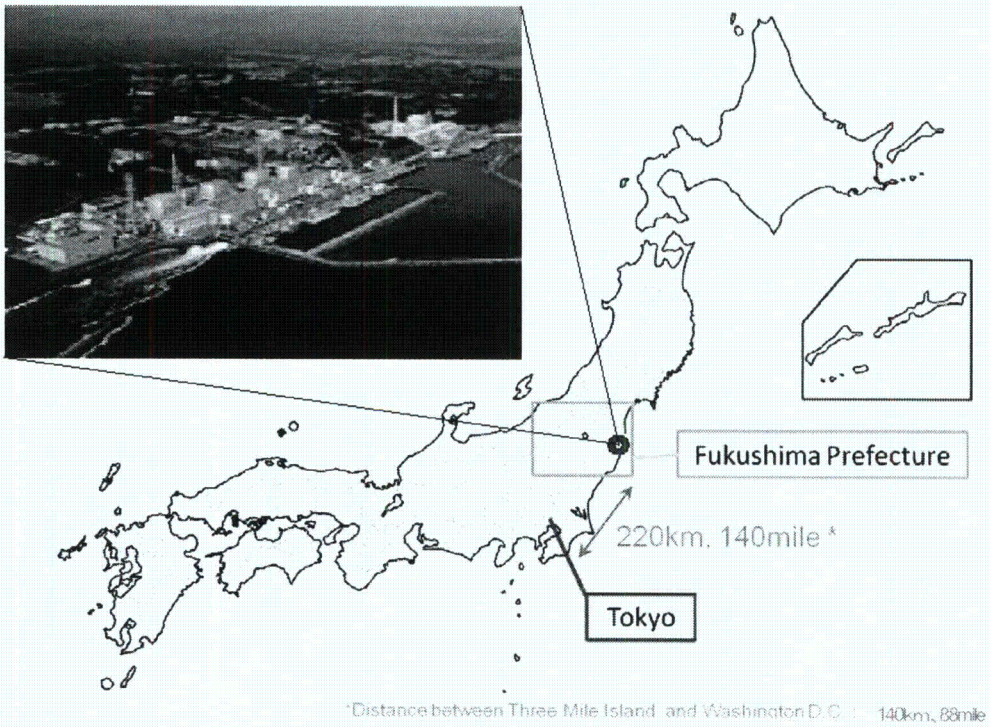
- On March 16th, the Local Emergency Response Headquarter issued "the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefecture Governors and the heads of cities, towns and villages.

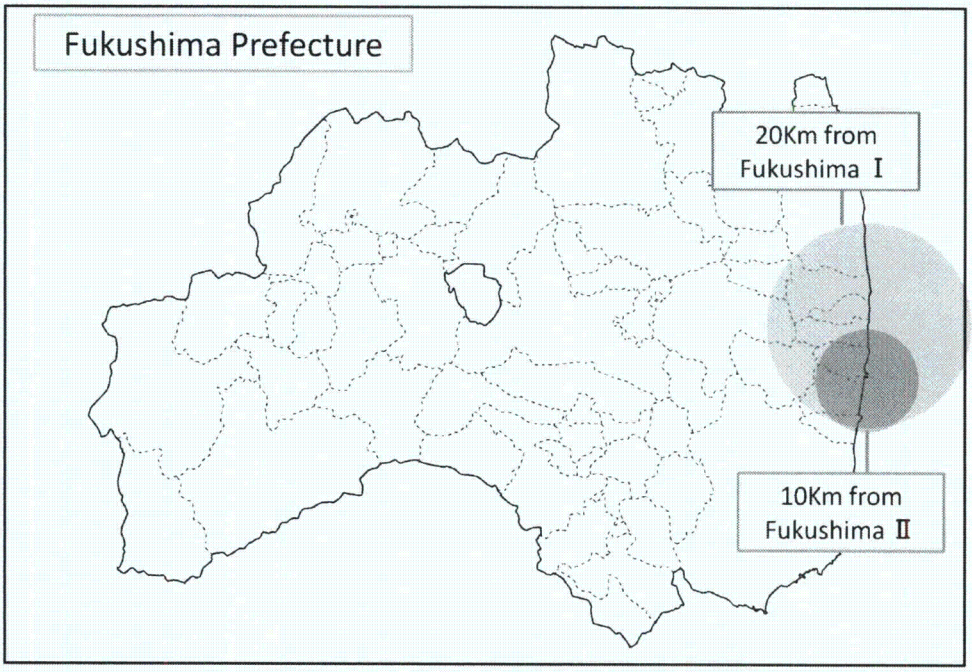
Monitoring Data

1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:
http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:
http://www.bousai.ne.jp/eng/

Location of Fukushima I and II in Japan





From: Salay, Michael
Sent: Thursday, April 21, 2011 10:05 AM
To: ET02 Hoc
Subject: RE: Blackberry
Attachments: Re: NRC Japan Team Asset transfer

Karen,

When I left they were short on Laptops so I transferred laptop and air card to Sean Meighan.

Transfer and receipt email attached.

-Mike

From: ET02 Hoc
Sent: Thursday, April 21, 2011 9:50 AM
To: Salay, Michael
Subject: RE: Blackberry
Importance: High

Mike:
Another question – did I ask if you took a laptop with you? If so, did you return it? Thanks...karen

---

From: ET02 Hoc
Sent: Thursday, April 21, 2011 9:13 AM
To: Salay, Michael
Subject: RE: Blackberry

Mike:
No rush – I was just wondering the status. I will check with OIS to see what can be done about the pictures. FYI: I will be out of the office tomorrow. Thanks...karen

---

From: Salay, Michael
Sent: Thursday, April 21, 2011 8:44 AM
To: ET02 Hoc
Subject: RE: Blackberry

Karen,

I dropped by on Mon or Tue to hand it in. (I think I may have spoken to you when I was there). I wanted to get some pictures off of it before handing it in but was told that you guys just wipe it when we turn them in. The email on the BB wasn't working so I can't email them to myself. I have been busy with other things and haven't had a chance to call 1234 to see if they could help me get the pictures off. I'll try to get that done today and then drop it off.

-Mike

From: ET02 Hoc
Sent: Thursday, April 21, 2011 8:32 AM
To: Salay, Michael

LLLL/400

Subject: Blackberry
Importance: High

Mike:

This is Karen Jackson working from the Ops Center and I was wondering if you returned your blackberry to OIS? Thanks....karen

From: Google Alerts
To: Burnell, Scott
Subject: Google Alert - "Nuclear Regulatory Commission"
Date: Monday, April 11, 2011 5:35:38 PM

News **4** new results for **"Nuclear Regulatory Commission"**

NRC: Three workers exposed to radiation at Nebraska nuclear plant
USA Today
The US **Nuclear Regulatory Commission** announced Monday it was looking into the "unplanned radiation exposures" on April 3 at Cooper Nuclear Station, the news organization reported. According to a news release on the NRC website, the exposures took place **...**
See all stories on this topic »

PG&E asks for delay in license renewal for Diablo Canyon nuclear power plant
San Luis Obispo Tribune
By David Sneed Pacific Gas and Electric Co. has sent a letter to the federal **Nuclear Regulatory Commission** asking it to delay final implementation of license renewal at Diablo Canyon nuclear power plant until the utility can complete advanced seismic **...**
See all stories on this topic »

NRC denies license to UniStar for CC3
So Md News
By MEGHAN RUSSELL The US **Nuclear Regulatory Commission**, which oversees license approval for new nuclear reactors, released a report on Friday stating it could not issue UniStar Nuclear Energy a license for the proposed third reactor in Calvert County **...**
See all stories on this topic »

County by county news for Tuesday
Atlanta Journal Constitution
Dyke, who was appointed by Commissioner JoAnn Birrell, replaces Chuck Casto, a deputy regional administrator with the **Nuclear Regulatory Commission** who is leading the United State's assistance efforts in Japan. The oversight committee is tasked with **...**
See all stories on this topic »

LLLL/401

From: HOO Hoc
Sent: Friday, April 22, 2011 3:05 PM
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC
Subject: FW: [METI Japan](Apr_22)Update on Seismic and Tsunami Damage Information
Attachments: [METI] Apr 22_0800_Seismic Damages to the NPSs.pdf; Apr_22 Radioactivity Level Map Chart.pdf

-----Original Message-----
From: meti-info@meti.go.jp [mailto:meti-info@meti.go.jp]
Sent: Friday, April 22, 2011 2:24 PM
To: meti-info@meti.go.jp
Subject: [METI Japan](Apr_22)Update on Seismic and Tsunami Damage Information

For your reference, Ministry of Economy, Trade and Industry of Japan (METI) is providing latest information on the seismic and tsunami damages to the nuclear power stations (NPSs) in Japan, including those caused to Fukushima Dai-ichi NPS.

This Friday, the following information has been updated.

---- Today's news ----
1. Australian Prime Minister Gillard had a talk with Japanese Prime Minister Kan in Tokyo. Tomorrow, Prime Minister Gillard will be visiting Fukushima Prefecture where Nuclear Power Station is located. [Please refer to 10.]

2. Japanese Prime Minister Kan issued the instruction to prohibit access to the 20km radius area from Fukushima Dai-ichi [Please refer to 11.]

3. Ministry of Land, Infrastructure, Transport, and Tourism released the guideline to measure the radiation level of containers and ships at ports in Japan [Please refer to 12.]

4. Ministry of Economy, Trade and Industry has uploaded a presentation on the current situation of Fukushima Dai-ichi Nuclear Power Station and Japanese Government's challenges and efforts toward it. [Please refer to 5.]

---- Updates from METI ----
5. [METI] Ministry of Economy, Trade and Industry has uploaded a presentation on the current situation of Fukushima Dai-ichi Nuclear Power Station and Japanese Government's challenges and efforts toward it.
http://www.meti.go.jp/english/earthquake/nuclear/japan-challenges/index.html

6. [METI] Apr 22_0800_Seismic Damages to the NPSs [Please refer to the attached file]

7. [METI] Apr 22_Radioactivity Level Map Chart [Please refer to the attached file]

---- Updates from NISA ----

LLL/402

8. [NISA] Apr 22 1530_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (only Japanese version is now available. English version will be uploaded.)
http://www.meti.go.jp/press/2011/04/20110422008/20110422008-1.pdf

[NISA] Apr 16 0800_Current Situation of Onagawa, Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni NPSs (English versioin) http://www.nisa.meti.go.jp/english/files/en20110416-12-1.pdf

9. [NISA] Apr 21 0700_Fukushima Dai-ichi Major Parameters of the Plant (English version)
http://www.nisa.meti.go.jp/english/files/en20110421-5-3.pdf

---- Major Updates from other agencies of Japanese Government --- 10. Australian Prime Minister Gillard had a talk with Japanese Prime Minister Kan in Tokyo. Tomorrow, Prime Minister Gillard will be visiting Fukushima Prefecture where Nuclear Power Station is located.
http://www.kantei.go.jp/foreign/kan/statement/201104/21australia_e.html

11. [PM] Japanese Prime Minister Kan issued the instruction to prohibit access to the 20km radius area from Fukushima Dai-ichi http://www.nisa.meti.go.jp/english/files/en20110422-3-1.pdf

12. [MLIT] Ministry of Land, Infrastructure, Transport, and Tourism released the guideline to measure the radiation level of containers and ships at ports in Japan (only Japanese version is now available. English version will be uploaded.)
http://www.mlit.go.jp/report/press/kaiji01_hh_000101.html

13. [MLIT] Apr 22 PM_Measurement of Radiation Doses in the Ports around Tokyo Bay
http://www.mlit.go.jp/kowan/kowan_fr1_000041.html
Currently, the level of radiation in Tokyo City, Yokohama City, Kawaski City and Ichikawa City (Chiba) were as shown in the attachment at very safe level to health.

14. [MLIT] Apr 22 AM_Measurement of radiation doses around the Metropolitan Airports
http://www.mlit.go.jp/koku/koku_tk7_000003.html
The current level of radiation does not have any effects on human health.

15. [NSC] Apr 22 1645_Assessment of the result of environment monitoring (Only Japanese version is available)
http://www.nsc.go.jp/nsc_mnt/110422_1.pdf

If you need to add other e-mail address to this mailing list or do not need our information mail any more, please contact at meti-info@meti.go.jp

==========
International Public Relations Team
Ministry of Economy, Trade and Industry (METI)
1-3-1 Kasumigaseki, Chiyoda-ku, Tokyo 100-8901, Japan E-mail : meti-info@meti.go.jp
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(See attached file: [METI] Apr 22_0800_Seismic Damages to the NPSs.pdf) (See attached file: Apr_22 Radioactivity Level Map Chart.pdf)

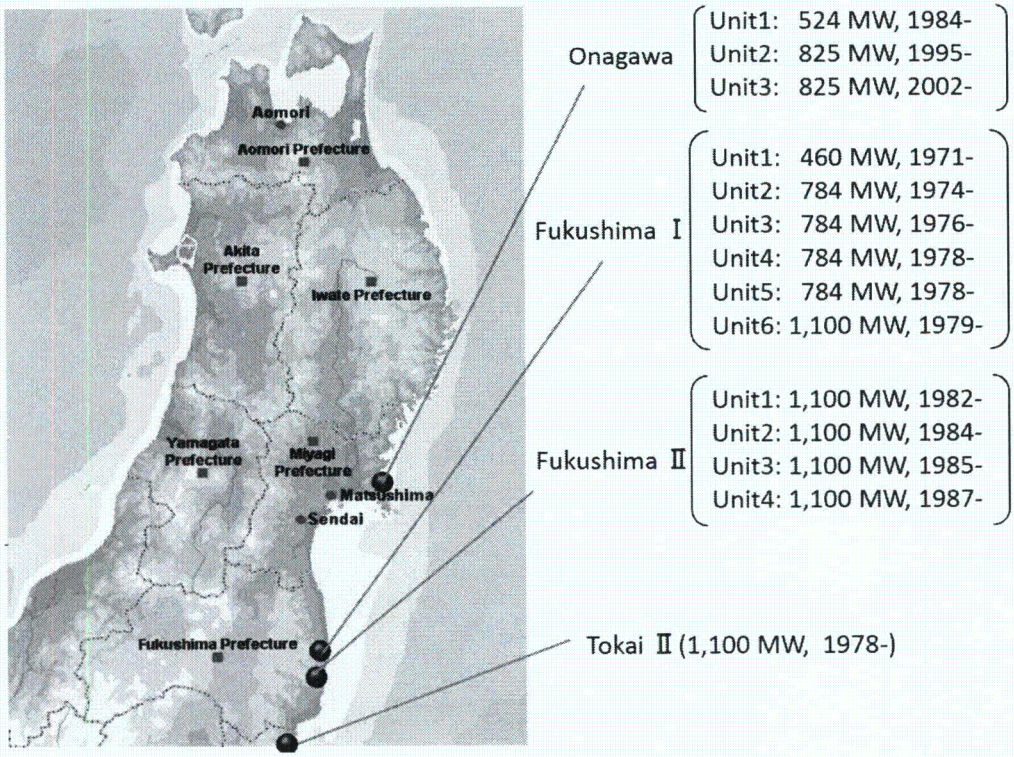
Great East Japan Earthquake and the seismic damage to the NPSs

As of 8:00am April 22nd, 2011 (JST)
Ministry of Economy, Trade and industry

Earthquake and automatic shut-down of nuclear reactors

The Great East Japan Earthquake of historic magnitude 9.0 struck the northeastern part of Japan at 14:46 on March 11th, 2011.

