

Group BA

(Records Released  
In Their Entirety)

**From:** [LIA07 Hoc](#)  
**To:** [Burnell, Scott](#)  
**Subject:** FW: Request for Interagency Information  
**Date:** Monday, March 14, 2011 11:26:05 AM  
**Attachments:** [NRC Input to USAID Administrators Report 0655 031411.docx](#)  
[NRC Input to USAID Public Fact Sheet 1125 031411.docx](#)

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Scott:

Here is the original request. I'm attaching the one we sent out this morning, and the document I just left with you.

Yen

**From:** RMTPACTSU\_ELNRC [mailto:RMTPACTSU\_ELNRC@ofda.gov]  
**Sent:** Sunday, March 13, 2011 5:32 PM  
**To:** LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA08 Hoc; Gott, William  
**Subject:** FW: Request for Interagency Information

We need the bullets for the responses...

**From:** RMTPACTSU\_PRO  
**Sent:** Sunday, March 13, 2011 5:29 PM  
**To:** RMTPACTSU\_STATE; RMTPACTSU\_ELNRC; RMTPACTSU\_HHS; RMTPACTSU\_DoDJCS  
**Cc:** RMTPACTSU\_RM; RMTPACTSU\_DMP; RMTPACTSU\_INC; RMTPACTSU\_MLO  
**Subject:** Request for Interagency Information

One more time...

Pasted below is a message from Mark Bartolini, USAID's Director of the Office of U.S. Foreign Disaster Assistance. We encourage you to send this message back to your home agencies in the hope that will help make our information products more useful for all involved in the response.

Please don't hesitate to let us know if you have questions or concerns.

Thanks,  
Rebecca

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USAID is working to produce timely, informative updates that fully illustrate the breadth of the U.S. Government disaster response to the earthquake and tsunami in Japan. To that end, we are looking to our interagency partners to provide updates on their individual agency's efforts to the Washington-based Response Management Team (RMT), which is housed at USAID and staffed with team members from across the interagency. Each day we are producing two primary information products: the Administrator's Update and the public Fact Sheet.

Administrator's Report (Internal USG)

- Contains highlights of USG relief efforts during the past 24 hours and looks ahead to the next 24-48 hours

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- Written in a digestible format for principals and contains unclassified and Sensitive but Unclassified information
- Daily distribution by approximately noon EDT to an internal USG audience
- INFO NEEDS: By no later than 0830 EDT, two to three bullets that contain top-line information from each USG agency operational in the disaster response effort. Please mark Sensitive but Unclassified bullets "SBU." Please include any changes to funding information since prior day's fact sheet.

#### Public Fact Sheet

- Contains comprehensive information on relevant humanitarian sectors and US Government response
- Nightly distribution by approximately 1900 EDT to a distribution list that includes both internal USG personnel and the public
- INFO NEEDS: By no later than 1400 EDT, bullets that contain the latest information and any funding updates appropriate for public distribution from each USG agency operational in the disaster response effort.

For those agencies that are not operational in Japan but have alerted USAID/OFDA of capabilities that could be of use in the response effort, we will note those available capabilities when appropriate.

You should provide the information via your agency's liaison on the RMT. For those agencies that do not have liaisons, please send the information to [rmtfactsu\\_inc@ofda.gov](mailto:rmtfactsu_inc@ofda.gov).

Attachment NRC Input to USAID Administrators Report 0655.docx (11682 Bytes) cannot be converted to PDF format.



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Attachment NRC Input to USAID Public Fact Sheet 1125 031.docx (12312 Bytes) cannot be converted to PDF format.

**From:** RMTFACTSU\_ELNRC  
**To:** LIA11 Hoc; LIA01 Hoc; LIA02 Hoc; LIA07 Hoc; LIA08 Hoc; LIA12 Hoc; LIA04 Hoc; LIA03 Hoc; LIA06 Hoc; Harrington, Holly; Burnell, Scott; McIntyre, David; ET07 Hoc  
**Subject:** 03.24.11 - USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #13  
**Date:** Thursday, March 24, 2011 3:14:47 PM  
**Attachments:** image001.png  
image003.png  
image005.png  
03.24.11 - Japan Earthquake and Tsunami Map.pdf  
03.24.11 - USAID-DCHA Japan EQ and Tsunami Fact Sheet #13.pdf

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**Subject:** 03.24.11 - USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #13

Please find attached and pasted below the USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #13 and accompanying map, both dated March 24, 2011. These documents have been approved for public use. Please note the next fact sheet is scheduled for release on March 31. If you experience formatting issues in the text below, please refer to the attached document.

To be added to or removed from this distribution list, please email [rmtfactsu\\_inc@ofda.gov](mailto:rmtfactsu_inc@ofda.gov).

**BUREAU FOR DEMOCRACY, CONFLICT, AND HUMANITARIAN ASSISTANCE (DCHA)**  
**OFFICE OF U.S. FOREIGN DISASTER ASSISTANCE (OFDA)**

***Japan – Earthquake and Tsunami***

Fact Sheet #13, Fiscal Year (FY) 2011  
March 24, 2011

*Note: The last fact sheet was dated March 22, 2011.*

**KEY DEVELOPMENTS**

- The earthquake and tsunami have resulted in more than 9,800 deaths and left approximately 17,500 people missing, as reported by the Government of Japan (GoJ) on March 24. The natural disasters also damaged or destroyed more than 139,000 buildings and 2,000 roads.
- According to the GoJ, the number of people staying in evacuation centers continues to steadily decrease. On March 24, the GoJ reported that approximately 245,000 people remain in evacuation centers, representing a decrease of more than 18,000 people—7 percent of the population in evacuation centers—since March 22. More than half of the people in evacuation centers have left since the peak of displacement on March 16. Of the total number of people staying in evacuation centers, the U.N. Office for the Coordination of Humanitarian Affairs (OCHA) reports that nearly 84,000 people had been evacuated from the GoJ's 20 km exclusion zone around the Fukushima Daiichi facility.
- On March 24, the Tokyo Metropolitan Government lifted an advisory to avoid infant consumption of tap water after tests recorded decreased levels of radioactive iodine in the water, according to international media sources. Tokyo authorities issued the advisory as a precautionary measure on March 23 following detections of higher-than-normal levels of radioactive iodine in the water supply. The GoJ reported that the levels did not pose a health risk for adults.

NUMBERS AT A GLANCE <sup>[1]</sup>		
SOURCE		
Confirmed Deaths	9,811	GoJ NPA <sup>[2]</sup> – March 24, 2011

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Missing Persons	17,541	GoJ NPA – March 24, 2011
Number of People in Evacuation Centers	245,394	GoJ NPA – March 24, 2011

#### **FY 2011 HUMANITARIAN FUNDING PROVIDED TO JAPAN TO DATE**

USAID/OFDA Assistance for the Japan Earthquake and Tsunami..... \$7,291,550

DoD<sup>[3]</sup> Humanitarian Assistance for the Japan Earthquake and Tsunami..... \$24,960,294

**Total USAID and DoD Assistance for the Japan Earthquake and Tsunami..... \$32,251,844**

#### **CONTEXT**

- On March 11 at 0046 hours Eastern Standard Time, or 1446 hours Japan Standard Time, a magnitude 9.0 earthquake occurred off the east coast of Honshu Island—approximately 231 miles northeast of Tokyo at a depth of approximately 15 miles, generating a tsunami that struck the eastern coast of Japan and resulted in additional fatalities and damage, particularly in Miyagi, Fukushima, and Iwate prefectures. Furthermore, the natural disasters led to a serious nuclear incident at the Fukushima Daiichi power plant located approximately 150 miles north of Tokyo.
- USAID immediately activated a Response Management Team in Washington, D.C., and deployed a Disaster Assistance Response Team (DART)—including urban search and rescue (USAR) specialists and nuclear experts—to support Japanese emergency response efforts. On March 11, U.S. Ambassador John V. Roos declared a disaster due to the effects of the earthquake and tsunami in Japan.

#### ***Humanitarian Situation and Response***

- According to DART assessments, the GoJ continues to meet the immediate needs of individuals in affected areas, with sufficient relief items available locally and higher quantities of relief supplies flowing into affected areas as roads are repaired. DART staff also noted that local level coordination appeared strong and has continued improving across the GoJ as telecommunications repairs are completed.
- Japanese authorities have commenced construction of temporary housing in Iwate and Fukushima prefectures, with preparations ongoing in Miyagi, Tochigi, and Chiba prefectures, according to the U.N. GoJ authorities plan to construct at least 33,000 temporary houses in the coming weeks.
- As of March 23, approximately 216,000 households remained without electricity—an improvement of more than 95 percent from the 5 million households without electrical services on March 12.

#### ***Logistics and Relief Supplies***

- Approximately 10,000 USAID/OFDA-funded personal protective equipment sets—including suits, masks, gloves, decontamination bags, and other supplies—have arrived in Koriyama city, near the contaminated zone in Fukushima Prefecture, for distribution to individuals working near the nuclear exclusion zone around Fukushima Daiichi nuclear power plant.
- As of March 23, DoD had delivered a total of 337,793 pounds of relief commodities to Japan in support of humanitarian response efforts.

#### ***Situation at Nuclear Power Plants***

- On March 23, OCHA reported that electrical power had been restored to all six reactors at the Fukushima Daiichi nuclear power plant. Staff from the U.S. Department of Energy, the U.S. Nuclear Regulatory Commission, the U.S. Embassy in Tokyo, and the DART continue to actively monitor and triangulate information on radiation levels in Tokyo.
- The GoJ found radioactive materials exceeding national safety limits in 11 types of vegetables grown in Fukushima Prefecture as of March 23, according to OCHA. The U.N. World Health Organization notes that Japanese authorities have instituted monitoring and are taking measures to address food safety concerns.

#### **USAID AND DOD HUMANITARIAN ASSISTANCE TO JAPAN**

<b><i>Implementing Partner</i></b>	<b><i>Activity</i></b>	<b><i>Location</i></b>	<b><i>Amount</i></b>

USAID/OFDA ASSISTANCE			
U.S. Embassy in Tokyo	Emergency Relief Support	Affected Areas	\$100,000
DoD	USAR Operations (Transport of USAR cargo)	Affected Areas	\$1,000,000
L.A. County USAR Team	USAR Operations	Affected Areas	\$2,058,000
Fairfax County USAR Team	USAR Operations	Affected Areas	\$2,058,000
	USAID/DART Support Costs		\$1,618,240
	Administrative Support		\$457,310
<b>TOTAL USAID/OFDA</b>			<b>\$7,291,550</b>
DOD ASSISTANCE			
	Emergency Relief Support	Affected Areas	\$24,960,294
<b>TOTAL DOD</b>			<b>\$24,960,294</b>
<b>TOTAL USAID AND DOD HUMANITARIAN ASSISTANCE TO JAPAN IN FY 2011</b>			<b>\$32,251,844</b>

<sup>1</sup> USAID/OFDA funding represents anticipated or actual obligated amounts as of March 24, 2011. Amounts are subject to change.

<sup>2</sup> Estimated expenditure as of March 22, 2011.

#### Public Donation Information

- The most effective way people can assist relief efforts is by making cash contributions to humanitarian organizations that are conducting relief operations. A list of humanitarian organizations that are accepting cash donations for earthquake and tsunami response efforts in Japan can be found at [www.usaid.gov/japanquake](http://www.usaid.gov/japanquake) or [www.interaction.org](http://www.interaction.org).
- USAID encourages cash donations because they allow aid professionals to procure the exact items needed (often in the affected region); reduce the burden on scarce resources (such as transportation routes, staff time, warehouse space, etc.); can be transferred very quickly and without transportation costs; support the economy of the disaster-stricken region; and ensure culturally, dietary, and environmentally appropriate assistance.
- More information can be found at:
  - o The Center for International Disaster Information: [www.cidi.org](http://www.cidi.org) or (703) 276-1914
  - o Information on relief activities of the humanitarian community can be found at [www.reliefweb.int](http://www.reliefweb.int)

USAID/OFDA bulletins appear on the USAID web site at [http://www.usaid.gov/our\\_work/humanitarian\\_assistance/disaster\\_assistance/](http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/)

**Helen Ho, Lily Frey, and Patricia Shea**

*Information Coordinators*

Pacific Tsunami and Japan Earthquake Response Management Team

[RMTPACTSU\\_INC@ofda.gov](mailto:RMTPACTSU_INC@ofda.gov)

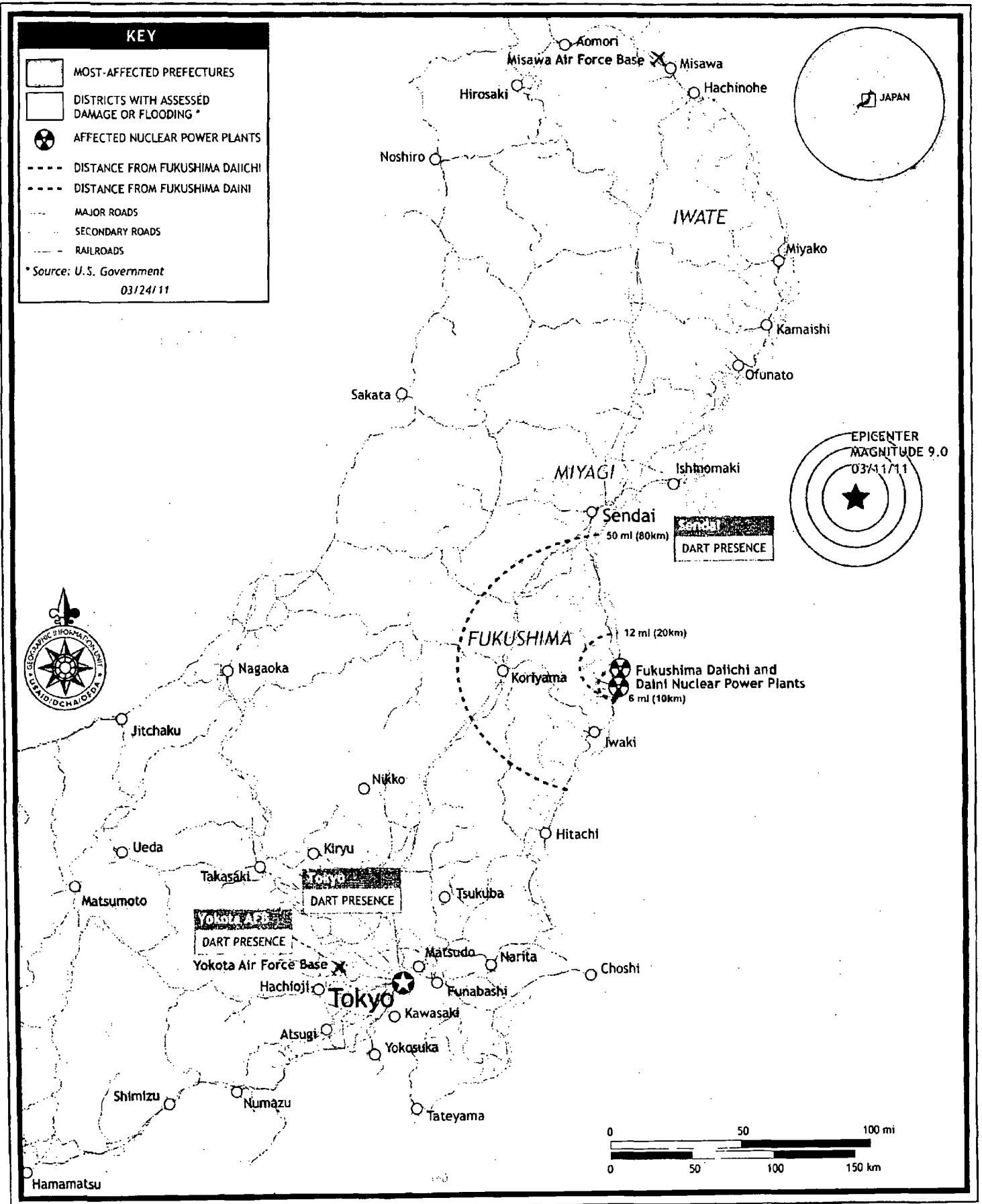
202-712-0039

[1] Figures remain preliminary and are expected to change.

[2] National Police Agency (NPA)

[2] U.S. Department of Defense (DoD)

# USG HUMANITARIAN ASSISTANCE TO JAPAN FOR THE EARTHQUAKE AND TSUNAMI





**USAID**

FROM THE AMERICAN PEOPLE

**BUREAU FOR DEMOCRACY, CONFLICT, AND HUMANITARIAN ASSISTANCE (DCHA)  
OFFICE OF U.S. FOREIGN DISASTER ASSISTANCE (OFDA)**

***Japan – Earthquake and Tsunami***

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NUMBERS AT A GLANCE <sup>1</sup>		SOURCE
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<sup>1</sup> Figures remain preliminary and are expected to change.

<sup>2</sup> National Police Agency (NPA)

<sup>3</sup> U.S. Department of Defense (DoD)

- Japanese authorities have commenced construction of temporary housing in Iwate and Fukushima prefectures, with preparations ongoing in Miyagi, Tochigi, and Chiba prefectures, according to the U.N. GoJ authorities plan to construct at least 33,000 temporary houses in the coming weeks.
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## **PUBLIC DONATION INFORMATION**

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  - The Center for International Disaster Information: [www.cidj.org](http://www.cidj.org) or (703) 276-1914
  - Information on relief activities of the humanitarian community can be found at [www.reliefweb.int](http://www.reliefweb.int)

**From:** RMTPACTSU\_ELNRC  
**To:** [LIA11 Hoc](#); [LIA01 Hoc](#); [LIA07 Hoc](#); [LIA02 Hoc](#); [LIA08 Hoc](#); [LIA12 Hoc](#); [Harrington, Holly](#); [McIntyre, David](#); [Burnell, Scott](#); [ET07 Hoc](#)  
**Subject:** Newer -- FW: ECHO Japan Update  
**Date:** Tuesday, April 05, 2011 11:42:41 AM  
**Attachments:** [MIC message 17 Earthquake Japan CORR.PDF](#)  
[Assistance overview - Japan 05 April.pdf](#)

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**From:** Brown, Patterson W [mailto:[BrownPW@state.gov](mailto:BrownPW@state.gov)]  
**Sent:** Tuesday, April 05, 2011 11:40 AM  
**To:** Bartolini, Mark (DCHA/OFDA) [USAID]; Chan, Carol(DCHA/OFDA) [USAID]; OD\_Expanded [USAID]; RMT\_PACTSU; RMTPACTSU\_DMP; RMTPACTSU\_INC; RMTPACTSU\_PC; RMTPACTSU\_RM  
**Subject:** ECHO Japan Update

All,

Please find an updated ECHO Japan assistance overview.

Best,  
Patterson

**Patterson W. Brown**  
USAID Humanitarian Assistance and Food Security Advisor  
U.S. Mission to the European Union  
+32 (0)2 811-5512

This email is UNCLASSIFIED.

BA/3



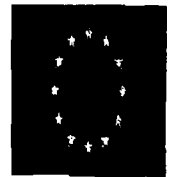
Date: 2011/04/05 Time: 08:00 UTC

Status	Request for Assistance		From MIC to Civil Protection contact points
MIC contact	Gregor Volaj / Ionut Homeag MIC Duty Officers		Telephone: +32 2 29 22222 Fax: +32 2 29 90525 E-mail: <a href="mailto:echo-mic@ec.europa.eu">echo-mic@ec.europa.eu</a>
Event	Cause: Natural disaster	Type: Earthquake	
Occurrence	Date: 11/ 03/11 Time: 18:00 UTC		
Situation	<p><b>Overall Situation</b></p> <p>The number of confirmed casualties is still rising with 12.020 confirmed deaths and 15.512 still missing. More than 200.000 buildings were heavily damaged or destroyed by the quake - tsunami.</p> <p>On 1 April, Japan's Self Defense Forces have launched a three-day joint-operation with US military to recover the bodies of people still unaccounted for in the coastal areas of Miyagi, Iwate and Fukushima.</p> <p>The vast majority of key infrastructure such as highways, ports and airports has been restored and there have been improvements in electricity, gas and water supply, but in the worst affected areas it could take some time before these vital services are up and running.</p> <p>So far, the Government of Japan has received 134 offers of assistance from countries as well as 39 offers from international organizations. At this stage, the Government of Japan indicated that the need for further international assistance is limited.</p> <p>UN/OCHA has officially ended its support role in-country to the Government of Japan for this emergency.</p> <p><b>Offers of assistance</b></p> <p>Today at 06:05 a B-777 aircraft took off from Frankfurt carrying 26 tons / 145 m<sup>3</sup> of European assistance, consisting of food, tents, sleeping bags, clothes, specific boots and gloves provided by Hungary, Slovakia and Sweden. The plane was made available free of charge by AeroLogic, a joint venture of DHL Express and Lufthansa Cargo. It is scheduled to arrive at Narita Airport on 6 April at 07:00LT. The assistance will then be delivered to Miyagi Prefecture.</p> <p>50 dose rate meters provided by Finland will arrive on 5 April at the EU Delegation office in Tokyo. Handover of these items by the EUCP team to the Ibaraki Prefecture is scheduled for Thursday.</p> <p>DG ECHO has adopted a 10 million € emergency decision on 1 April to support the relief effort in Japan. The duration of individual humanitarian aid actions financed under this Decision shall be limited to a maximum of six months.</p> <p><b>EU Civil Protection Team</b></p> <p>In line with the short-term mandate of civil protection, which focuses on the early stages of an emergency, the EUCP Team is preparing its exit strategy. The remaining 3 civil protection experts are scheduled to return on 9 April.</p> <p>For the time being, deployment of a second team is not foreseen unless the situation fundamentally changes.</p> <p><b>Radiological Situation</b></p> <p>Updated dose rate data for the monitoring stations at the 3 April were revealed. A continuing decreasing trend in dose rates can be observed. An increase in the deposition of both I-131 and Cs-137 were observed on 31 March but levels have now returned to those of previous days. On 31 March and 1 April deposition was reported for 10 prefectures.</p> <p>The latest IAEA update showed that restrictions on the consumption of drinking water remain applies for infants only. The restriction in all other earlier reported locations for the prefecture of Fukushima have been lifted.</p> <p>According to Kyodo, a large amount of low level radioactive waste water has been already stored at the nuclear power plant. TEPCO has plans to discharge 11.500 tons of the existing low level radioactive waste water to the sea to store the highly radioactive liquids. Seawater is sampled and two points 30 m and 330 m offshore from the Daiichi NPP and at a further two points offshore from the Daiini NPP. Eight sampling points for seawater have been established along a north-south transect in coastal waters 30 km offshore.</p>		
Attachments	Overview map of assistance; update 5 April 2011		



# EU Civil Protection and Humanitarian Aid Operation Japan

## Update: 05/04/2011



Total value of financial and in-kind assistance (source: 14 pt, in EUR)	
Austria	1.200.000
Czech Republic	205.000
<b>DG ECHO</b>	<b>10.000.000</b>
Estonia	200.000
Finland	500.000
France	54.549
Germany	630.000
Greece	100.000
Ireland	1.000.000
Lithuania	67.707
Luxembourg	150.000
Netherlands	1.000.000
Slovenia	150.000
<b>European Union</b>	<b>15.257.256</b>

Miyagi Prefecture:  
 16,7 tons Food (HU)  
 14 Tents (SK)  
 112 Sleeping bags (SK)  
 4,000 Clothes (SK)  
 1,000 Shoes (SK)  
 10,000 Gloves (SE)  
 296 Rubber boots (SE)

Miyagi Prefecture:  
 180 tons Blankets, Bottled water,  
 Food, Medical equipment (FR)

### Key activities of DG ECHO:

- EUCPT facilitates delivery of assistance;
- MIC identifies free-of-cost flights
- 10 mio € funding decision adopted

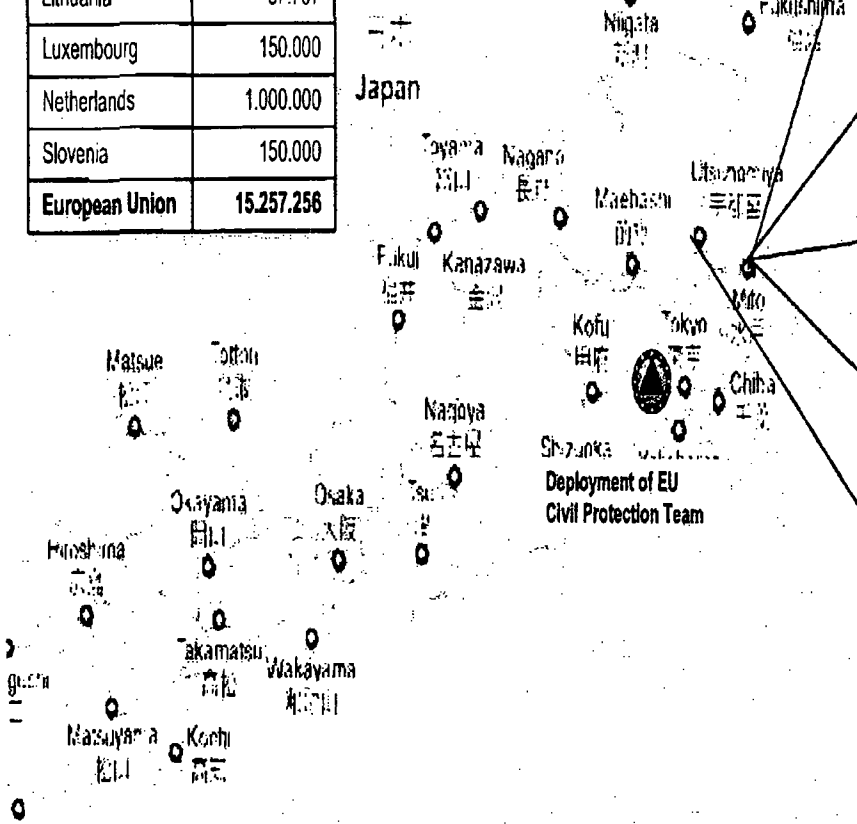
Ibaraki Prefecture:  
 21,610 Blankets (DK)  
 2,000 Blankets (LT)  
 300 Sleeping bags (LT)  
 1,998 Sleeping mattresses (NL)

Ibaraki Prefecture:  
 700 Blankets (DK)

Ibaraki Prefecture:  
 103 tons Bottled water (UK)

Ibaraki Prefecture:  
 50 Dose rate devices (FI)

Tochigi Prefecture:  
 1,000 Blankets (DK)



**From:** RMTFACTSU\_ELNRC  
**To:** LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; LIA12 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; ET07 Hoc  
**Subject:** FYI -- FW: ECHO Japan Update  
**Date:** Wednesday, April 06, 2011 3:40:48 PM  
**Attachments:** Assistance overview 06April - Japan.pdf  
MIC message 18 Earthquake Japan.pdf

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**From:** Brown, Patterson W [mailto:BrownPW@state.gov]  
**Sent:** Wednesday, April 06, 2011 3:10 PM  
**To:** Bartolini, Mark (DCHA/OFDA) [USAID]; Chan, Carol(DCHA/OFDA) [USAID]; OD\_Expanded [USAID]; RMT\_PACTSU; RMTFACTSU\_DMP; RMTFACTSU\_INC; RMTFACTSU\_PC; RMTFACTSU\_RM  
**Subject:** ECHO Japan Update

All,

Please find ECHO's Japan update attached.

Best,  
Patterson

Sent Using U.S. Department of State / Blackberry Server

**From:** Brown, Patterson W  
**To:** Bartolini, Mark (DCHA/OFDA); Chan, Carol(DCHA/OFDA); OD\_Expanded; 'RMT\_PACTSU@ofda.gov' <RMT\_PACTSU@ofda.gov>; 'RMTFACTSU\_DMP@ofda.gov' <RMTFACTSU\_DMP@ofda.gov>; 'RMTFACTSU\_INC@ofda.gov' <RMTFACTSU\_INC@ofda.gov>; 'RMTFACTSU\_PC@ofda.gov' <RMTFACTSU\_PC@ofda.gov>; 'RMTFACTSU\_RM@ofda.gov' <RMTFACTSU\_RM@ofda.gov>  
**Sent:** Tue Apr 05 17:40:29 2011  
**Subject:** ECHO Japan Update

All,

Please find an updated ECHO Japan assistance overview.

Best,  
Patterson

**Patterson W. Brown**  
USAID Humanitarian Assistance and Food Security Advisor  
U.S. Mission to the European Union  
+32 (0)2 811-5512

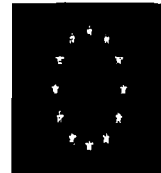
This email is UNCLASSIFIED.