At the time of the earthquake occurrence, 3 reactors (Units 4, 5 and 6 at Fukushima Dai-ichi (I) Nuclear Power Station (NPS)) were under periodic inspection outage, and 11 reactors (Units 1, 2 and 3 at Onagawa NPS; Units 1, 2 and 3 at Fukushima I NPS; Units 1, 2, 3 and 4 of Fukushima Dai-ni (II) NPS; and an unit of Tokai Dai-ni (II) NPS) were automatically shut-down.



Tsunami damaged the emergency generators and the cooling systems at the Fukushima Dai-ichi (I)

Since the external power supply was cut off upon the earthquake occurrence, the emergency diesel power generators at Fukushima I automatically started generating electricity and the cooling systems began their operation.

Then, the massive earthquake triggered the devastating Tsunami wiping away houses, buildings, cars along the widespread areas of the northeast coast. The emergency diesel power generators and the pumps supplying seawater to the cooling system were halted at 15:41 on March 11th due to the Tsunami estimated more than 14 meters high from the seawater level.

Report concerning incidents at the Fukushima Dai-ichi (I)

Unit 1 Fresh water is being injected to the spent fuel pool and the reactor.

After the reactor was automatically shut-down and the Tsunami disabled the equipments. The pressure of containment vessel unusually increased and the water level inside the reactor pressure vessel dropped. Vent of the primary containment vessel was operated at 10:17am on March 12th; thereafter, hydrogen explosion occurred at the upper-part of the reactor building at 15:36.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 12th; thereafter, fresh water has been injected since March 25th, instead of seawater.

Water injection to the spent fuel pool

- On March 31st, spray of fresh water over the spent fuel pool of Unit 1 using the concrete pump truck was carried out.

Power supply

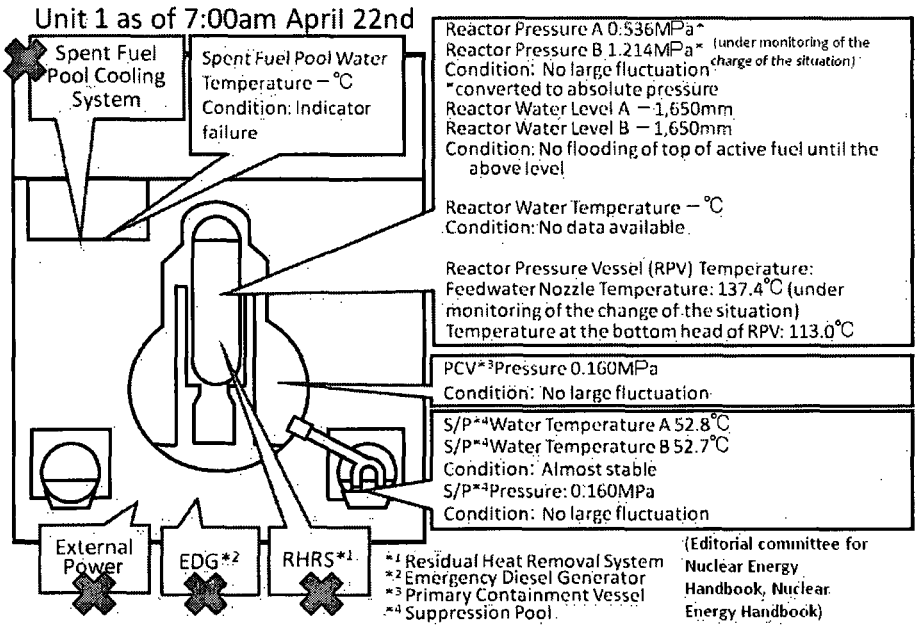
- Lighting in the main control room was recovered on March 24th. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- As the result of concentration measurement in the stagnant water on the basement floor of the turbine building, 2.1×10^{5}Bq/cm^{3} of ^{131}I (Iodine) and 1.8×10^{6}Bq/cm^{3} of ^{137}Cs (Caesium) were detected as major radioactive nuclides. Since March 24th, the stagnant water has been transferred to the condenser until it was fulfilled.
- In order to prepare to transfer the stagnant water in the turbine building to the condenser, the water in the condensate storage tank was transferred to the surge tank of suppression pool water and finished on April 2nd. The transfer of the water in the condenser to the condensate storage tank was completed on April 10th.

Nitrogen injection

- Aiming at reducing the possibility of hydrogen combustion in the primary containment vessel of Unit 1, the operations for the injection of nitrogen to the vessel were started at 22:30 on April 6th. The start of nitrogen injection to the primary containment vessel of Unit 1 was confirmed. (1:31am April 7th)



Unit 2 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, the water injection function was sustained. And vent of the primary containment vessel was operated at 11:00am on March 13th and at 0:02am on March 15th. But the reactor water level tended to decrease. At 6:10am on March 15th, there was an explosion sound at Unit 2. Given the fact that the pressure in the suppression chamber decreased, it is presumed that there is possibility of certain damage on the suppression chamber.

Water injection to the reactor pressure vessel

- Seawater had been injected into the reactor pressure vessel since March 14th; thereafter, fresh water has been injected since March 26th, instead of seawater.

Water injection to the spent fuel pool

- The seawater injection to the spent fuel pool using the fire pump truck started on March 20th. On March 29th, the injection was switched to the fresh water injection using the temporary motor-driven pump.
- The work of sampling water that flowed out in the skimmer surge tank from the spent fuel pool of Unit 2 was carried out in order to grasp the condition of water in the pool. (April 16th) As a result of nuclide analysis of radioactive materials regarding the sampled water of the pool, 4.1×10^{3}Bq/cm^3 of ^{131}I (Iodine), $1.6\times10^{:}$Bq/ cm^3 of ^{134}Cs (Cesium), $1.5\times10^{:}$Bq/ cm^3 of ^{137}Cs (Cesium) were detected. (April 17th)

Power supply

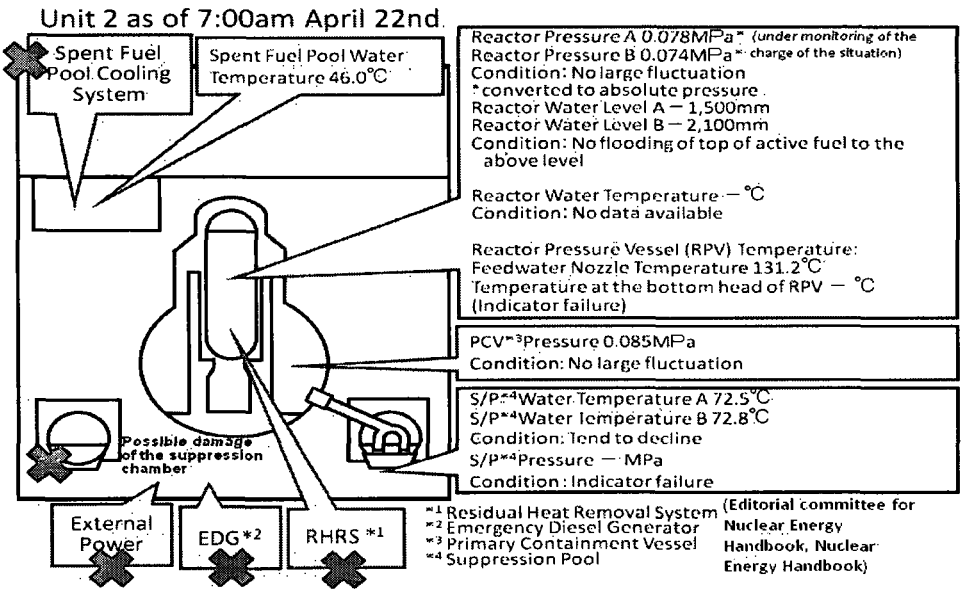
- On March 26th, lighting of the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- After transferring the water in the condenser to the condensate storage tank, the stagnant water in the trench of the turbine building was transferred to the condenser from April 12th till 13th. Then, stagnant water (stagnant water with high-level radioactivity) in the turbine building of Unit 2 was started to be transferred to the radioactive waste treatment facilities at 10:08am on April 19th.

Water in the pit

- The water, of which the dose rate was at the level of more than 1,000 mSv/h, was confirmed to be collected in the pit (a vertical portion of an underground structure) located near the intake channel of Unit 2. In addition, the outflow from the crack(20cm) in the concrete portion of the lateral surface of the pit into the sea was confirmed on April 2nd. In order to stop the outflow the coagulant (soluble glass) was injected from the holes around the pit from April 5th, the outflow was confirmed to stop on 6th. Furthermore, the measures to stop water by means of rubber board and jig (prop) were implemented at the outflowing point. (April 6th)
- Injection of the coagulant to the power cable trench of Unit 2 was carried out on April 18th and 19th.



Unit 3 Fresh water is being injected to the spent fuel pool and the reactor.

After the automatic shut-down of the reactor, fresh water and subsequently seawater were injected into the reactor pressure vessel. And vent of the primary containment vessel was operated on March 13th and 14th. However, the pressure in the primary containment vessel rose up unusually and the explosion took place around the reactor building at 11:01am on March 14th.

Water injection to the reactor pressure vessel

- The seawater had been injected into the reactor pressure vessel since March 13th, thereafter; fresh water has been injected since March 25th, instead of seawater. On March 28th, the pump for the fresh water injection was switched from the fire pump truck to the temporary motor-driven pump.

Water injection to the spent fuel pool

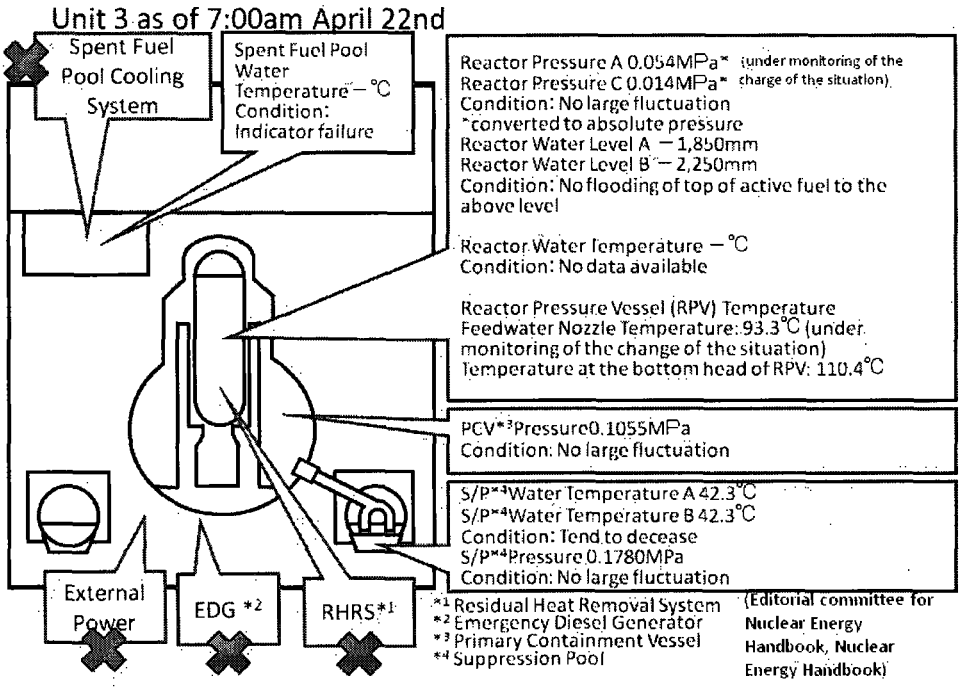
- In order to pour water into the spent fuel pool, helicopters, water cannon trucks, fire engines and concrete pump trucks discharged water to the spent fuel pool of Unit 3 from sky and ground. Since March 29th till April 18th, fresh water spray over the spent fuel pool using the concrete pump truck had been carried out.

Power supply

- On March 22nd, lighting in the main control room was recovered. And the power supply for the fresh water injection to the reactor pressure vessel was switched to the external power supply on April 3rd.

Stagnant water

- In order to prepare for transferring the stagnant water on the basement floor of turbine building to the condenser, the water in the condensate storage tank is being transferred to the surge tank of suppression pool water from March 28th till March 31st.



Unit 4 No fuel is in the reactor. Fresh water is being injected to the spent fuel pool.

There is no fuel in the reactor pressure vessel due to replacement of the shroud. It was confirmed that a part of wall of the operation floor of the reactor building of Unit 4 was damaged at 6:14am on March 15th. A fire took place at Unit 4 at 9:38am March 15th, but the fire was extinguished spontaneously as of 11:00am. Another fire took place on March 16th, but no fire could be confirmed from the ground.

Water injection to spent fuel pool

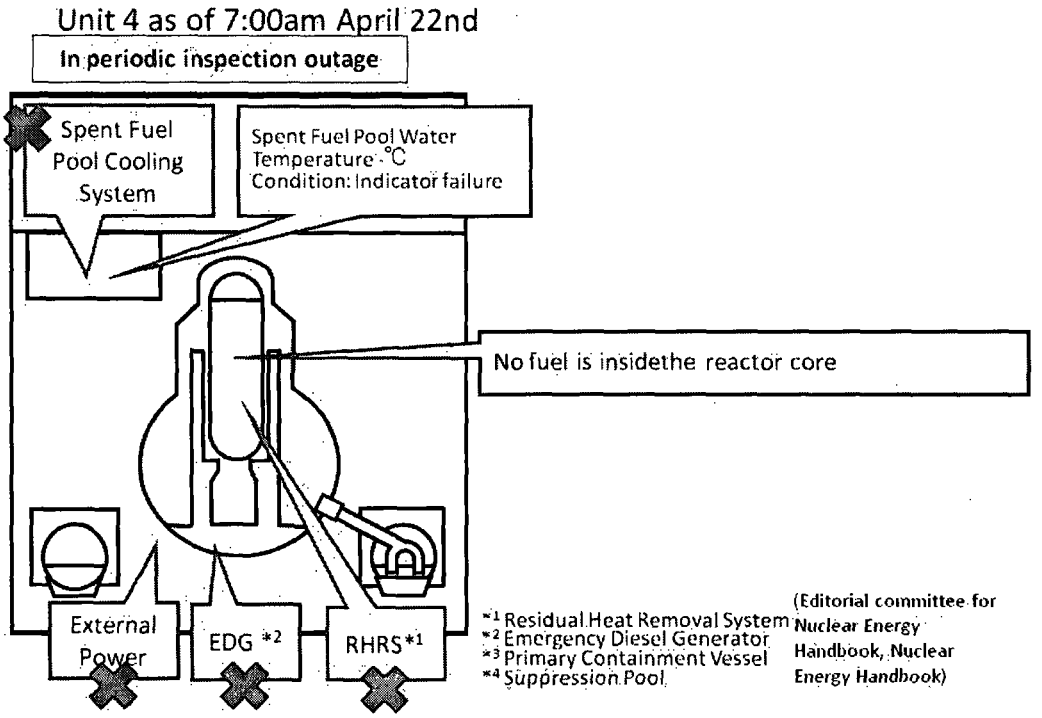
- Water spray using fire engine with seawater over the spent fuel pool of Unit 4 was carried out from March 20th till March 21st. And water spray using a concrete pump truck had been carried out with seawater from March 22nd till March 27th and with fresh water from March 30th till April 21st.