BA/4



# EU Civil Protection and Humanitarian Aid Operation Japan

Update: 06/04/2011



Total value of financial and in-kind assistance (sources: 14 pt + MIC, in EUR)	
Austria	1.200.000
Czech Republic	205.000
Denmark	110.435
<b>DG ECHO</b>	<b>10.000.000</b>
Estonia	200.000
Finland	500.000
France	54.549
Germany	630.000
Greece	100.000
Hungary	33.345
Ireland	1.000.000
Latvia	142.288
Lithuania	67.707
Luxembourg	150.000
Netherlands	1.008.391
Slovenia	150.000
Slovakia	137.900
Sweden	25.458
<b>European Union</b>	<b>15.715.073</b>

Miyagi Prefecture:  
16,7 tons Food (HU)  
14 Tents (SK)  
112 Sleeping bags (SK)  
4,000 Clothes (SK)  
1,000 Shoes (SK)  
10,000 Gloves (SE)  
296 Rubber boots (SE)

Miyagi Prefecture:  
100,000 Paper masks (FR)  
10 tons Food (FR)  
Hydro-alcoholic antiseptic gel (FR)

Yamagata Prefecture:  
8,000 Blankets (FR)

Fukushima Prefecture:  
Dosimeters (FR)  
Radiological detectors (FR)  
Protective suits, gloves, mask (FR)  
100 tons Boron (FR)

## Key activities of DG ECHO:

- EUCPT facilitates delivery of assistance;
- MIC identifies free-of-cost flights
- 10 mio € funding decision adopted

Ibaraki Prefecture:  
21,610 Blankets (DK)  
2,000 Blankets (LT)  
300 Sleeping bags (LT)  
1,998 Sleeping mattresses (NL)

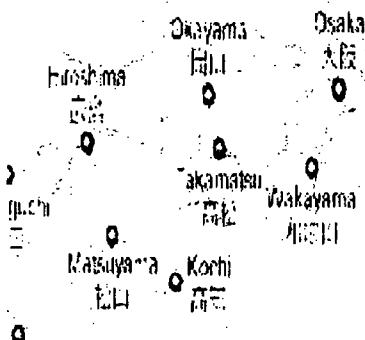
Ibaraki Prefecture:  
100,000 Bottled water (FR)

Ibaraki Prefecture:  
700 Blankets (DK)

Ibaraki Prefecture:  
103 tons Bottled water (UK)

Ibaraki Prefecture:  
50 Dose rate devices (FI)

Tochigi Prefecture:  
1,000 Blankets (DK)



Deployment of EU Civil Protection Team



Date: 2011/04/06 Time: 18:15 UTC

Status	Request for Assistance		From MIC to Civil Protection contact points	
MIC contact	Radica Nusdorfer/Bart Materne MIC Duty Officers		Telephone: +32 2 29 22222 Fax: +32 2 29 90525 E-mail: <a href="mailto:echo-mic@ec.europa.eu">echo-mic@ec.europa.eu</a>	
Event	Cause: Natural disaster	Type: Earthquake		
Occurrence	Date: 11/ 03/11 Time: 18:00 UTC			
Situation	<p><b>Overall Situation</b></p> <p>The number of confirmed casualties is still rising, with 12.175 confirmed deaths and 15.489 still missing. More than 200.000 buildings were heavily damaged or destroyed by the quake / tsunami.</p> <p>More than 160,000 disaster victims are still living in evacuation shelters. The government is focusing its efforts to ensure temporary housing and speed up the restoration to normality.</p> <p>There is no restriction for tap water consumption in Tokyo. In the light of the latest developments at the Fukushima NPP, the sea water and ground water contamination will be the key issue to deal with.</p> <p>As of this stage, according to the latest information available, the vast majority of key infrastructure (highways, ports and airports) has been restored, and electricity, gas and water supply are being restored as well. Also, an emergency water supply system to provide water trucking service to the prefectures has been established. Although some emergency needs still remain in the worst affected areas, it is our understanding that Japan is moving quickly from the emergency response to the recovery phase.</p> <p><b>Offers of assistance</b></p> <p>Today at 06:20LT the 5th EU shipment consisting of 26 tons / 145 m<sup>3</sup> of assistance (food, tents, sleeping bags, clothes, specific boots and gloves) provided by Hungary, Slovakia and Sweden has reached the airport of Narita, Japan. The plane was made available free of charge by AeroLogic, a joint venture of DHL Express and Lufthansa Cargo. In-land delivery to the consignees was handled by DHL Japan free of charge.</p> <p>The EUCP team is following the distribution process in close coordination with Japanese authorities. Today the SK tents and sleeping bags were distributed to the Habitat warehouse in Sendai.</p> <p>For tomorrow, 7 April, the HU, SE and remaining SK assistance will be delivered to the Miagyi prefecture and the 50 dose rate meters provided by Finland will be handed-over to the Ibaraki Prefecture. The EUCP team will provide a short training on the spot on how to properly use the devices.</p> <p>With this 5<sup>th</sup> shipment, nearly 400 tons of in-kind assistance was channelled through the EU Civil Protection Mechanism to Japan, being distributed to the Fukushima, Ibaraki, Miyagi, Tochigi and Yamagata Prefectures.</p> <p>Taking into consideration the short-term mandate of the EU Civil Protection Mechanism, which focuses its activities on the very early stages of an emergency, the MIC intends to phase out the civil protection activities in the coming days, as DG ECHO's focus will now change from civil protection in-kind assistance to financial contribution to the efforts of partners in the Red Cross family. This approach is reflected in the DG ECHO funding decision of 1 April, which provides a contribution of € 10 million to assist more than 30,000 persons in the most affected areas through support to the Red Cross, covering significant needs over the coming 6 months. Participating States wishing to further support the relief effort are encouraged to provide financial assistance through the Red Cross.</p> <p>In view of the overall development of the situation, no further shipments of in-kind assistance through the EU Civil Protection Mechanism are scheduled for the time being. The EUCP Team will return home on 9 April.</p> <p>The MIC will remain in close contact with the Japanese authorities and stands ready to assist in case the situation significantly deteriorates.</p> <p><b>Radiological Situation</b></p> <p>The overall situation of the Fukushima Daiichi plant remains serious. TEPCO said it may inject nitrogen into the No. 1 reactor's containment vessel possibly later Wednesday. According to the national authorities the aim is to stop a potential hydrogen explosion in advance and that does not mean there is an immediate danger.</p> <p>In the Updated dose rate data for the on-site monitoring stations at the Daiichi and Daini sites from 22 March to 5 April a continuing downward trend in dose rates can be observed.</p> <p>A seawater sample taken near the No. 2 reactor water intake Saturday showed a radioactive iodine-131 concentration of 7,5 million times the maximum level permitted under law, or about 300 MBq/cm<sup>3</sup>. At 5 April coagulation agents (liquid glass) was used to block the leakage of highly radioactive contaminated water. It was reported that the leakage has currently stopped.</p> <p>Approximately 11.500 tonnes of low radioactive contaminated water is being discharged to the sea with the aim of providing room to store water with higher levels of radioactivity in a safer manner.</p>			

**From:** McIntyre, David  
**To:** Brenner, Eliot  
**Subject:** RE: Interview with Charles Miller  
**Date:** Thursday, April 07, 2011 2:53:00 PM

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Exchange Monitor would hardly overshadow 60 Minutes.

**From:** Brenner, Eliot  
**Sent:** Thursday, April 07, 2011 2:30 PM  
**To:** McIntyre, David  
**Subject:** RE: Interview with Charles Miller

Think we want to let them do their work until the first reporting period. My two cents. Also, I am trying to set up the chairman with 60 minutes coincident with that event and don't want to overshadow it.

eliot

**From:** McIntyre, David  
**Sent:** Thursday, April 07, 2011 2:07 PM  
**To:** Brenner, Eliot  
**Subject:** FW: Interview with Charles Miller

Have we established a policy on this?

**From:** Sarah Anderson [mailto:sarah@exchangemonitor.com]  
**Sent:** Thursday, April 07, 2011 2:06 PM  
**To:** McIntyre, David  
**Subject:** Interview with Charles Miller

Hello Dave! How are you?

I was wondering if there was a time next week that I could set up an interview with Charles Miller to discuss the Fukushima Task Force.

I'm in all week, but it would be great just to ask Dr Miller about what the task force will be doing, on what timeline, etc, just some basic questions.

Thanks so much,

Sarah E. Anderson  
Reporter, Radwaste Monitor  
Exchange Monitor Publications  
(202) 296-2814 x 110  
anderson@exchangemonitor.com

BA/5



**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Friday, March 11, 2011 5:51 PM  
**To:** Lee, Richard  
**Cc:** Voglewede, John  
**Subject:** Re: Press Release: NRC Continues to Track Earthquake and Tsunami Issues

That doesn't sound good. I really feel for them and all they are dealing with.

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

**From:** Lee, Richard  
**To:** Gibson, Kathy  
**Cc:** Voglewede, John  
**Sent:** Fri Mar 11 17:48:34 2011  
**Subject:** RE: Press Release: NRC Continues to Track Earthquake and Tsunami Issues

Kathy:

Dr. Akihide Hidaka (the Japanese researcher who is participating in our peer review of the revised NUREG-1465 for HBU and MOX fuel) told me that at the Fukushima No. 1 NPP, the fuel could have been broken because iodine concentration in air began to be increased at the site boundary. Containment Venting is imminent.

I am not sure what he meant by "broken." I asked him whether the dose at the site boundaries are within regulatory limits. I have not received any answers yet.

Akihide is on loan to the Japanese Nuclear Safety Commission (NSC) from JAEA. Last night, all NSC staff slept in the office because all transportation in Tokyo was shutdown.

Richard

---

**From:** Gibson, Kathy  
**Sent:** Friday, March 11, 2011 4:29 PM  
**To:** RES\_DSA  
**Subject:** Fw: Press Release: NRC Continues to Track Earthquake and Tsunami Issues

---

**From:** Sheron, Brian  
**To:** Bonaccorso, Amy; Calvo, Antony; Case, Michael; Coe, Doug; Correia, Richard; Dion, Jeanne; Gibson, Kathy; Lui, Christiana; Richards, Stuart; Rini, Brett; Sangimino, Donna-Marie; Uhle, Jennifer; Valentin, Andrea  
**Sent:** Fri Mar 11 16:27:08 2011  
**Subject:** FW: Press Release: NRC Continues to Track Earthquake and Tsunami Issues

**From:** OPA Resource  
**Sent:** Friday, March 11, 2011 4:26 PM  
**To:** Ash, Darren; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozin, Sunny; Brenner, Eliot; Brock, Terry; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Cutler, Iris; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker,

BA/6

David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffry; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Thomas, Ann; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason

Subject: Press Release: NRC Continues to Track Earthquake and Tsunami Issues

The attached to be issued and posted in approximately 15 minutes.

Office of Public Affairs  
US Nuclear Regulatory Commission  
301-415-8200  
[opa.resource@nrc.gov](mailto:opa.resource@nrc.gov)

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Friday, March 11, 2011 5:52 PM  
**To:** Sheron, Brian; Uhle, Jennifer  
**Cc:** Tinkler, Charles  
**Subject:** Fw: Press Release: NRC Continues to Track Earthquake and Tsunami Issues

Fyi

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

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**Cc:** Voglewede, John  
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BA | 7

David; Dricks, Victor; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Haney, Catherine; Hannah, Roger; Harbuck, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Jacobssen, Patricia; Jaczko, Gregory; Jasinski, Robert; Jenkins, Verlyn; Johnson, Michael; Jones, Andrea; Kock, Andrea; Kotzalas, Margie; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; McCrary, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitlyng, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quesenberry, Jeannette; Reddick, Darani; Regan, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Olive; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffry; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Steger (Tucci), Christine; Svinicki, Kristine; Tabatabai, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Thomas, Ann; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Annette; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Wiggins, Jim; Williams, Evelyn; Zimmerman, Roy; Zorn, Jason

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US Nuclear Regulatory Commission  
301-415-8200  
[opa.resource@nrc.gov](mailto:opa.resource@nrc.gov)

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Saturday, March 12, 2011 7:15 AM  
**To:** Gavrilas, Mirela  
**Subject:** Re: Fukushima

I'm not aware of any further info than what's on the news or TEPCO website. This is so sad. Did I read below that Dana is going to Japan?

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

**From:** Gavrilas, Mirela  
**To:** Gibson, Kathy; Case, Michael  
**Cc:** Lee, Richard  
**Sent:** Sat Mar 12 06:55:28 2011  
**Subject:** FW: Fukushima

Any info that can be shared with our contractor at ANL? He has a very sharp mind and he is probably the world's foremost expert if the core did melt through the vessel.

They may have done exactly what Mitch said: flooded the cavity and then they got a steam explosion--Mike Corradini could give the best guess as to that. To me, the timeline fits.

M.

---

**From:** Michael Corradini [corradini@engr.wisc.edu]  
**Sent:** Friday, March 11, 2011 9:08 PM  
**To:** Farmer, Mitchell T.  
**Cc:** Gavrilas, Mirela; Tinkler, Charles; Basu, Sudhamay; Lee, Richard; Grandy, Christopher  
**Subject:** Re: Fukushima

I am with Dana and others at ACRS. We have gotten some small info from folks in Japan. Fukushima used up their DC battery energy powering their RCIC pumps after the AC diesel generators started and then failed. As of 7pm EST, portable generators had arrived but yet to have been hooked up. Charlie or Mirela may know more. Dana has been contacted by a DOE emergency response team (and I wished him well to Japan).

Michael Corradini, Chair  
Engineering Physics  
University of Wisconsin  
(608)263-1648 [Fax: 3-7451]  
[corradini@engr.wisc.edu](mailto:corradini@engr.wisc.edu)  
<http://www.engr.wisc.edu/ep>

Quoting "Farmer, Mitchell T." <[farmer@anl.gov](mailto:farmer@anl.gov)>:

> Hi Mirela, Charlie, Sud, Richard,  
>  
> Don't know if you are out there. I've been watching the situation at  
> Fukushima and don't like what I'm seeing, at least based on the news  
> reports I have access to. I don't know how long a BWR can go w/o

BA 7 8

- > emergency core cooling and not sustain significant core damage but it
- > seems like we're well into that time domain. Is there anything that
- > can be done to help? I don't know, I'm searching.
- > The one thing we learned from MCCI though: if you fear vessel failure
- > and you have any means to flood the cavity then you should do that.
- > They have siliceous concrete in Japan; too much interaction ex-vessel
- > w/o water and coolability is lost. Let me know if there is anything I
- > can do.
- >
- > Mitch
- >
- >

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Saturday, March 12, 2011 7:59 AM  
**To:** Gavrilas, Mirela  
**Subject:** Re: Fukushima

The TEPCO website says they have offsite power and cooling with condensate. It also indicates a stuck rod at one unit that is now inserted. And an explosion but not clear whether reactor building related or something else. a news report says the reactor container was not damaged and they doused the reactor with sea water.

I just got up and took more Nyquil and going back to sleep :-)

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

**From:** Gavrilas, Mirela  
**To:** Gibson, Kathy  
**Sent:** Sat Mar 12 07:47:10 2011  
**Subject:** Re: Fukushima

Looks like Dana is going. Given his area of expertise, one can only assume how serious it really is.

I remember when I was taking R800 with Dana, his caution about you either cool a BWR on time or you have a really hard time keeping the core from melting.

I'm still trying to figure out if they managed to bring water in the cavity or if they are in fool fledged MCCI. I hope it's the former, even if it caused the building to explode.

After this, I'm going to try to get trained in Sangs.

I did not expect to hear from you till 10, but then obviously this is keeping you up as well.

How are you feeling? Throat still sore?

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

**From:** Gibson, Kathy  
**To:** Gavrilas, Mirela  
**Sent:** Sat Mar 12 07:15:24 2011  
**Subject:** Re: Fukushima

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Cc: Gavrilas, Mirela; Tinkler, Charles; Basu, Sudhamay; Lee, Richard; Grandy, Christopher  
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--

Michael Corradini, Chair  
Engineering Physics  
University of Wisconsin  
(608)263-1648 [Fax: 3-7451]  
[corradini@engr.wisc.edu](mailto:corradini@engr.wisc.edu)  
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> w/o water and coolability is lost. Let me know if there is anything I  
> can do.  
>  
> Mitch  
>  
>



**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Sunday, March 13, 2011 1:36 PM  
**To:** 't7o3y1o@docomo.ne.jp'  
**Subject:** Good to hear from you!

Toyo,  
John forwarded your message to those of us who have met and worked with you. Thank you for letting us know you and your family and colleagues are well. We are praying for you and the people of Japan during this horrible disaster. Please let us know if there is anything we can do to help.

Best wishes,

Kathy

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Sunday, March 13, 2011 3:53 PM  
**To:** Ulises, Anthony  
**Subject:** Godspeed!

Tony,  
I heard you are one of the NRC experts going to Japan for assistance. I want to wish you well and safe journey.

Best wishes,  
Kathy

BA/11

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 12:56 AM  
**To:** Sheron, Brian; Uhle, Jennifer  
**Subject:** Fw: FYI - Japan Situation  
**Attachments:** ANS Japan Backgrounder.pdf

Tell me if you want me to stop sending this stuff.

---

**From:** Rubin, Stuart  
**To:** Gibson, Kathy; Scott, Michael  
**Sent:** Sun Mar 13 23:23:14 2011  
**Subject:** FW: FYI - Japan Situation

FYI

---

**From:** Inn Seock Kim [<mailto:isk@issatechinc.com>]  
**Sent:** Saturday, March 12, 2011 11:35 PM  
**Subject:** FYI - Japan Situation

FYI -

(1) Most Likely Accident Scenario at Fukushima Dai-ichi Unit 1 (as of noon 3/13, Korea time)

See attached (from Joe Colvin of ANS).

(2) Fukushima Dai-ichi Unit 1 reactor schematic

<http://www.beyondnuclear.org/home/2011/3/12/fukushima-dai-ichi-unit-1-reactor-schematic.html>

(3) BWR Info

<http://holbert.faculty.asu.edu/eee463/NUCLEAR.HTML>

<http://www.iaea.org/NuclearPower/Downloads/Simulators/Conventional.BWR.Manual.2009-10-05.pdf>

(4) Latest Updated Info on All Japanese NPPs

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

<http://ansnuclearcafe.org>

<http://www.google.com/crisisresponse/japanquake2011.html>

BA/12

Best regards,  
ISK

--  
*Inn Seock Kim, PhD, President*  
*ISSA Technology, Inc.*  
*Maryland, USA*

Greenwood, Carol

---

**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 12:55 AM  
**To:** Rubin, Stuart  
**Subject:** Re: FYI - Japan Situation

Thanks Stu!

---

**From:** Rubin, Stuart  
**To:** Gibson, Kathy; Scott, Michael  
**Sent:** Sun Mar 13 23:23:14 2011  
**Subject:** FW: FYI - Japan Situation

FYI

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(3) BWR Info

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<http://www.google.com/crisisresponse/japanguake2011.html>

Best regards,

BA 13

ISK

*Inn Seock Kim, PhD, President |  
ISSA Technology, Inc.  
Maryland, USA*

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 7:56 AM  
**To:** Gavrilas, Mirela  
**Subject:** Fw: FYI - Japan Situation  
**Attachments:** ANS Japan Backgrounder.pdf

The NISA and NEI sites have the best info

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**From:** Rubin, Stuart  
**To:** Gibson, Kathy; Scott, Michael  
**Sent:** Sun Mar 13 23:23:14 2011  
**Subject:** FW: FYI - Japan Situation

FYI

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**From:** Inn Seock Kim [<mailto:isk@issatechinc.com>]  
**Sent:** Saturday, March 12, 2011 11:35 PM  
**Subject:** FYI - Japan Situation

FYI -

(1) Most Likely Accident Scenario at Fukushima Dai-ichi Unit 1 (as of noon 3/13, Korea time)

See attached (from Joe Colvin of ANS).

(2) Fukushima Dai-ichi Unit 1 reactor schematic

<http://www.beyondnuclear.org/home/2011/3/12/fukushima-dai-ichi-unit-1-reactor-schematic.html>

(3) BWR Info

<http://holbert.faculty.asu.edu/eee463/NUCLEAR.HTML>

<http://www.iaea.org/NuclearPower/Downloads/Simulators/Conventional.BWR.Manual.2009-10-05.pdf>

(4) Latest Updated Info on All Japanese NPPs

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

<http://ansnuclearcafe.org>

<http://www.google.com/crisisresponse/japanquake2011.html>

Best regards,  
ISK

*Inn Seock Kim, PhD, President  
ISSA Technology, Inc.  
Maryland, USA*



## **American Nuclear Society Backgrounder: Japanese Earthquake/Tsunami; Problems with Nuclear Reactors**

**3/12/2011 5:22 PM EST**

**To begin, a sense of perspective is needed... right now, the Japanese earthquake/tsunami is clearly a catastrophe; the situation at impacted nuclear reactors is, in the words of IAEA, an "Accident with Local Consequences."**

The Japanese earthquake and tsunami are natural catastrophes of historic proportions. The death toll is likely to be in the thousands. While the information is still not complete at this time, the tragic loss of life and destruction caused by the earthquake and tsunami will likely dwarf the damage caused by the problems associated with the impacted Japanese nuclear plants.

### **What happened?**

Recognizing that information is still not complete due to the destruction of the communication infrastructure, producing reports that are conflicting, here is our best understanding of the sequence of events at the Fukushima I-1 power station.

- The plant was immediately shut down (scrammed) when the earthquake first hit. The automatic power system worked.
- All external power to the station was lost when the sea water swept away the power lines.
- Diesel generators started to provide backup electrical power to the plant's backup cooling system. The backup worked.
- The diesel generators ceased functioning after approximately one hour due to tsunami induced damage, reportedly to their fuel supply.
- An Isolation condenser was used to remove the decay heat from the shutdown reactor.
- Apparently the plant then experienced a small loss of coolant from the reactor.
- Reactor Core Isolation Cooling (RCIC) pumps, which operate on steam from the reactor, were used to replace reactor core water inventory, however, the battery-supplied control valves lost DC power after the prolonged use.
- DC power from batteries was consumed after approximately 8 hours.
- At that point, the plant experienced a complete blackout (no electric power at all).
- Hours passed as primary water inventory was lost and core degradation occurred (through some combination of zirconium oxidation and clad failure).

- Portable diesel generators were delivered to the plant site.
- AC power was restored allowing for a different backup pumping system to replace inventory in reactor pressure vessel (RPV).
- Pressure in the containment drywell rose as wetwell became hotter.
- The Drywell containment was vented to outside reactor building which surrounds the containment.
- Hydrogen produced from zirconium oxidation was vented from the containment into the reactor building.
- Hydrogen in reactor building exploded causing it to collapse around the containment.
- The containment around the reactor and RPV were reported to be intact.
- The decision was made to inject seawater into the RPV to continue to the cooling process, another backup system that was designed into the plant from inception.
- Radioactivity releases from operator initiated venting appear to be decreasing.

#### **Can it happen here in the US?**

- While there are risks associated with operating nuclear plants and other industrial facilities, the chances of an adverse event similar to what happened in Japan occurring in the US is small.
- Since September 11, 2001, additional safeguards and training have been put in place at US nuclear reactors which allow plant operators to cool the reactor core during an extended power outage and/or failure of backup generators – “blackout conditions.”

#### **Is a nuclear reactor "meltdown" a catastrophic event?**

- Not necessarily. Nuclear reactors are built with redundant safety systems. Even if the fuel in the reactor melts, the reactor's containment systems are designed to prevent the spread of radioactivity into the environment. Should an event like this occur, containing the radioactive materials could actually be considered a "success" given the scale of this natural disaster that had not been considered in the original design. The nuclear power industry will learn from this event, and redesign our facilities as needed to make them safer in the future.

**What is the ANS doing?**

ANS has reached out to The Atomic Energy Society of Japan (AESJ) to offer technical assistance.

ANS has established an incident communications response team.

This team has compiling relevant news reports and other publicly available information on the ANS blog, which can be found at [ansnuclearcafe.org](http://ansnuclearcafe.org).

The team is also fielding media inquiries and providing reporters with background information and technical perspective as the events unfold.

Finally, the ANS is collecting information from publicly available sources, our sources in government agencies, and our sources on the ground in Japan, to better understand the extent and impact of the incident.

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 8:08 AM  
**To:** Scott, Michael; RES\_DSA  
**Subject:** Re: Japan's Nuclear Plant Status

Here's the NISA website:

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

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

**From:** Gibson, Kathy  
**To:** Scott, Michael; RES\_DSA  
**Sent:** Mon Mar 14 08:03:22 2011  
**Subject:** Re: Japan's Nuclear Plant Status

I have found the NISA (Japan's nuclear regulatory agency) and NEI websites to be the most informative. Also John Voglewede heard from Toyo Fuketa, one of our JAEA colleagues - he and his family are ok as well as those at JAEA's office.

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

**From:** Scott, Michael  
**To:** RES\_DSA  
**Sent:** Mon Mar 14 07:47:41 2011  
**Subject:** Japan's Nuclear Plant Status

Good morning.

I know you have heard a lot in the press about the challenging situation for the reactors in Japan nearby last week's quake. NRC does not post status on these reactors. A good clearinghouse for information on the status of the Japanese reactors can be found on the website of the American Nuclear Society at:

<http://ansnuclearcafe.org/>

At least one of the DSA staff (Tony Huffert) has been called in as the NRC Command Center has been partially stood up to provide whatever support we can to Japan. It is possible more of us will be tapped as the event progresses. I'm sure we all share concern about this event and its impacts, and want to do all we can to help.

Mike

BA/15

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 8:46 AM  
**To:** Case, Michael; Scott, Michael  
**Cc:** Sheron, Brian; Uhle, Jennifer; Bonaccorso, Amy; Flory, Shirley  
**Subject:** Re: Japanese Earthquake--Ops Center Request

The best person I know of is Trish Milligan in NSIR. Terry Brock should also have some information.

---

**From:** Case, Michael  
**To:** Gibson, Kathy  
**Cc:** Sheron, Brian; Uhle, Jennifer; Bonaccorso, Amy; Flory, Shirley  
**Sent:** Mon Mar 14 08:41:08 2011  
**Subject:** Japanese Earthquake--Ops Center Request

Hi Kathy. They are working on what if scenarios in the Ops Center. They are tasked to compare some of the dose assessment results on the Japanese plants to Chernobyl. They need someone or some information on dose results from Chernobyl. Who do you have to help? The request is specifically from Kathryn Brock on the PMT.

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 2:15 PM  
**To:** Scott, Michael  
**Subject:** Are you calling Sandia?

Do you know who the 6 NRC staff are going to Japan?

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 8:31 PM  
**To:** Lee, Richard; Elkins, Scott; Hoxie, Chris; Santiago, Patricia; Bush-Goddard, Stephanie; Zaki, Tarek  
**Cc:** Scott, Michael  
**Subject:** Re: OpsCenter

No not at this point.

As I understand it, Tony Ulises and Jim Trapp from Region 1 have gone to Japan and Chuck Casto, John Monninger, Tony Nakanishi, Tim Kolb, Jack Foster and Richard Devercelly are going.

Besides Hossein and Mike, Tony Huffert, Casper Sun and Jason Schaperow have been on shifts at the Ops Center. Anybody else from DSA?

Thanks!

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

**From:** Lee, Richard  
**To:** Gibson, Kathy  
**Sent:** Mon Mar 14 20:13:07 2011  
**Subject:** RE: OpsCenter

Kathy:

Thanks, I will let them know. Do you whether Charlie or Jason is heading to Japan?

Richard

---

**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 7:31 PM  
**To:** Lee, Richard  
**Cc:** Elkins, Scott; Hoxie, Chris; Scott, Michael; Zaki, Tarek; Uhle, Jennifer  
**Subject:** Re: OpsCenter

Thanks Richard! And Mike and Hossein too!

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

**From:** Lee, Richard  
**To:** Gibson, Kathy  
**Cc:** Elkins, Scott; Hoxie, Chris; Scott, Michael; Zaki, Tarek  
**Sent:** Mon Mar 14 18:17:34 2011  
**Subject:** RE: OpsCenter

Mika Salay and Hossein Esmaili have already been assigned to staff the Ops Center since this weekend.