Power supply

- On March 29th, lighting in the main control room was recovered.

Stagnant water

- From April 2nd, the stagnant water in the main building of radioactive waste treatment facilities was being transferred to the turbine building of Unit 4. As the water level in the vertical portion of the trench for Unit 3 rose from April 3rd, by way of precaution, the transfer was suspended notwithstanding that the path of the water was not clear.(9:22am April 4th)



Unit 5&6 Unit 5 & 6 is under cold shut down.

One of the emergency generators for Unit 6 was operating and supplying electricity to Unit 5 and Unit 6. Fresh water was being injected into the reactor pressure vessels and the spent fuel pools by make-up water condensate system.

Cold shut down

- The pump for residual heat removal system (RHR) for Unit 5 and the pump for RHR for Unit 6 started up on March 19th and recovered heat removal function.
- Unit 5 was under cold shut down at 14:30 on March 20th and Unit 6 was under cold shut down at 19:27 on the same day.

Power supply

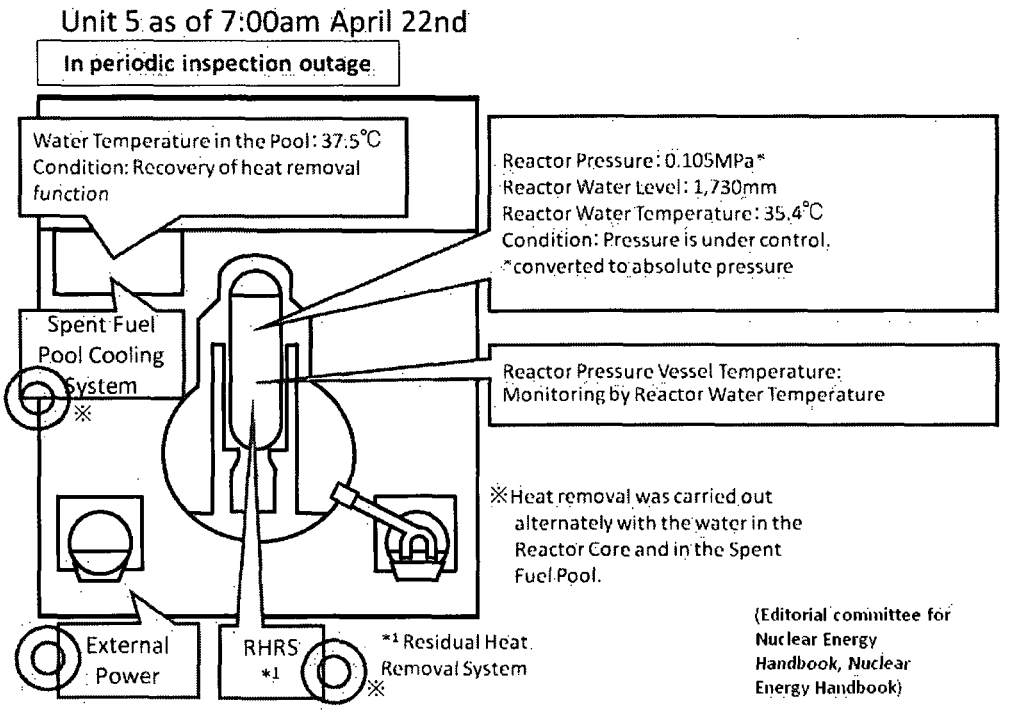
- Unit 5 and 6 received electricity reached to the starting transformer on March 20th. The power supply of Unit 5 and 6 was switched from the emergency diesel generators to the external power supply on March 21st and March 22nd.
- Power supply for the temporary pumps for RHR seawater system of Unit 5 and 6 were switched from the temporary to the permanent on March 24th and 25th.

Low-level radioactivity water discharge

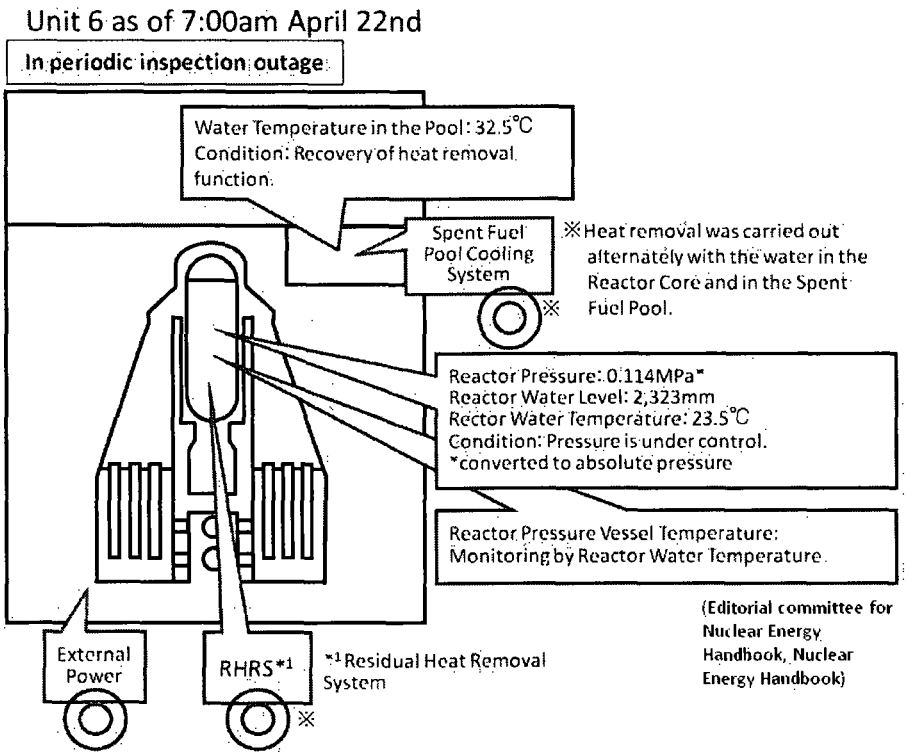
- The groundwater with low-level radioactivity in the sub drain pits of Units 5 and 6 (around 1,300t) was discharged through the water discharge canal to the sea from April 4th till 9th in order to protect the critical safety facilities of the reactors. The water was beginning to leak out to the reactor building and other buildings of Unit 6 and there was no further capacity to accommodate it.

Stagnant water

- The stagnant water in the basement floor of the turbine building of Unit 6 was transferred to the condenser. (From 11:00 till 15:00 April 19th)



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



Common Spent Fuel Pool

- The power supply was started at 15:37 on March 24th and cooling was also started at 18:05 on the same day.
- The power supply was stopped due to short-circuiting of the end of the power supply circuit. (14:34 April 17th) Thereafter the facility inspection was carried out and the power supply was recovered. (17:30 April 17th)

Other

Nuclide analysis at water discharge canal

- As the result of nuclide analysis at around the southern water discharge canal, 7.4×10^{1}Bq/cm^3 of ^{131}I (1850.5 times higher than the limit of consentration of water outside the Environmental Monitoring Area) was detected on March 26th. (As the result of measurement on March 29th, it was detected as 3355.0 times higher than the limit in water.)
  As the result of the analysis at the northern water discharge canal, 4.6×10^{1}Bq/ cm^3 of ^{131}I (1262.5 times higher) was detected on March 29th.

Water in the trenches

- The water was confirmed to be collected in the vertical parts of the trenches (an underground structure for laying pipes, shaped like a tunnel) outside of the turbine building of Units 1 to 3. The dose rates on the water surface were 0.4 mSv/h of the Unit 1's trench and 1,000 mSv/h of the Unit 2's trench on March 27th. The rate of the Unit 3's trench could not measure because of the rubble.

Nuclide analysis of soil

- In the samples of soil collected on March 21st, 22nd, 25th, 28th, 31nd and April 4th on the site of Fukushima I, ^{238}Pu (Plutonium), ^{239}Pu and ^{240}Pu were detected. The concentration of the detected plutonium was at the equivalent level of the fallout that was observed in Japan concerning the past atmospheric nuclear testing, i.e. at

the equivalent level of the normal condition of environment, and was not at the level of having harmful influence on human body.

Stagnant water

- On March 28th, the stagnant water was confirmed in the main building of radioactive waste treatment facilities. As the result of analysis of radioactivity, the total amount of the radioactivity 1.2×10^{1} Bq/cm^3 in the controlled area and that of 2.2×10^{1} Bq/cm^3 in the non-controlled area were detected in March 29th.

Barges loading fresh water

- Two barges of the US armed forces carrying fresh water for cooling reactors, etc. landed in the exclusive port of the power station, being towed by the ships of Japan Maritime Self-Defense Force on March 31st and April 2nd. The transfer of fresh water from the barges to the filtrate tank was started.

Low-level radioactive water discharge

- The wastewater with high concentration of radioactive materials was trapped on the basement floor of the turbine building of Unit2 and it was necessary to immediately be transferred to another location as it was leaking out to the surrounding environment. But there was no further capacity to accommodate it.
- In order to use the main building of radioactive waste treatment facilities for accommodating the wastewater of the turbine building of Unit2, the stagnant water with low-level radioactivity in the radioactive waste treatment facilities was started to be discharged from the southern side of the water discharge canal to the sea from April 4th till 10th.Confirmation of the remaining water is being carried out. (Total amount of discharged water is around 9,070t.)
- The stagnant water with low-level radioactivity in the building of miscellaneous solid waste volume reduction processing was discharged from the southern side of the water discharge canal to the sea using 5 pumps.(From April 6th till 7th)
- The watertight measures in the buildings of the radioactive waste treatment facilities were completed. (April 18th)

Countermeasures for Tsunami

- The distribution boards, etc. for the pumps injecting water to the reactors of Units 1 to 3 were transferred to a hill on April 15th.

Other

- In order to prevent the contaminated water from outflowing from the exclusive port, the work for stopping water by means of large-sized sandbags was implemented around the seawall on the south side of the NPS on April 5th.
- 3 sandbags filled with Zeolite were placed between the inlet screen pump room of Unit 3 and that of Unit 4 on April 15th. Thereafter, 2 sandbags were placed between the inlet screen pump room of Unit 1 and that of Unit 2, and 5 sandbags were placed between that of Unit 2 and that of Unit 3 on April 17th.
- The silt fences to prevent the contaminated water from being scattered were completed to be doubly installed at the appropriate part of the seawall on the south side of the NPS on April 11th. Other silt fences were installed in front of the screen of Units 3 and 4 on April 13th, and at the curtain wall and in front of the screen of Unit 1 and 2 on April 14th.
- The test scattering of anti-scattering agent to prevent the radioactive materials on the ground surface from being scattered was carried out on the mountain-side of the Common Pool and other areas from April 1st till 21st.
- Removal of the rubble using remote-control heavy machineries was carried out from April 10th till 21st.
- On the ocean-side of the inlet bar screen of Unit 2, temporary boards to stop water were installed on April 12th, 13th and 15th.
- Work of strengthening connection of the power supplies between Units 1 and 2 and Units 3 and 4 was completed. (10:23 April 19th)
- Confirmation of situation, etc. was carried out by unmanned robots at the reactor building for Unit 1, 2 and 3 on April 17th and 18th.

Current Situation

- Evacuation as far as 20 kilometers from Fukushima I NPS and 10 kilometers from Fukushima II NPS was almost completed (see the diagram "Fukushima prefecture"). The residents in the areas from 20 kilometers to 30 kilometers radius from Fukushima I NPS are directed to stay in-house.

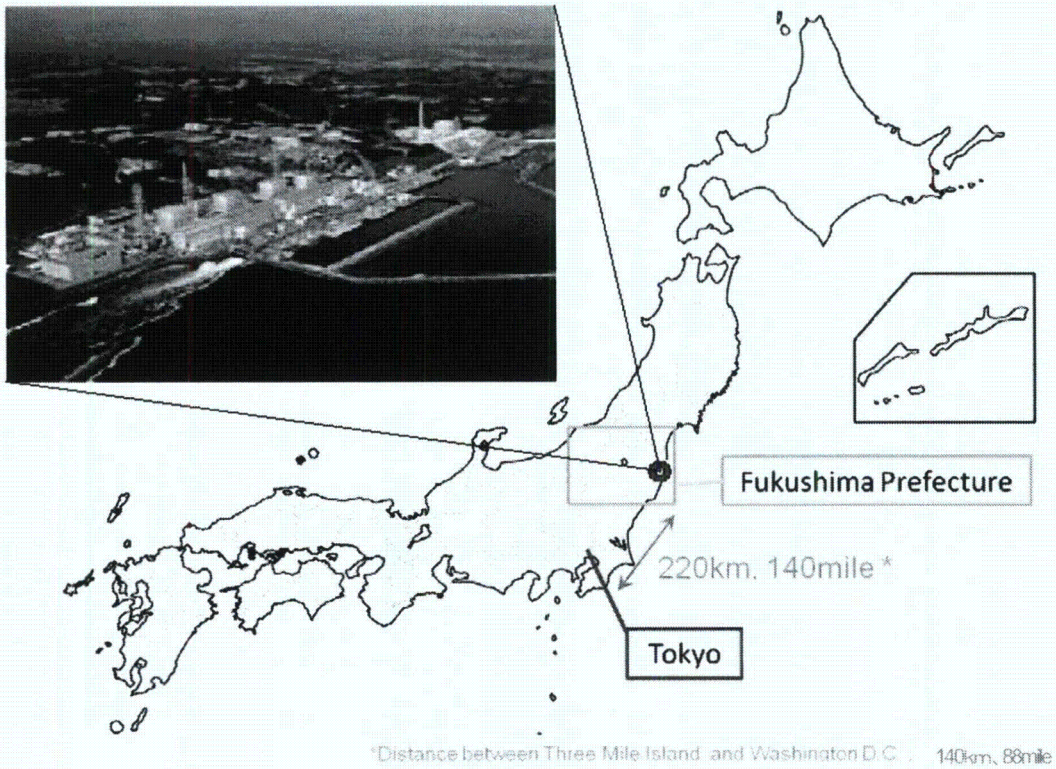
- On March 16th, the Local Emergency Response Headquarter issued "the direction to administer the stable Iodine during evacuation from the evacuation area (20 km radius)" to the Prefecture Governors and the heads of cities, towns and villages.

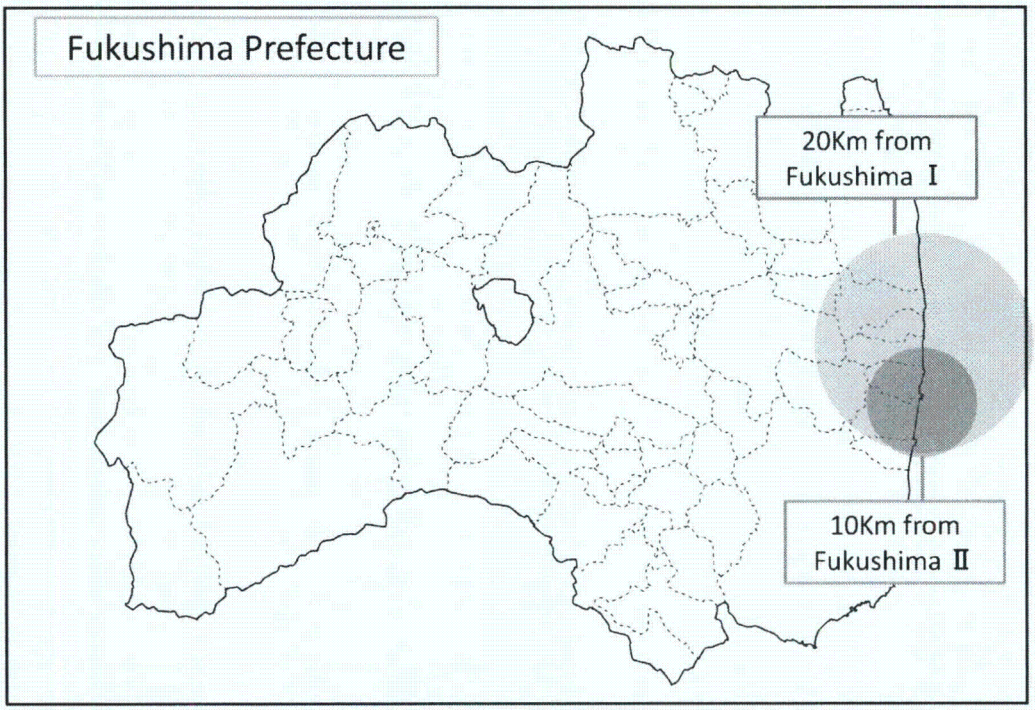
Monitoring Data

1) The data of Monitoring Post out of 20 kilometers zone of Fukushima I NPS is available on the following website:
http://www.mext.go.jp/a_menu/saigaijohou/syousai/1303726.htm

2) The real-time radiation data collected via the System for Prediction of Environment Emergency Dose Information (SPEEDI) is available on the following website:
http://www.bousai.ne.jp/eng/

Location of Fukushima I and II in Japan

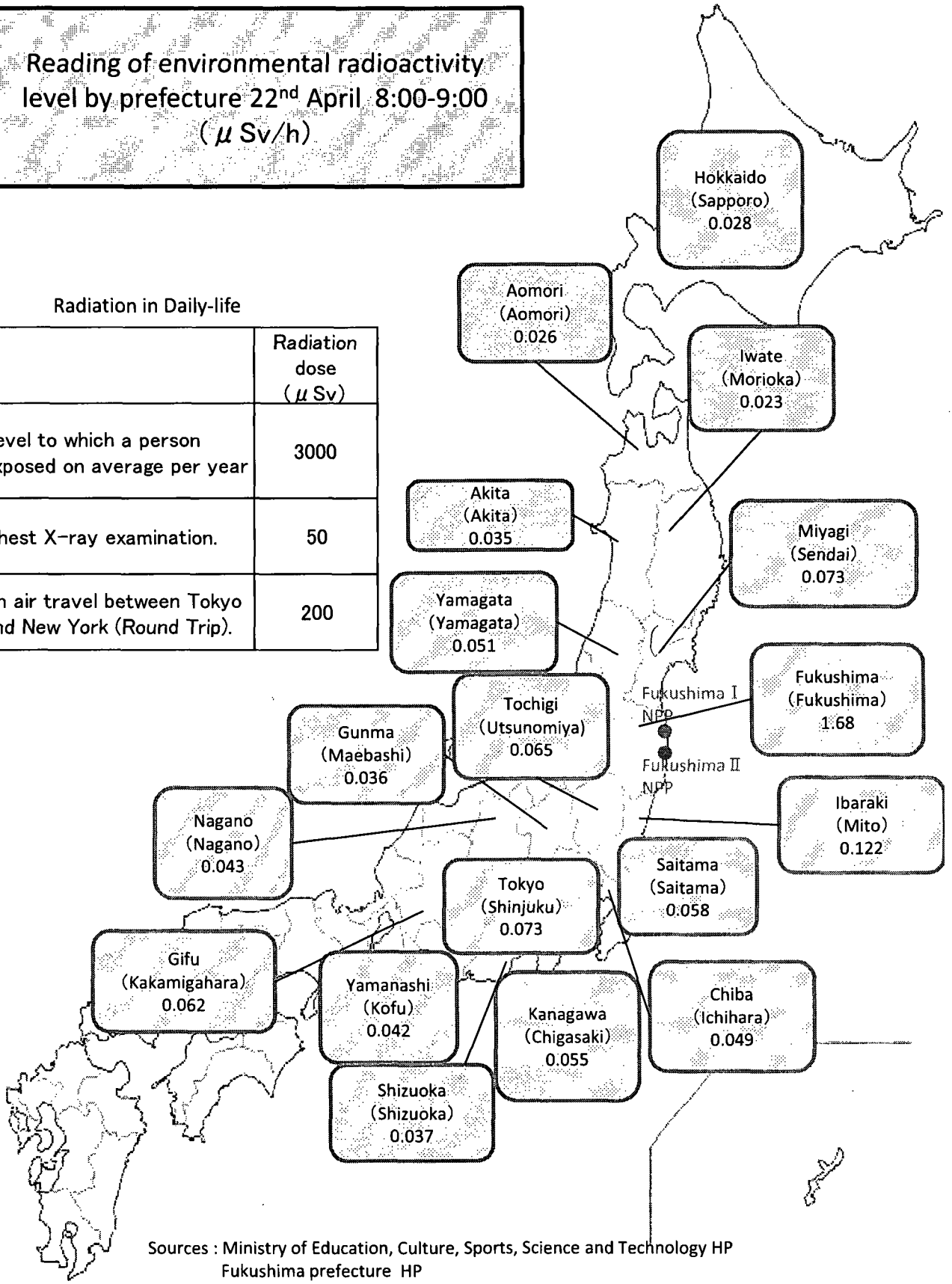




Reading of environmental radioactivity level by prefecture 22nd April 8:00-9:00 (μSv/h)

Radiation in Daily-life

	Radiation dose (μSv)
Level to which a person exposed on average per year	3000
Chest X-ray examination.	50
An air travel between Tokyo and New York (Round Trip).	200



Sources : Ministry of Education, Culture, Sports, Science and Technology HP
Fukushima prefecture HP

From: Harrington, Holly
To: Mroz (Sahm), Sara
Subject: RE: 50 mile EPZ
Date: Tuesday, March 22, 2011 8:22:00 AM

This is heating up and I need something to look at before this afternoon...

From: Mroz (Sahm), Sara
Sent: Monday, March 21, 2011 11:00 PM
To: Harrington, Holly
Subject: RE: 50 mile EPZ

I've got something drafted but it needs to be blessed ... I'll try to get that done tomorrow when I'm on shift (3-11pm)
-Sara

From: Harrington, Holly
Sent: Monday, March 21, 2011 5:14 PM
To: Mroz (Sahm), Sara
Subject: FW: 50 mile EPZ

Do you think you could possibly do this?

From: Screnci, Diane
Sent: Monday, March 21, 2011 5:11 PM
To: Harrington, Holly
Subject: 50 mile EPZ

Holly,

Bill Dean was wondering whether you guys could write a blog entry explaining the basis for the 10 mile epz and why we recommended more in Japan.

I'm just the messenger.

DIANE SCRENCI
SR. PUBLIC AFFAIRS OFFICER
USNRC, RI
610/337-5330

LLLL/403

From: OST01 HOC
Sent: Friday, April 22, 2011 1:59 PM
To: Hoc, PMT12; LIA08 Hoc; RST01 Hoc
Subject: FW: NRC Report on Fukushima
Attachments: image001.jpg

Please provide your assistance if possible in response the inquiry below:

From: Franovich, Mike
Sent: Friday, April 22, 2011 1:52 PM
To: OST01 HOC
Cc: Orders, William; Castleman, Patrick; Snodderly, Michael; Hipschman, Thomas; Bowman, Gregory
Subject: NRC Report on Fukushima

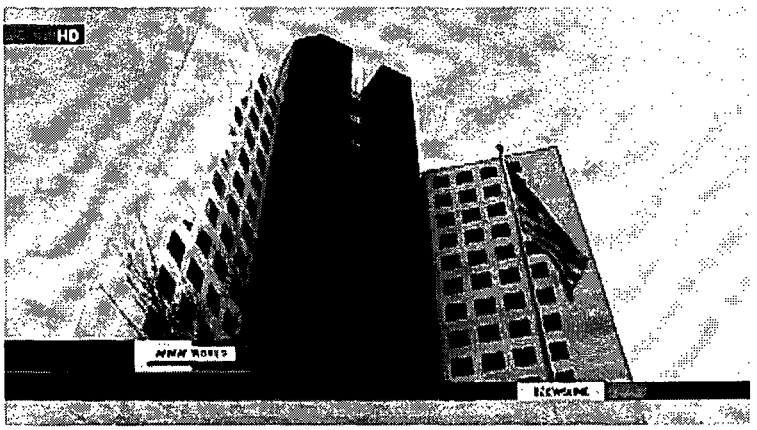
Good afternoon,

Does the staff know which NRC report is being referred to in this NHK report? I believe it might be the OUO interim comprehensive assessment slides from Chuck that were used to brief NISA/GOJ representatives for the event, but would like confirmation.

Thanks,

Mike

Mike Franovich
Technical Assistant for Reactors
Office of Commissioner Ostendorff
301-415-1784



LLLL/404

US NRC: Fukushima plant "static but fragile"

The US Nuclear Regulatory Commission says conditions at the Fukushima Daiichi nuclear plant are "static but fragile" in its latest assessment of the nuclear emergency.

The Commission compiled the report as of April 15th, along with the US Energy Department and other nuclear organizations.

The report suggests that ongoing operations to feed the reactors with water could be affected by the occurrence of more aftershocks.

It recommends a more diversified and redundant feeding system, along with the automation of operations involving large cranes and other equipment to douse the reactors with water.

The report estimates that 67 percent of nuclear fuel has been damaged at reactor No.1, 44 percent at reactor No.2 and 30 percent at reactor No.3.

It says these estimates do not differ greatly from those provided by the plant operator, Tokyo Electric Power Company.

TEPCO has estimated the rate of damage at 70 percent at reactor No.1, 30 percent at No.2, and 25 percent at No.3.

The US Nuclear Regulatory Commission is due to brief the Senate on the latest conditions at the plant on April 28th.

Friday, April 22, 2011 17:42 +0900 (JST)

From: OST01 HOC
Sent: Monday, April 25, 2011 10:24 PM
To: FOIA Response.hoc Resource
Subject: FW: Japan One Pager 2300 EDT 4-25-11.doc
Attachments: Japan One Pager 2300 EDT 4-25-11.doc

From: Carpenter, Cynthia
Sent: Monday, April 25, 2011 10:16 PM
To: OST01 HOC
Subject: Japan One Pager 2300 EDT 4-25-11.doc

LLLL/405

From: OST01 HOC
Sent: Monday, April 25, 2011 10:06 PM
To: Carpenter, Cynthia
Subject: One Pager - For Your Review
Attachments: Japan One Pager 2300 EDT 4-25-11.doc

Cindi...

See attached and provide me with your updates/comments.

Thanks...
MG

LLLL/406

From: CSC
Sent: Monday, April 25, 2011 10:11 AM
To: Heard, Robert; Bissett, Ryan; TSC Resource
Cc: Reyes, Debra; Brusoe, Eric; ET02 Hoc; Schwartzman, Jennifer; Padilla, William
Subject: RE: Blackberry Devices for Travel to Japan this week

The Customer Support Center has received your support request.

Your reference numbers are listed below. Please use these referral numbers when contacting the Customer Support Center for status inquiries regarding your current support request.
513930 to 513935 & 513942 to 513946

Please feel free to e-mail or call us at 301-415-1234 if you require further assistance.

Thank you for contacting the Customer Support Center.

William Flint
NRC Customer Support Center
Two White Flint North, 5th floor C-14
Hours: 6:00 AM-9:00 PM (M-F)
Hours: 9:00 AM-9:00 PM (Sat-Sun)
(301) 415-1234

From: Heard, Robert
Sent: Monday, April 25, 2011 9:28 AM
To: Bissett, Ryan; CSC; TSC Resource
Cc: Reyes, Debra; Brusoe, Eric; ET02 Hoc; Schwartzman, Jennifer; Padilla, William
Subject: Blackberry Devices for Travel to Japan this week

Please create tickets and prepare Blackberry devices as stated below.

Francis (Skip) Young – Has AT&T Blackberry – please ensure it is set up to be used in Japan
Mark Miller – Set up with international Blackberry Device for use in Japan
Robert Temps - Set up with international Blackberry Device for use in Japan
Richard Plasse - Set up with international Blackberry Device for use in Japan
Scott Freeman - Set up with international Blackberry Device for use in Japan
Jim Lynch - Set up with international Blackberry Device for use in Japan

Please ensure that all devices are ready to be delivered to the Operations center **No later than** 3:00pm Tuesday April 26th.

Note: Hironori Peterson and Matthew Mitchell are also travelling to Japan with this group and have already requested Blackberry devices. Please ensure their devices are ready for delivery to the operations center **No later than** 3:00pm Tuesday April 26th.

If you have any question please let me know.

Robert Heard Jr.
OIS/ICOD/ISPT
(301)415-6393

LLLL/407

Robert.Heard@nrc.gov

From: Virgilio, Martin
Sent: Tuesday, April 26, 2011 6:10 PM
To: OST01 HOC
Cc: Borchardt, Bill
Subject: RE: April 26 - 1500EDT One-Pager-Fukushima Daiichi
Attachments: April 26 - 1500EDT One-Pager-Fukushima Daiichi

Please add Bill Borchardt to your distribution list for this doc

Thanks

Marty

From: OST01 HOC
Sent: Tuesday, April 26, 2011 3:15 PM
To: Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Orders, William; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy
Subject: April 26 - 1500EDT One-Pager-Fukushima Daiichi

Attached, please find the April 26 – 1500 EDT One-Pager – Fukushima Daiichi.

Please note that this attachment is ~~OUO~~

LLLL/408

From: Heard, Robert
Sent: Tuesday, April 26, 2011 12:38 PM
To: Mitchell, Matthew; Reyes, Debra
Cc: ET02 Hoc
Subject: RE: Japan Team Departing Tomorrow - Picking up Blackberries

The devices are still being provisioned. We will them to you as soon as possible, but I can't say at this time exactly what time that will be.

I'm sorry for any inconvenience.

Rob

From: Mitchell, Matthew
Sent: Tuesday, April 26, 2011 11:11 AM
To: Heard, Robert; Reyes, Debra
Cc: ET02 Hoc
Subject: Japan Team Departing Tomorrow - Picking up Blackberries

Robert, Debra:

Please see below.

Could we possibly pick up our international Blackberries before 3 PM today?

Matthew Mitchell, Chief
NRR/DCI/CVIB

From: Schwartzman, Jennifer
Sent: Tuesday, April 26, 2011 11:02 AM
To: Mitchell, Matthew
Cc: Jones, Andrea
Subject: RE: Picking up Blackberries

Matt,

Please contact Robert Heard and Debra Reyes with a copy to ET02.Hoc@nrc.gov. We in OIP have no control over when the blackberries are ready.

In addition, please note that the blackberries will only be yours for the duration of your trip. Therefore, if someone wishes to contact you after you return to the US, you will need to provide them with your office number (in other words, your business cards are only good temporarily).