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

**From:** Gibson, Kathy  
**Sent:** Monday, March 14, 2011 5:56 PM  
**To:** Lee, Richard; Elkins, Scott; Hoxie, Chris; Scott, Michael; Zaki, Tarek  
**Subject:** OpsCenter  
**Importance:** High

BA/18

Who do we have that can perform the duties of BWR severe accident analyst for the Ops Center?



**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 8:37 AM  
**To:** Santiago, Patricia; Tinkler, Charles; Lee, Richard  
**Cc:** Scott, Michael  
**Subject:** Re: MELCOR input deck for Germany

**Importance:** High

Hold on, is there someone who can do this besides Charlie? Someone in Richard's branch?

---

**From:** Santiago, Patricia  
**To:** Tinkler, Charles  
**Cc:** Gibson, Kathy; Scott, Michael  
**Sent:** Wed Mar 16 08:33:11 2011  
**Subject:** FW: MELCOR input deck for Germany

Morning Charlie,

Can you email Diane back with your contact information and cc management.

Thanks again Charlie!

---

**From:** Uhle, Jennifer  
**Sent:** Wednesday, March 16, 2011 8:22 AM  
**To:** Santiago, Patricia; Gibson, Kathy; Scott, Michael  
**Subject:** Fw: MELCOR input deck for Germany

We should be able to do this from our aircraft impact SFP work. Charlie knows. J

---

**From:** [Diane.JACKSON@oecd.org](mailto:Diane.JACKSON@oecd.org) <[Diane.JACKSON@oecd.org](mailto:Diane.JACKSON@oecd.org)>  
**To:** Uhle, Jennifer  
**Sent:** Wed Mar 16 08:18:04 2011  
**Subject:** MELCOR input deck for Germany

Hello Jennifer –

How are you? I am sure overly busy with Japan, as many of us are. We have requests for information from all over in many forms.

As I am sure you know, the German government has ordered the shutdown of 7 of their plants that were built before 1980. GRS would like to run MELCOR on Mark 1 containments to fight back with some analysis.

Would NRC/RES be able to share an input deck for Mark 1 containment with GRS? Maybe someone from SOARCA branch could talk with someone in GRS?

If so, I can send along a NRC name and number or I can get my German colleague here to give me the GRS contact, so that NRC can contact GRS directly.

 **Diane Jackson**, Nuclear Safety Specialist  
Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)

BA/19

Tel.: +33 (0)1 45 24 10 55, [Diane.Jackson@oecd.org](mailto:Diane.Jackson@oecd.org)

**Update your bookmarks!** On 1 December 2010, the NEA is moving to: [www.oecd-nea.org](http://www.oecd-nea.org)

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 8:59 AM  
**To:** RES\_DSA  
**Subject:** Request for info  
  
**Importance:** High

It seems I need to clarify my information request.

Please let Ken know 3 things:

Are you willing to work in the Ops Center (if asked)? If so what shifts?

Are you willing to go to Japan (if asked)?

We need this by noon.

What is your area of expertise?

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 9:13 AM  
**To:** Santiago, Patricia  
**Cc:** Scott, Michael  
**Subject:** Also Don Helton

For severe accidents and spent fuel pools.

Kevin is going to get us his phone number (he's at a conference til Friday).

And I confirmed with Brian he is willing to delay SOARCA - but wants it done! So we will need to propose a reasonable date when we see how things are unfolding.

Also check with PMDA and Susan about initiating a mod to SOARCA SOW or new contract for support to NRC for assistance to Japan. (For contingency in case we need them.)

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 10:14 AM  
**To:** Armstrong, Kenneth  
**Subject:** Fw: Request for info

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

**From:** Whitman, Josh  
**To:** Gibson, Kathy  
**Sent:** Wed Mar 16 10:08:50 2011  
**Subject:** RE: Request for info

Kathy,

I am willing to work in the Ops Center if asked. I have no shift preference (I could work any shift).

I am also willing to go to Japan if asked.

My area of expertise is systems analysis. I have also interned with TEPCO in 2005 at one of their Tokyo research offices for 3 months, although I speak very little Japanese and have not maintained any contacts.

Thanks,  
Josh Whitman

---

**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 8:58 AM  
**To:** RES\_DSA  
**Subject:** Request for info

It seems I need to clarify my information request.

Please let Ken know 3 things:

Are you willing to work in the Ops Center (if asked)? If so what shifts?

Are you willing to go to Japan (if asked)?

We need this by noon.

What is your area of expertise?

BA/22

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 11:18 AM  
**To:** Sheron, Brian  
**Subject:** Fw:

This is interesting - recall my mention this morning about NEI quoting DOE experiments saying ignition not possible. I don't have any problem with us and the lab participating in this discussion, do you. There was an email about processing requests through the Ops center. Do we need to do this for the GRS and NEI requests?

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

**From:** Zigh, Ghani  
**To:** Gibson, Kathy; Scott, Michael  
**Sent:** Wed Mar 16 11:13:07 2011  
**Subject:** FW:

What do you think?

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

**From:** Lindgren, Eric [<mailto:erlindg@sandia.gov>]  
**Sent:** Wednesday, March 16, 2011 11:11 AM  
**To:** Zigh, Ghani  
**Subject:**

Ghani,

Steve Kraft from NEI called my manager Ken Sorenson to ask if we would call them today to discuss our spent fuel ignition experiments. This is in regards to the ongoing Japanese nuclear disaster. We need to know if we can discuss this with them.

Please let us know.

Thanks

Eric

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 12:59 PM  
**To:** Dehn, Jeff; Santiago, Patricia; Sangimino, Donna-Marie; Scott, Michael; Chang, Richard  
**Subject:** Re: GRS request for MELCOR input deck for Mark 1

I'm doing an interview so I can't engage on this for about a half hour. Please hold the presses until I've had a chance to talk to Brian about Charlie's and Sandia's concerns and come up with a sensible path forward to respond to these requests.

Thanks

---

**From:** Dehn, Jeff  
**To:** Santiago, Patricia; Sangimino, Donna-Marie; Scott, Michael; Gibson, Kathy; Chang, Richard  
**Sent:** Wed Mar 16 12:53:04 2011  
**Subject:** FW: GRS request for MELCOR input deck for Mark 1

FYI, this just came in. Brian's already been in touch w/ Diane @ NEA and the Director General of GRS (Dr. Weiss) about providing the SORCA analysis. I'll be following up with OIP shortly.

Thanks,  
Jeff

---

**From:** [Diane.JACKSON@oecd.org](mailto:Diane.JACKSON@oecd.org) [<mailto:Diane.JACKSON@oecd.org>]  
**Sent:** Wednesday, March 16, 2011 12:47 PM  
**To:** Astwood, Heather; Schwartzman, Jennifer; Dehn, Jeff; Sangimino, Donna-Marie  
**Subject:** FYI: GRS request for MELCOR input deck for Mark 1

Dear all –

I want to keep you informed for requests or exchanges with NEA/NRC, especially if it high level.

GRS was asking for fast action to help combat the shutdown of seven reactors in Germany in wake of the Japan events. Dr. Weiss, director general of GRS, (through the German NEA employee in our division) was making the request.

Since it was Director General of GRS and a counterpart of Brian Sheron on the CSNI board, I sent the request directly to Brian and Bill Borchardt.

Brian (below) responded quickly with help for GRS. And they are very grateful to the NRC.

Best regards,



**Diane Jackson**, Nuclear Safety Specialist  
Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)  
Tel.: +33 (0)1 45 24 10 55, [Diane.Jackson@oecd.org](mailto:Diane.Jackson@oecd.org)

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**From:** Weiß, Frank-Peter Prof. Dr. [<mailto:Frank-Peter.Weiss@grs.de>]  
**Sent:** Wednesday, March 16, 2011 15:51  
**To:** JACKSON Diane, NEA/SURN; [Brian.Sheron@nrc.gov](mailto:Brian.Sheron@nrc.gov); [Jennifer.Uhle@nrc.gov](mailto:Jennifer.Uhle@nrc.gov)  
**Cc:** BREEST Axel, NEA/SURN  
**Subject:** AW: GRS request for MELCOR input deck for Mark 1

BA/24

Thank you all!

Yes, we are interested in the results of the Peach Bottom SOARCA results!

Regards

Frank-Peter

**Prof. Dr. rer. nat. Frank-Peter Weiss**

Wissenschaftlich-technischer Geschäftsführer / Scientific-technical Director

Gesellschaft für Anlagen- und Reaktorsicherheit (GRS) mbH

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Internet: <http://www.grs.de>

Vorsitzender des Aufsichtsrates: Prof. Staatssekretärin Ursula Heinen-Esser

Geschäftsführer: Prof. Dr. Frank-Peter Weiß, Hans J. Steinhauer

Registergericht: Amtsgericht Koeln, HRB 7665 Sitz der Gesellschaft: Köln

Disclaimer

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**Von:** [Diane.JACKSON@oecd.org](mailto:Diane.JACKSON@oecd.org) [<mailto:Diane.JACKSON@oecd.org>]

**Gesendet:** Mittwoch, 16. März 2011 15:44

**An:** [Brian.Sheron@nrc.gov](mailto:Brian.Sheron@nrc.gov); [Jennifer.Uhle@nrc.gov](mailto:Jennifer.Uhle@nrc.gov)

**Cc:** Weiß, Frank-Peter Prof. Dr.; [Axel.BREEST@oecd.org](mailto:Axel.BREEST@oecd.org)

**Betreff:** RE: GRS request for MELCOR input deck for Mark 1

Dear Brian –

Thank you for the quick response. Yes, Dr. Weiss would very much appreciate the SOARCA results for Peach Bottom.

Best regards,



**Diane Jackson**, Nuclear Safety Specialist

Nuclear Safety Division, OECD Nuclear Energy Agency (NEA)

Tel.: +33 (0)1 45 24 10 55, [Diane.Jackson@oecd.org](mailto:Diane.Jackson@oecd.org)

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**From:** Sheron, Brian [<mailto:Brian.Sheron@nrc.gov>]

**Sent:** Wednesday, March 16, 2011 15:21

**To:** JACKSON Diane, NEA/SURN; Borchardt, Bill; Uhle, Jennifer

**Cc:** REIG Javier, NEA/SURN; DUNN LEE Janice, NEA

**Subject:** RE: GRS request for MELCOR input deck for Mark 1

Diane, Kathy Gibson said that we are checking with the Peach Bottom plant to see if we can release the Peach Bottom MELCOR deck, since it is proprietary.

However, we have already completed consequence analyses for Peach Bottom as part of SOARCA. Would GRS be interested in the SOARCA

Results, since the severe accident analyses are already done?



## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 10:46 PM  
**To:** Sheron, Brian  
**Cc:** Uhle, Jennifer  
**Subject:** Re: MACCS run

It is being run beyond 50, sorry I should have said beyond. There are apparently difficulties because Nate Bixler is away teaching a MACCS class and there are questions about whether we have an appropriate spent fuel model (our models were high density and these are low density pools). However Charlie and Randy Gauntt are working it. Randy is clear we need something tomorrow and I passed on to Charlie and him Jennifer's specifications for the runs (3 reactors + 3 pools, and 3 reactors + 6 pools over 4 days).

I saw on the news that they tried dropping water from helicopters but because they were so high up they only hit the target once. But they are bringing 11 water cannon truck to the site. Also 180 staff are working rotating shifts.

Also, Jennifer, it doesn't appear that Jason talked to Sandia or Richard today. We called Jason but were unable to contact him tonight, so I will check in the morning.

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

**From:** Sheron, Brian  
**To:** Gibson, Kathy  
**Cc:** Uhle, Jennifer  
**Sent:** Wed Mar 16 21:21:06 2011  
**Subject:** RE: MACCS run

Why are we only running it out to 50 miles. I was told Rascal calculates out to 50 miles and they already ran the RASCAL analysis in the IRC. I would think we would want to run MACCS out to further distances to see what the projected doses are and whether our (U.S.) recommendation that U.S. citizens in Japan evacuate out to 50 miles remains valid, or if we should increase the recommended evacuation zone.

---

**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 3:09 PM  
**To:** Sheron, Brian  
**Subject:** MACCS run

Sandia is doing a MACCS run out to 50 miles at Jennifer's request. Charlie is on the phone with Sandia to ensure they are using the "right" source term considering multiple reactors and spent fuel pools.

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 2:09 PM  
**To:** McGinty, Tim  
**Subject:** Re: Query: Willing/Able to Serve on the Liaison Team in the Operations Center

I'm already slated for the PMT. Have you thought about tapping SESCDP grads that haven't been placed?

---

**From:** McGinty, Tim  
**To:** Akstulewicz, Frank; Bergman, Thomas; Madden, Patrick; Richards, Stuart; Gibson, Kathy; Correia, Richard; Delligatti, Mark; Webber, Robert; Persinko, Andrew; Davis, Jack; Bailey, Marissa; Weaver, Doug; Adams, John  
**Cc:** Evans, Michele; OST02 HOC; Thaggard, Mark; Tschiltz, Michael; Blount, Tom; Lombard, Mark; Jones, Cynthia; Giitter, Joseph; Temple, Jeffrey; LIA06 Hoc; LIA08 Hoc; McDermott, Brian; Morris, Scott; Bower, Anthony  
**Sent:** Wed Mar 16 13:44:52 2011  
**Subject:** Query: Willing/Able to Serve on the Liaison Team in the Operations Center

Colleagues – I am reaching out to you directly to see if you can, and would be interested, in joining the Liaison Team (LT) in the Operations Center as a Director and/or Deputy Director.

If you already have a defined incident response roll, please disregard this query.

To get to the point: The LT currently only has a handful of "Directors". Since we need to staff the Ops Center 24/7, perhaps for an extended period of time (see below from the NSIR Acting Deputy Director), I am "recruiting" among colleagues who may be able and interested in helping. Since this is an ongoing event on foreign soil, the LT has actually been actively involved. We need additional help to staff the LT leadership position for the next month.

If you are interested and able to help, please email the LT Coordinator (Jeff Temple), Anthony Bower and myself. There is no need to "reply to all", or to reply at all, as the Incident Response activity continues to be on a voluntary basis.

I think the LT only needs 2 or 3 additional volunteers to establish enough capability to allow for a rotating shiftwork watchbill that will also give us some flexibility to do our normal jobs part time as well. If you can do it, I would expect the process to be to "shadow" one of the LT Directors at shift change and perhaps for a couple hours to observe team activities, a half-hour brief by the Coordinator, and to review the LT Directors procedure.

Thanks for your consideration - Tim

---

**From:** OST02 HOC  
**Sent:** Tuesday, March 15, 2011 6:28 PM  
**To:** Thaggard, Mark; Blount, Tom; McGinty, Tim; Tschiltz, Michael  
**Cc:** Evans, Michele  
**Subject:** Staffing Ops Center 24/7  
**Importance:** High

### Liaison Team Directors:

Per EDO direction we plan to staff the Ops Center 24/7 while we have staff dispatched in Japan. And we are currently planning to identify a second team to send to Japan in about 2 weeks, with the idea that they may stay there for an additional two weeks. That would take us out to April 10 or so.

Staffing in the IRC will remain at the current levels for potentially another week. Possibly we will be able to scale back somewhat at that point. The intent is to develop a schedule through April 10 at this point. The immediate focus is to staff for the first week, starting Saturday March 19.

We'd like to have a little more consistency in the staffing of most positions. So we'd like to staff the Liaison Team Director in 4 day blocks, three shifts each day, starting March 19.

Tim McGinty has offered to take the lead to coordinate among the potential Liaison Team Directors to fill the schedule. Please work with him and provide at least the schedule for the first four day block by COB Wednesday March 16.

*Michele*

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 16, 2011 11:36 PM  
**To:** Scott, Michael; Lee, Richard; Santiago, Patricia; Tinkler, Charles; Zigh, Ghani; Navarro, Carlos  
**Cc:** Armstrong, Kenneth  
**Subject:** Fw: RES support for commission meeting on Monday 3/21.  
**Attachments:** Assistance with Commission Brief

This is a heads up. You will likely be involved in preparing materials for this briefing.

Mike, would you please coordinate this effort and keep me informed? I will be on the night shift Saturday and Sunday night in the Ops Center, so I may or may not be available (I.e. Awake) for the briefing depending on what time the briefing is scheduled.

Thanks, all!

---

**From:** Dion, Jeanne  
**To:** Coe, Doug; Gibson, Kathy; Coyne, Kevin; Case, Michael; Sheron, Brian; Uhle, Jennifer  
**Cc:** Rini, Brett; Armstrong, Kenneth  
**Sent:** Wed Mar 16 18:42:32 2011  
**Subject:** RES support for commission meeting on Monday 3/21.

NRR has requested RES to support a commission briefing on Monday 3/21. They are looking for background information, slides, key messages, talking points and possible Q&A- see the attached message. This might be a public meeting- our input will need to be fairly high level. NRR will provide more information after the EDO alignment meeting tomorrow 3/17.

Bill Borchardt's presentation, "Overview of Japanese Event and US response"

- RES to provide slides/information on "Advancing our understanding of safety and risk" (more info to come)

Mike Weber's presentation, "Situation assessment for US reactors and applicants"

- RES to provide slides/information on "Consequence Projections in Japan and what we might expect to see in the US"

Marty Virgilio's presentation, "Situation assessment for US reactors and applicants."

-RES to assist NRR as requested.

I will be in a meeting tomorrow morning (8am to noon)- Kenneth Armstrong will attend the 8:45am meeting.

Thanks,

Jeanne Dion  
Technical Assistant (Acting)  
U.S. Nuclear Regulatory Commission  
Office of Nuclear Regulatory Research  
[jeanne.dion@nrc.gov](mailto:jeanne.dion@nrc.gov)  
301-251-7482

BA/27

**Greenwood, Carol**

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**From:** Howe, Allen  
**Sent:** Wednesday, March 16, 2011 5:09 PM  
**To:** Dion, Jeanne; Williams, Donna; Bajwa, Chris; Wittick, Susan; Shropshire, Alan; VanderBerghe, John; Deegan, George; Milligan, Patricia  
**Cc:** Meighan, Sean; Hall, Randy; Boska, John  
**Subject:** Assistance with Commission Brief  
**Attachments:** Scheduling NoteMar2011\_JapaneseEvent agh 3-16-2011.docx; commission meeting outline 3-16-2011.docx  
  
**Importance:** High

I am looking for assistance to pull together background information, slides, key messages, talking points and possible Q&A for the Commission briefing on the Japan event. The briefing is likely to happen Monday. Looks like a busy weekend. A rough draft outline is attached with leads for the areas. Please keep in mind that the meeting will be public and the information will be at a fairly high level. If you know of a point of contact that is best suited to address the information, please let me know.

I am working to schedule a meeting tomorrow afternoon @1:30 to flesh this out. I will send out a scheduler with a bridge line.

Thanks - Allen

BA/28

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Saturday, March 19, 2011 1:11 PM  
**To:** Lee, Richard; Scott, Michael  
**Cc:** Sheron, Brian; Uhle, Jennifer  
**Subject:** Re: Proposal to handle dried Spent fuel pool.docx

Good work, guys! Thanks

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

**From:** Lee, Richard  
**To:** Gibson, Kathy; Scott, Michael  
**Sent:** Sat Mar 19 10:39:26 2011  
**Subject:** FW: Proposal to handle dried Spent fuel pool.docx

fyi

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

**From:** Lee, Richard  
**Sent:** Saturday, March 19, 2011 9:03 AM  
**To:** Voglewede, John; Clifford, Paul  
**Cc:** Blumberg, Mark  
**Subject:** RE: Proposal to handle dried Spent fuel pool.docx

At yesterday 1:30 pm, Charlie Tinkler, Hossein Esmaili (at the Op Center) and I participated in a conference call with the Op Center with a large group of external stakeholders (EPRI, Naval reactors, KAPL, Bettis,...), Bob brought up the idea of using liquid Ar. Charlie Tinkler mentioned that after the SNL BWR Zr-fire finished, SNL used Ar to cool those bundles, it took them 3 days to do it. It is very slow. The purpose of yesterday conference call was to formulate options paper on dealing with cooling SFP in Fukushima, and provide it to the NRC team at the U.S. Embassy in Tokyo. The position paper has been formulated after the conference call.

Using water to cool a hot intact, partial intact or debris bed will initially generate a lot of steam and most likely FP release, but it removes a lot of heat and subsequently scrubbing the FPs. LOFT FPT2 reflooding of the bundle, showed an initial pressure rise and additional FPs release.

If I understood what the Japanese TV is showing this morning (US EST), large amount of water was been sprayed at the unit.

---

**From:** Voglewede, John  
**Sent:** Saturday, March 19, 2011 8:01 AM  
**To:** Clifford, Paul  
**Cc:** Blumberg, Mark  
**Subject:** RE: Proposal to handle dried Spent fuel pool.docx

It is an interesting proposal but it presumes that the damage is still in the process of being done..

At a minimum, I think we should assume that the leak tightness of most of the fuel rods is gone, and that most of the rod-like geometry is also gone. The result is a rubble much like Three Mile Island. The evidence for this is the long uncover periods and the presence of cesium and iodine outside the plant.

BA/29

The question at the moment is how much zirconium metal-water reaction has taken place (not just zirconium hydride reaction) because it provides most (but not all) of the heat source. If there is much zirconium metal left, it is prudent to cool it rather than inert it because even a little water provides additional oxidizing agent. If there is little zirconium metal left, it is prudent to seal the containment leakage paths rather than inert it because there is only decay heat to worry about.

From: Clifford, Paul  
Sent: Friday, March 18, 2011 10:21 AM  
To: Voglewede, John; Blumberg, Mark  
Subject: FW: Proposal to handle dried Spent fuel pool.docx

John: Your thoughts on Bob's proposal.

Mark: While Bob's proposal would maintain the fuel, it does not provide the scrubbing that water does. Your thoughts on pros/cons of Argonne w.r.t. dose.

From: Ruland, William  
Sent: Thursday, March 17, 2011 12:52 PM  
To: Clifford, Paul  
Cc: Attard, Anthony; Bahadur, Sher; Mendiola, Anthony  
Subject: FW: Proposal to handle dried Spent fuel pool.docx

A realistic proposal given the current situation?

Bill

From: Ordaz, Vonna  
Sent: Thursday, March 17, 2011 12:39 PM  
To: Dudes, Laura; Ruland, William; McIntyre, David  
Cc: Dorman, Dan; Haney, Catherine; Einziger, Robert; Rahimi, Meraaj  
Subject: Proposal to handle dried Spent fuel pool.docx

Laura,

I understand that you are on duty as the RST Director today. From our shift last night, Bill Ruland and the RST staff were discussing various approaches to address the potentially dry SFP. One of our Senior Materials Experts, Bob Einziger has prepared the attached proposal to offer support on how to handle a dry SFP. He is available, if needed, and can be reached at 301-492-3283.

Thanks,  
Vonna

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 23, 2011 10:27 AM  
**To:** Evans, Michele  
**Subject:** Re: Upcoming Comm Meeting on Fukushima rad consequences

Are you ok with the scheduling note? EDOs office is asking for it.

We can add Charlie with topic of Rad consq and health effects overview. Or have him give concluding remarks so it would be more natural for him to answer questions that follow.

And if you have names for external panel that would be great but not essential right now. We can send with TBD.

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

**From:** Evans, Michele  
**To:** Gibson, Kathy  
**Sent:** Wed Mar 23 10:20:12 2011  
**Subject:** RE: Upcoming Comm Meeting on Fukushima rad consequences

OK. I will talk to Charlie in near term.

thanks

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

**From:** Gibson, Kathy  
**Sent:** Wednesday, March 23, 2011 8:29 AM  
**To:** Evans, Michele  
**Subject:** Upcoming Comm Meeting on Fukushima rad consequences

Michele,  
Mike Weber opined that we need an SES with Bill and the SLs to respond to Commission questions. Brian and I discussed this and think Charlie Miller may be a good choice. FYI and consideration.

K



Greenwood, Carol

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From: Gibson, Kathy  
Sent: Thursday, March 24, 2011 7:30 AM  
To: Hoxie, Chris; Lee, Richard; Wagner, Katie  
Subject: Re: BWR-3 and Mark I

This may be thinking way outside the box, but can we put up an external website with all the info we can make public there and then reference people to it? We could also have a password protected link to OOU etc that we could give to a smaller set of people. What do you think?

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

From: Hoxie, Chris  
To: Lee, Richard; Wagner, Katie  
Cc: Gibson, Kathy  
Sent: Thu Mar 24 04:13:58 2011  
Subject: FW: BWR-3 and Mark I

First request from a CAMP member for information...  
Richard, I will be by to discuss.

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

From: Tomasz Kozlowski [<mailto:tomasz@safety.sci.kth.se>]  
Sent: Wednesday, March 23, 2011 7:26 PM  
To: Hoxie, Chris  
Subject: BWR-3 and Mark I

Hi Chris,

I assume that you and NRC get this a lot these days, but I would like to ask if you have any BWR-3 and/or Mark I documentation that is publicly available that you could send me?

Is there MELCOR input for BWR-3 that could be made available, also?

We would like to do some simulations of Fukushima.

Thank you!

Tomasz

BA/31

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 23, 2011 1:28 PM  
**To:** Boyd, Christopher  
**Subject:** RE: ICONE19  
**Attachments:** Kathy Halvey Gibson.vcf

Ok thanks

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

**From:** Boyd, Christopher  
**Sent:** Wednesday, March 23, 2011 11:47 AM  
**To:** Gibson, Kathy  
**Subject:** RE: ICONE19

Kathy,

Regarding the ICONE19 meeting. They have been updating their website and just adjusted some final program due dates which makes it look like they are carrying on without interruption. I just received an email yesterday from one of their coordinators requesting information. There is no talk of cancelling the meeting on their website. The only reference they give to the earthquake is below (copied from their website).

I am assuming that by the middle of May, things will be much calmer than they are now (We should not be hearing about steam releases every other day).

Chris

\*\*\*\*\*

Welcome to the ICONE19 website  
ICONE19 in Makuhari, Japan, is scheduled for May 16 - 19, 2011. (Poster, PDF, 757kB. Revised Aug. 18, 2010)

To all of the participants of ICONE19  
Very big earthquake and tsunami hit to Japan on 11 March. But our event facility has no problem now.

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

**From:** Gibson, Kathy  
**Sent:** Wednesday, March 23, 2011 11:25 AM  
**To:** Boyd, Christopher  
**Subject:** Need to see you when you have a chance

## Greenwood, Carol

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**From:** Camper, Larry  
**Sent:** Wednesday, March 23, 2011 12:49 PM  
**To:** Dorman, Dan  
**Cc:** Deegan, George; RST01 Hoc; Bowman, Gregory; Hickman, John  
**Subject:** Decommissioning Type Information

Dan,

Greetings! Trust you are holding up well over there! Regarding your message of earlier today, we will be able to provide feedback on Question number 6 today by the 18:00 timeframe. Questions 6,8 and 9 will require a bit of review and interface with RES but we will start that process today. Standby for a better timeline on those. The staff did some work on the entombment issue via a couple of SECY's but the approach died out because it became clear that industry was not going to utilize it in the US. Of course, the situation in Japan is quite different etc. Regardless, our earlier work should be of some benefit but we just have to resurrect it and review etc. In thinking ahead just a bit, I suspect that we will need to put together some sort of Task Force or think tank type group to analyze possible paths forward for the overall decommissioning of the site and for the related waste management etc. Of course, we have some time to think about this issue but not too long etc.

## **Greenwood, Carol**

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**Subject:** FW: Request for Information after Events in Japan  
**Location:** HQ-TWFN-10A01-40p  
  
**Start:** Thu 3/24/2011 3:00 PM  
**End:** Thu 3/24/2011 4:00 PM  
**Show Time As:** Tentative  
  
**Recurrence:** (none)  
  
**Meeting Status:** Not yet responded  
  
**Organizer:** Janney, Margie

Hi Everyone,

The agency is receiving a significant increase in requests for information after the events in Japan. Your help is needed to provide solutions as to how we can expeditiously complete the requests without significantly impacting mission-related work.

Some topics which we'd like to discuss include:

A quick FOIA request overview

A quick Congressional Inquiry overview

What is considered due diligence in searching for the requested material?

Can OIS provide an automated enterprise search for the pertinent information needed; if so, what are the search criteria?

Please forward this meeting notice to appropriate staff.

Please let me know if you have any questions.

Thanks!

-Margie

BA/34

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Friday, March 25, 2011 7:30 AM  
**To:** Lewis, Robert  
**Cc:** Bush-Goddard, Stephanie  
**Subject:** Fw: John Boice- CNN: Japan Reactor Accident - Radiation Risks in Perspective

Rob,  
Suggestion for a speaker on the external panel. We just contacted him to speak for RES Chernobyl seminar and he's done a previous seminar for us. Internationally respected authority on radiological risk and dose consequences.