From: Mitchell, Matthew
Sent: Tuesday, April 26, 2011 11:00 AM
To: Schwartzman, Jennifer
Subject: RE: Picking up Blackberries

Jen,

LBLL/409

Is there any way we can possibly pick these up earlier?

We're expected to get these and then transfer the number to business cards that we are printing out especially for use in Japan. And at least a couple of us are trying to get out of here by 4 PM to take care of personal business before we leave tomorrow.

Matt Mitchell

From: Schwartzman, Jennifer
Sent: Tuesday, April 26, 2011 10:26 AM
To: Mitchell, Matthew; Plasse, Richard; Temps, Robert
Cc: Young, Francis; Jones, Andrea; Heard, Robert
Subject: Picking up Blackberries

Good morning,

Please go to the NRC Ops Center at 3 PM today to pick up the international Blackberries for you and your colleagues in the regions. They will have staff on hand in case you need any assistance in operating the devices.

Jennifer Schwartzman Holzman
Office of International Programs
U.S. Nuclear Regulatory Commission
+1-301-415-2317
jennifer.schwartzman@nrc.gov

NOTE: Please note new email address above. My old email address, jks1@nrc.gov, will no longer work on this system. Please update your contact lists accordingly.*

From: Brenner, Eliot
To: Akstulewicz, Brenda; Chandrathil, Prema; McIntyre, David; Screnci, Diane; Harrington, Holly; Couret, Ivonne; Janbergs, Holly; Ledford, Joey; Sheehan, Neil; Hannah, Roger; Burnell, Scott; Uselding, Lara; Shannon, Valerie; Dricks, Victor; Mitlyng, Viktoria
Subject: FW: COMMISSION E-READER....MONDAY, APRIL 11, 2011
Date: Monday, April 11, 2011 12:45:43 PM
Attachments: Tab A 04-08-11 Sen. Feinstein.pdf
Tab B 04-08-11 Yamauchi 11-0212.pdf
Tab C 04-06-11 Gov. Deval Patrick .pdf
Tab D 04-06-11 Gov Deval Patrick.pdf
Tab E 03-31-11 Sen. Blumenthal .pdf
Tab F 04-08-11 Ltr to Boxer-Carper.pdf
Tab G 04-08-11 Ltr to Boxer-Feinstein.pdf
dailymemos.doc

From: Champ, Billie
Sent: Monday, April 11, 2011 12:44 PM
To: Commission E-Reader Distribution; E-Reader Distribution
Subject: COMMISSION E-READER....MONDAY, APRIL 11, 2011

INTERNAL USE ONLY
Some of the information contained in the Reader is not publicly available.
If there are any questions, please contact SECY.

READING FILE

INDEX

April 11, 2011

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Tab "B" 04/08/11 -- Email from Kiyoshi Yamauchi, concerns Mitsubishi statement on Northeastern earthquake and tsunami in Japan.

Tab "C" 04/06/11 -- Letter from Gov. Deval Patrick, MA, concerns Pilgrim nuclear power plant.

Tab "D" 04/06/11 -- Letter from Gov. Deval Patrick, MA, concerns dry cask storage ... Pilgrim nuclear power plant.

LLLL/410

Tab "E" 03/31/11 -- Letter from Sen. Richard Blumenthal, concerns assessment of the safety and viability of U.S. on-site nuclear waste storage facilities.

OUTGOING CORRESPONDENCE

Tab "F" 04/08/11 -- Letter to Congress, responds to request that the NRC perform a thorough review of nuclear power plants.

Tab "G" 04/08/11 -- Letter to Congress, responds to request that NRC perform a thorough review of the Diablo Canyon and San Onofre nuclear power plants.

United States Senate
COMMITTEE ON APPROPRIATIONS
WASHINGTON, DC 20510–6025
http://appropriations.senate.gov

April 8, 2011

The Honorable Gregory Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

I am writing to ask that you seriously consider regulatory policies that would encourage the movement of nuclear fuel, once sufficiently cool, out of spent fuel pools and into dry cask storage systems. I am concerned that current Nuclear Regulatory Commission policies allow excessive re-racking and densification of radioactive fuel within spent fuel pools. In fact, there are examples in the U.S. where nuclear fuel rods have been stored in spent fuel pools for decades.

According to "Safety and Security of Commercial Spent Nuclear Fuel Storage," a report published in 2006 by the National Research Council at the request of Congress, dry cask storage systems have inherent safety advantages over spent fuel pool storage. The report highlighted three main differences between these two storage options:

1. **Less spent fuel is at risk in an accident or attack on a dry storage cask than on a spent fuel pool.** An accident or attack on a dry cask facility would likely affect only a few casks at a time. An accident or attack on a spent fuel pool places the entire fuel inventory at risk.

2. **The consequences of an accident or terrorist attack on a dry cask storage facility are lower than those for a spent fuel pool.** If an accident or attack on a dry cask facility resulted in radioactive material being released, the dispersion could likely be contained easier than if a spent fuel pool were compromised.

3. **The recovery from an attack on a dry cask would be much easier than the recovery from an attack on a spent fuel pool.** Containing radiation that could be released from damage to dry casks can be plugged temporarily with radiation-absorbing materials until permanent fixes are available. Containing radiation from a compromised spent fuel pool is likely to be much more difficult, particularly if the overlying building collapsed preventing workers from reaching the pool.

When taken together, these points assert that the risk of a non-recoverable accident decreases when spent nuclear fuel is kept in smaller, easier to manage, containers that are distributed intelligently on a secure site. The continuous re-racking and addition of fuel rods in spent fuel pools appears to be at odds with these safety recommendations. Based on these findings, I ask the NRC to initiate a rulemaking process to immediately require a more rapid shift of spent fuel to dry casks.

The lesson from Japan's disaster is that we must be prepared to respond to unanticipated threats. Therefore, any policy changes that further reduce risks of an unsafe situation catching the industry off guard should be implemented. I look forward to working with you further on this issue.

Sincerely,

Dianne Feinstein
Chairman
Subcommittee on Energy and Water
Development

DF/mbn/ac

From: kiyoshi_yamauchi@mnes-us.com [mailto:kiyoshi_yamauchi@mnes-us.com]
Sent: Friday, April 08, 2011 3:54 PM
To: Jaczko, Gregory
Cc: frank_gillespie@mnes-us.com; masayuki_fujisawa@mnes-us.com; shinji_kawanago@mnes-us.com
Subject: Mitsubishi Statement on Northeastern Earthquake and Tsunami in Japan

U.S. Nuclear Regulatory Commision
Honorable Chairman
Dear Mr. Gregory B. Jaczko

I highly appreciate the efforts taken by the strong leadership of the NRC to support current nuclear energy fleet with high safety and reliability following the Fukushima Daiichi event caused by the northeastern Japan earthquake and resulting tsunami.

We at Mitsubishi Nuclear Energy Systems(MNES),subsidiary to Mitsubishi Heavy Industries(MHI), posted our statement on our home page attached below (http://www.mnes-us.com/) expressing our sympathies to all victims affected by the desaster and also describing Mitsubishi contribution our technology and experience wherever possible to help resolve the situation at the Fukushima Daiichi site. It is noted that Mitsubishi is also continuing to give complete technical support to the clients of the 24 PWR units in Japan, which Mitsubishi supplied, in order to immediately implement the new highest safety measures required by the Japanese government.

We also emphasize that we have formed the "MNES Response & Support Team for Fukushima Event", collecting and sharing related information, investigating US-APWR design considering the NRC instructions, supporting US customers and enhancing public relations.

We think co-operation with the same direction between US and Japan to overcome this event is quite important not onlt in the area of government but also in the area of industries. Lessones learned should be shared timely and good results should be obtained as the best practice by the co-operated activities.

Our responsibility is quite large in continuing to provide the highest level of safety and reliable nuclear plants

4/11...To OIP for Appropriate Action...Cpy to: RF..11-0212

here in the USA.

We will be pleased to be advised if you have any comments or you need any support.

Best Regards, Kiyoshi Yamauchi

President and CEO
Mitsubishi Nuclear Energy Systems, INC.
1001 19th Street North, Suite 2000
Arlington, VA 22209
Tel:703.908.4340
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cc:Frank Gillespie, MNES
Shinji Kawanago, MNES
Masayuki Fujisawa, MNES

MNES
Mitsubishi Nuclear Energy Systems

MNES Statement on North Eastern Earthquake and Tsunami in Japan

We at Mitsubishi Heavy Industries (MHI) and Mitsubishi Nuclear Energy Systems (MNES) send our deepest sympathies to all victims affected by the earthquake and the resulting tsunami that devastated the coast of northeastern Japan on Friday, March 11th.

Since the day of the events, the Japanese Government and Tokyo Electric Power Company have been making every possible effort to ensure plant safety for the Fukushima Daiichi site that was severely impacted by the earthquake and tsunami.

As an expression of our grave concern and strong desire to offer our utmost assistance at this tragic time, MHI, which is a leading pressurized water reactor (PWR) nuclear power plant supplier, and its group companies including MNES pledged on Monday, March 14th, to contribute an amount equivalent to $6 million to support relief and recovery efforts in the affected areas.

Mitsubishi will continue to contribute our technology and experience wherever possible to help resolve the situation at the Fukushima Daiichi site. In addition, on Thursday, March 30th, the Japanese government ordered all utilities operating nuclear power plants in Japan to implement emergency safety measures by the end of April based on the Fukushima incidents. Mitsubishi has supplied 24 PWR units in Japan and although these units were not impacted by the earthquake and tsunami, Mitsubishi is continuing to give its complete technical support to its client utilities in order to immediately implement the new emergency safety measures.

Through these activities, MNES, as MHI's U.S. affiliate, will ensure that US-APWR plants planned for construction in the United States are of the highest level of safety and reliability.

###

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DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

April 6, 2011

Chairman Gregory B. Jackzo
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Dear Chairman Jackzo:

Thank you for the briefing last week. We share your heightened concern related to the recent incidents at the nuclear facilities in Japan. The NRC is under tremendous pressure as we address this continuing crisis while learning how to reduce the likelihood of a similar tragedy in the future. We hope to continue an open dialogue in the weeks and months ahead.

In the meantime, we write with three requests:

1. As your team offered, please provide a specific list of near term and longer term activities that will occur at Pilgrim to assure that we are continuing to operate the plant safely and learning as much as possible, as quickly as possible, as we can from the tragedy in Japan. As we understand, in the next few weeks this will include self assessments by Pilgrim and inspections from the NRC which MA officials will be invited to participate.

   We know we all learned, changed our practices and made new investments to enhance safe operations after the experiences at Three Mile Island, Chernobyl and 9-11 and want to be sure that we learn and act on our new knowledge from the tragedy in Japan at Pilgrim.

2. The Japan tragedy developments have identified two specific areas of vulnerability we want to make sure we are fully addressing:
   i. Spent fuel – as we have all known, our temporary storing of spent fuel on site is a major concern. Japan's experiences have dramatically increased this concern. We want your team to look again at the vulnerabilities and alternatives to the current practices at Pilgrim.
   ii. Seismic vulnerability – we appreciate that mistaken reporting by MSNBC incorrectly identified Pilgrim as the second most vulnerable nuclear core to be damaged in a seismic event and further, that the NRC public statement which excluded Pilgrim in the list of plants in need of further seismic assessment was also incorrect. Also, we understand that the NRC had already engaged the Electric Power Research Institute and the Department of Energy to re-assess nuclear facility specific seismic vulnerabilities and that this study will in fact include Pilgrim. As we understood from the briefing, this study as scheduled may take more than a year to complete. We request that you accelerate the study schedule and to make sure all relevant scientific and engineering input is included,

3. We request that you inform us of all Pilgrim relicensing actions (by all actions, we literally mean all actions, even minor procedural actions) and encourage you to not proceed with any steps towards relicensing until we can all be sure that we have learned what we need to from the experience in Japan.

We will also be forwarding under separate cover specific questions from Massachusetts's legislative leaders and look forward to your response to the above requests as well as the Legislature's questions. Thank you for your time and for your continued service.

Sincerely,

Deval Patrick Governor	Therese Murray Senate President	Robert DeLeo Speaker

cc: Bill Dean NRC region 1

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DEVAL L. PATRICK
GOVERNOR

TIMOTHY P. MURRAY
LIEUTENANT GOVERNOR

April 6, 2011

Chairman Gregory B. Jackzo
U.S. Nuclear Regulatory Commission
One White Flint North
11555 Rockville Pike
Rockville, MD 20852-2738

Dear Chairman Jackzo:

As referenced in our previous letter of April 6, 2011, please see the attached questions from Massachusetts's legislative leaders. We look forward to your response. Again, thank you for your time and attention to these concerns.

Sincerely,

Deval Patrick	Therese Murray	Robert DeLeo
Governor	Senate President	Speaker

Enc.

Questions:

1. Are there any plans for relocation of the spent nuclear material currently held at the plants, which are over-capacity?Will dry storage be considered? Why is dry storage not the preferred method considering its 'passive' maintenance requirement?

2. Will the NRC and DOE consider seeking changes to the law if necessary to allow for the use of the Nuclear Waste Fund for accelerated dry cask storage and or the licensing of an interim national repository?

3. Are there any plans for future spent nuclear material?

4. For how long does the NRC anticipate that spent fuel will be stored on-site at Pilgrim? What about the other New England facilities?

5. Are there plans for storing spent fuel generated by any of the New England plants off-site?

6. Current understanding is that all the spent material is in the upper levels of the Pilgrim plant and is very susceptible to an aerial attack; are their plans to strengthen/protect the structure from air or relocate the wet pool to a different, more secure location?

7. Japan reprocesses and reuses spent nuclear material, what are the pros and cons of this approach and are there any plans to implement it in the US?

8. The cables powering the Pilgrim plant are not made for a moist environment, though they have spent 40 years in such a situation; what inspection/repair/replacement system is in place to ensure the cables remain in working condition?

9. Will the NRC allow independent experts with security authorization to see studies they used to conclude further on-site spent material storage was safe?

10. Will the NRC provide access to documents it previously has refused to disclose regarding its analysis of the safety and security of our commercial nuclear reactors and spent fuel pools?

11. Pressure build-ups can cause explosions in the Mach 1 core design as was seen in Japan, what adjustments have been made to Seabrook and Vermont Yankee to deal with this design flaw? Germany uses a steam release which is then filtered, is this the best option?

12. What emergency planning adjustments will be made?

13. Is the 10 mile evacuation zone still accurate? Americans were recommended to evacuate any area within 50 miles of the Fukushima plant.

14. Any plans for dealing with people on Cape Cod in an emergency situation considering the prevailing winds travel in that direction?

15. Any potassium iodine pill stockpiling precautions planned?

16. Current evacuation reception centers can only deal with 20% of the intended population, are there plans for more/larger centers?

17. Are there any plans to ensure emergency workers have the proper equipment and communication devices (i.e. interoperable radios)?

18. Are there any plans to install air radiation monitors around plants to more accurately identify radiation plume direction in the case of a release? What about meteorological monitors?

19. What is the purpose of the President's 90 day review of our commercial facilities? Will there be an opportunity for the public or interested states to provide input?

20. With no solution to the long-term disposal of spent fuel and in light of the disaster in Japan, will the NRC commit to re-evaluating its current rules and regulations regarding the on-site storage of spent fuel with public input?