Stephanie can give you more details, and the video is worth watching.

Kathy

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**From:** Brock, Terry  
**To:** Gibson, Kathy  
**Sent:** Thu Mar 24 13:37:18 2011  
**Subject:** John Boice- CNN: Japan Reactor Accident - Radiation Risks in Perspective

Excellent John Boice interview below on Japanese current events. Hat-tip to Vered on finding this.

Terry

CNN Video Link:

<http://www.cnn.com/video/data/2.0/video/world/2011/03/23/sotu.boice.0320.cnn.cnn.html>

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Friday, March 25, 2011 12:11 PM  
**To:** Bergman, Thomas  
**Subject:** Notifiactions

Tom,

Mike is in Japan and it is night there so I haven't been able to make contact with him. I'm going to go ahead and notify the others this afternoon. It is highly unlikely that Mike will turn down this job, so I will proceed on this premise. Do you agree?

BA/36

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Friday, March 25, 2011 1:04 PM  
**To:** 'sypicke@sandia.gov'; Uhle, Jennifer; Santiago, Patricia; Lee, Richard; Rivers, Joseph  
**Cc:** 'rogaunt@sandia.gov'; 'spburns@sandia.gov'; Valentin, Andrea; Parks, Jazel  
**Subject:** Re: Action: Fukushima FOIA

We have one too but it is limited to internal NRC to NRC communications from 3/11-3/16/11. What does yours encompass?

Jazel Parks is RES FOIA coordinator. She will likely be involved. Also Andrea Valentin, our Administrative SES.

---

**From:** Pickering, Susan Y <sypicke@sandia.gov>  
**To:** Uhle, Jennifer; Gibson, Kathy; Santiago, Patricia; Lee, Richard; Rivers, Joseph  
**Cc:** Gauntt, Randall O <rogaunt@sandia.gov>; Burns, Shawn <spburns@sandia.gov>  
**Sent:** Fri Mar 25 12:34:06 2011  
**Subject:** FW: Action: Fukushima FOIA

Well, it was bound to happen. We are responding to a broad FOIA request from the Associated Press. To what extent would you like to be involved? Sigh...

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**From:** Pickering, Susan Y  
**Sent:** Friday, March 25, 2011 10:32 AM  
**To:** Pickering, Susan Y; Pearson, Camelia D.; Fitzpatrick, Lynn; Gauntt, Randall O; Burns, Shawn; Rein, Amy; O'Canna, Myra L; Castellano, Dolores; Elliott, Russell D; Parks, M Bradley; Rhodes, William G; Bonano, Evaristo Jose; Sorenson, Ken B; McClellan, Yvonne; Lloyd, Janette; Khalil, Imane; Miller, David R; McMahon, Kevin A; Shanks, Arthur; Danneskiold, James D; Petti, Jason P; Hill, Marianne B; Knief, Ronald A; Philbin, Jeffrey S; Durbin, Samuel; Ammerman, Douglas J; Shoemaker, Paul E; Jones, Joe A; Wheeler, Timothy; Lipinski, Ronald J  
**Cc:** Silva, Jacquelyn R; Bauck, Steven C; Eanes, James L; Orrell, Stanley A; Walck, Marianne; Tatro, Marjorie; Hwang, Bob  
**Subject:** Action: Fukushima FOIA  
**Importance:** High

Greetings,

**Your response is due to Camelia Pearson by COB Monday, 3/28!**

Here is what you need to know to respond:

- Freedom of Information Act (FOIA) is the law so respond quickly, accurately, and completely; as best you can given the short turnaround. NNSA is expediting this request.
- DOE received 3 nearly identical FOIA requests from the Associated Press. See, below
- The requests are for all communications including emails, faxes, and written correspondence. Provide only those communications between the listed entities, e.g., DOE, NRC, GE, other DOE labs, and the individuals specifically named.
- Verbal communication is outside the scope, you do not need to include it.
- Also out of scope are communications limited to LMC and Sandia, foreign entities and Sandia, or just between Sandians.
- In scope are communications Sandia contractors made that meet the request.
- If any content is OUO, propriety, or draft; please let Camelia Pearson know by adding a note in your email. Don't mark the document itself. The sensitive sections will be reviewed by classification folks for possible exemption/redaction.

BA/37

- Send all communication to Camelia Pearson, electronically, if possible. For example, paste multiple emails into one email to her.
- Send communication from 3/11 to 4/1. Send all you have now and continue to send until COB 4/1.
- Keep all communication indefinitely. There could be follow-up action.
- There is no P/T, so use the one you charged when you generated the communication.
- Complete the attached form and send it to Camelia along w/ your communication. It is quick. Staff should complete section 5, managers section 6. Yes, the rates are woefully small. No, we don't get reimbursed (I asked). The requestor pays for the FOIA, but Dept of Justice keeps the money.

If you have no communication that matches the request, you can happily ignore this message. If you know of others that might, please forward it to them, including contractors. I will contact John Kelly, DOE NE, and Jennifer Uhle, NRC, about the request. You may let your customers know, too, if you like.

Transparency in government is what makes democracy great; but I know you weren't just hanging around playing dominoes! Thanks for your effort!

syp

#### Requests:

1. The communications should include emails, faxes and written correspondence between Energy Secretary Steven Chu, his staff and his counsel, and all other DOE employees to and from the NRC and to and from GE Energy, Hitach-GE Nuclear energy, and its designated representatives. Our request should include communications between DOE national laboratories and NRC and GE pertaining to the nuclear incident, as well as the 34 DOE personnel working in Japan.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

2. Requesting copies of all internal communications within the U.S. Department of Energy, including those to and from Energy Secretary Steven Chu, his chief of staff, and his counsel, pertaining to the Japanese nuclear incidents cause by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

The communications should include emails, faxes, and written correspondence between DOE and Japanese officials, including: Energy Secretary Chu, his staff and counsel, the 34 employees deployed to Japan and those working for national laboratories helping to assess and monitor the events.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

3. Requesting copies of all internal communications within the U.S. Department of Energy, including those to and from Energy Secretary Steven Chu, his chief of staff, and his counsel, pertaining to the Japanese nuclear incidents cause by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

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NRC and to and from GE Energy, Hitachi-GE Nuclear Energy, and its designated representatives. Our request should include communications between DOE national laboratories and NRC and GE pertaining to the nuclear incident, as well as the 34 DOE personnel working in Japan.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

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**From:** Pickering, Susan Y

**Sent:** Thursday, March 24, 2011 5:11 PM

**To:** Pearson, Camelia D.; Fitzpatrick, Lynn; Gauntt, Randall O; Burns, Shawn; Miller, Christopher C; Rein, Amy; O'Canna, Myra L; Castellano, Dolores; Elliott, Russell D; Parks, M Bradley; Rhodes, William G; Bonano, Evaristo Jose; Sorenson, Ken B; McClellan, Yvonne; Lloyd, Janette; Khalil, Imane; Miller, David R; McMahon, Kevin A

**Cc:** Silva, Jacquelyn R; Bauck, Steven C; Eanes, James L; Orrell, Stanley A

**Subject:** RE: EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)

Greetings,

Don't panic!

I just spoke w/ James Eanes and Camelia Pearson. I have a better understanding of the request and Camelia is researching some specific questions. I will follow-up w/ them tomorrow morning and send you an update.

I am not sure who all will need to respond to this request, so please forward it to others as necessary. Don't respond yet!  
syp

---

**From:** Pearson, Camelia D.

**Sent:** Thursday, March 24, 2011 4:43 PM

**To:** Fitzpatrick, Lynn; Gauntt, Randall O; Burns, Shawn; Miller, Christopher C; Rein, Amy; O'Canna, Myra L; Castellano, Dolores; Pickering, Susan Y; Elliott, Russell D

**Cc:** Silva, Jacquelyn R; Bauck, Steven C

**Subject:** FW: EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)

**Importance:** High

***FYI, there is no project and task number to charge this work too, and because (FOIA) Freedom of Information Act is the law and it is part of our contract within our Prime Contract, we have clauses that make Sandia subject to the law in a timely and efficient manner:***

***72. DEAR 970.5204-2 LAWS, REGULATIONS, AND DOE DIRECTIVES (DEC 2000) (DEVIATION)***

***(a) In performing work under this contract, the contractor shall comply with the requirements of applicable Federal, State, and local laws and regulations (including DOE regulations), unless relief has been granted in writing by the appropriate regulatory agency.***

***Therefore, each department is responsible for fulfilling the law and charging their costs accordingly to their own project and task.***

## **Hello: This is an Expedited FOIA Request, Normal Times for Delivery Does Not Apply. The DUE Date to NNSA is March 31, 2011.**

The attached Freedom of Information Act (FOIA) requests access to and copies of all communications between the Department of Energy, the U.S. Nuclear Regulatory Commission, GE Energy and Hitachi-GE Nuclear Energy pertaining to the Japanese nuclear incidents caused by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

### **3 requests were aggregated into 1:**

2. The communications should include emails, faxes and written correspondence between Energy Secretary Steven Chu, his staff and his counsel, and all other DOE employees to and from the NRC and to and from GE Energy, Hitachi-GE Nuclear energy, and its designated representatives. Our request should include communications between DOE national laboratories and NRC and GE pertaining to the nuclear incident, as well as the 34 DOE personnel working in Japan.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

2. Requesting copies of all internal communications within the U.S. Department of Energy, including those to and from Energy Secretary Steven Chu, his chief of staff, and his counsel, pertaining to the Japanese nuclear incidents cause by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

The communications should include emails, faxes, and written correspondence between DOE and Japanese officials, including: Energy Secretary Chu, his staff and counsel, the 34 employees deployed to Japan and those working for national laboratories helping to assess and monitor the events.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

3. Requesting copies of all internal communications within the U.S. Department of Energy, including those to and from Energy Secretary Steven Chu, his chief of staff, and his counsel, pertaining to the Japanese nuclear incidents cause by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

The communications should include emails, faxes, and written correspondence between Energy Secretary Chu, his staff and counsel, and all other DOE employees to and from the NRC and to and from GE Energy, Hitachi-GE Nuclear Energy, and its designated representatives. Our request should include communications between DOE national laboratories and NRC and GE pertaining to the nuclear incident, as well as the 34 DOE personnel working in Japan.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

(The original request begins on page 2 of the attached document.)

Your response is greatly appreciated within 2 days by Monday March 28, 2011, for records that are only explicitly responsive to what the requester has asked. If there is more than one item or question listed, please indicate which record(s) respond to that specific item or question. An estimate of costs for processing, and/or a need for clarification/scope narrowing, and the time you need to review and gather documents to the FOIA request. In addition please fill out the LAST page of the Record of Freedom of Information (FOI) Processing Cost sheet for Contractor personnel that is attached to the original FOIA request (The instructions for filling out the form is on the next to the last page) and return to me within 5 days by Thursday October 15, 2011 for an estimate of cost and processing as indicated above. The FOIA will be considered INCOMPLETE if this information is not provided, IT WILL BE RETURNED FOR PROCESSING. Please use the amounts already embedded in the document any other amount is not accepted, these are set cost by FOIA.

If you are not the person to receive this FOIA request, (disregard) and please let me know if there are other individuals, I should contact to respond to this FOIA request.

In addition, if a search was conducted and no responsive records were found, I need you to answer the following four questions below and email me the response within 2 days by Monday March 28, 2011:

1. Where was the search conducted?
2. What type of search was conducted, hand or computer?
3. If it was a computer, how was it conducted and what was searched? (What Keywords Was Used to Query the Database).
4. If by hand, how was it conducted and what was searched?

Please send one (1) copy of any unclassified or sensitive responsive information directly to Camelia Pearson, preferably electronically by email, or to MS 0180. **DO NOT SEND ANY RECORDS OR RESPONSIVE INFORMATION to the requester, NNSA, SSO, or any other source.** All FOIAs are routed through Contracting Contracts with the exception of classified information as indicated below:

One (1) copy of all classified responsive information must be sent to David Gann, Classification at MS 0175. Please notify the FOIA Specialist/Coordinator at [redacted] when the records have been sent.

Please notify me by email if any of these Sandia records are **Contractor-Owned Records** according to Sandia's M&O contract, Clause I-73 (b) <http://www-irn.sandia.gov/corpdata/doe/prime/i-73.html>; therefore, they are **not agency records** and therefore not subject to FOIA.

When searching for responsive record(s) in your organization, this search should include records maintained in any format, including electronic files, active files, and retired files in the Archives. If you know responsive records are available through the following, state this in your response and provide as much bibliographical information (title, url, if on the web, author, etc.) as possible to be provided to the requester.

- Office of Science and Technical Information (OSTI).
- National Technical Information Service (NTIS).
- Public Library.
- DOE Reading Room.

If the record's can be located in a DOE Reading Room and the requester is within 100 miles of that location, we are not required to provide the document's; it is consider to be in a public domain.

## **ADDITIONAL INFORMATION (Freedom of Information Act (FOIA Exemptions) :**

The following lists the nine categories of records, which are exempt from disclosure under FOIA:

1. Documents classified by executive order-(national security information)
2. Internal personnel rules and procedures—(examples: internal manuals and standard operating procedures)
3. Documents specifically exempted by statute—(restricted data, formerly restricted data, and unclassified controlled nuclear information)
4. Confidential or proprietary business information submitted to the Department of Energy—(examples: portions of contracts or proposal)
5. Records which are inter- or intra-agency memorandums or letters—(this exemption safeguards the deliberative policy-making process. Draft documents are usually considered pre-decisional, deliberative process documents. However, final decisions must be released, along with the factual information. This exemption also includes attorney-client work products)

6. Records which would be a clearly unwarranted invasion or personal privacy—(examples: documents contained in personnel or medical files)
7. Records of information compiled for “for enforcement purposes” (this would not include background investigative reports or documents concerning security clearances) to the extent that disclosure would:
  - a. Interfere with the enforcement proceedings;
  - b. Deny an individual of a right to a fair or impartial adjudication;
  - c. Be an unwarranted invasion of personal privacy;
  - d. Disclosure the identity of a confidential source;
  - e. Reveal investigator techniques or procedures;
  - f. Endanger the life or physical safety of any individual;
8. Records, which pertain to the regulation and supervision of financial institutions.
9. Maps and records containing geological and geophysical information concerning wells.

Thank you,

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**From:** Peigler, Wanda [mailto:WPeigler@doeal.gov]  
**Sent:** Thursday, March 24, 2011 2:39 PM  
**To:** Pearson, Camella D.  
**Cc:** Deserisy, Lloyd Donald  
**Subject:** FW: EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)  
**Importance:** High

This is an expedited request that is due by March 31, 2011. I am preparing the official request, but sending this to you prior, so you can get this out to the SMEs. Thanks.

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**From:** Hamblen, Christina H.  
**Sent:** Thursday, March 24, 2011 12:20 PM  
**To:** Vigil, Geraldine J.; Harkness, Debbie; Peigler, Wanda; Wyatt, Steven L (YSO); Slack, Terri (Y12)  
**Subject:** EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)  
**Importance:** High

ALL,

**EXPEDITED PROCESSING**

**DUE DATE: March 31, 2011**

**Important:** This FOIA is being coordinated by HQ DOE. Expedited processing was granted to the requester. Therefore, please move this FOIA to the top of your list and get it back to us as soon as possible. **DO NOT DELAY.**

**Here is DOE's guidance for this request:**

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**3 requests were aggregated into 1:**

1. Requesting copies of all internal communications within the U.S. Department of Energy, including those to and from Energy Secretary Steven Chu, his chief of staff, and his counsel, pertaining to the Japanese nuclear incidents cause by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

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NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

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Chris

**Christina Hamblen**  
**Information Programs Specialist**  
**Office of Public Affairs**  
**National Nuclear Security Administration**  
**Service Center**

**Phone: (505) 845- 4765**

**Fax: (505) 284-7205**



**SAVE PAPER - Please do not print this e-mail unless absolutely necessary**

## Greenwood, Carol

---

**From:** Gibson, Kathy  
**Sent:** Friday, March 25, 2011 1:43 PM  
**To:** 'sypicke@sandia.gov'  
**Cc:** Valentin, Andrea; Parks, Jazel; Sheron, Brian; Uhle, Jennifer  
**Subject:** Re: Action: Fukushima FOIA

I will pass this to our RES admin FOIA staff and we will get back to you. We may need guidance from our main FOIA people too. I suspect we will assign a POC for you on this. I am out on Monday, so I may not be able to get back to you until Tuesday.

---

**From:** Pickering, Susan Y <sypicke@sandia.gov>  
**To:** Gibson, Kathy  
**Sent:** Fri Mar 25 13:26:54 2011  
**Subject:** RE: Action: Fukushima FOIA

Howdy! The scope of the request is "all communication" related to the three Japanese sites. You can scroll down this message to the whole text, it is in black ink. The AP reporter mentions some officials by name.

---

**From:** Gibson, Kathy [mailto:Kathy.Gibson@nrc.gov]  
**Sent:** Friday, March 25, 2011 11:04 AM  
**To:** Pickering, Susan Y; Uhle, Jennifer; Santiago, Patricia; Lee, Richard; Rivers, Joseph  
**Cc:** Gauntt, Randall O; Burns, Shawn; Valentin, Andrea; Parks, Jazel  
**Subject:** Re: Action: Fukushima FOIA

We have one too but it is limited to internal NRC to NRC communications from 3/11-3/16/11. What does yours encompass?

Jazel Parks is RES FOIA coordinator. She will likely be involved. Also Andrea Valentin, our Administrative SES.

---

**From:** Pickering, Susan Y <sypicke@sandia.gov>  
**To:** Uhle, Jennifer; Gibson, Kathy; Santiago, Patricia; Lee, Richard; Rivers, Joseph  
**Cc:** Gauntt, Randall O <rogaunt@sandia.gov>; Burns, Shawn <spburns@sandia.gov>  
**Sent:** Fri Mar 25 12:34:06 2011  
**Subject:** FW: Action: Fukushima FOIA

Well, it was bound to happen. We are responding to a broad FOIA request from the Associated Press. To what extent would you like to be involved? Sigh...

---

**From:** Pickering, Susan Y  
**Sent:** Friday, March 25, 2011 10:32 AM  
**To:** Pickering, Susan Y; Pearson, Camelia D.; Fitzpatrick, Lynn; Gauntt, Randall O; Burns, Shawn; Rein, Amy; O'Canna, Myra L; Castellano, Dolores; Elliott, Russell D; Parks, M Bradley; Rhodes, William G; Bonano, Evaristo Jose; Sorenson, Ken B; McClellan, Yvonne; Lloyd, Janette; Khalil, Imane; Miller, David R; McMahon, Kevin A; Shanks, Arthur; Danneskiold, James D; Petti, Jason P; Hill, Marianne B; Knief, Ronald A; Philbin, Jeffrey S; Durbin, Samuel; Ammerman, Douglas J; Shoemaker, Paul E; Jones, Joe A; Wheeler, Timothy; Lipinski, Ronald J  
**Cc:** Silva, Jacquelyn R; Bauck, Steven C; Eanes, James L; Orrell, Stanley A; Walck, Marianne; Tatro, Marjorie; Hwang, Bob  
**Subject:** Action: Fukushima FOIA  
**Importance:** High

BA | 38

Greetings,

**Your response is due to Camelia Pearson by COB Monday, 3/28!**

Here is what you need to know to respond:

- Freedom of Information Act (FOIA) is the law so respond quickly, accurately, and completely; as best you can given the short turnaround. NNSA is expediting this request.
- DOE received 3 nearly identical FOIA requests from the Associated Press. See, below
- The requests are for all communications including emails, faxes, and written correspondence. Provide only those communications between the listed entities, e.g., DOE, NRC, GE, other DOE labs, and the individuals specifically named.
- Verbal communication is outside the scope, you do not need to include it.
- Also out of scope are communications limited to LMC and Sandia, foreign entities and Sandia, or just between Sandians.
- In scope are communications Sandia contractors made that meet the request.
- If any content is OUO, propriety, or draft; please let Camelia Pearson know by adding a note in your email. Don't mark the document itself. The sensitive sections will be reviewed by classification folks for possible exemption/redaction.
- Send all communication to Camelia Pearson, electronically, if possible. For example, paste multiple emails into one email to her.
- Send communication from 3/11 to 4/1. Send all you have now and continue to send until COB 4/1.
- Keep all communication indefinitely. There could be follow-up action.
- There is no P/T, so use the one you charged when you generated the communication.
- Complete the attached form and send it to Camelia along w/ your communication. It is quick. Staff should complete section 5, managers section 6. Yes, the rates are woefully small. No, we don't get reimbursed (I asked). The requestor pays for the FOIA, but Dept of Justice keeps the money.

If you have no communication that matches the request, you can happily ignore this message. If you know of others that might, please forward it to them, including contractors. I will contact John Kelly, DOE NE, and Jennifer Uhle, NRC, about the request. You may let your customers know, too, if you like.

Transparency in government is what makes democracy great; but I know you weren't just hanging around playing dominoes! Thanks for your effort!

syp

Requests:

1. The communications should include emails, faxes and written correspondence between Energy Secretary Steven Chu, his staff and his counsel, and all other DOE employees to and from the NRC and to and from GE Energy, Hitach-GE Nuclear energy, and its designated representatives. Our request should include communications between DOE national laboratories and NRC and GE pertaining to the nuclear incident, as well as the 34 DOE personnel working in Japan.

NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald



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NOTE: The requester later added the following individuals to the requests: Daniel Poneman; Thomas D'Agostino; Dr. Peter Lyons; Steven Aoki; Adm. Joseph Krol; and, Adm. Kirkland Donald

---

**From:** Pickering, Susan Y

**Sent:** Thursday, March 24, 2011 5:11 PM

**To:** Pearson, Camelia D.; Fitzpatrick, Lynn; Gauntt, Randall O; Burns, Shawn; Miller, Christopher C; Rein, Amy; O'Canna, Myra L; Castellano, Dolores; Elliott, Russell D; Parks, M Bradley; Rhodes, William G; Bonano, Evaristo Jose; Sorenson, Ken B; McClellan, Yvonne; Lloyd, Janette; Khalil, Imane; Miller, David R; McMahon, Kevin A

**Cc:** Silva, Jacquelyn R; Bauck, Steven C; Eanes, James L; Orrell, Stanley A

**Subject:** RE: EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)

Greetings,

Don't panic!

I just spoke w/ James Eanes and Camelia Pearson. I have a better understanding of the request and Camelia is researching some specific questions. I will follow-up w/ them tomorrow morning and send you an update.

I am not sure who all will need to respond to this request, so please forward it to others as necessary. Don't respond yet!

syp

---

**From:** Pearson, Camelia D.

**Sent:** Thursday, March 24, 2011 4:43 PM

**To:** Fitzpatrick, Lynn; Gauntt, Randall O; Burns, Shawn; Miller, Christopher C; Rein, Amy; O'Canna, Myra L; Castellano, Dolores; Pickering, Susan Y; Elliott, Russell D

**Cc:** Silva, Jacquelyn R; Bauck, Steven C

**Subject:** FW: EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)

**Importance:** High

***FYI, there is no project and task number to charge this work too, and because (FOIA) Freedom of Information Act is the law and it is part of our contract within our Prime Contract, we have clauses that make Sandia subject to the law in a timely and efficient manner:***

**72. DEAR 970.5204-2 LAWS, REGULATIONS, AND DOE DIRECTIVES (DEC 2000) (DEVIATION)**

***(a) In performing work under this contract, the contractor shall comply with the requirements of applicable Federal, State, and local laws and regulations (including DOE regulations), unless relief has been granted in writing by the appropriate regulatory agency.***

***Therefore, each department is responsible for fulfilling the law and charging their costs accordingly to their own project and task.***

**Hello: This is an Expedited FOIA Request, Normal Times for Delivery Does Not Apply. The DUE Date to NNSA is March 31, 2011.**

The attached Freedom of Information Act (FOIA) requests access to and copies of all communications between the Department of Energy, the U.S. Nuclear Regulatory Commission, GE Energy and Hitachi-GE Nuclear Energy pertaining to the Japanese nuclear incidents caused by the March 11 earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa.

**3 requests were aggregated into 1:**

2. The communications should include emails, faxes and written correspondence between Energy Secretary Steven Chu, his staff and his counsel, and all other DOE employees to and from the NRC and to and from GE Energy, Hitachi-GE Nuclear energy, and its designated representatives. Our request should include communications between DOE national laboratories and NRC and GE pertaining to the nuclear incident, as well as the 34 DOE personnel working in Japan.

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(The original request begins on page 2 of the attached document.)

**Your response is greatly appreciated within 2 days by Monday March 28, 2011, for records that are only explicitly responsive to what the requester has asked. If there is more than one item or question listed, please indicate which record(s) respond to that specific item or question. An estimate of costs for processing, and/or a need for clarification/scope narrowing, and the time you need to review and gather documents to the FOIA request. In addition please fill out the LAST page of the Record of Freedom of Information (FOI) Processing Cost sheet for Contractor personnel that is attached to the original FOIA request (The instructions for filling out the form is on the next to the last page) and return to me within 5 days by Thursday October 15, 2011 for an estimate of cost and processing as indicated above. The FOIA will be considered INCOMPLETE if this information is not provided, IT WILL BE RETURNED FOR PROCESSING. Please use the amounts already embedded in the document any other amount is not accepted, these are set cost by FOIA.**

**If you are not the person to receive this FOIA request, (disregard) and please let me know if there are other individuals, I should contact to respond to this FOIA request.**

**In addition, if a search was conducted and no responsive records were found, I need you to answer the following four questions below and email me the response within 2 days by Monday March 28, 2011:**

- 1. Where was the search conducted?**
- 2. What type of search was conducted, hand or computer?**
- 3. If it was a computer, how was it conducted and what was searched? (What Keywords Was Used to Query the Database)**
- 4. If by hand, how was it conducted and what was searched?**

**Please send me (1) copy of any unclassified or declassified responsive information directly to Pamela Pearson, preferably electronically by email, to MS-0180: DO NOT SEND ANY RECORDS OR RESPONSIVE INFORMATION to the requester, NNSA, SSO, or any other source.** All FOIA's are routed through appropriate Sandia channels with the exception of classified information as noted below.

**One (1) copy of all classified responsive information must be sent to David Smith, Classification, at MS-0175. Please notify me (301) 904-0140 or dsmith@nnsa.gov as soon as possible. When the records have been sent.**

Please notify me by email if any of these Sandia records are **Contractor-Owned Records** according to Sandia's M&O contract, Clause I-73 (b) <http://www-irn.sandia.gov/corpdata/doe/prime/i-73.html>; therefore, they are **not agency records** and therefore not subject to FOIA.

When searching for responsive record(s) in your organization, this search should include records maintained in any format, including electronic files, active files, and retired files in the Archives. **If you know responsive records are available through the following, state this in your response and provide as much bibliographical information (title, url, if on the web, author, etc.) as possible to be provided to the requester.**

- Office of Science and Technical Information (OSTI)
- National Technical Information Service (NTIS)
- Public Library
- DOE Reading Room

If the record's can be located in a DOE Reading Room and the requester is within 100 miles of that location, we are not required to provide the document's; it is consider to be in a public domain.

## **ADDITIONAL INFORMATION (Freedom of Information Act (FOIA Exemptions) :**

The following lists the nine categories of records, which are exempt from disclosure under FOIA:

1. Documents classified by executive order-(national security information)
2. Internal personnel rules and procedures—(examples: internal manuals and standard operating procedures)
3. Documents specifically exempted by statute—(restricted data, formerly restricted data, and unclassified controlled nuclear information)
4. Confidential or proprietary business information submitted to the Department of Energy—(examples: portions of contracts or proposal)
5. Records which are inter- or intra-agency memorandums or letters—(this exemption safeguards the deliberative policy-making process. Draft documents are usually considered pre-decisional, deliberative process documents. However, final decisions must be released, along with the factual information. This exemption also includes attorney-client work products)
6. Records which would be a clearly unwarranted invasion or personal privacy—(examples: documents contained in personnel or medical files)
7. Records of information compiled for "for enforcement purposes" (this would not include background investigative reports or documents concerning security clearances) to the extent that disclosure would:
  - a. Interfere with the enforcement proceedings;
  - b. Deny an individual of a right to a fair or impartial adjudication;
  - c. Be an unwarranted invasion of personal privacy;
  - d. Disclosure the identity of a confidential source;
  - e. Reveal investigator techniques or procedures;
  - f. Endanger the life or physical safety of any individual;
8. Records, which pertain to the regulation and supervision of financial institutions.
9. Maps and records containing geological and geophysical information concerning wells.