21. What assurances can the NRC provide to the Commonwealth that Pilgrim and VT Yankee not just meet current NRC rules and regulations for safety and security but that there are material differences in the way the plans were designed, upgraded and regulated that will reduce the risk of what is happening in Japan, as they are being re-licensed?

22. Can you provide us with an estimated yearly cost to Massachusetts consumers and taxpayers for the current on-site storage of this spent fuel instead of it being stored off-site?

RICHARD BLUMENTHAL
CONNECTICUT

United States Senate

WASHINGTON, DC 20510

March 31, 2011

The Honorable Gregory B. Jaczko
Chairman
U.S. Nuclear Regulatory Commission
Mail Stop O-16G4
Washington, DC 20555-0001

Dear Chairman Jaczko:

I am writing to ask for your assessment of the safety and viability of America's on-site nuclear waste storage facilities.

As you know, 1019 spent fuel assemblies are currently stored in 43 dry storage casks at the former Connecticut Yankee nuclear site in Haddam Neck, CT. Several hundred fuel assemblies are also stored in 19 dry storage casks at Connecticut's Millstone Power Station, and nearly two thousand additional spent fuel assemblies are stored in the facility's spent fuel pool. The costs associated with this storage are considerable; Connecticut's utility ratepayers spend millions of dollars each year on waste storage—$8 million for the storage of approximately 412 tons at Haddam Neck alone.

As Congress awaits the preliminary recommendations of the President's Blue Ribbon Commission on America's Nuclear Future, the American public and people of Connecticut deserve to have the answers to several serious questions relating to the storage of our nuclear waste:

- Has the NRC determined how long nuclear waste can safely be stored at reactor sites until a long-term storage solution is identified?
- Does the NRC have data about how much spent nuclear fuel is currently stored at various sites across the United States, in both dry storage and spent fuel pools? How often is this data updated?
- What steps has the NRC taken to ensure that these on-site storage facilities, such as the one located in Haddam Neck, are properly maintained and secured against natural disasters or man-made catastrophes, including terrorist attacks?

Thank you for your attention to this request and for your continuing work to ensure that America's nuclear industry operates in a safe and reliable manner.

Sincerely,

Richard Blumenthal
United States Senate

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

April 8, 2011

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

Dear Madam Chairman:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter of March 17, 2011. In light of the recent events in Japan, you asked that NRC perform a thorough review of nuclear power plants and posed a number of questions. Detailed responses to the questions contained in your letter are provided in the enclosure.

Regarding a review of the California facilities, the Commission directed the NRC staff to 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. This activity will have both near-term and longer-term objectives. We will keep you and our other stakeholders informed as we proceed.

While the NRC continues to provide assistance to the Japanese government, I want to assure you that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue to operate safely. With our near-term evaluation of the relevance of recent events to the U.S. fleet underway, we are continuing to gather the information necessary for us to take a longer, more thorough look at the events in Japan and their lessons for us. Based on these efforts, the agency will take all appropriate actions necessary to ensure the continuing safety of the American public.

Sincerely,

Gregory B. Jaczko

Enclosure: As stated

Identical letter sent to

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

The Honorable Tom Carper
United States Senate
Washington, D.C. 20510

Responses to Questions from Senator Barbara Boxer and Senator Tom Carper
Letter of March 17, 2011

1. Please identify all U.S. nuclear facilities subject to significant seismic activity and/or tsunamis.

Although we often think of the US as having "active " and non-active" earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate and high seismicity zones. The NRC requires that every nuclear plant be designed for site-specific ground motions that may be expected at their locations. In addition, the NRC has specified a minimum ground motion level to which all nuclear plants must be designed. The designation of the general type of seismic zone that may apply at any specific site is subject to interpretation but a conservative interpretation – meaning a larger zone—might include the following plants, based upon a preliminary estimate:

High Seismicity – Diablo Canyon, SONGS

Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

Low Seismicity – all other plants

2. U.S. nuclear power plants are designed to be safe based on historical data of the area's maximum credible threat (including earthquakes and tsunamis). What extra safety features does the NRC currently require for facilities that have a credible threat of an earthquake or tsunami? In light of the recent events in Japan, we would also like the NRC to re-examine the assumptions used to determine the maximum credible threat and suggest additional options that could provide a greater margin for safety at plants nationwide that might be subject to challenges similar to this currently being seen in Japan following the earthquake and tsunami.

The NRC requires that each plant be designed to withstand expected ground motion level specific to the site. Our regulations also require designs which consider the potential for a tsunami.

We have also taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U.S. reactor fleet. This includes a number of new regulatory requirements imposed by the NRC that have enhanced the domestic reactor fleet's preparedness for some of the problems we are seeing in Japan.

The "station blackout" (SBO) rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to

the site and provide cooling to the core. The hydrogen rule requires modifications to reduce the impacts of hydrogen generated in the event of a severe accident and core damage.

With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC initiated a Boiling Water Reactor (BWR) Mark I Containment Improvement Program in the late 1980. This led to installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

Additionally, following the 9/11 events, reactor licensees have been required to develop strategies to maintain and restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire. Licensees are required to develop strategies for fire fighting, operations to mitigate fuel damage, and actions to minimize radiological release

As a result of the events in Japan, the Chairman, with the full support of the Commission, has directed the NRC staff to 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. This activity will have both near-term and longer-term objectives.

For the near term effort, we have begun a 90-day review. This review will evaluate all of the available information from the Japanese events to identify immediate or near-term operational or regulatory issues potentially affecting the 104 operating reactors in the U.S., including their spent fuel pools. Areas of investigation will include protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; emergency preparedness; and combustible gas control. Over this 90-day period, we will develop recommendations, as appropriate, for changes to inspection procedures and licensing review guidance, and recommend whether generic communications, orders, or other regulatory requirements are needed.

The task force's longer-term review will begin as soon as the NRC has obtained sufficient technical information concerning the events in Japan. The longer term review will evaluate all technical and policy issues related to those events to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that should be pursued by the NRC. We will also evaluate interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within 6 months of the start of this evaluation. Both the 90-day and final reports will be made publicly available.

3. Which U.S. nuclear power plants share similar design features with the affected Japanese reactor facilities? Do these facilities have design vulnerabilities that should be addressed to ensure their cooling systems do not fail when confronted by stresses

including those similar to what we have seen in Japan following the earthquake and tsunami?

Thirty-five of the 104 operating nuclear power plants in the U.S. are BWRs, as are the reactors at Fukushima. Twenty-three of the U.S. BWRs have the same Mark I containment as the Fukushima reactors. Four of the U.S. BWRs are early designs which are similar to Fukushima Unit 1. Nineteen U.S. BWRs are similar to Fukushima Unit 3.

BWR Mark I containments have different designs than other containments. However, the staff does not view the differences in design as vulnerabilities. For example, Mark I designs have relatively small volumes in comparison with most pressurized water reactor (PWR) containments. This makes the BWR Mark I containment relatively more susceptible to containment failure given a core meltdown severe enough to cause the reactor vessel to fail and to breach the containment boundary. On the positive side, BWRs have more ways of adding water to the core than PWRs. This includes the provision of two water injection sources which do not rely on AC electric power. For example these systems include Reactor Core Isolation Cooling (RCIC) and High pressure coolant injection (HPCI).

The NRC initiated a Boiling Water Reactor (BWR) Mark I Containment Improvement Program in the late 1980s. This led to installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system. These changes mitigate the small containment volume of the Mark I design.

The NRC task force will be looking at the sequence of events and status of equipment during the events in Japan and will consider based on our review whether revisions to our regulatory framework are needed..

4. How comprehensive is the radiation monitoring system in Japan? Would the U.S. take a similar monitoring approach if a serious accident were to occur here? What increased risk is associated with exposure to mixed oxide fuel?

The NRC does not currently have sufficient information to describe in detail the radiation monitoring system in Japan. In addition to the radiation monitoring that is required to be performed by all U.S. reactor licensees, the U.S. Environmental Protection Agency conducts environmental monitoring of radiation. Questions concerning the EPA's monitoring systems and actions should be directed to the EPA.

Mixed oxide (MOX) fuel involves the use of plutonium as a fuel, in addition to enriched uranium. Plutonium, like uranium is a long-lived alpha emitter, and they present similar biological risks. All commercial reactors produce plutonium from uranium during operation regardless of whether the material was there to begin with. Regarding exposure to mixed oxide fuel, in Japan, prompt evacuation has minimized radiation exposure to the public, so long-term public health consequences from radiation exposure resulting from the events, whether due to MOX or uranium fuel, are expected to be small. NRC has evaluated the use of MOX fuel and concluded

that the design basis accidents consequences were within the acceptance criteria and the differences between MOX and uranium fuel were within the dose consequences calculation uncertainties. The staff has concluded that the presence of a small number of MOX fuel assemblies in Fukushima Daiichi Unit 3 constitutes an insignificant change from non-MOX fuel in core operating conditions and accident consequences.

5. Given what has happened at the Japanese facilities, please describe how the NRC currently ensures the safety of spent fuel pools at U.S. facilities and identify additional steps the NRC could take to better address the vulnerabilities of spent fuel pools at plants in the U.S.

Information concerning the circumstances and specific sequence of events at the Fukushima plants is incomplete at this time, and the lessons to be learned from those events remain to be determined. The NRC's regulatory focus is to ensure that cooling capability, both for reactors and for spent fuel pools, is maintained in order to prevent fuel damage. This has been accomplished at U.S. plants by redundant and/or diverse capabilities to provide forced cooling and water addition

The NRC task force will be looking at a range of issues, including station blackout and severe accident mitigation at spent fuel pools.

6. Has the NRC modeled what could happen if the U.S. had multiple nuclear accidents simultaneously? If so, how would the NRC respond to such a disaster?

In general, the NRC applies the Commission's safety goals on a per-reactor basis. However, in security assessments of two dual-unit sites in the 2002-2004 timeframe, the NRC considered the potential consequences of events simultaneously involving both reactors. The study found that the reactor containments and spent fuel pools are robust structures and resistant to a terrorist attack. The study also found that radiological releases are delayed and smaller than those predicted in past studies. Subsequently, additional mitigation measures were required (10CFR50.44(hh)) to further enhance safety. All U.S. nuclear power plant licensees are required to develop plans to deal with emergencies at their facilities, including the loss of offsite power. In addition, site-specific offsite emergency preparedness plans are required to be developed and exercised on a regular basis, to provide reasonable assurance that adequate protective measures can and will be taken in the event of an emergency. While these capabilities and plans are site-specific, they would apply as well in the event of a broader emergency involving multiple sites.

With regard to the NRC's response to a disaster, the NRC has experience in responding to national events affecting multiple facilities including major hurricanes and regional power blackouts such as the 2003 Northeast blackout. The NRC maintains an emergency operations center that is staffed 24/7. In addition to this emergency response center, the NRC has a backup operations center. Operation of the emergency response centers are tested regularly during facility and national emergency response drills.

Originating Office: EDO
REF: CORR-11-0042
Commission Correspondence

GBJ – Approved/edit
KLS – Approved/edit
GEA – Approved
WDM – Approved/edit
WCO – Approved/edit

ADAMS Accession No.:

OFC	SECY	OCA	OCM/GBJ	OCM/GBJ	
NAME	SMcKelvin		JMonninger	GBJaczko	
DATE	04/08/2011	04/ /2011	04/ /2011	04/ /2011	

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United States Senate

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS
WASHINGTON, DC 20510-6175

March 17, 2011

The Honorable Gregory Jaczko
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The loss of life and physical damage that Japan sustained in last week's devastating earthquake and subsequent destructive tsunami is catastrophic and heartbreaking. Our thoughts and prayers, as well as those of the American people, go out to all citizens of Japan and especially to the families of the thousands of disaster victims.

As this tragedy continues to unfold, we encourage the Nuclear Regulatory Commission and other U.S. agencies to continue to coordinate fully with the Japanese government to assess the status of public safety in light of the reactors' failures and to provide all technical assistance required.

The earthquake and tsunami that struck Japan are chilling reminders that we are all vulnerable to unexpected disasters, whether they are an act of nature or a terrorist attack. While we cannot predict with any certainty when or where the next major disaster will occur, we know that adequate preparation and response planning are absolutely vital to minimize injury, death, and destruction when it does happen.

As the Committee with oversight responsibilities on nuclear safety, we believe it is important to assist Japan to ensure that this nuclear disaster is contained as quickly and effectively as possible. For the long term, the multiple simultaneous failures of backup coolant systems at nuclear reactors in Japan are a clear warning that we must step up efforts to ensure that every precaution is taken to safeguard the American people from a similar incident at a U.S. nuclear facility.

Therefore, we call on the NRC to conduct a comprehensive investigation of all nuclear facilities in the United States to assess their capacity to withstand catastrophic natural or man-made disasters including scenarios that may be considered remote like the recent events in Japan. These domestic nuclear reactors must be fully evaluated to ensure that they are as safe and resilient as possible, that worst case scenarios are examined and addressed, and that personnel training and equipment for emergency responses are in place and up-to-date. Special and immediate attention should be given to those U.S. nuclear reactors that share similar characteristics as the failing reactors in Japan, including similar designs or located near a coastline or seismic fault line.

In addition to updating the EPW Committee on a regular basis, we also request that the NRC supply information to the committee as soon as possible regarding the following issues:

1. Please identify all U.S. nuclear facilities subject to significant seismic activity and/or tsunamis.
2. U.S. nuclear power plants are designed to be safe based on historical data of the area's maximum credible threat (including earthquakes and tsunamis). What extra safety features does the NRC currently require for facilities that have a credible threat of an earthquake and/or tsunami? In light of the recent events in Japan, we would also like the NRC to re-examine the assumptions used to determine the maximum credible threat and suggest additional options that could provide a greater margin for safety at plants nationwide that might be subject to challenges similar to those currently being seen in Japan following the earthquake and tsunami.
3. Which U.S. nuclear power plants share similar design features with the affected Japanese reactor facilities? Do these facilities have design vulnerabilities that should be addressed to ensure their cooling systems do not fail when confronted by stresses including those similar to what we have seen in Japan following the earthquake and tsunami?
4. How comprehensive is the radiation monitoring system in Japan? Would the U.S. take a similar monitoring approach if a serious accident were to occur here? What increased risk is associated with exposure to mixed oxide fuel?
5. Given what has happened at the Japanese facilities, please describe how the NRC currently ensures the safety of spent fuel pools at U.S. facilities and identify additional steps the NRC could take to better address the vulnerabilities of spent fuel pools at plants in the U.S.
6. Has the NRC modeled what could happen if the U.S. had multiple nuclear accidents simultaneously? If so, how would the NRC respond to such a disaster?

Safety is always our number one priority, and therefore it is vital that the NRC immediately evaluate the risks posed to nuclear reactors in the United States. We look forward to working with you to ensure that the nuclear energy industry and NRC regulators are adequately prepared to prevent accidents and to fully address the risks of serious events in the future.