Thank you,

---

**From:** Peigler, Wanda [mailto:WPeigler@doeal.gov]  
**Sent:** Thursday, March 24, 2011 2:39 PM  
**To:** Pearson, Camelia D.  
**Cc:** Deserisy, Lloyd Donald  
**Subject:** FW: EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)  
**Importance:** High

This is an expedited request that is due by March 31, 2011. I am preparing the official request, but sending this to you prior, so you can get this out to the SMEs. Thanks.

---

**From:** Hamblen, Christina H.  
**Sent:** Thursday, March 24, 2011 12:20 PM  
**To:** Vigil, Geraldine J.; Harkness, Debbie; Peigler, Wanda; Wyatt, Steven L (YSO); Slack, Terri (Y12)  
**Subject:** EXPEDITE: New FOIA Request: FOIA 11-00303-H (CAPPIELLO)  
**Importance:** High

ALL,

**EXPEDITED PROCESSING**

**DUE DATE: March 31, 2011**

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Chris

**Christina Hamblen**  
**Information Programs Specialist**  
**Office of Public Affairs**  
**National Nuclear Security Administration**  
**Service Center**  
**Phone: (505) 845-4765**  
**Fax: (505) 284-7205**



**SAVE PAPER - Please do not print this e-mail unless absolutely necessary**

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Friday, March 25, 2011 6:33 PM  
**To:** Sherbini, Sami  
**Subject:** Re: EDO Alignment: Japanese Earthquake Status - Focus on Health Effects of Radiation

Thanks Sami. Please also attend the meeting.

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

**From:** Sherbini, Sami  
**To:** Gibson, Kathy  
**Sent:** Fri Mar 25 18:26:36 2011  
**Subject:** RE: EDO Alignment: Japanese Earthquake Status - Focus on Health Effects of Radiation

We have already discussed some of the issues, and I will help prepare for the Monday meeting.

---

**From:** Gibson, Kathy  
**Sent:** Friday, March 25, 2011 5:58 PM  
**To:** Sherbini, Sami  
**Cc:** Bush-Goddard, Stephanie  
**Subject:** FW: EDO Alignment: Japanese Earthquake Status - Focus on Health Effects of Radiation

Sami,  
Please support Stephanie at this meeting and provide assistance for briefing slide development.

Thanks,  
Kathy

**When:** Monday, March 28, 2011 3:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).  
**Where:** O17-B04

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

\*~\*~\*~\*~\*~\*~\*~\*~\*

RES, FSME and NSIR,

You are cordially invited to an EDO Alignment meeting

**When and Where:** Monday, March 28th, in O17-B04 from 3 to 4pm.

**Why:** Get aligned on a Commission meeting (April 14th) to provide an update of the Japanese nuclear event, discuss NRCs radiation protection strategies in emergency situations and hear a representative sample of external stakeholder viewpoints.

Thanks  
-Stephanie Bush-Goddard  
Chief, Health Effects Branch  
Office of Nuclear Regulatory Research  
301-251-7528



[cid:image001.jpg@01CBEB16.3ADCFC40]

Greenwood, Carol

---

**From:** Gibson, Kathy  
**Sent:** Saturday, March 26, 2011 1:40 PM  
**To:** Tinkler, Charles  
**Subject:** Re: Mark I failure

Well then it sounds like we're doing all we can do. Its just a matter of giving Brian support so he can head off questions so they don't fester.

---

**From:** Tinkler, Charles  
**To:** Gibson, Kathy  
**Sent:** Sat Mar 26 13:23:10 2011  
**Subject:** RE: Mark I failure

There was speculation that hydrogen explosion in the reactor building may have damaged the torus/suppression pool.

However, as I have noted and discussed with RST, the unit 3 torus pressure is 2 bar. So, it may be relatively minor damage since the pressure reading is above atmospheric. Leakage may be high on the torus. Alternatively, they may have had trouble closing a vent valve and that is what caused pressure to drop after explosion.

Evidence also suggests unit 3 containment may be flooded up to the drywell – maybe up as high as the RPV lower head. Drywell pressure is 1 bar and torus pressure is a little less than 2 bar.(suggests flooding). Other measurement also suggested flooding. Again we discussed with RST (I talked to Don Helton yesterday before he went on RST shift and he passed it along for their telecom to Japan) View was discussed with ET as well.

---

**From:** Gibson, Kathy  
**Sent:** Saturday, March 26, 2011 1:06 PM  
**To:** Tinkler, Charles  
**Subject:** Re: Mark I failure

What is the breach is in the suppression pool like they were saying for I think Unit 3 hydrogen explosion?

---

**From:** Tinkler, Charles  
**To:** Gibson, Kathy  
**Sent:** Sat Mar 26 13:03:47 2011  
**Subject:** RE: Mark I failure

Sure, I will set up briefing

More background : Mark I liner failure during severe accidents is a longstanding issue going back 20 years (some plants made changes to reduce risk by adding curbs, others did not – risk was low enough. But it is the sort of thing that is likely to highlighted these days.

Again, SOARCA has shown n that releases are not extreme because of fission products are deposited in suppression pool.

---

**From:** Gibson, Kathy  
**Sent:** Saturday, March 26, 2011 12:54 PM  
**To:** Tinkler, Charles  
**Subject:** Re: Mark I failure

Can you set up a briefing next week with me and Brian (and Jennifer if she's in) on accident progression in BWRs. I've had BWR training and was inspector at Hope Creek (and Brian has some BWR background) but a refresher of Mark I and severe accidents etc would be helpful - especially for all these Congressional calls Brian is doing. Thanks

---

**From:** Tinkler, Charles  
**To:** Gibson, Kathy  
**Sent:** Sat Mar 26 12:42:22 2011  
**Subject:** Mark I failure

The Mark I containment is relatively vulnerable to drywell shell/liner melt thru – if the reactor vessel fails and if the drywell floor is dry (not flooded). It also depends if the drywell pedestal region has a large sump or if there are curbs. (design details)

Peach Bottom is fairly vulnerable, for SBO, if the RPV fails then the containment fails but most of the fission products are deposited in the suppression pool so the containment integrity is not so important at that stage.

SOARCA models containment failure but the fission product release is still relatively small because the fp's go to the pool.

Charles Tinkler  
[Charles.Tinkler@nrc.gov](mailto:Charles.Tinkler@nrc.gov)

**Greenwood, Carol**

---

**From:** Gibson, Kathy  
**Sent:** Sunday, March 27, 2011 6:20 PM  
**To:** Lee, Richard  
**Subject:** Re: Brian's Q

Should I bring you aromatherapy candles? :-)

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

**From:** Lee, Richard  
**To:** Gibson, Kathy  
**Sent:** Sun Mar 27 17:00:00 2011  
**Subject:** RE: Brian's Q

Thanks, Kathy.

We are about to start the conference call with DOE. I am in my office and the overhead light does not work.  
Richard

I need to bring in candles in case the conference call is later

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

**From:** Gibson, Kathy  
**Sent:** Sunday, March 27, 2011 4:56 PM  
**To:** Lee, Richard  
**Subject:** Fw: Brian's Q

Fyi - I've been sending so much stuff to Brian I think he loses track of where it came from. ;-) thanks for your follow-up.

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

**From:** Sheron, Brian  
**To:** Gibson, Kathy  
**Cc:** Tinkler, Charles  
**Sent:** Sun Mar 27 15:56:05 2011  
**Subject:** RE: Brian's Q

Thanks.

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

**From:** Gibson, Kathy  
**Sent:** Sunday, March 27, 2011 10:41 AM  
**To:** Sheron, Brian  
**Cc:** Tinkler, Charles  
**Subject:** Fw: Brian's Q

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

**From:** Lee, Richard  
**To:** Hoxie, Chris; Uhle, Jennifer  
**Cc:** Gibson, Kathy  
**Sent:** Sun Mar 27 10:35:35 2011  
**Subject:** RE: Brian's Q

• Consulted both Mike and Dana on the matter - Salt effects on molten core materials:

From Mike Corradini:

This will not likely generate a more energetic effect. It will be a dilution to the melt composition and energy. Think of this like any solid that must be melted and mixes with the melt. So no effect there. So if it does stop the melt there with in-vessel retention (which I suspect it would), it would add to the melt volume as it remelts and mixes and dilutes the corium.

I would then expect it to lower the solidus temperature of the mixture. How much, I do not know, but we can see the effect on energetics by altering the solidus. Remember that the if we assume triggering (which we always do), steam explosions are a thermodynamic phenomenon altered minimally by local heat transfer.

From: Dana Powers

Core debris will hit the salt and cause it to melt and vaporize. Some fraction of it will be incorporated into the core debris, but much will vaporize - removing heat from the core debris. Vaporized salt will condense on upper internals of the BWR vessel. Salt in the core debris will cause some vaporization of materials - including some fission products - as chlorides, but I would not expect the effect to be especially significant. Again vaporized chlorides will condense on upper internal surfaces.

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From: Hoxie, Chris  
Sent: Saturday, March 26, 2011 9:41 PM  
To: Uhle, Jennifer  
Cc: Lee, Richard; Gibson, Kathy  
Subject: Brian's Q

In regards to Brian's question about how salt water may influence the dynamics of a fuel coolant interaction:

Here are two references:  
[http://www.iaea.org/inis/collection/NCLCollectionStore/\\_Public/42/006/42006251.pdf](http://www.iaea.org/inis/collection/NCLCollectionStore/_Public/42/006/42006251.pdf)

On page 396, states that pure water vs. salt water made no difference in an experiment designed to measure peak pressures for fuel coolant interactions in a lab setting.

Reference 2:  
Although it might not be one-for-one, here is a reference to research that indicates the salt might actually dampen the steam explosion (or at least it does maybe when lava hits sea water....)

Caveats: This reference 2 is not nuclear oriented. Not specific to the Japan case. This is really complex and should be answered by an expert. Depends so much on the actual conditions in the Japan plants...

At least I did not find anything that says salt makes things worse!

Impure coolants and interaction dynamics of phreatomagmatic eruptions

James D. L. WhiteE-mail The Corresponding Author, \*

Geology Department, University of Otago P.O. Box 56, Dunedin 9015, New Zealand  
Received 12 January 1996;  
revised 18 June 1996;

## Abstract

Phreatomagmatic eruptions resulting from interaction of magma with groundwater are common in many terrestrial settings, and their explosivity is widely accepted to result from fuel-coolant interaction (FCI) processes. Relatively little attention has been given to the precise nature of the volcanic settings in which phreatomagmatic FCI's take place, but several lines of evidence indicate that they almost inevitably involve mixing of magma with impure, sediment-laden water. Consideration of the effects of these impure coolants on the fuel-coolant interaction process suggests that: (1) impure coolants enhance the ability of magma to mix with large volumes of coolant; and (2) maximum unit-volume explosivity of FCI's is damped relative to interactions with pure water. It is probably unrealistic to back-calculate water-magma mass ratios for most, if not all, phreatomagmatic eruptions because: (1) effects of impure coolants on fragmentation efficiency and eruption explosivity are not yet known; and (2) aspects of the vent environments in which phreatomagmatism occurs may influence fragmentation processes, explosive efficiency, and resultant particle populations as or more strongly than water-magma mass ratios. To estimate mass ratios for individual bursts, or for eruptions as a whole, one must distinguish particle populations resulting from many different processes in phreatomagmatic vents, including primary fragmentation, induced fragmentation, vent-wall collapse and pyroclast recycling. Incorporation of accidental blocks beyond the zone of phreatomagmatic interaction and ejection of unvaporized water further complicate efforts at reconstruction.

## Greenwood, Carol

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**Subject:** FW: EDO Alignment: Japanese Earthquake Status – Focus on Health Effects of Radiation  
**Location:** O17-B04

**Start:** Mon 3/28/2011 3:00 PM  
**End:** Mon 3/28/2011 4:00 PM  
**Show Time As:** Tentative

**Recurrence:** (none)

**Meeting Status:** Not yet responded

**Organizer:** RES\_DSA\_Calendar Resource

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

**From:** RES\_DSA\_Calendar Resource  
**Sent:** Tuesday, March 22, 2011 4:08 PM  
**To:** RES\_DSA\_Calendar Resource; Gibson, Kathy; Elkins, Scott; Shaffer, Vered  
**Subject:** EDO Alignment: Japanese Earthquake Status – Focus on Health Effects of Radiation  
**When:** Monday, March 28, 2011 3:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).  
**Where:** O17-B04

**When:** Monday, March 28, 2011 3:00 PM-4:00 PM (GMT-05:00) Eastern Time (US & Canada).  
**Where:** O17-B04

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

\*~\*~\*~\*~\*~\*~\*~\*~\*~\*

(Joint meeting with 4/28 CM Alignment)

BA/42

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Tuesday, March 29, 2011 7:16 AM  
**To:** Sheron, Brian; Uhle, Jennifer; Lee, Richard; Tinkler, Charles  
**Cc:** Bush-Goddard, Stephanie  
**Subject:** Fw: NUREG-1465 Notes

Relevant to possible RPV damage

---

**From:** Gauntt, Randall O <[rogaunt@sandia.gov](mailto:rogaunt@sandia.gov)>  
**To:** Gibson, Kathy; Lee, Richard  
**Sent:** Sun Mar 27 15:00:40 2011  
**Subject:** Re: NUREG-1465 Notes

Hard to say. The path from vessel to torus is still through the SRV path into submerged spargers. That would be true as long as the torus failure location was above the torus water level. This is likely so, as the vulnerable point in the drywell-wetwell interface is with the bellows connection, and I am pretty sure this is above the water level.

So, my suspicion is that the failed torus is at the bellows and the unit would still be getting benefit of scrubbing. It just can't build up any over pressure in the drywell-wetwell regions. Scrubbing, but continuous venting of wetwell vapor space.

I am also under the impression that the SRV's are being held open by the operators using station batteries. This keeps the vessel pressure at the same pressure as the containment. I recall hearing 50 psi. Not sure how to explain that unless the breach offers some backpressure to the escaping steam.

Flooding of the drywell would imply some hydrostatic pressure but 50 psi would imply a high water level (32 feet for every 14.7 psi).

So, nureg-1465 just says 30 percent of volatiles escaping vessel - what is done with that subsequently is key.

Randy

---

**From:** Gibson, Kathy [<mailto:Kathy.Gibson@nrc.gov>]  
**Sent:** Sunday, March 27, 2011 11:38 AM  
**To:** Gauntt, Randall O  
**Cc:** Lee, Richard <[Richard.Lee@nrc.gov](mailto:Richard.Lee@nrc.gov)>  
**Subject:** Re: NUREG-1465 Notes

For Unit 3 if in fact the RPV or suppression pool is damaged, then couldn't the 1465 source terms be used?

---

**From:** Gauntt, Randall O <[rogaunt@sandia.gov](mailto:rogaunt@sandia.gov)>  
**To:** Gibson, Kathy  
**Cc:** Lee, Richard  
**Sent:** Sun Mar 27 13:11:28 2011  
**Subject:** NUREG-1465 Notes

RE: Dose Rate Estimates I sent earlier: Thought I sent them, but must have messed up.

In looking over the OP Center e-mails regarding Rascal - They are using NUREG-1465 source terms to the containment. This is totally wrong for Fukushima reactors. The NUREG-1465 Regulatory Containment Source term is very DBA LBLOCA

BA/43



centric - which for the BWR's is representative of a Main Steam Line Break (LBLOCA) that vents steam into the DRYWELL. The NUREG-1465 source term to the dry well is then used in Reg space to test against 10CFR100 boundary dose requirements assuming containment design leakage. NUREG-1654 is being misused in this sense.

Why? The releases from the fuel in the LTSBO are not going into the drywell as would be the case in a DBA-LBLOCA, they are going into the wetwell. So the discussion about depletion in the drywell using the Powers model is a bit off the mark. Such depletion could be applied to airborne particles that successfully escape suppression pools scrubbing through and find their way eventually into the wetwell.

Hope this helps.  
Randy



---

**From:** Gibson, Kathy [Kathy.Gibson@nrc.gov]  
**Sent:** Sunday, March 27, 2011 10:46 AM  
**To:** Gauntt, Randall O  
**Subject:** Re: Dose Rate Estimates I sent earlier

Thanks Randy for the source term information. Would you resend the dose rate estimates? I don't think I've seen them.  
Thx

---

**From:** Gauntt, Randall O <[rogaunt@sandia.gov](mailto:rogaunt@sandia.gov)>  
**To:** Gibson, Kathy; Lee, Richard  
**Cc:** [rylm@cavtel.net](mailto:rylm@cavtel.net) <[rylm@cavtel.net](mailto:rylm@cavtel.net)>  
**Sent:** Sun Mar 27 12:33:01 2011  
**Subject:** Dose Rate Estimates I sent earlier

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Tuesday, March 29, 2011 3:19 PM  
**To:** Rihm, Roger; Tinkler, Charles; Jones, Steve  
**Cc:** Doolittle, Elizabeth; Armstrong, Kenneth; Wilson, George; Milligan, Patricia  
**Subject:** RE: Heads up re: likely questions from SAC Energy and Water  
**Attachments:** Kathy Halvey Gibson.vcf

Roger,

As I discussed with you we are working on a number of questions, requiring input from our (RES) staff as well as NRR and NSIR.

Once we compile the q's and a's we will send them to you - by 5 pm.

Kathy

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

**From:** Rihm, Roger  
**Sent:** Tuesday, March 29, 2011 3:14 PM  
**To:** Tinkler, Charles; Jones, Steve  
**Cc:** Doolittle, Elizabeth; Gibson, Kathy  
**Subject:** RE: Heads up re: likely questions from SAC Energy and Water

Thank you for prompt response. Where can I get your "written Qs and As"?

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

**From:** Tinkler, Charles  
**Sent:** Tuesday, March 29, 2011 3:06 PM  
**To:** Rihm, Roger; Jones, Steve  
**Cc:** Doolittle, Elizabeth; Gibson, Kathy  
**Subject:** RE: Heads up re: likely questions from SAC Energy and Water

Roger

I left you a voice mail message but the short of it is:

I have written Q&As to address spent fuel pool enhancements We have implemented both water spray and fuel distribution both of which were identified by the NAS

The Op-Ed was retracted by the Washington Post because its basic assertion/premise (improvements are not done) was incorrect.

I have not addressed the 2nd question, Has any other suggestion made by any entity not been implemented? The question is too speculative and broad. Some folks have recommended removing all older fuel out of pools and going back to low density racking - we (NRC) do not agree with that position.

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

**From:** Rihm, Roger  
**Sent:** Tuesday, March 29, 2011 2:36 PM  
**To:** Jones, Steve; Tinkler, Charles  
**Cc:** Doolittle, Elizabeth  
**Subject:** FW: Heads up re: likely questions from SAC Energy and Water

BA/44

Importance: High

Gentlemen, sorry for the late notice, but is one of you the appropriate person to provide some input on NAS study for Chairman to have in advance of hearing tomorrow? See questions from Hill staff below. Also, this just came up at a meeting Bill had with the Chairman, so he wants to be sure he understands the report recommendations and our actions. It can be Q&A or fact sheet (or both) - whatever makes the most sense. I need something by 5PM. Please reply all to confirm one of you can do!

Thank you!

Roger S. Rihm  
Communications and Performance Improvement Staff Office of the Executive Director for Operations US NRC  
301.415.1717  
roger.rihm@nrc.gov

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

From: White, Bernard  
Sent: Tuesday, March 29, 2011 2:21 PM  
To: Rihm, Roger  
Cc: Ordaz, Vonna; Doolittle, Elizabeth; Jones, Steve; Tinkler, Charles  
Subject: RE: Heads up re: likely questions from SAC Energy and Water  
Importance: High

Roger,

I just received the item below and note that NRR, not NMSS licenses and oversees spent fuel pools. I have cc'ed Steve Jones of NRR and Charlie Tinkler of RES. Charlie was the lead person for briefing the NAS committee in their review of spent fuel pools

Bernie White  
Technical Assistant  
Division of Spent Fuel Storage and Transportation Office of Nuclear Material Safety and Safeguards NRC  
(301) 492-3303  
Bernard.White@nrc.gov

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

From: Ordaz, Vonna  
Sent: Tuesday, March 29, 2011 2:13 PM  
To: Doolittle, Elizabeth  
Cc: White, Bernard  
Subject: FW: Heads up re: likely questions from SAC Energy and Water  
Importance: High

Please call me.

Thanks  
Vonna

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

From: Rihm, Roger  
Sent: Tuesday, March 29, 2011 8:27 AM  
To: Ordaz, Vonna; Doolittle, Elizabeth  
Subject: FW: Heads up re: likely questions from SAC Energy and Water  
Importance: High

NMSS - got this email last evening with questions for the chairman's testimony at Senate appropriations TOMORROW. See question below on NAS spent fuel study. Can you provide potential responses/one pager - whatever seems most appropriate. Need it TODAY. Please advise what you will be able to do. Thanks!

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

From: Decker, David  
Sent: Monday, March 28, 2011 5:34 PM  
To: Doane, Margaret; Rihm, Roger  
Subject: FW: Heads up re: likely questions from SAC Energy and Water

Margie and Roger,

Attached below are some initial "questions" that the SAC Subcommittee on Energy and Water Development sent to us as a "heads-up" of what might be asked at this Wednesday's hearing where the Chairman will be the NRC's representative. The first set of questions looks like it deals with international/IAEA type issues (Margie stuff), with the rest of them being more in the EDO world (Roger stuff). Whatever you can do tomorrow to provide talking points/one-pagers (anything really) to address these questions would greatly help the Chairman prepare for his hearing. If you can develop something, just e-mail it to me and we will provide it to the Chairman. Thanks!

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

From: Powell, Amy  
Sent: Monday, March 28, 2011 3:52 PM  
To: Schmidt, Rebecca; Batkin, Joshua  
Cc: Decker, David  
Subject: Heads up re: likely questions from SAC Energy and Water

FYI, Doug Clapp just send an initial (partial) list of potential questions for Wednesday's SAC Energy and Water hearing - see below...

Amy

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

From: Clapp, Doug (Appropriations) [mailto:Doug\_Clapp@appro.senate.gov]  
Sent: Monday, March 28, 2011 2:59 PM  
To: Powell, Amy  
Subject: FW: this is what i have so far

Don't know what Matt will add but these are draft questions I've done up. When I have final list of questions I will send to you but unlikely to be until late tomorrow so wanted to give you early heads up.

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

From: Clapp, Doug (Appropriations)  
Sent: Monday, March 28, 2011 2:53 PM  
To: Nelson, Matthew (Feinstein)  
Subject: this is what i have so far

FIRST PANEL QUESTIONS

#### Failure of IAEA to Lead and Provide Information:

Chairman Jaczko, there has been significant confusion created by conflicting information and inadequate information coming out of Japan. Clearly the nature of the nuclear crisis creates most of this confusion, but some attribute a portion of the problem to the utility and Japanese government.

The rest of the world is left to sift through conflicting information and conduct remote independent radiation monitoring to try to assess the situation. This appears to be a problem.

- \* Does the International Atomic Energy Agency have a role to play in assuring governments adequately share information?
- \* Does the IAEA have a role in assuring international assessments of radiation levels?
- \* Do you feel the international community is better prepared since Chernobyl, and if so, how has that been demonstrated with the event at Daiichi?

#### NAS Study on Spent Fuel

Chairman Jaczko, in 2006 a National Academy of Sciences committee completed a report requested by the NRC and Department of Homeland Security related to safety of spent nuclear fuel. Matt Bunn of Harvard wrote an op-ed this past week that two recommendations from that NAS report were to 1) put old fuel next to new fuel in the spent fuel pools, and 2) add sprayers over the pools in case cooling water was lost for whatever reason. He says the NRC did not implement these recommendations.

- \* Can you tell me if Mr. Bunn is correct, and if so, why the NRC did not implement these two safety recommendations made by the NAS report?
- \* Are there other suggestions from the NAS, or other entities, that the NRC has not implemented that you are willing to reconsider in light of events at Daiichi?

#### Independent Assessment of Nuclear Power Safety in the United States

Chairman Jaczko, I want to thank you and the people of your agency for the hard work and long hours many of you have been putting in since March 11. I further want to say that I believe the women and men of your agency work hard every day to keep our power plants safe. So, in no way do I want you or the workforce of the NRC to take this question as a slight.

- \* Do you believe there is value in having an independent assessment of nuclear power safety in the United States?

## Design Basis Reassessment

Chairman Jaczko, in the past four years there has been earthquakes in Japan that have exceeded the design basis for nuclear plants in the vicinity of the earthquakes.

- \* How confident are you that our design basis for U.S. plants is sufficient?
- \* Why were the Japanese so wrong on their assumptions of the possible maximum earthquake and tsunami events?

## Relicensing not including seismic and tsunami

Chairman Jaczko, I understand from my trip to Diablo Canyon that the relicensing process does not include a review of seismic and tsunami threats. Rather that relicensing is focused more on the aging of materials and equipment. The plant operators and NRC personnel on the trip explained that seismic and tsunami issues are considered on a continuing basis and thus do not need to be part of the relicensing.

I find this a little confusing. I understand relicensing should consider aging of materials and equipment as 20 to 40 years have passed since the initial license. But our information relative to seismic and tsunami threats has also changed over this time.

- \* If seismic and tsunami issues are not considered during relicensing, what guarantee do we have that the NRC is adequately considering these issues at any other time?
- \* If not considered during relicensing, does the burden fall to the federal government to prove there is a need to modify the license due to seismic or tsunami information or does that burden get put on the plant operator?

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Wednesday, March 30, 2011 3:32 PM  
**To:** Uhle, Jennifer; Santiago, Patricia; Chang, Richard  
**Cc:** Sheron, Brian; Lee, Richard  
**Subject:** Re: SOARCA study put on hold for Japan reviews?

We have NOT put SOARCA on hold. We and SNL are working it with staff not completely consumed by Japan support and main staff (charlie, jason, randy gauntt) as they can. This will certainly delay SOARCA but have not yet assessed the length of the delay since Japan support is fluid. Yes delayed, NOT on hold.

---

**From:** Uhle, Jennifer  
**To:** Santiago, Patricia; Gibson, Kathy; Chang, Richard  
**Cc:** Sheron, Brian  
**Sent:** Wed Mar 30 15:24:54 2011  
**Subject:** RE: SOARCA study put on hold for Japan reviews?

This is what I would say about SOARCA delays

NRC's efforts on the State of the Art Reactor Consequence Analysis (SOARCA) are currently on hold because the NRC staff and contractors working on SOARCA are assisting NRC's efforts regarding the Fukushima event.

Do you agree?

---

**From:** Hayden, Elizabeth  
**Sent:** Wednesday, March 30, 2011 3:04 PM  
**To:** Uhle, Jennifer  
**Cc:** Sheron, Brian  
**Subject:** FW: SOARCA study put on hold for Japan reviews?

Can someone help us out in Scott Burnell's absence?

Thanks,

*Beth*

---

**From:** Dolley, Steven [mailto:Steven\_Dolley@platts.com]  
**Sent:** Wednesday, March 30, 2011 2:56 PM  
**To:** OPA Resource  
**Cc:** Hayden, Elizabeth  
**Subject:** RE: SOARCA study put on hold for Japan reviews?

Could someone please confirm or disconfirm Neil's statement that the NRC Soarca study is on hold pending the Japan reviews? I'm not sure why he can't, but he referred me to HQ.

Thanks,  
Steve

Steven Dolley  
Managing Editor, Inside NRC  
Platts Nuclear

BA/45

202-383-2166 Office  
202-383-2187 Fax

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**From:** Sheehan, Neil [mailto:Neil.Sheehan@nrc.gov]  
**Sent:** Wednesday, March 30, 2011 2:51 PM  
**To:** Dolley, Steven  
**Cc:** Burnell, Scott  
**Subject:** FW: SOARCA study put on hold for Japan reviews?

Steve,

I would refer you to Scott Burnell on this. He may be out today.

Neil  
NRC Public Affairs  
(610) 337-5331

---

**From:** Dolley, Steven [mailto:Steven\_Dolley@platts.com]  
**Sent:** Wednesday, March 30, 2011 2:49 PM  
**To:** Sheehan, Neil  
**Subject:** SOARCA study put on hold for Japan reviews?

Neil, Can you confirm this? If so, how long will the Soarca review be on hold?

Thanks, Steve

That study has been put on hold, though, because the NRC is busy reviewing facilities to make sure vulnerabilities identified from what happened in Japan after the March 11 earthquake and tsunami are not found in U.S. plants, Sheehan said.