Sincerely yours,

Barbara Boxer
Chairman
Committee on Environment and
Public Works

Tom Carper
Chairman
Subcommittee on Clean Air and
Nuclear Safety

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

CHAIRMAN

April 8, 2011

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

Dear Madam Chairman:

On behalf of the U.S. Nuclear Regulatory Commission (NRC), I am responding to your letter of March 16, 2011. In light of the recent events in Japan, you asked that we perform a thorough review of the Diablo Canyon and San Onofre nuclear power plants and posed a number of questions. Detailed responses to the questions contained in your letter are provided in the enclosure.

Regarding a review of the California facilities, the Commission directed the NRC staff to establish a senior level agency task force to conduct a methodical and systematic review of our processes and regulations to make recommendations to the Commission whether the agency should make additional improvements to our regulatory system. This review will include an assessment of any regulatory issues in the areas of earthquakes and emergency preparedness mentioned in your letter. This activity will have both near-term and longer-term objectives. We are also pursuing limited actions that appear to be prudent, including inspection activities to look at the readiness of plants to deal with both design basis and beyond design basis accidents. We will keep you and our other stakeholders informed as we proceed.

While the NRC continues to provide assistance to the Japanese government, I want to assure you that the NRC continues to make its domestic responsibilities for licensing and oversight of the U.S. licensees its top priority and that the U.S. nuclear power plants continue to operate safely. With the near-term evaluation of the relevance of recent events to the U.S. fleet underway, the NRC is continuing to gather the information needed for us to take a longer, more thorough look at the events in Japan and their lessons for the NRC. Based on these efforts, the agency will take all appropriate actions necessary to ensure the continuing safety of the American public.

Sincerely,

Gregory B. Jaczko

Gregory B. Jaczko

Enclosure: As stated

Identical letter sent to:

The Honorable Barbara Boxer
Chairman, Committee on Environment
and Public Works
United States Senate
Washington, D.C. 20510

The Honorable Dianne Feinstein
United States Senate
Washington, D.C. 20510

Responses to Questions from Senator Barbara Boxer and Senator Dianne Feinstein
Letter of March 16, 2011

Plant Design and Operations

1. **What changes to the design or operation of these facilities have improved safety at the plants since they began operating in the mid-1980s?**

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U.S. reactor fleet. We have learned from experience across a wide range of situations, including, most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we significantly revised emergency planning requirements and emergency operating procedures for licensees, and made substantive improvements in NRC's incident response capabilities. We also addressed many human factors issues regarding control room indicators and layouts, added new requirements for hydrogen control to help prevent explosions inside of containment, and created requirements for enhanced control room displays of the status of pumps and valves.

Two significant changes after Three Mile Island (TMI) were the expansion of the Resident Inspector Program and the incident response program. Today, there are at least two Resident Inspectors at each nuclear power plant. The inspectors have unfettered access to all licensees' activities, and serve as NRC's eyes and ears at the power plant. The NRC Headquarters Operations Center and regional incident response centers are prepared to respond to all emergencies, including any resulting from operational events, security events, or natural phenomena. Multidisciplinary teams in these centers have access to detailed information regarding licensee facilities, and access to plant status information through telephonic links with the Resident Inspectors, an automated emergency response data system, and directly from the licensee through the emergency notification system. In the case of a significant event the NRC's response would include the dispatch of a site team to augment the Resident Inspectors on site, and integration with the licensee's emergency response organization at its Emergency Offsite Facility. The NRC's incident response program is designed to provide an independent assessment of events, to ensure that appropriate actions are taken to mitigate the events, and to ensure that State officials have the information they would need to make decisions regarding protective actions.

Further, a number of new regulatory requirements were imposed by the NRC following the TMI accident, which enhanced the domestic fleet's preparedness to cope with some of the problems have seen seeing in Japan. For example, the "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current to the site and provide cooling to the core.

Another post-TMI requirement, the hydrogen rule, required modifications to reduce the impacts of hydrogen generated for beyond-design basis events and core damage. In addition, there are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see in a beyond-design basis accident. With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC implemented a Boiling Water Reactor Mark I Containment Improvement Program. This program led to installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

Emergency planning and preparedness was also augmented substantially following the TMI accident, with the adoption of additional regulatory requirements and the conduct of mandatory emergency planning exercises on a biennial basis, including participation by state and local government officials. The NRC's emergency preparedness and planning requirements provide ongoing training, testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Administration (FEMA), these activities include extensive interaction with state and local governments, as those programs are coordinated with state and local officials and are evaluated and tested on a periodic basis.

As a result of the events of September 11, 2001, we identified important pieces of equipment that, regardless of the cause of a significant fire or explosion at a plant, licensees have available and staged in advance, as well as new procedures, training requirements, and policies that would help deal with a severe situation.

Since Diablo Canyon went into commercial service, many specific changes in design or operation have been implemented at the plant. These include the following:

- Added sixth on-site emergency diesel generator
- Increased volume of diesel generator fuel oil tanks to supply 7 days of fuel
- Added capacitor banks to the 230 kV offsite power source to improve reliability of offsite power source
- Replaced 500 kV offsite power source circuit breakers with new design that has increased earthquake resistance
- Replaced offsite power source transformers
- Replaced the reactor heads for the reactor vessels with a new design that has improved resistance to corrosion
- Replaced steam generators with new design that has improved resistance to corrosion
- Increased the capacity of the 4 kilovolt system circuit breakers
- Replaced plant process computer
- Replaced low pressure turbine rotors with a new design that is more resistant to turbine blade failure

- Replaced the water cooled positive displacement pumps for core injection with air cooled centrifugal charging pumps
- Replaced main feedwater pump control system to digital based control system
- Upgraded residual heat removal system piping to reduce potential flow induced erosion following an accident
- Replaced emergency core cooling system flow orifices to reduce potential potential flow blockage following an accident
- Replaced the containment sump strainer with a new design that is five times larger to minimize susceptibility to clogging
- Removed material from inside containment that could become a potential debris source following a loss of coolant accident
- Developed additional procedures to address potential natural and manmade disasters
- Implemented significant site changes to improve plant security
- Implemented procedures and training to improve human performance and reduce errors
- Implemented procedures and training to increase use of industry nuclear plant operating experience to improve plant safety

Changes in design or operation at San Onofre (SONGS) have included the following:

- Replaced steam generators with new design that has improved resistance to corrosion
- Developed additional procedures to address potential natural and manmade disasters
- Replaced the containment sump strainer with a new design that is five times larger to minimize susceptibility to clogging
- Removed material from inside containment that could become a potential debris source following a loss of coolant accident
- Implemented significant site changes to improve plant security
- Implemented procedures and training to improve human performance and reduce errors
- Implemented procedures and training to increase use of industry nuclear plant operating experience to improve plant safety
- Replaced all Emergency Planning Zone alert notification sirens in 2005 and 2006, and added paging capability.
- Replaced plant process computer
- Replaced low pressure turbine rotors with new design that is more resistant to turbine blade failure and stress corrosion cracking
- Replaced main feedwater pump control system to digital based control system
- Replaced service air compressors with modern model, and add cross-tie to instrument air
- Added vent to HPSI line to ensure ECCS system free of gas

- Increased safety related battery capacity (1200-1800 amp hours)
- Added degraded grid undervoltage relays to 1E 4KV buses
- Added a portable generator for steam generator water level indication in order to facilitate steam driven pump manual operation during beyond design basis blackout scenarios

2. **What emergency notification systems have been installed at California nuclear power plants? Has there ever been a lapse of these systems during previous earthquakes or emergencies?**

   An Early Warning System (EWS) is installed to provide prompt alerting of the public in the event of an emergency at both Diablo Canyon and SONGS. The EWS consists of 131 sirens positioned out to 22 miles from the plant at Diablo Canyon, and 50 sirens spanning 10 miles at SONGS. The EWS is used in conjunction with radio and TV broadcasts, and allows instructions, information, and necessary actions to be immediately communicated to the public. The sirens are equipped with battery or solar-powered back-up capability. This redundancy in power source was upgraded in the 2005-2006 timeframe. The sirens are tested daily, bi-weekly, quarterly, and annually. The sirens are monitored 24/7 with alarms for system failures.

   For Diablo Canyon, prior to installing the power-back up capability, some sirens lost power during the December 2003 San Simeon earthquake. The sirens were not used during that earthquake but back-up route alerting was set up if the need for public alerting warranted. The SONGS EWS sirens have not been affected by past seismic activity.

3. **What safety measures are in place to ensure continued power to California reactors in the event of an extended power failure?**

   U.S. plants are required to meet 10 CFR Part 50 Appendix A General Design Criterion 17, "Electric Power System." Reactor units must have two physically independent offsite power supplies capable of placing the units in a safe shutdown condition. Additionally, all plants are required to have onsite power supplies that are also independent and capable of placing the units in a safe shutdown condition assuming a worst case single failure. All U.S. plants (except Oconee which has an alternate system) have emergency diesel generators and battery backup systems. Most U.S. plants with diesels have two diesels per unit (Diablo Canyon has 3). The regulations do not specify the length of time that the diesels and batteries must be able to operate following a loss of offsite power. The required amount of time is dependent on the plant's site recovery strategy and is based on providing sufficient capacity to assure that the core is cooled and containment integrity and other vital functions are maintained in the event of postulated accidents.

   If Diablo Canyon experiences a loss of power from the 500 kV and 230 kV offsite power switchyards, three emergency diesel generators (EDGs) are available to supply onsite power in each of the units. A unit can be safely shutdown utilizing any single

EDG. There are two-50,000 gallon diesel fuel oil tanks, sufficient to operate an EDG for seven days. The EDGs are located at an elevation of 85 feet, well above the maximum expected tsunami elevation.

In addition, Emergency Operating Procedures (EOPs) are in place that include procedures to cope with the loss of all vital AC power. For example, there are Casualty Procedures in place that have pre-planned actions in the event of earthquakes, tsunami warnings and fires. There are Severe Accident Management Guidelines in place that contain actions to take in extreme conditions that require coolant injection to the reactor core, mitigation of hydrogen flammability in containment, and coolant to flood-up containment and cover the reactor core. There are Extreme Damage Mitigation Guidelines (EDMGs) in place that postulate extensive plant damage due to a natural disaster or terrorist event. The EDMGs are invoked when the control of the plant cannot be established from the Main Control Room or there is no communication with the Main Control Room. The Extreme Damage event is assumed to disable all electric power. The EDMGs provide a procedure to perform multiple actions (if needed) to continue to cool the reactor core, cool the spent fuel pool, and minimize radiation release.

SONGS is similar to Diablo Canyon with 2 EDGs per unit and the EDGs are located 30 feet above sea level. SONGS also has a physical cross-tie ability such that the EDGs on one unit can be used to safely shutdown the other unit in the event that either unit loses both of its EDGs. The comments provided above concerning emergency procedure improvements at Diablo Canyon (i.e., EOPs, Severe Accident Mitigation Guidelines, and EDMGs) apply as well to SONGS.

Type of Reactor

1. **What are the differences and similarities between the reactors being used in California (pressurized water reactors) and those in Japan (boiling water reactors), as well as the facilities used to house the reactors, including the standards to which they were built and their ability to withstand natural and manmade disasters?**

   The two types of light-water reactors in operation in the United States are pressurized (PWR) and boiling (BWR) water reactors. The PWRs use a two-stage system where the water in the reactor is maintained at a high pressure, and an additional coolant loop is used to transfer heat from that system to produce steam to drive the turbines, while BWRs use a single-stage system that allows water in the reactor to boil to produce steam to drive the turbines directly. The NRC is not yet fully aware of all of the attributes of the specific BWR reactors in question in Japan and how they are different from or similar to BWRs or other reactors in operation in the U.S. Many changes have been made over the years in the design and operation of U.S. nuclear power plants through our program of safety improvement (as described in our response to Question #1 above), which may or may not have been made to reactors operating in Japan.

We have, since the beginning of the regulatory program in the United States, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, operation, and oversight, and does not rely on any single layer to protect public health and safety. We begin with designs for every individual reactor that take into account site-specific factors and include a detailed evaluation for any credible natural event, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site. There are multiple physical barriers to the release of radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and are frequently tested to ensure that the plant is in a high condition of readiness to respond to any scenario.

Looking at basic design differences between the Japanese BWRs and the California plants, the following can be noted:

- The Japanese reactors have containments that are part of the reactor design and the buildings in which they are placed are not containment structures. By contrast, the California reactors have significantly larger volume containment buildings that house the reactors. This reduces the chance of exceeding the containment design pressure or having a hydrogen explosion inside containment following a natural or manmade disaster that can result in a release of radioactive material to the environment.
- In the event of the loss of power at a U.S. PWR, the reactor core can be cooled using natural circulation of water (without pumps) in the primary coolant loop to transfer heat from the reactor core to the secondary loop. The secondary loop in a PWR can be used to remove the primary loop heat (without power) by pumping non-radioactive water in the secondary loop into heat exchangers (steam generators) with a steam driven pump and releasing non-radioactive steam to the atmosphere via manually operated valves or spring operated safety relief valves. By contrast, venting steam from the Japanese BWRs resulted in a release of radiation to the reactor building from which it escaped to the environment. In addition, there are multiple other pre-planned methods available to provide on-site stored water to the reactor core and to the steam generators to ensure continued core cooling after a disaster.
- The spent fuel pool at a U.S. PWR is contained in a separate building, instead of being contained above the primary containment structure as in a Japanese BWR.
- There are multiple on-site stored water sources and pre-planned measures in place to provide water to the spent fuel pools.

Earthquakes and Tsunamis

1. **We have been told that both Diablo Canyon and San Onofre Nuclear Generating Station are designed to withstand the maximum credible threat at both plants, which we understand to be much less than the 9.0 earthquake that hit Japan. What assumptions have you made about the ability of both plants to withstand an**

earthquake or tsunami? Given the disaster in Japan, what are our options to provide these plants with a greater margin for safety?

All U.S. nuclear power plants are built to withstand external hazards, including earthquakes, flooding, and tsunamis, as appropriate. Regarding earthquakes, nuclear plants, are designed based on ground motion levels, not earthquake magnitudes. Ground motion is a function of both the magnitude of an earthquake and the distance from the fault to the site. The existing nuclear plants in the U.S. were designed based on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes that could reasonably be expected in the area around the plant. A margin is further added to the predicted ground motions to provide added robustness. The NRC's Generic Issue 199 (GI-199) project is using the latest probabilistic techniques used for new nuclear plants to review the safety of existing plants.

Both Diablo Canyon and SONGS are known to have a tsunami hazard. As such, they are designed to withstand the maximum predicted tsunami with coincident wave action.

It is too early to tell what the lessons from this earthquake are. The NRC will look closely at all aspects of the plants' response to the earthquake and tsunami to determine if any actions need to be taken in U.S. nuclear plants and if any changes are necessary to NRC regulations.

2. **Have new faults been discovered near Diablo Canyon or San Onofre Nuclear Generating Station since those plants began operations? If so, how have the plants been modified to account for the increased risk of an earthquake? How will the NRC consider information on ways to address risks posed by faults near these plants that is produced pursuant to state law or recommendations by state agencies during the NRC relicensing process?**

A new Shoreline fault zone near Diablo Canyon was discovered in late 2008. In 2009 and 2010 Pacific Gas and Electric (PG&E) acquired, analyzed, and interpreted new data to better assess the seismic hazard from the Shoreline fault zone. PG&E submitted the final Shoreline fault zone report to the NRC on January 7, 2011. PG&E has concluded that maximum ground motions at the site from local faults are bounded by ground motions for which the plant had been previously evaluated. PG&E has also stated that the tsunami hazard threat from the Shoreline fault zone is relatively small since it is a strike-slip fault rather than a reverse fault and, therefore, the tsunami hazard is not expected to exceed the plant's design-basis tsunami characteristics.

The NRC staff is evaluating the tsunami hazard and is conducting an independent deterministic seismic hazard analysis of the Shoreline fault based on the information provided by the licensee to confirm the licensee's conclusions regarding the safe operation of the plant. In this regard, the staff has reviewed interim seismic studies related to the Shoreline fault zone. The staff is also in the process of reviewing PG&E's final Shoreline

fault zone report to determine whether any licensee or regulatory action may be needed. In addition to these specific efforts, the staff plans to continue discussions with PG&E on a possible license amendment to codify a Long Term Seismic Program methodology for the management of new geotechnical seismic information.

For SONGS, no new active faults have been discovered.

With regard to studies performed by other entities, such as the State of California, the NRC reviews each study's results for any new information and design challenges. The State of California is funding a new seismic study that is currently in the planning and draft phase. Licensees are required through their Technical Specifications to notify the NRC at any time during a review or study should evidence of a design challenge be identified.

The NRC considers seismic hazards to be an ongoing regulatory concern; therefore, we address seismic hazards as part of our reactor oversight process for operating reactors whenever a significant change is recognized. As a result, the NRC does not separately re-analyze seismic hazards for the license renewal process. The license renewal review is focused on managing the effects of aging and not a re-review of the current licensing basis.

3. **What are the evacuation plans for both plants in the event of an emergency? We understand that Highway 1 is the main route out of San Luis Obispo, what is the plan for evacuation of the nearby population if an earthquake takes out portions of the highway and a nuclear emergency occurs simultaneously?**

Each U.S. nuclear power plant has an emergency plan for ensuring the health and safety of members of the public who live within the emergency planning zone. Emergency plans contain contingencies for alternate evacuation routes, alternate means of notification, and other backup plans in the event of a natural disaster that damages the surrounding infrastructure.

FEMA reviews off-site emergency plans formally every 2 years during a biennial emergency preparedness exercise. The NRC evaluates on-site emergency plans during the same exercise, as well as on an annual basis. Population studies are conducted every 10 years, and evacuation time estimates are re-evaluated at that time. FEMA reviews the offsite emergency plans and evacuation time estimates, and determines whether there is a reasonable assurance that adequate protective measures can and will be taken in the event of an emergency at a nuclear power plant.

Evacuation of members of the general public is the responsibility of San Luis Obispo County for Diablo Canyon and San Diego County for SONGS, working in conjunction with the State of California, and would be carried out in accordance with their prearranged plans. The areas to be evacuated and specific evacuation routes would depend on the meteorological conditions and route viability at the time of the accident. PG&E and Southern California Edison (SCE) would act in an advisory capacity, giving technical assessments of the

conditions at the plants and the probabilities for a potential off-site release as well as other pertinent information. This information, along with the licensee's recommended protective actions, would be assessed by responsible county and state officials in determining appropriate actions to be taken.

For Incidents of National Significance where the critical infrastructure is severely damaged, DHS has a lead role as a coordinating agency to orchestrate Federal, State, and local assets. The Nuclear/Radiological Incident Annex to the National Response Framework provides for the NRC to be a coordinating agency for incidents involving NRC-licensed materials.

The main route out of San Luis Obispo is Highway 101. The main route for SONGS is Highway 5. For both sites, evacuation studies are conducted by demography specialists and provide information on various evacuation scenarios that could take place. The studies' results consider normal road conditions, time of day, degraded weather/visibility, and road condition.

4. **What is the NRC's role in monitoring radiation in the event of a nuclear accident both here and abroad? What is the role of EPA and other federal agencies?**

A number of U.S. agencies are involved in domestic monitoring and radiation assessment, including the EPA, Department of Energy, and NRC. NRC regulations require nuclear power plants to report any radiation levels detected at the plant that could be harmful to the public. This would include radiation levels generated by the plant or by an external source. EPA and DOE are responsible for more comprehensive domestic radiation monitoring.

The EPA utilizes its existing nationwide radiation monitoring system, RadNet, to continuously monitor the nation's air, and it regularly monitors drinking water, milk, and precipitation for environmental radiation.

5. **What monitoring systems currently are in place to track potential impacts on the U.S., including California, associated with the events in Japan?**

See response to Question #4 above. All U.S. plants are required to have a Radiological Environmental Monitoring Program (REMP) in the surrounding communities that are monitored at specific intervals and analyzed in a laboratory as part of a normal offsite monitoring and sampling program.

In addition, Diablo Canyon and SONGS have near-site radiation monitoring systems in place utilizing pressurized ion chambers (radiation detectors). The facilities' pressurized ion chambers are owned and operated by the EPA and are a part of the RadNet system. The EPA monitors the real-time data from these monitors on a continuous basis. The EPA is able to share their data with other agencies during emergency situations. Questions

regarding the details of specific monitoring systems of EPA and other federal agencies should be directed to those agencies.

6. **Which federal agency is leading the monitoring effort and which agencies have responsibility for assessing human health impacts? What impacts have occurred to date on the health or environment of the U.S. or are currently projected or modeled in connection with the events in Japan?**

   See response to Question #4 above. The EPA, working with the NRC, DOE and others, has the lead for radiation monitoring activities and regularly samples air, water, and milk. An interagency advisory team that includes the NRC, the Departments of Energy, Health and Human Services, Agriculture, and others, has been established under EPA's leadership and is regularly evaluating potential health and environmental impacts from events in Japan.

   Only trace amounts of radioactive material have been identified through U.S. monitoring; those trace amounts are far below levels of natural background radiation and are not of public health concern. The NRC does not expect any U.S. states or territories to experience harmful levels of radioactivity as a result of the events in Japan.

7. **What contingency plans are in place to ensure that the American public is notified in the event that hazardous materials associated with the events in Japan pose an imminent threat to the U.S.?**

   Under the Nuclear/Radiological Incident Annex to the National Response Framework, the U.S. EPA is the federal lead for plumes that come across our borders. In such situations, EPA would proceed in accordance with its established processes and procedures to work with state and local governments to protect public health and safety.

   If an event requiring protective measures were to occur, U.S. residents would be advised to listen to their state and county authorities who are responsible for making protective action decisions for public health and safety. If necessary and, as appropriate, protective action decisions could include: preventing contaminated food from reaching the marketplace, recommending that all local produce be thoroughly rinsed prior to consumption, or sheltering or evacuating affected citizens. The NRC will continue to work with its local, state, and federal partners to ensure that appropriate emergency response procedures are prepared, reviewed, and exercised in accordance with NRC regulations.

Originating Office: EDO
REF: CORR-11-0041
Commission Correspondence

GBJ – Approved/edit
KLS – Approved/edit
GEA – Approved/edit
WDM – Approved/edit
WCO – Approved/edit

ADAMS Accession No.:

OFC	SECY	OCA	OCM/GBJ	OCM/GBJ	
NAME	SMcKelvin		JMonninger	GBJaczko	
DATE	04/08/2011	04/ /2011	04/ /2011	04/ /2011	

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United States Senate

WASHINGTON, DC 20510

March 16, 2011

The Honorable Gregory Jaczko
Chairman
U. S. Nuclear Regulatory Commission
Washington, DC 20555-0001

Dear Chairman Jaczko:

The unfolding nuclear disaster in Japan has raised questions about the safety of nuclear power plants here in the U.S. As Senators from California, we are particularly interested in the safety of San Onofre Nuclear Generating Station, located in San Clemente, and the Diablo Canyon Nuclear Power Plant near San Luis Obispo, both of which are near earthquake faults.

Roughly 424,000 live within 50 miles of the Diablo Canyon and 7.4 million live within 50 miles of San Onofre Nuclear Generating Station. Although many safety measures have been taken to address potential hazards associated with these facilities, we need to ensure that the risk is fully evaluated.

For example, a 2008 California Energy Commission report presented very clear warnings of potential threats at both of these plants. This report found that the San Onofre plant could experience "larger and more frequent earthquakes" than the maximum 7.0 magnitude earthquake predicted when the plant was designed. It is our understanding that the NRC has not taken action to address these warnings in the report. It is also our understanding that the 2008 report found that there is an additional fault near the Diablo Canyon plant that should be taken into consideration as part of NRC's relicensing process. We want to know if the NRC will address all of the threats, including seismic threats, described in the 2008 report at these facilities.

We ask that the Nuclear Regulatory Commission (NRC) perform a thorough inspection at these two plants to evaluate their safety and emergency preparedness plans.

In addition, we ask the NRC to answer the questions below regarding plant design and operations, type of reactor, and preparedness to withstand an earthquake or tsunami and other potential threats.

Plant Design and Operations

1. What changes to the design or operation of these facilities have improved safety at the plants since they began operating in the mid-1980s?

2. What emergency notification systems have been installed at California nuclear power plants? Has there ever been a lapse of these systems during previous earthquakes or emergencies?

3. What safety measures are in place to ensure continued power to California reactors in the event of an extended power failure?

Type of Reactor

1. What are the differences and similarities between the reactors being used in California (pressurized water reactors) and those in Japan (boiling water reactors), as well as the facilities used to house the reactors, including the standards to which they were built and their ability to withstand natural and manmade disasters?

Earthquakes and Tsunamis

1. We have been told that both Diablo Canyon and San Onofre Nuclear Generating Station are designed to withstand the maximum credible threat at both plants, which we understand to be much less than the 9.0 earthquake that hit Japan. What assumptions have you made about the ability of both plants to withstand an earthquake or tsunami? Given the disaster in Japan, what are our options to provide these plants with a greater margin for safety?

2. Have new faults been discovered near Diablo Canyon or San Onofre Nuclear Generating Station since those plants began operations? If so, how have the plants been modified to account for the increased risk of an earthquake? How will the NRC consider information on ways to address risks posed by faults near these plants that is produced pursuant to state law or recommendations by state agencies during the NRC relicensing process?

3. What are the evacuation plans for both plants in the event of an emergency? We understand that Highway 1 is the main route out of San Luis Obispo, what is the plan for evacuation of the nearby population if an earthquake takes out portions of the highway and a nuclear emergency occurs simultaneously?

4. What is the NRC's role in monitoring radiation in the event of a nuclear accident both here and abroad? What is the role of EPA and other federal agencies?

5. What monitoring systems currently are in place to track potential impacts on the U.S., including California, associated with the events in Japan?

6. Which federal agency is leading the monitoring effort and which agencies have responsibility for assessing human health impacts? What impacts have occurred to date on the health or environment of the U.S. or are currently projected or modeled in connection with the events in Japan?

7. What contingency plans are in place to ensure that the American public is notified in the event that hazardous materials associated with the events in Japan pose an imminent threat to the U.S.?

The NRC was created in the mid-1970s specifically to ensure the protection of public health and safety with regard to civilian nuclear power. The Commission plays an essential role ensuring that we learn from nuclear accidents and near misses. We hope you agree that we must identify whatever lessons are to be learned from the disaster in Japan in order to make facilities in the United States as safe as possible.

We look forward to working with you to ensure the safety of our nation's nuclear power plants and to make the changes necessary to ensure a nuclear tragedy does not occur in this country.

Sincerely,

Barbara Boxer

Dianne Feinstein

Attachment dailymemos_3.doc (36352 Bytes) cannot be converted to PDF format.

Wagner, Katie

From: Wagner, Katie
Sent: Wednesday, March 30, 2011 1:42 PM
To: Jimenez, Juan
Subject: Sharepoint

Hi Juan,

Could you please add "Ongoing" as a status?

Also, I was thinking that especially for the "Pending" and "Complete" Sharepoint reports it may be helpful to add that to the heading at the top of the page on the report like "Status of Japan-Related Requests: Pending Requests" and "Status of Japan-Related Requests: Completed Requests".

Thank you in advance for your help!
Katie

LLLL/411

From: Burnell, Scott
To: Hayden, Elizabeth; Eliot Brenner
Subject: FW: This morning"s hearing
Date: Friday, April 08, 2011 10:34:52 AM

Hope someone got back to him. Friggin' IEER...

From: Dorell, Oren [odorell@usatoday.com]
Sent: Thursday, April 07, 2011 2:42 PM
To: Burnell, Scott
Cc: OPA Resource
Subject: RE: This morning's hearing

Scott,

Thanks for your help yesterday clarifying details that emerged in yesterday's hearing on the Hill. Would you be available today for a quick chat about the radiation floating over the USA from Fukushima and what risk it poses to Americans?

The Institute for Engery and Environmental Research says more stringent radiation monitoring is necessary because the amounts of radiation are within limits that cause cancer in large populations, and they knock the NRC's characterization of these amounts as basically harmless.

According to their latest press release: "While the NRC is saying the 620 millirem (referring to this NRC link) a year on average has not been shown to cause harm, the EPA is saying that about one-third of this total average annual dose is attributable to indoor radon, which is responsible for thousands of cancer deaths every year," said Dr. Arjun Makhijani. "The NRC statement is an appalling misrepresentation of the science that underlies its own regulations as well as published statements on radon risks by the EPA. Using the 2006 National Academies risk estimates for cancer, 620 millirem per year to each of the 311 million people in the United States would eventually be associated with about 200,000 cancers each year; about half of them would be fatal."

I can send you the entire press release if you want and haven't already seen it.

Thanks,
Oren.
703-854-3323

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Wednesday, April 06, 2011 3:57 PM
To: Dorell, Oren
Subject: RE: This morning's hearing

Oren;

Regarding questions following the House hearing this morning, the NRC has the following statement:

There continues to be a great deal we don't know regarding the situation at Fukushima.

LLLL/412

One thing we do know with reasonable certainty is that the core of Unit 2 has been damaged. Beyond that, the NRC speculates there are possible leakage paths from the reactor vessel into the drywell that could account for reports of high radiation levels in the drywell. The NRC does not believe the reactor vessel has given way, and we do believe practically all of the core remains in the vessel. These two beliefs drive our continuing recommendation that every available method should be used to add fresh water to the Unit 2 reactor vessel and continue cooling the core.

Please include opa.resource@nrc.gov on any e-mails with additional questions. Thank you.

Scott Burnell
Public Affairs Officer
Nuclear Regulatory Commission

From: Schwartzman, Jennifer
Sent: Tuesday, April 26, 2011 10:24 AM
To: ET02 Hoc; Jones, Andrea
Cc: Bloom, Steven
Subject: RE: Next wave of travelers

Today would be great. We'll get the word out about picking up Blackberries at the Ops Center.

Jen

From: ET02 Hoc
Sent: Tuesday, April 26, 2011 10:11 AM
To: Schwartzman, Jennifer; Jones, Andrea
Cc: Bloom, Steven
Subject: Next wave of travelers
Importance: High

Jen:

I was wondering when you wanted me to add the next wave of travelers to the Liaison Japan group and shared drive access. Today? Thanks...karen

LLLL/413

From: Hipschman, Thomas
Sent: Friday, April 29, 2011 2:07 AM
To: ET02 Hoc
Subject: Out of Office: April 19 - 2200 EDT One-Pager - Fukushima Daiichi

I'll be out of the office until May 9. Please contact John Monninger or Michael Marshall if you need assistance before then.

LLLL/414