[http://www.timesonline.com/news/figures-showing-high-risk-of-meltdown-at-beaver-valley-outdated/article\\_2b061d5c-5a5a-11e0-b6b3-0017a4a78c22.html](http://www.timesonline.com/news/figures-showing-high-risk-of-meltdown-at-beaver-valley-outdated/article_2b061d5c-5a5a-11e0-b6b3-0017a4a78c22.html)

Steven Dolley  
Managing Editor, Inside NRC  
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**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Thursday, March 31, 2011 1:41 PM  
**To:** Armstrong, Kenneth  
**Subject:** Re: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

Yes thanks for checking.

---

**From:** Armstrong, Kenneth  
**To:** Gibson, Kathy  
**Cc:** Hoxie, Chris; Aissa, Mourad; Lee, Richard  
**Sent:** Thu Mar 31 13:11:23 2011  
**Subject:** RE: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

Kathy,

David Tiktinsky (Sr. PM for the MOX facility) confirmed the statement below and mentioned that TVA has interest in some of the first fuel once the MOX facility is running.

OK to send to EDO?

Thanks,  
Kenneth

---

**From:** Armstrong, Kenneth  
**Sent:** Thursday, March 31, 2011 12:51 PM  
**To:** Gibson, Kathy  
**Cc:** Hoxie, Chris; Aissa, Mourad; Lee, Richard  
**Subject:** RE: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

Kathy,

Greg is collecting the information for questions 3 and 4 directly from the offices. We feel very confident that Catawba was the only facility to put LTAs through a cycle, but we are confirming with NRR/NMSS.

Thanks,  
Kenneth

---

**From:** Gibson, Kathy  
**Sent:** Thursday, March 31, 2011 11:47 AM  
**To:** Armstrong, Kenneth  
**Cc:** Hoxie, Chris; Aissa, Mourad; Lee, Richard  
**Subject:** RE: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

This looks very good, nice work Mourad! What are we doing to get and add the answers to questions 3 and 4?

---

**From:** Armstrong, Kenneth  
**Sent:** Thursday, March 31, 2011 10:22 AM  
**To:** Gibson, Kathy  
**Cc:** Hoxie, Chris; Aissa, Mourad; Lee, Richard  
**Subject:** FW: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

BA/46

Kathy,

We received some additional clarification questions from Commissioner Ostendorff's office from our recent summary of MOX fuel. Mourad has addressed these questions below (in red). We have also incorporated the responses into the attached document.

Please review and let me know if you have any comments. Would you like me to run this by Brian/Jennifer?

Thanks,  
Kenneth

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**From:** Aissa, Mourad  
**Sent:** Thursday, March 31, 2011 6:58 AM  
**To:** Bowman, Gregory  
**Cc:** Armstrong, Kenneth  
**Subject:** RE: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel  
**Importance:** High

Ken,  
Would you please forward our response. The MOX information provided to the Chairman on Tuesday should answer these questions. I added specific details in red below.  
Thanks  
Mourad

Mourad Aissa, PhD  
Senior Criticality Analysis and Reactor Physics Engineer  
Office of Nuclear Regulatory Research  
Mail Stop CSB-3A07M  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Phone: (301) 251-7511

---

**From:** Bowman, Gregory  
**Sent:** Wednesday, March 30, 2011 2:20 PM  
**To:** Gibson, Kathy; Lee, Richard; Aissa, Mourad  
**Cc:** Armstrong, Kenneth  
**Subject:** FW: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel  
**Importance:** High

The questions below were sent to Ken Armstrong a minute ago, but I wanted to make sure you were aware of them (I tried calling Ken, but I missed him). Like the questions you worked on yesterday, these are related to MOX. Commissioner Ostendorff's office is asking for a response by COB tomorrow.

I think the answers you provided yesterday evening cover these questions, as well, but I wanted to give you a chance to add anything you think might be important that you didn't have time to address yesterday. The responses to these questions will end up being sent to all the Commission offices. If you're okay with what was sent yesterday, we can simply forward that on and consider the two RES questions addressed.

Thanks again for all the help with this. If you need any clarification or anything like that, please let me know.

**From:** Frazier, Alan

**Sent:** Wednesday, March 30, 2011 2:12 PM

**To:** Meighan, Sean; Nguyen, Quynh; Armstrong, Kenneth; Shropshire, Alan; Deegan, George

**Cc:** Wittick, Brian; Andersen, James; Merzke, Daniel; OST01 HOC; OST02 HOC; Rini, Brett; Bowman, Gregory; Brock, Kathryn; Muessle, Mary; Layton, Michael

**Subject:** ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

**Importance:** High

All,

Commissioner Ostendorff would like additional information regarding the article below that was in the "NRC in the News" yesterday. Below are the Commissioner's specific questions and proposed office leads. **Please respond if possible by Thursday, March 31.** If you need more time, please let me know so I can inform the Commissioner's office. Please send responses to Alan Frazier and Brian Wittick for consolidation.

1. Specifically, has the NRC staff verified the claim that Reactor 3 at Fukushima contains MOX fuel, and if so, has the fact that some of the fuel is MOX posed any safety challenges during the event? RES (note that RES provided information on MOX yesterday, to help prepare the Chairman for today's hearing, which may be sufficient to answer questions 1 and 2)

**NRC staff currently in Japan confirmed that 32 MOX assemblies were loaded in Unit 3. We do not expect significant safety related issues with respect to the MOX fuel.**

2. Has the staff evaluated the concerns that MOX fuel poses greater safety concerns? RES

**NRC did its own evaluations of MOX fuel and presented its findings during a hearing in front of the Atomic Safety and Licensing Board (ASLB). NRC concluded that the design basis accidents consequences were still within the acceptance criteria and the differences between MOX and uranium fuel were within the dose consequences calculation uncertainties. Based on staff evaluations, NRC allowed Catawba nuclear plant in South Carolina to load 4 MOX assemblies in one its reactors for testing purposes a few years ago.**

3. Has the staff evaluated the concerns that MOX fuel poses greater security concerns? NSIR
4. I understand that the staff completed a safety assessment of the use of MOX fuel for Catawba and the Browns Ferry. Can you provide a summary of the dose/health consequence analysis and a synopsis of the staff's evaluation of any public health risk from the use of MOX? NRR lead, FSME support.

Alan

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**ARTICLE: Mixed Oxide Nuclear Fuel Raises Safety Questions.** The Scientific American (3/25, Matson) reported that reactor No. 3 at the troubled Fukushima Daiichi power station in Japan "has one characteristic that differentiates it from its neighboring reactors and from any operating reactor in the US" Among the "hundreds of standard nuclear fuel assemblies in its core... are some that contain a mix of uranium and plutonium," or MOX. The use of MOX is controversial, and some "critics say that MOX is riskier than standard fuel and that there are better ways to dispose of excess plutonium." Notably, "the federally owned Tennessee Valley Authority (TVA), which operates the Browns Ferry Nuclear Plant and two other nuclear facilities, has expressed some interest in trying MOX and may step up to take fuel from" the Mixed Oxide Fuel Fabrication Facility (MFFF) in South Carolina.

## **Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Thursday, March 31, 2011 12:05 PM  
**To:** Madni, Imtiaz  
**Subject:** RE: Commissioners Briefing on SMRs

Thanks, Imtiaz. What is your take on the current schedule and planning for our work?

---

**From:** Madni, Imtiaz  
**Sent:** Thursday, March 31, 2011 11:32 AM  
**To:** Gibson, Kathy; Scott, Michael; Zaki, Tarek  
**Cc:** Madni, Imtiaz  
**Subject:** Commissioners Briefing on SMRs

Hi Kathy, Mike, and Tarek,

A Commissioners' Briefing on Small Modular Reactors (SMRs) was held on March 29, 2011 from 9:00 AM to 12:20 PM in the Commissioners' Conference Room, 1<sup>st</sup> floor OWFN. It was a public meeting. I was asked by my Branch Chief Tarek Zaki to attend in order to provide representation from NARB. Here is a summary of the subject briefing. For your reference, I have attached the meeting handouts as pdf files.

Imtiaz

The purpose of the meeting was to provide the Commission a discussion of anticipated licensing activities for SMRs, the status of activities to resolve key generic policy issues, and activities and plans for SMRs on the part of the industry and other government agencies and to facilitate Commission voting on policy paper on use of risk insights in SMR reviews.

All Commissioners were present except Chairman Gregory Jaczko who was on travel to Japan. Commissioner William Magwood was acting in his place.

The agenda was as follows:

**Participants: Presentation**

**External Panel 40 mins.**

**John Kelly**, Deputy Assistant Secretary, Nuclear Reactor Technologies, 10 mins.

Department of Energy, Office of Nuclear Energy

Topic: DOE Program in support of SMRs.

**Doug Walters**, Vice President, Regulatory Affairs, 10 mins.

Nuclear Energy Institute

Topic: NEI activities in support of SMRs.

**Jack Bailey**, VP, Nuclear Generation Development, TVA 10 mins.

Topic: Utility perspective on SMRs - Licensing.

**Christofer Mowry**, President – Babcock & Wilcox Nuclear Energy, Inc., and 10 mins.

Chairman – Generation mPower, LLC

Topic: Vendor perspective on SMRs - Technology.

**Commission Q & A 50 mins.**

**Break 5 mins.**

2

**NRC Staff Panel 45 mins.\***

**Michael Johnson**, Director, NRO

**Michael Mayfield**, Director, Advanced Reactor Program, NRO 5 mins.

BA/47

Topic: Overview of NRO Activities on SMRs.

**Stewart Magruder**, Chief, Advanced Reactor Branch 2, NRO 20 mins.

Topic: SMR Licensing Activities, including status of staff's response to COMGBJ-10-0004/COMGEA-10-0001 (Use of Risk Insights to Enhance Safety Focus of SMR Reviews), and preparations for the possible licensing and construction of SMRs by TVA at the Clinch River Site.

**William Reckley**, Chief, Advanced Reactor Branch 1; NRO 20 mins.

Topic: Progress on Resolution of Key Technical and Policy Issues, emphasizing control room staffing, security, and emergency planning.

**Commission Q & A 50 mins.**

**Discussion – Wrap-up 5 mins.**

The meeting was informative, especially the Q & A sessions. All the Commissioners raised very pertinent and interesting questions.

As an example, here are a few items that Commissioner Apostolakis raised:

1. Given that mPower is submitting the request under 10 CFR Part 50, is there a plan to submit a PRA?  
Answer was YES

2. Would the PRA include Level-3? Response was that not sufficient data is available at the early stage to do that. George stated that, even new reactors currently undergoing certification and COLA review do not have all the required data, but they are still doing L3 PRAs. He listed WASH-1400, NUREG-1150, and SOARCA as examples, and encouraged the applicants to do a Level-3 PRA.

3. Given Fukushima post accident response has been complicated even though the plant is above ground, would the underground construction of mPower handicap post accident response? B&W stated no it would not because all the passive systems are underground and need not be impacted by external hazards.

## Greenwood, Carol

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**From:** Gibson, Kathy  
**Sent:** Thursday, March 31, 2011 11:47 AM  
**To:** Armstrong, Kenneth  
**Cc:** Hoxie, Chris; Aissa, Mourad; Lee, Richard  
**Subject:** RE: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

This looks very good, nice work Mourad! What are we doing to get and add the answers to questions 3 and 4?

---

**From:** Armstrong, Kenneth  
**Sent:** Thursday, March 31, 2011 10:22 AM  
**To:** Gibson, Kathy  
**Cc:** Hoxie, Chris; Aissa, Mourad; Lee, Richard  
**Subject:** FW: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel

Kathy,

We received some additional clarification questions from Commissioner Ostendorff's office from our recent summary of MOX fuel. Mourad has addressed these questions below (in red). We have also incorporated the responses into the attached document.

Please review and let me know if you have any comments. Would you like me to run this by Brian/Jennifer?

Thanks,  
Kenneth

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**From:** Aissa, Mourad  
**Sent:** Thursday, March 31, 2011 6:58 AM  
**To:** Bowman, Gregory  
**Cc:** Armstrong, Kenneth  
**Subject:** RE: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel  
**Importance:** High

Ken,  
Would you please forward our response. The MOX information provided to the Chairman on Tuesday should answer these questions. I added specific details in red below.  
Thanks  
Mourad

Mourad Aissa, PhD  
Senior Criticality Analysis and Reactor Physics Engineer  
Office of Nuclear Regulatory Research  
Mail Stop CSB-3A07M  
US Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Phone: (301) 251-7511

BA/48

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**From:** Bowman, Gregory  
**Sent:** Wednesday, March 30, 2011 2:20 PM  
**To:** Gibson, Kathy; Lee, Richard; Aissa, Mourad  
**Cc:** Armstrong, Kenneth  
**Subject:** FW: ACTION DUE by 3/31 COB: Questions on the use of MOX fuel  
**Importance:** High

The questions below were sent to Ken Armstrong a minute ago, but I wanted to make sure you were aware of them (I tried calling Ken, but I missed him). Like the questions you worked on yesterday, these are related to MOX. Commissioner Ostendorff's office is asking for a response by COB tomorrow.

I think the answers you provided yesterday evening cover these questions, as well, but I wanted to give you a chance to add anything you think might be important that you didn't have time to address yesterday. The responses to these questions will end up being sent to all the Commission offices. If you're okay with what was sent yesterday, we can simply forward that on and consider the two RES questions addressed.

Thanks again for all the help with this. If you need any clarification or anything like that, please let me know.

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**From:** Frazier, Alan  
**Sent:** Wednesday, March 30, 2011 2:12 PM  
**To:** Meighan, Sean; Nguyen, Quynh; Armstrong, Kenneth; Shropshire, Alan; Deegan, George  
**Cc:** Wittick, Brian; Andersen, James; Merzke, Daniel; OST01 HOC; OST02 HOC; Rini, Brett; Bowman, Gregory; Brock, Kathryn; Muessle, Mary; Layton, Michael  
**Subject:** ACTION DUE by 3/31 COB: Questions on the use of MOX fuel  
**Importance:** High

All,

Commissioner Ostendorff would like additional information regarding the article below that was in the "NRC in the News" yesterday. Below are the Commissioner's specific questions and proposed office leads. **Please respond if possible by Thursday, March 31.** If you need more time, please let me know so I can inform the Commissioner's office. Please send responses to Alan Frazier and Brian Wittick for consolidation.

1. Specifically, has the NRC staff verified the claim that Reactor 3 at Fukushima contains MOX fuel, and if so, has the fact that some of the fuel is MOX posed any safety challenges during the event? RES (note that RES provided information on MOX yesterday, to help prepare the Chairman for today's hearing, which may be sufficient to answer questions 1 and 2)

**NRC staff currently in Japan confirmed that 32 MOX assemblies were loaded in Unit 3. We do not expect significant safety related issues with respect to the MOX fuel.**

2. Has the staff evaluated the concerns that MOX fuel poses greater safety concerns? RES

**NRC did its own evaluations of MOX fuel and presented its findings during a hearing in front of the Atomic Safety and Licensing Board (ASLB). NRC concluded that the design basis accidents consequences were still within the acceptance criteria and the differences between MOX and uranium fuel were within the dose consequences calculation uncertainties. Based on staff evaluations, NRC allowed Catawba nuclear plant in South Carolina to load 4 MOX assemblies in one its reactors for testing purposes a few years ago.**

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4. I understand that the staff completed a safety assessment of the use of MOX fuel for Catawba and the Browns Ferry. Can you provide a summary of the dose/health consequence analysis and a synopsis of the staff's evaluation of any public health risk from the use of MOX? NRR lead, FSME support

Alan

---

ARTICLE: Mixed Oxide Nuclear Fuel Raises Safety Questions. The Scientific American (3/25, Matson) reported that reactor No. 3 at the troubled Fukushima Daiichi power station in Japan "has one characteristic that differentiates it from its neighboring reactors and from any operating reactor in the US" Among the "hundreds of standard nuclear fuel assemblies in its core... are some that contain a mix of uranium and plutonium," or MOX. The use of MOX is controversial, and some "critics say that MOX is riskier than standard fuel and that there are better ways to dispose of excess plutonium." Notably, "the federally owned Tennessee Valley Authority (TVA), which operates the Browns Ferry Nuclear Plant and two other nuclear facilities, has expressed some interest in trying MOX and may step up to take fuel from" the Mixed Oxide Fuel Fabrication Facility (MFFF) in South Carolina.



**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Thursday, March 31, 2011 12:57 PM  
**To:** Lee, Richard; Wagner, Katie  
**Subject:** FW: Proposed Task Tracker

Pretty sure you already have this.

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**From:** Correia, Richard  
**Sent:** Thursday, March 31, 2011 12:48 PM  
**To:** Coe, Doug; Cheok, Michael; Drouin, Mary; Demoss, Gary; Gibson, Kathy; Tinkler, Charles; Harrison, Donnie  
**Subject:** FW: Proposed Task Tracker

FYI

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

[richard.correia@nrc.gov](mailto:richard.correia@nrc.gov)

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**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

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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).

BA/49

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.

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#### 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.

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Friday, April 01, 2011 10:44 AM  
**To:** Ramirez, Annie  
**Subject:** Re: DEDO Mtg Briefing Inputs -- (Due COB today)

Ok looks good

---

**From:** Ramirez, Annie  
**To:** Gibson, Kathy  
**Sent:** Fri Apr 01 10:05:29 2011  
**Subject:** DEDO Mtg Briefing Inputs -- (Due COB today)

Kathy,

These are the topics proposed for the DEDOS briefing, by technical staff. Please provide feedback to proceed.

- Radiation Protective actions and health effects- Steph
- Re-examination of the concept of credible event to which a facility is designed, and a cost-benefit analysis to determine if designing to lower probability events than is currently the practice would increase safety at a reasonable cost. - Sami

Thanks!

Annie

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**From:** Armstrong, Kenneth  
**Sent:** Tuesday, March 29, 2011 1:02 PM  
**To:** Ramirez, Annie  
**Subject:** FW: DEDO Mtg Briefing Info -- Due March 31

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**From:** Spencer, Ruth  
**Sent:** Thursday, March 24, 2011 9:35 AM  
**To:** Rivera-Lugo, Richard; Armstrong, Kenneth; Hudson, Daniel  
**Cc:** Stout, Kathleen; Grancorvitz, Teresa; Rini, Brett  
**Subject:** RE: DEDO Mtg Briefing Info -- Due March 31

I think I need to emphasize that this really was meant to be thoughts on resources "IF WE KNOW OF ANY RIGHT NOW". No need to go talk with technical offices or do anything elaborate.

And I'm sorry I didn't realize the EDO request from last Monday actually got to the Divisions -- I thought it got cancelled before that. So the list that Brian brainstormed was kind of what I was looking for -- with anything we might hazard as to 2013 resources and likelihood.

BA/50

Again, this is IF ANY, not a mandatory response.

Ruth

BRIAN'S LIST (which is what I'll put in the DEDO mtg briefing materials if no one has anything to add):

- Spent fuel analyses – SFPs vs ISFSIs?
- Severe accident analyses
- Exceeding seismic design basis
- Response to aftershocks following a design or beyond-design basis earthquake
- Tsunami/storm surge impacts
- Protection from hurricane winds, tornadoes, etc.

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Ruth Spencer, NRC/RES, 301 251 7921

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**From:** Spencer, Ruth  
**Sent:** Wednesday, March 23, 2011 8:48 AM  
**To:** Rivera-Lugo, Richard; Armstrong, Kenneth; Hudson, Daniel  
**Cc:** Stout, Kathleen; Grancorvitz, Teresa  
**Subject:** DEDO Mtg Briefing Info -- Due March 31

Good morning,

As is typical at this point in the budget season, the senior staff will be meeting with the DEDOs to go over the FY 13 budget request. Those meetings will be held the week of April 4<sup>th</sup>.

We're working on briefing materials for those meetings for our RES rep, and we think it would be prudent to include a list of potential needs (if any) for FY 13 as a result of the Japan events. While such needs were not envisioned in the PC&PS, and it is a bit late in the process to add them to our Scenario B items, we feel it is possible the DEDOs will ask the question and that items could be added to the FY 13 budget through those meetings. OCFO had already asked about FY 11 needs, after all.

We're not asking for significant detail, just something like:

- The amount that might be needed (probably \$K, but critical FTE if you have a really solid justification)
- Justification/context for the need (brief)

■ Likelihood/priority

So a rough example might be:

\$1,000K for high priority Severe Accident work, to evaluate XXX factors relative to the Japan event that have not been addressed in prior SOARCA research; SOARCA follow-on SECY will go to the Commission on DATE and there is strong likelihood this effort will be included as a recommended activity. *(SOARCA is a really loaded example, of course)*

**Please give me any input by COB March 31** for inclusion in the briefing books (we realize all your bosses/branch chiefs are probably hard to find right now....)

Thanks,

**Ruth**

\*\*\*\*\*

Ruth Spencer, NRC/RES

Mailstop C6-D20M, Washington, DC 20555-0001

Phone 301 251 7921 FAX 301 251 7426

eMail: [Ruth.Spencer@NRC.GOV](mailto:Ruth.Spencer@NRC.GOV)

Office Location: C06-D19

<< OLE Object: Picture (Device Independent Bitmap) >>

**Zabel, Joseph**

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**From:** Donaldson, Leslie  
**Sent:** Wednesday, March 16, 2011 10:34 AM  
**To:** Zabel, Joseph  
**Subject:** FW: Monthly Status (February) - TABS TASK FORCE

Joe -

Since Amy is at OPA helping out w/the Japan crisis. Do you think you could draft a quick email to staff about the TABS report for February now being available on our web page (see below)? I would send it out to all of RES Distribution.

Thanks, Leslie

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**From:** Kardaras, Tom  
**Sent:** Wednesday, March 16, 2011 9:07 AM  
**To:** Donaldson, Leslie  
**Cc:** Bonaccorso, Amy; Valentin, Andrea  
**Subject:** Monthly Status (February) - TABS TASK FORCE

I have asked Ha to post the latest TABS status report for February on the RES internal page under the Quick Links portion of the main page. Once the item is confirmed to be on the site and accessible, could Amy put out an e-mail to staff to let them know?

Regards,

Tom Kardaras, Chief

Information Technology and Infrastructure Branch

Program Management, Policy Development and Analysis Staff

Office of Nuclear Regulatory Research

(o) 301-251-7667

BA/51

**From:** RMTPACTSU\_ELNRC  
**To:** LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; Marshall, Jane  
**Subject:** Your Request - Organization of Interagency People In Japan  
**Date:** Wednesday, March 16, 2011 12:24:51 PM  
**Attachments:** PAC TSU Response Org Charts 03 15 2011.pptx

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Per your request, I have enclosed an org chart on the who, what, and where the Interagency is deployed in Japan. According to the email below, there are 210 total people over there... and it is growing.

Please let me know if you need any additional questions or concerns.

Michael I. Dudek

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**From:** RMTPACTSU\_DMO  
**Sent:** Wednesday, March 16, 2011 11:40 AM  
**To:** RMTPACTSU\_ELNRC  
**Subject:** FW: DART/RMT Org charts

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**From:** RMTPACTSU\_DMO  
**Sent:** Tuesday, March 15, 2011 10:11 PM  
**To:** DART\_PACTSU; RMT\_PACTSU  
**Cc:** SMT [USAID]  
**Subject:** DART/RMT Org charts

Dear DART and RMT,

As promised on the field call, attached please find the current org charts for the DART and RMT. I've also outlined a brief description of the scopes of work for the NRC, HHS, and DOE teams. NRC, HHS, and DOE team members...please feel free to correct me if I've misrepresented your mission.

**Total DART footprint: 210**

**USAID: 13 total**

**USAR: 144 total and 12 dogs** (this is the number we are reporting, even though we now have 143)

**NRC Team: 12 total**

The purpose of the NRC team is to monitor the technical aspects of the nuclear events unfolding in Japan, specifically engage with the Ambassador's staff and Japanese authorities to better understand the status of the nuclear reactors at Fukushima Daiichi, units 1, 2, and 3. The NRC team will be headed by Disaster Communications Specialist who is set to arrive Tokyo, 1:30 pm on Wednesday, 3/16. We are working on the travel for the remaining NRC staff.

**HHS Health Communications Team: 6 total**

The team is composed of six health communication specialists with expertise in CBRNE issues. The

BA152

team will :

- Provide support to the DART earthquake and tsunami in Japan.
- Develop and coordinate the distribution of health and safety related messages to the population of Japan that has been impacted by the earthquake and tsunami.
- Locations within Japan may vary, but it is anticipated that 2 specialists will be based in Tokyo with additional specialists deployed to various consulates near the affected regions.

**DOE: 35 total**

The team had two primary components:

- Consequence Management (CM) –is DOE's emergency response team to protect the public's health and safety of a radiological dispersal that results in contamination to the environment. It includes: scientific data assessment and radiation monitoring; management, coordination, and liaison function; data management with GIS product development; health physics kit supporting contamination surveys; and low volume air sampling.
- Aerial Measuring System (AMS) - is DOE's aerial emergency response capability for mapping radiological material deposited on the ground. It includes: aerial radiation detection systems with capabilities for sensitive radiation mapping and high-radiation field surveys; equipment can be mounted on up to two aircraft simultaneously; and deploys with a self-contained analytic capability.

Chris Leonardo

Deputy Manager for Operations

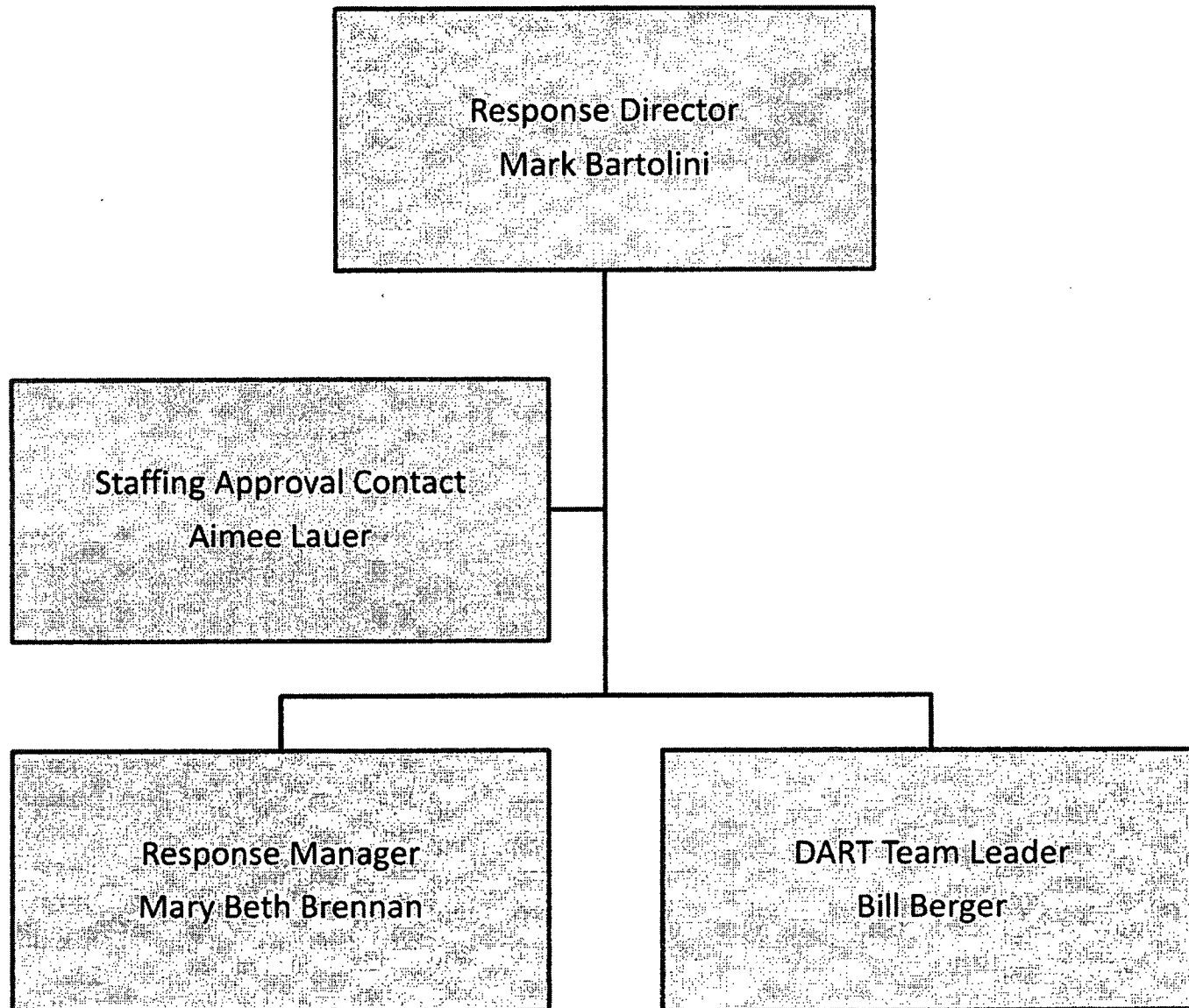
Pacific Tsunami Response Management Team

[RMTPACTSU\\_DMO@ofda.gov](mailto:RMTPACTSU_DMO@ofda.gov)

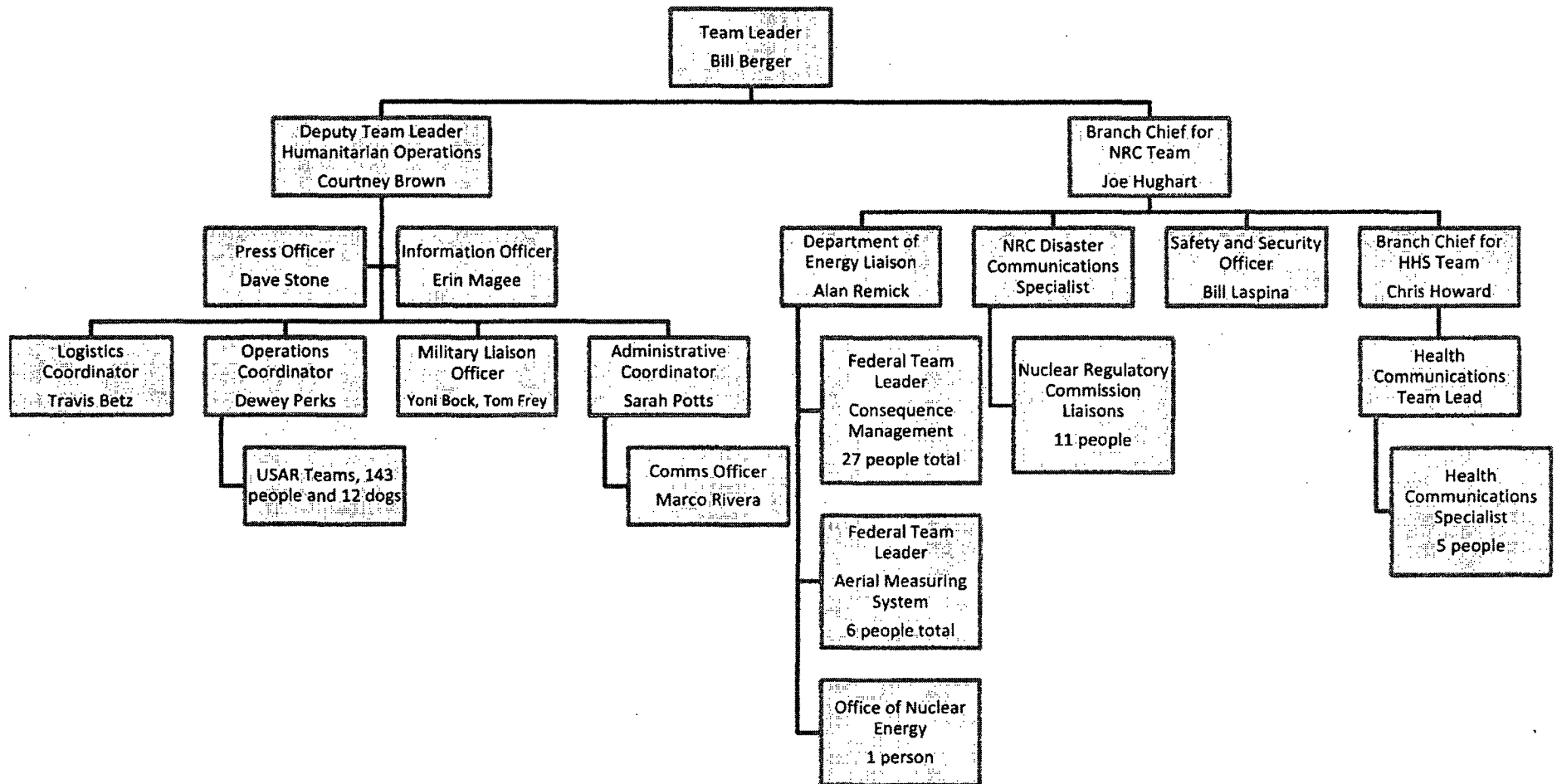
202-712-0039



# Pacific Tsunami Response - Senior Management

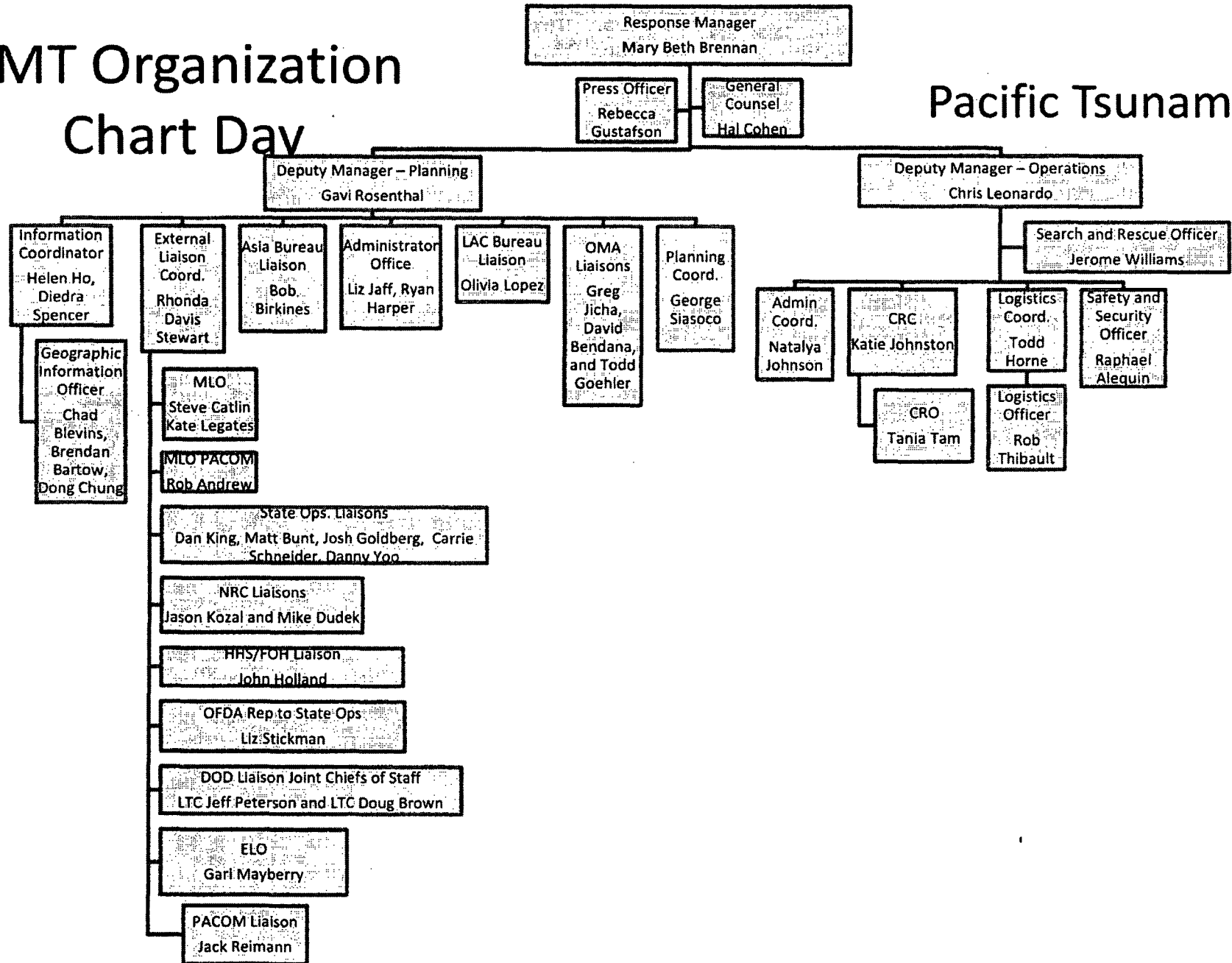


# Pacific Tsunami DART



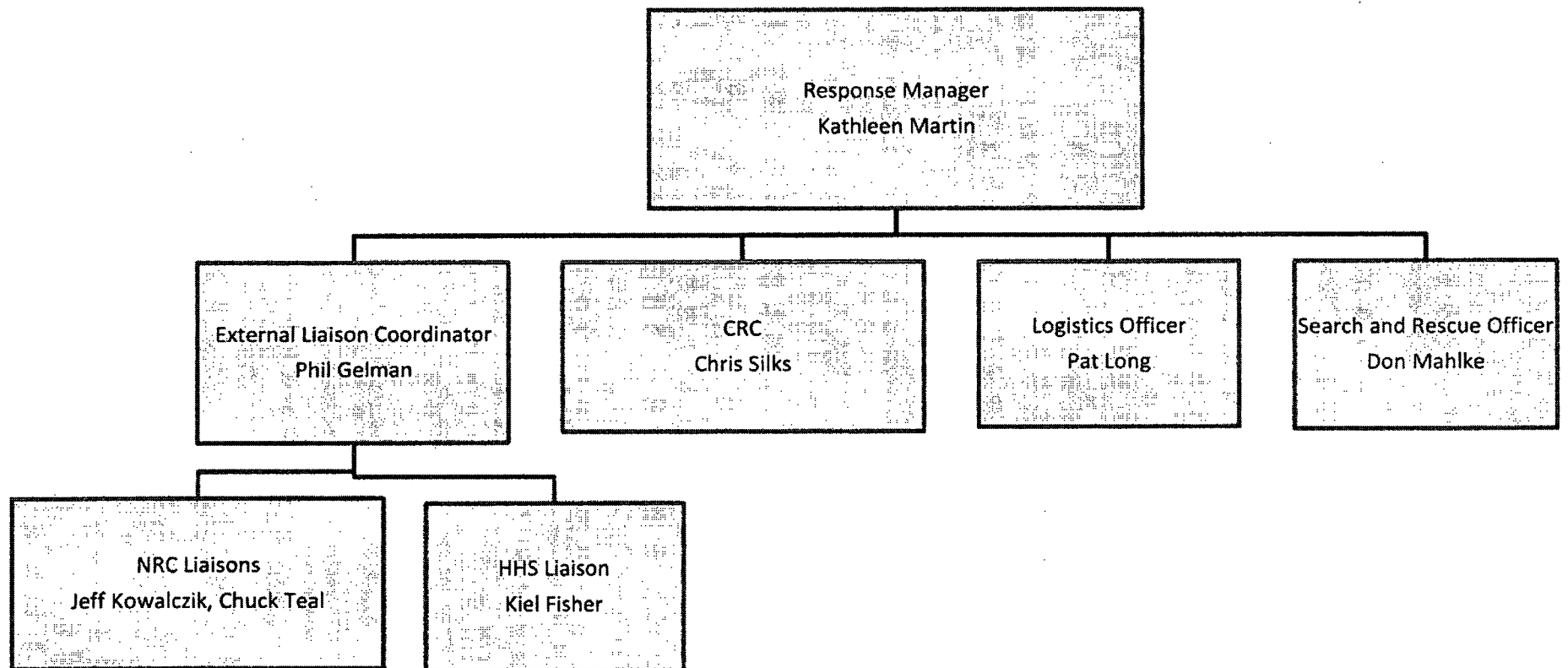
# RMT Organization Chart Day

## Pacific Tsunami



# RMT Organization Chart Night

Pacific Tsunami



**From:** Givvines, Mary  
**To:** Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Cunningham, Mark; Evans, Michele; Galloway, Melanie; Giltner, Joseph; Givvines, Mary; Hilland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David  
**Cc:** Leeds, Eric; Grobe, Jack; Boger, Bruce  
**Subject:** FW: Additional Staff requirements outside Ops Center Long Term Staffing  
**Date:** Wednesday, March 16, 2011 12:57:15 PM  
**Importance:** High

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All,

I will go ahead and lead this effort to obtain a list of potential staff. I know that Bill is super busy – can you provide me with names and I will forward to the EDO office? I would appreciate sending me names by noon tomorrow.

Thanks

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**From:** Grobe, Jack  
**Sent:** Wednesday, March 16, 2011 11:18 AM  
**To:** Givvines, Mary; Ruland, William  
**Cc:** Leeds, Eric; Boger, Bruce  
**Subject:** Fw: Additional Staff requirements outside Ops Center Long Term Staffing  
**Importance:** High

Mary and Bill.

Please take the lead and respond directly.  
Jack Grobe, Deputy Director, NRR

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**From:** Muessle, Mary  
**To:** Evans, Michele; Hackett, Edwin; Brenner, Eliot; Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Greene, Kathryn; Stewart, Sharon; Howard, Patrick; Miller, Charles; Moore, Scott; Cohen, Miriam; Tracy, Glenn; Haney, Catherine; Dorman, Dan; Johnson, Michael; Holahan, Gary; Leeds, Eric; Boger, Bruce; Grobe, Jack; Zimmerman, Roy; Campbell, Andy; Sheron, Brian; Uhle, Jennifer; Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Casto, Chuck; Satorius, Mark; Pederson, Cynthia; Collins, Elmo; Howell, Art; Andersen, James; Akstulewicz, Brenda; Belmore, Nancy; Quesenberry, Jeannette; Kreuter, Jane; Armstrong, Janine; Hudson, Sharon; Ellis, Marv; Hasan, Nasreen; Ronewicz, Lynn; Schumann, Stacy; Daniels, Stanley; Casby, Marcia; Thomas, Loretta; Walker, Dwight; Sprogeris, Patricia; Schwarz, Sherry; Ross, Robin; Cohen, Shari; Riddick, Nicole; Flory, Shirley; Veltri, Debra; Matakas, Gina; ODaniell, Cynthia; Miles, Patricia; Lee, Pamela; Dubose, Sheila; Buckley, Patricia; Tomczak, Tammy; Owen, Lucy; Tannenbaum, Anita; Gusack, Barbara; Harrington, Holly; Ricketts, Paul; Howell, Linda; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James; Jackson, Donald  
**Cc:** Williams, Shawn; Andersen, James; Ramsey, Jack  
**Sent:** Wed Mar 16 09:31:40 2011  
**Subject:** Additional Staff requirements outside Ops Center Long Term Staffing

OPA and OIP expect large call volumes today and in the next few weeks given expected news from Japan. OIP is looking for names of people who have desk officer or other OIP or international experience to assist them in the event that current staff cannot meet the work demands for call inquiries as well as ongoing international work. Please provide Shawn Williams and I a list of names that could serve to help OIP in this capacity and their general availability over the next week

BA/53

and month. It is difficult to determine the need level at this time, but as in the Op Center, it is anticipated OIP will have for an additional month. We would like the list of names by COB today.

Thanks

Mary

Mary Muessle

Assistant for Operations - Acting

Office of the Executive Director for Operations

U.S. Nuclear Regulatory Commission

301-415-1703 office

301-415-2700 fax

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**From:** Evans, Michele

**Sent:** Tuesday, March 15, 2011 5:53 PM

**To:** Hackett, Edwin; Brenner, Eliot; Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Greene, Kathryn; Stewart, Sharon; Howard, Patrick; Miller, Charles; Moore, Scott; Cohen, Miriam; Tracy, Glenn; Haney, Catherine; Dorman, Dan; Johnson, Michael; Holahan, Gary; Leeds, Eric; Boger, Bruce; Grobe, Jack; Zimmerman, Roy; Campbell, Andy; Sheron, Brian; Uhle, Jennifer; Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Casto, Chuck; Satorius, Mark; Pederson, Cynthia; Collins, Elmo; Howell, Art; Muessle, Mary; Andersen, James; Akstulewicz, Brenda; Belmore, Nancy; Quesenberry, Jeannette; Kreuter, Jane; Armstrong, Janine; Hudson, Sharon; Ellis, Marv; Hasan, Nasreen; Ronewicz, Lynn; Schumann, Stacy; Daniels, Stanley; Casby, Marcia; Thomas, Loretta; Walker, Dwight; Sprogeris, Patricia; Schwarz, Sherry; Ross, Robin; Cohen, Shari; Riddick, Nicole; Flory, Shirley; Veltri, Debra; Matakas, Gina; ODaniell, Cynthia; Miles, Patricia; Lee, Pamela; Dubose, Sheila; Buckley, Patricia; Tomczak, Tammy; Owen, Lucy; Tannenbaum, Anita; Gusack, Barbara; Harrington, Holly; Ricketts, Paul; Howell, Linda; Higginbotham, Tina; Ross, Brenda; Boyce, Thomas (OIS); Schaeffer, James; Jackson, Donald

**Subject:** Follow-up from 4 pm teleconference on Ops Center Long Term Staffing

Everyone,

Please find attached 1) a list of current positions being staffed in the Ops Center and 2) the staff identified as available to support in Japan.

Regarding additional staff available to support in the ops center, the primary needs are for the specialized positions on the PMT and anyone with previous international experience in OIP.

Regarding support in Japan, please provide any updates/changes to the list by COB March 17. The target time frame for sending these staff members is March 27-April 9, so please consider that when considering staff to put on the list.

Thanks for your support.

*Michele*

**From:** Deeds, Erin  
**To:** Taylor, Robert; Tate, Travis; Jolicœur, John; Salgado, Nancy; Franovich, Rani; Rodriguez, Veronica; Wilson, George; Klein, Alex; Harrison, Donnie; Bailey, Stewart; Narick, Marianne; Imboden, Andy; Regan, Christopher; Pelton, David; Leeds, Eric; Lubinski, John; Lee, Samson; Nelson, David; Galloway, Melanie; Blount, Tom; Bahadur, Sher; McMurtry, Anthony; Ross-Lee, MaryJane; Brown, Rohn; Shoop, Undine; Broadus, Doug; Murphy, Martin; Kobetz, Timothy; Chernoff, Harold; Markley, Michael; Quichocho, Jessie; Casto, Greg; Le, Hong; Auluck, Rajender; Eads, Johnny; Pham, Bo; Pedersen, Renee; Grobe, Jack; McGinty, Tim; Evans, Michele; Ruland, William; Ferrell, Kimberly; Skeen, David; Howe, Allen; Giltner, Joseph  
**Subject:** Reminder - Difficult Conversations Follow-up  
**Date:** Wednesday, March 16, 2011 4:41:45 PM  
**Importance:** High

---

Good afternoon,

This is a reminder that you are scheduled to take the Difficult Conversations Follow-up class on Monday, March 21, 2011. Please arrive at the PDC on time (8:30am).

When asked by Quynh, here's a paraphrase of Eric Leeds' response:

Understanding the Japan situation, managers should make every effort to attend the training.

The NRC has already spent significant resources (during the Continuing Resolution).

Refresher Training:

Monday 21 - Morning Session 830 – 1200 (PDC)  
Afternoon Session 1300-1630 (PDC)

Thank you,

Erin D. Deeds, Information Management Assistant

NRR/DPR/PRIB

301-415-2887

erin.deeds@nrc.gov

O-12H18

BA/54

**From:** Leeds, Eric  
**To:** YOUNG, GARRY G  
**Subject:** Support for LTO Meeting in Paris  
**Date:** Wednesday, March 16, 2011 4:46:00 PM

---

Garry –

I've been distracted by the events in Japan and have not kept up with my emails. Can Entergy support the June 8 meeting in Paris?

Thanks for your help!

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-1270

BA/55



**Dean, Bill**

---

**From:** Dean, Bill  
**Sent:** Wednesday, March 16, 2011 6:39 PM  
**To:** Hunegs, Gordon  
**Subject:** RE: Award

Thanks Gordon. We are all real pleased for you.

*Bill*

---

**From:** Hunegs, Gordon  
**Sent:** Wednesday, March 16, 2011 4:44 PM  
**To:** Dean, Bill  
**Subject:** Award

Dear Bill,

Thank you for the award nomination; I really appreciate it. My response was subdued by your previous conference call on Japan.

Regards, Gordon

BA/56

**Dean, Bill**

---

**From:** Dean, Bill  
**Sent:** Wednesday, March 16, 2011 6:59 PM  
**To:** Virgilio, Martin  
**Cc:** Lew, David  
**Subject:** FW: Feedback on Yesterday's Senior Management Retreat  
**Attachments:** image001.jpg

FYI. We had a good retreat and a good meeting with the staff today on the Japanese event.

*Bill*

---

**From:** Dean, Bill  
**Sent:** Wednesday, March 16, 2011 6:58 PM  
**To:** All R1 Users  
**Subject:** Feedback on Yesterday's Senior Management Retreat



Yesterday, the Region's senior management team conducted a retreat. While originally intended to focus on achieving alignment on issues such as succession planning, management strategies and organizational development, we spent a considerable amount of time discussing the recent events in Japan and their implications for the agency and the region. We integrated much of our discussion on this dramatic international nuclear event with you all at our impromptu all hands meeting earlier today. While this very safety significant and still developing event is occupying a lot of our time and attention, we cannot lose sight of our primary mission to assure safe and secure operation of our domestic nuclear power and materials facilities.

Relative to the other issues we discussed at the retreat, of note is the observation I made to the team that from my perspective, I could not be more pleased with how the region has performed since I arrived in October, and that despite the number of management changes, we seem to have not missed a beat. This is a great credit to the entire staff and management team for staying focused on our core safety mission and important administrative support activities. During the retreat, I believe our management team, which has undergone significant changes in the last several months, made considerable progress in achieving consensus and alignment on a number of topics that are important to assure that we operate as an integrated and efficient management team. For example, we discussed (1) our need to continue our focus on developing our staff at all levels of the organization to assure a viable succession plan exists, (2) our approach to measures and metrics as an effective management tool and not necessarily an "absolute" requirement, (3) how to reinforce our commitment to the Servant Leadership model and fostering an Open and Collaborative Work Environment and ways to continue to demonstrate this in our daily activities, and (4) several internal processes and how to make them more effective/efficient/consistent.

We identified a handful of action items and we have several issues/topics that we will be taking up with our branch chiefs and team leaders in a few weeks as part of a periodic all supervisors meeting in order to garner broader support and understanding. Overall, it was a very productive meeting and I believe was quite valuable in helping our relatively new senior management team reach a common understanding and establish clear expectations for how we intend to work together in the future.

BA/57

**From:** Holmberg Jan-Erik  
**To:** Björkman Kim; stefan.authen@riskpilot.se; gabriel.georgescu@irsn.fr; julien.delache@irsn.fr; richard.quatrain@edf.fr; herve.bruneliere@areva.com; Jan.Stiller@grs.de; Ewgenij.Pilugin@grs.de; Arndt.Lindner@istec.grs.de; charleskim@kaeri.re.kr; Taylor, Gabriel; Kuritzky, Alan; Coyne, Kevin; Halverson, Derek; Betancourt, Luis; chu@bnl.gov; yuemeng@bnl.gov; smidts.1@osu.edu; sed@ujv.cz; kondo-keisuke@jnes.go.jp; tamas.bartha@sztaki.hu; paolo.contri@enel.com; federicadaudiavaleria.mancini@enel.com; cotozana@nrg.eu; Abdallah.AMRI@oecd.org; varde@barc.gov.in  
**Subject:** WGRISK/DIGREL Paris TG meeting presentations?  
**Date:** Thursday, March 17, 2011 4:06:19 AM

---

Dear all,

First of all, I would like to express my deep sympathy for our Japanese colleagues and I wish best success in their efforts to manage the situation.

In order to plan the agenda for the Paris TG meeting more in detail, I would like to know who of you plan to give a presentation and what is the topic.

I'm expecting presentations at least from

- NRC/BNL
- GRS
- NRG
- VTT & RiskPilot
- OSU?
- EDF?
- BARC

Since we should have enough time for discussion, I would like to restrict the presentations into ~15 min.

Some presentations, like the GRS I&C system example, need more time.

Therefore I would like to know the synopsis of your presentations beforehand in order to properly allocate the time and to plan the order of presentations.

Finally, please remember to notify the WGRISK secretariat of your participation, if you have not yet done it.

Regards, Jan

BA/58

Zabel, Joseph

From: CDMC [newsletter@chinadecisionmakers.com]  
Sent: Thursday, March 17, 2011 6:13 AM  
To: Zabel, Joseph  
Subject: Praying for Japanese Disaster-China Nuclear Energy Congress 2011

If you cannot see this email, please [click here](#)



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## 中国核能国际大会2011



### Current Status of Fukushima Daiichi NPPs

Unit	Status
1	<ul style="list-style-type: none"><li>· Reactor cold shutdown, stable water level, offsite power is available</li><li>· No refrigerant is leaked in the reactor contaminant vessel</li><li>· Maintain average water temperature at 100°C in the pressure restraint</li></ul>
2	<ul style="list-style-type: none"><li>· Reactor cold shutdown, stable water level, offsite power is available</li><li>· No refrigerant is leaked in the reactor contaminant vessel</li><li>· Maintain average water temperature at 100°C in the pressure restraint</li></ul>
3	<ul style="list-style-type: none"><li>· Reactor cold shutdown, stable water level, offsite power is available</li><li>· No refrigerant is leaked in the reactor contaminant vessel</li><li>· Maintain average water temperature at 100°C in the pressure restraint</li></ul>
4	<ul style="list-style-type: none"><li>· Reactor cold shutdown, stable water level, offsite power is available</li><li>· No refrigerant is leaked in the reactor contaminant vessel</li><li>· Maintain average water temperature at 100°C in the pressure restraint</li></ul>

From TEPCO Press Release 13:00 PM Mar. 15

All units at the Fukushima II Daini, Onagawa, and Tokai nuclear power plants are in a safe and stable condition.

Japan's top government spokesperson says the radiation level at the quake-hit nuclear power plant in Fukushima Prefecture,

BA759

north of Tokyo, rose briefly on Wednesday morning.

The fuel rod exposure at Fukushima Daiichi number 2 reactor is potentially the most serious event so far at the plant.

At this moment, what we can do is just praying for Japanese disaster.

**Given the apparent severity of the events at Fukushima, the organizing committee decides to set up some sort of special session(s) at Beijing to help share the initial lessons learned.**

**■ Related Speakers:**

LIU Hua, Director, National Nuclear Safety Administration(NNSA)





Chris Lanzit, Senior Advisor on China, American Society of Mechanical Engineers (ASME)

IAEA's speakers are invited by the organizing committee to give our audience a full scene of what happened in FUKUSHIMA.

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**■ Agenda at a glance:**

	Day one (May 12)	Day two (May 13)
Morning	S1. Outlook of Nuclear Market S2. Reactor Debate	S4. Bottleneck: Safety and Uranium Uranium Mining Companies focus
Afternoon	S3. Dialogue Between Operators Equipment supplies highly suggested	S5. Reviewing Other Asia Nuclear Energy Users

**■ Exhibit at CNEC 2011 and meet with:**

Policy Makers

China Nuclear Troika

Domestic EPC Contractor

Chinese Uranium Traders

Large equipment providers

Utilities

If you are interested in sponsorship, exhibit & speaking opportunities, please contact us at [cnec@cdmc.org.cn](mailto:cnec@cdmc.org.cn)

Please, do not hesitate to contact us with any questions that you may have, and we look forward to welcoming you at the event!

Sincerely,

Michael LIU

Project Director

China Nuclear Energy Congress 2011

T: +8621-6840-7631

E: [michaell@cdmc.org.cn](mailto:michaell@cdmc.org.cn)

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**From:** Hiland, Patrick  
**To:** Coe, Doug; Skeen, David  
**Cc:** Beasley, Benjamin; Coyne, Kevin; Correia, Richard; Case, Michael  
**Subject:** RE: Response requested: Assistance with Commission Brief  
**Date:** Thursday, March 17, 2011 7:54:31 AM  
**Importance:** High

---

Thanks Doug.

David, I believe Mike Case has folks to handle seismic and tsunami. I'm adding him to cc list and perhaps he can take part. As you know our seismic folks focus on structures and SRP vs. detailed seismic- tsunami design. Mike should be able to participate or provide a senior staff person.

---

**From:** Coe, Doug  
**Sent:** Wednesday, March 16, 2011 10:47 PM  
**To:** Hiland, Patrick; Skeen, David  
**Cc:** Beasley, Benjamin; Coyne, Kevin; Correia, Richard  
**Subject:** RE: Response requested: Assistance with Commission Brief

Pat/Dave,  
I'm out of country and Kevin Coyne is acting Director RES/DRA, and I'll be back late Sunday night and in the office on Monday. Rich Correia is coming over to replace Chris Lui on Mar 28. We can provide you with GI-199 bullets or back you up as needed at the Commission meeting. Please let Kevin and Ben know how you want to present GI-199 and what we can do to support you. One thought is that we may need to indicate a consideration of tsunami for coastal or near-coastal plants in the information we request from licensees although that isn't something we've discussed to-date.  
Doug

---

**From:** Hiland, Patrick  
**Sent:** Wednesday, March 16, 2011 8:57 PM  
**To:** Skeen, David  
**Cc:** Coe, Doug; Beasley, Benjamin  
**Subject:** FW: Response requested: Assistance with Commission Brief

p.s. I can handle GI-199, but RES (Coe or Beasley) did the heavy lifting.

---

**From:** Howe, Allen  
**Sent:** Wednesday, March 16, 2011 4:47 PM  
**To:** Ruland, William; Brown, Frederick; McGinty, Tim; Blount, Tom; Quay, Theodore; Lubinski, John; Thomas, Brian; Nelson, Robert; Glitter, Joseph; Westreich, Barry; Bahadur, Sher; Holian, Brian; Cheok, Michael; Lee, Samson; Wilson, George; Hiland, Patrick; Skeen, David  
**Cc:** Martin, Robert; Meighan, Sean  
**Subject:** Response requested: Assistance with Commission Brief  
**Importance:** High

LT – I am looking for the right folks to pull together background information, slides, key messages, talking points and possible Q&A for the Commission briefing on the Japan event. The briefing is likely to happen Monday. Looks like a busy weekend. I will attend the ET standup tomorrow to discuss. Please let me know who will support. The areas where NRR has the lead and where specific support is needed are as follows:

**Situation Assessment For US Reactors and Applicants – Marty Virgilio– lead NRR, RES support**

BA/60

- External Events
  - Seismic – DE
  - Flood -DE
  - Tsunamis - DE
- Severe Accidents
  - SBO - DE/DRA
  - B.5.b/50.54 (hh)(2) – DRA/DIRS
  - SAMGs - DSS
  - Hydrogen control DSS
  - Emergency planning - NSIR
- Spent fuel – DSS, NMSS support for dry casks

**Path Forward and Priorities – Eric Leeds – lead NRR**

- Near Term Actions
  - In Support of Response
  - Near term regulatory actions - DPR
  - TI for inspections - DIRS
  - Generic Communications - DPR
  - Licensing actions – DORL
- Longer Term Actions
  - Lessons Learned From this Event – process based on past lessons learned  
e.g. TMI, Chernobyl, Davis-Besse, Japan earthquake at KK
  - Resolution of GSI 199 - DE
- Industry actions

Thanks - Allen



**From:** Grobe, Jack  
**To:** Steger (Tucci), Christine  
**Subject:** Re: For Review/Approval: Agenda for NRR All Supervisors Meeting on 3/30  
**Date:** Thursday, March 17, 2011 8:20:25 AM

---

Fine by me  
Jack Grobe, Deputy Director, NRR

---

**From:** Steger (Tucci), Christine  
**To:** Leeds, Eric; Grobe, Jack; Boger, Bruce; Givvines, Mary; Ruland, William  
**Cc:** Nguyen, Quynh; Meighan, Sean  
**Sent:** Wed Mar 16 08:48:07 2011  
**Subject:** For Review/Approval: Agenda for NRR All Supervisors Meeting on 3/30

Good Morning,

Unfortunately, we have been unable to meet in person, so I have attached the draft/suggested outline for the upcoming NRR All Supervisors Meeting scheduled for March 30. At your earliest convenience, please provide me your comments and suggestions.

You will find a suggested outline as well as additional topics for discussion that were submitted by supervisors. To include some of these topics, you may consider using them as "planted questions" for the discussion portion of the meeting.

In light of the events in Japan and NRC involvement, this may be another topic for consideration.

FYI: the BCC is committed to speaking on Enlightened Leadership.

Thanks,  
Christine

**Christine A. Steger**  
Communications Analyst  
Program Management, Policy Development  
and Analysis Staff  
Office of Nuclear Reactor Regulation  
Direct: 301-415-2008  
[christine.steger@nrc.gov](mailto:christine.steger@nrc.gov)

BA/61

**From:** Nelson, Robert  
**To:** Leeds, Eric; Boger, Bruce  
**Cc:** Buland, William; Gitter, Joseph; Howe, Allen  
**Subject:** FYI: Final Process - Near-term considerations for selected licensing activities  
**Date:** Thursday, March 17, 2011 10:02:23 AM  
**Attachments:** Enhanced Handling Final.pdf

---

See below for our process for screening potentially sensitive licensing actions.

## NELSON

---

**From:** Chernoff, Harold  
**Sent:** Wednesday, March 16, 2011 4:41 PM  
**To:** Broadus, Doug; Campbell, Stephen; Carlson, Robert; Chernoff, Harold; Kulesa, Gloria; Markley, Michael; Pascarelli, Robert; Salgado, Nancy; Singal, Balwant; Pickett, Douglas; Boska, John  
**Cc:** Meighan, Sean; Mahoney, Michael; Nelson, Robert; Howe, Allen; Gitter, Joseph  
**Subject:** Final Process - Near-term considerations for selected licensing activities

### BCs:

What follows is the finalized process for enhanced handling of selected near-term licensing activities along with a proposed list of subject areas where enhanced handling measures would be applied. The intent of this process is to ensure appropriate treatment of licensing activities that may be affected by the evolving situation in Japan subsequent to the March 11, 2011 earthquake/tsunami.

Please communicate this process with your staff and ask them to apply this process to all Selected Licensing Activities (see definition of this term below).

Effective immediately - each Selected Licensing Activity shall be screened using the pdf form located at:

G:\ADRO\DORL\DORL TA\Japan work screening\Enhanced Handling Final.pdf

As we discussed, the form is intended to be completed with brief responses. The form should be filled-in by the PM up to the demarcation line above the BC block. At this point the PM should click on the submit button at the top of the form. This will forward the form to me. I will have the form processed through the BC and DORL Director inform the affected parties of the final disposition.

### Definitions

**Licensing Activities** – This term includes all licensing actions, as well as, controlled correspondence (e.g., 2.206 issues and Congressional correspondence). This does not include meeting notices or RAIs.

**Selected Licensing Activities** – Any Licensing Activity that directly involves one of the subjects in the Selected Licensing Activities Subject Reference List.

**Near-term** – Any Licensing Activity with a planned completion and/or issuance on or

BA/62

before April 8, 2012 (note that this initial period of applicability may be modified by the Director DORL).

**DORL Director Notice (DDN)** – Concise summary of the anticipated disposition of a Selected Licensing Activity. This summary shall include:

1. the facility name;
2. a description of the Selected Licensing Activity;
3. a recommendation from the applicable PM and BC regarding the Selected Licensing Activities processing method (i.e., normal processing or deferred processing);
4. an assessment of the affect of the recommendation on the licensee and other stakeholders;
5. a discussion of potential insights that may be gained from deferred processing; and,
6. a discussion of any adverse impact on agency performance.

#### **Process**

1. PM shall develop a DORL Director Notice (DDN) as soon as practicable but at least one week prior to intended disposition of a Selected Licensing Activity.
2. PM shall complete the DDN up to the demarcation line above the BC block and click on the submit button.
3. Designated DORL staff will process the DDN through the BC and DORL Director.
4. DORL Director shall either endorse the recommendation or direct another processing method. Designated DORL staff will document this determination on the DDN and inform the affected parties of the final disposition.

#### **Selected Licensing Activities Subject Reference List**

1. Containment design issues (e.g., containment peak pressure, primary/secondary ventilation and filtration, cooling, and leak rate testing).
2. Containment combustible gas control.
3. AC/DC power (e.g., emergency diesel generators, Station Blackout (SBO) and batteries)
4. Seismic issues
5. Flooding (tsunami, seiche, and river system)
6. Emergency core cooling systems
7. Ultimate heat sink
8. Fuel design (e.g., structural capacity and seismic design)
9. Spent fuel pool design (cooling, criticality, rack strength, and structural capacity)
10. Peak cladding temperature limits
11. Emergency planning

Security settings or invalid file format do not permit using Enhanced Handling Final.pdf (90594 Bytes).

**From:** McGinty, Tim  
**To:** Sloan, Scott  
**Cc:** Ross-Lee, MaryJane; Quay, Theodore; Blount, Tom; Ruland, William; Boger, Bruce; Leeds, Eric  
**Subject:** Incident Response Performance Feedback Regarding Scott Sloan, Federal Liaison  
**Date:** Thursday, March 17, 2011 10:45:52 AM

---

Scott – the purpose of this email is for you to hand to your future supervision regarding your performance in the Operations Center regarding the events in Japan.

As a member of the Liaison Team, in the role of Federal Liaison, your performance has been outstanding. Your initiative, out-of-the-box thinking, can-do attitude, dedication and commitment to safety and security are truly remarkable. I have personal knowledge of your performance in this regard, having served on the same shift with you as the LT Director. Thank You.

This morning, however, it was brought to my attention that your performance last night was especially noteworthy. Bill Ruland informed the entire Executive Team and Leadership Team about your actions yesterday to drive the development of systems to help mitigate the conditions existing in Japan, and to coordinate with other stakeholders for the purposes of positioning the U.S. in a way where we could provide this highly critical technical assistance.

Mr. Ruland conveyed to me that your actions were "heroic".

Scott – speaking for the NRR ET and LT: Thank You.

Sincerely, Tim McGinty, Director, NRR/DPR

BA/63

**From:** Sheron, Brian  
**To:** Coe, Doug; Coyne, Kevin  
**Cc:** Uhle, Jennifer  
**Subject:** FW: FYI - April meetings in DC on how high reliability organizations manage catastrophic risks  
**Date:** Thursday, March 17, 2011 11:08:22 AM

---

See below. Is someone attending? Should/can someone attend?

---

**From:** Weber, Michael  
**Sent:** Wednesday, March 16, 2011 6:56 PM  
**To:** Sheron, Brian; Uhle, Jennifer  
**Cc:** Bowman, Gregory; Evans, Michele; Wiggins, Jim; Case, Michael  
**Subject:** FYI - April meetings in DC on how high reliability organizations manage catastrophic risks

These meetings could be interesting, especially in light of our ongoing response to the situation in Japan.

---

**From:** Sanfilippo, Nathan  
**Sent:** Wednesday, March 16, 2011 11:45 AM  
**To:** Weber, Michael  
**Cc:** Bowman, Gregory; Franovich, Mike  
**Subject:** FW: April meetings in DC on how high reliability organizations manage catastrophic risks

Mike,

During our meeting with the CSB last week, they mentioned these two meetings in April that we might be interested in. Perhaps you could pass to RES?

Thanks,  
Nathan

---

**From:** Hoyle, Bill [mailto:Bill.Hoyle@csb.gov]  
**Sent:** Tuesday, March 15, 2011 4:36 PM  
**To:** Franovich, Mike  
**Cc:** Sanfilippo, Nathan  
**Subject:** April meetings in DC on how high reliability organizations manage catastrophic risks

Michael and Nathan,

Thanks so much for your time last week. It was extremely helpful. Below are links to two interesting meetings in DC next month.

Regards,  
Bill Hoyle  
CSB Senior Investigator

April 19th [http://berkeleysph.qualtrics.com/SE/?SID=SV\\_e4zISCHqiz0PIR6](http://berkeleysph.qualtrics.com/SE/?SID=SV_e4zISCHqiz0PIR6)

April 20-21 [http://www.high-reliability.org/Documents/Conferences/Washington\\_DC/Agenda/Agenda\\_Intl\\_HRO\\_Conference\\_April2011.pdf](http://www.high-reliability.org/Documents/Conferences/Washington_DC/Agenda/Agenda_Intl_HRO_Conference_April2011.pdf)

BA/64

**From:** Jenkins, Barbara  
**To:** Cohen, Shari  
**Cc:** Grobe, Jack; Nguyen, Quynh  
**Subject:** RE: Upcoming Trip Overseas for Jack Grobe  
**Date:** Thursday, March 17, 2011 11:13:06 AM

---

Very good!

When I return to the office on Tuesday, I will follow up with you on all counts. We still have sufficient time to take care of everything, so everything will work out.

Have a great weekend!

---

**From:** Cohen, Shari  
**Sent:** Thursday, March 17, 2011 10:44 AM  
**To:** Jenkins, Barbara  
**Cc:** Grobe, Jack; Nguyen, Quynh  
**Subject:** RE: Upcoming Trip Overseas for Jack Grobe

Barbara – as always, you are the bomb! Thank you so very much! He has a thumb drive but needs a lesson on how to use it – can you help him with that? He was scheduled to have Michael Lee assist him but with all that is going on in Japan, we had to cancel the tutorial session. Jack is working odd hours at the Ops Center now and when things clear up a little we will look to you for your further, and always outstanding, assistance. I believe, but will need verification on this, that Jack's BB is set up for international service already. With appreciation, Shari

Shari Cohen, Contract Secretary  
Office of Nuclear Reactor Regulation, USNRC  
Room – O-13H18 / Mail Stop - O13H16M  
Phone – 301-415-1270  
Fax - 301 - 415-8333  
Email - [shari.cohen@nrc.gov](mailto:shari.cohen@nrc.gov)

---

**From:** Jenkins, Barbara  
**Sent:** Thursday, March 17, 2011 10:25 AM  
**To:** Cohen, Shari  
**Cc:** Nguyen, Quynh; Champion, Bryan  
**Subject:** RE: Upcoming Trip Overseas for Jack Grobe

I'm in the process of requesting the loaner international laptop for Mr. Grobe. The request date will be March 30<sup>th</sup>. I also need to mention that he will not be able to load anything on the laptop, so he may need to use one of the 4GB MXI secure thumb drives. If he does not have one of the 4GB MXI secure thumb drives, let me know, and I'll request one for him. That will take approximately 2 days for them to get the thumb drive to Mr. Grobe.

The request for the loaner international laptop will be in his name. When the international laptop is ready for his pick-up, the CSC will contact him via email when it's ready. The process can take

BA/65

anywhere from 10 minutes to 20 minutes for them to get the laptop set up (in his presence, and he'll need to log on at that time).

I know that he also has a BlackBerry. We may need to request international capability for him from April 1<sup>st</sup> through April 15<sup>th</sup>. Can you confirm that as well. We can process the requests early next week. They state that they need approximately 5 – 7 days notice for the international capability for a BlackBerry.

If you think of anything else which he may need (perhaps the international power source), please let me know, and I can request that from the Administrative Services Center.

---

**From:** Cohen, Shari  
**Sent:** Wednesday, March 16, 2011 8:22 AM  
**To:** Jenkins, Barbara  
**Cc:** Nguyen, Quynh  
**Subject:** RE: Upcoming Trip Overseas for Jack Grobe

Yes, let's get Jack that loaner lap top a few days earlier so he can test and load or do whatever he needs to get comfortable with it. He is leaving on April 1 and returning April 15. The only place he will need the lap top is in Austria where the Convention on Nuclear Safety (CNS) meetings will be conducted. Thank you!

Shari Cohen, Contract Secretary  
Office of Nuclear Reactor Regulation, USNRC  
Room – O-13H18 / Mail Stop - O13H16M  
Phone – 301-415-1270  
Fax - 301 - 415-8333  
Email - [shari.cohen@nrc.gov](mailto:shari.cohen@nrc.gov)

---

**From:** Jenkins, Barbara  
**Sent:** Wednesday, March 16, 2011 7:06 AM  
**To:** Cohen, Shari  
**Cc:** Champion, Bryan  
**Subject:** Upcoming Trip Overseas for Jack Grobe

Good morning, Shari.

I'll be leaving for training at the PDC in a few minutes and wanted to get this to you before I left.

Mr. Grobe will need an "International" laptop for his trip. Can you provide the following information so that I can process when I return from training:

**Departure time**

**Return time**

**Which country(ies) he will be going to**

If he would like to have the international laptop a day or two earlier, please let me know that as



well and I'll make the arrangements. The OIS L3 Contractors will need Mr. Grobe to come to their location (T5C10) so that they can "initialize" the international for him. The process can take as long as 20 minutes (if there are no problems). Their hours of operation are from 8am until 4pm daily.

If there is anything else which he may need, please let me know.

For example: "international capability" for his BlackBerry or anything else he may need.

I'll check in with you when I return this afternoon.

**From:** Coe, Doug  
**To:** Sheron, Brian; Coyne, Kevin  
**Cc:** Uhle, Jennifer; Correl, Richard  
**Subject:** RE: FYI - April meetings in DC on how high reliability organizations manage catastrophic risks  
**Date:** Thursday, March 17, 2011 11:18:56 AM

---

Brian, this is related to OE's internal safety culture work, and they have led the NRC engagement with HRO inter-agency roundtables in the past, so they would normally lead any internal coordination for attendees here.

Kevin, Sean can check on what they may be planning and see if it makes sense for us to attend.

---

**From:** Sheron, Brian  
**Sent:** Thursday, March 17, 2011 11:08 AM  
**To:** Coe, Doug; Coyne, Kevin  
**Cc:** Uhle, Jennifer  
**Subject:** FW: FYI - April meetings in DC on how high reliability organizations manage catastrophic risks

See below. Is someone attending? Should/can someone attend?

---

**From:** Weber, Michael  
**Sent:** Wednesday, March 16, 2011 6:56 PM  
**To:** Sheron, Brian; Uhle, Jennifer  
**Cc:** Bowman, Gregory; Evans, Michele; Wiggins, Jim; Case, Michael  
**Subject:** FYI - April meetings in DC on how high reliability organizations manage catastrophic risks

These meetings could be interesting, especially in light of our ongoing response to the situation in Japan.

---

**From:** Sanfilippo, Nathan  
**Sent:** Wednesday, March 16, 2011 11:45 AM  
**To:** Weber, Michael  
**Cc:** Bowman, Gregory; Franovich, Mike  
**Subject:** FW: April meetings in DC on how high reliability organizations manage catastrophic risks

Mike,

During our meeting with the CSB last week, they mentioned these two meetings in April that we might be interested in. Perhaps you could pass to RES?

Thanks,  
Nathan

---

**From:** Hoyle, Bill [mailto:Bill.Hoyle@csb.gov]  
**Sent:** Tuesday, March 15, 2011 4:36 PM  
**To:** Franovich, Mike  
**Cc:** Sanfilippo, Nathan  
**Subject:** April meetings in DC on how high reliability organizations manage catastrophic risks

Michael and Nathan,

Thanks so much for your time last week. It was extremely helpful. Below are links to two interesting meetings in DC next month.

BA/66

Regards,  
Bill Hoyle  
CSB Senior Investigator

April 19th [http://berkeleysph.qualtrics.com/SE/?SID=SV\\_e4zISCHqiZ0PIR6](http://berkeleysph.qualtrics.com/SE/?SID=SV_e4zISCHqiZ0PIR6)

April 20-21 [http://www.high-reliability.org/Documents/Conferences/Washington\\_DC/Agenda/Agenda\\_Intl\\_HRO\\_Conference\\_April2011.pdf](http://www.high-reliability.org/Documents/Conferences/Washington_DC/Agenda/Agenda_Intl_HRO_Conference_April2011.pdf)

**From:** Hiland, Patrick  
**To:** Wilson, George; Howe, Allen  
**Cc:** Skeen, David; Case, Michael; Glitter, Joseph; Chokshi, Niles; Munson, Clifford; Kammerer, Annie; Raione, Richard; See, Kenneth; Cook, Christopher; Flanders, Scott  
**Subject:** RE: Points of Contact  
**Date:** Thursday, March 17, 2011 11:33:39 AM

---

Add Annie Kammerer to POC for Tsunami

**From:** Wilson, George  
**Sent:** Thursday, March 17, 2011 11:17 AM  
**To:** Howe, Allen  
**Cc:** Hiland, Patrick; Skeen, David; Case, Michael; Glitter, Joseph; Chokshi, Niles; Munson, Clifford; Kammerer, Annie; Raione, Richard; See, Kenneth; Cook, Christopher; Flanders, Scott  
**Subject:** Points of Contact

### **External Events**

Seismic – DE Point of Contact Meena Khanna – {We will need support from Res (Jon Ake, Marty Stutzke, and Anne Kammerer) and NRO (Cliff Munson, Niles Chokshi)}

Flood – DE Point of contact – George Wilson - {We will need support from NMSS (Rex Wescot) and NRO (Richard Raione, Ken See and Chris Cook)}

Tsunamis – DE Point of Contact – Meena Khanna - {We will need support form NRO (Cliff Munson, Niles Chokshi, and Richard Raione)}

### **Severe Accidents**

SBO – DE point of contact – George Wilson

### **Long Term Actions**

Resolution of GSI 199 - DE Point of Contact – Meena Khanna {We will need support from Res (Jon Ake and Marty Stutzke)}

George Wilson  
USNRC  
EICB Branch Chief, Division of Engineering  
Mail Stop O12H2  
301-415-1711

BA/67

**From:** Cheok, Michael  
**To:** Lee, Samson; Lubinski, John  
**Subject:** FW: Question  
**Date:** Thursday, March 17, 2011 4:59:05 PM

---

FYI - In case this discussion comes up tomorrow at the LT meeting.

**From:** Smith, Brian  
**Sent:** Thursday, March 17, 2011 4:56 PM  
**To:** Cheok, Michael  
**Subject:** RE: Question

Cathy sends it to the Division Directors. At least in FCSS we are providing it to the staff.

**From:** Cheok, Michael  
**Sent:** Thursday, March 17, 2011 3:12 PM  
**To:** Smith, Brian  
**Subject:** Question

Does NMSS provide its staff with the summary from the Ops Center ET briefing (concerning the Japanese event)?

Just trying to find out what other offices are doing so we (NRR) can be consistent.

Thanks

BA/v8

**From:** Pittiglio, Clayton  
**To:** Leeds, Eric  
**Cc:** Cohen, Miriam  
**Subject:** FW: Appreciation and Continued Mission Focus  
**Date:** Thursday, March 17, 2011 5:41:39 AM

---

Eric

I have received several calls and visits related to staffing the OPS Center. I also spoke to Miriam earlier this week. I wanted you to be aware of the issue also. Staff are very supportive and glad to help staff the OPS Center. The issue that has arises is for staff who volunteer to work 11:00PM to 8:00 AM (perhaps once a week), the staff are confused about their obligation on the day shift either prior to or after the night shift as well as how to fill out their T/A sheets. For example, if a staff typically works 7:00 AM to 3:45 PM are they to work, then go home and return to work 11:00PM to 8:00AM or what happens to their next day shift. Also, it is a separate issue for GG-15s as they are not going to get Comp Time as they are hindered by the salary limit. I suggested they use the night shift as their normal hours and charge credit hours for day shift since credit hours are from 5:00 AM to 11:00 PM. If staffing the OPS Center is going to continue for some time, it would be beneficial to have a uniform policy in place.

Again, I just wanted you to be aware of the issue as I recognize you are very supportive off our staff.

*Larry Pittiglio*  
Senior Analyst  
Office of Nuclear Reactor Regulation  
Division of Policy and Rulemaking/PFPB  
301-415-1435  
Mail Stop: OWF 12 B 1

---

**From:** Schwarz, Sherry On Behalf Of Leeds, Eric  
**Sent:** Wednesday, March 16, 2011 5:05 PM  
**To:** NRR Distribution  
**Subject:** Appreciation and Continued Mission Focus

During this period of heightened activity in response to the events in Japan, I want to take the time to let you know how much I value the work that all of you do in NRR. Some of you are providing key support in emergency response, while others are performing the equally vital day-to-day regulatory duties. Throughout these distracting times abroad, it is so important to keep our focus on the safe operation of nuclear power plants here in the United States. Whether you are involved

BA/69

with licensing actions, technical analysis, budget preparations, or administrative functions to help us execute our essential regulatory work, your continued dedication and commitment are vital for us to maintain our mission of protecting the American public's health and safety.

I know that there can be anxiety and stress as events unfold; take time to take good care of yourself. To keep informed, there will be periodic updates from the EDO, and I encourage you to stay abreast of the agency's public announcements and blog at [www.nrc.gov](http://www.nrc.gov). As regulators, we excel at our steadiness in protecting people and the environment. Again, thanks for all you do.

*Eric*

**From:** Schwarz, Sherry  
**To:** Leeds, Eric  
**Cc:** Cohen, Shari; Ross, Robin  
**Subject:** Monday's ADAMS Training for Sherry  
**Date:** Thursday, March 17, 2011 5:38:53 PM

---

Hi Eric,

In light of our work demands due to the events in Japan, I have cancelled my training at the PDC on Monday, March 21. I will reschedule for a later date. As you will remember, you were to have been in training (Difficult Conversations) at the PDC on Monday as well. Your training has also cancelled. See you Monday when the fun and challenges will continue, I'm certain.

*Sherry G. Schwarz*

Administrative Assistant to Eric J. Leeds

Office of Nuclear Reactor Regulation

301-415-1270

Location: O13/D15

Mailstop: O13/H16M

[Sherry.Schwarz@NRC.gov](mailto:Sherry.Schwarz@NRC.gov)

BA/70



**From:** Leeds, Eric  
**To:** Pittiglio, Clayton  
**Cc:** Cohen, Miriam  
**Subject:** RE: Appreciation and Continued Mission Focus  
**Date:** Thursday, March 17, 2011 6:07:00 PM

---

Thanks, Larry! I ran into Glenn Tracy and we discussed. We'll continue to work the issue. I appreciate the heads up.

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-1270

**From:** Pittiglio, Clayton  
**Sent:** Thursday, March 17, 2011 5:42 AM  
**To:** Leeds, Eric  
**Cc:** Cohen, Miriam  
**Subject:** FW: Appreciation and Continued Mission Focus

Eric

I have received several calls and visits related to staffing the OPS Center. I also spoke to Miriam earlier this week. I wanted you to be aware of the issue also. Staff are very supportive and glad to help staff the OPS Center. The issue that has arisen is for staff who volunteer to work 11:00PM to 8:00 AM (perhaps once a week), the staff are confused about their obligation on the day shift either prior to or after the night shift as well as how to fill out their T/A sheets. For example, if a staff typically works 7:00 AM to 3:45 PM are they to work, then go home and return to work 11:00PM to 8:00AM or what happens to their next day shift. Also, it is a separate issue for GG-15s as they are not going to get Comp Time as they are hindered by the salary limit. I suggested they use the night shift as their normal hours and charge credit hours for day shift since credit hours are from 5:00 AM to 11:00 PM. If staffing the OPS Center is going to continue for some time, it would be beneficial to have a uniform policy in place.

Again, I just wanted you to be aware of the issue as I recognize you are very supportive of our staff.

*Larry Pittiglio*  
Senior Analyst  
Office of Nuclear Reactor Regulation

BA/71

Division of Policy and Rulemaking/PFPB  
301-415-1435  
Mail Stop: OWF 12 B 1

**From:** Schwarz, Sherry **On Behalf Of** Leeds, Eric  
**Sent:** Wednesday, March 16, 2011 5:05 PM  
**To:** NRR Distribution  
**Subject:** Appreciation and Continued Mission Focus

During this period of heightened activity in response to the events in Japan, I want to take the time to let you know how much I value the work that all of you do in NRR. Some of you are providing key support in emergency response, while others are performing the equally vital day-to-day regulatory duties. Throughout these distracting times abroad, it is so important to keep our focus on the safe operation of nuclear power plants here in the United States. Whether you are involved with licensing actions, technical analysis, budget preparations, or administrative functions to help us execute our essential regulatory work, your continued dedication and commitment are vital for us to maintain our mission of protecting the American public's health and safety.

I know that there can be anxiety and stress as events unfold; take time to take good care of yourself. To keep informed, there will be periodic updates from the EDO, and I encourage you to stay abreast of the agency's public announcements and blog at [www.nrc.gov](http://www.nrc.gov). As regulators, we excel at our steadiness in protecting people and the environment. Again, thanks for all you do.

*Eric*

**From:** [Weber, Michael](#)  
**To:** [Chokshi, Niles](#)  
**Cc:** [Leeds, Eric](#); [LIA03 Hoc](#); [QST02 HOC](#)  
**Subject:** RESPONSE - 転送:Chokshiさんへの返信  
**Date:** Thursday, March 17, 2011 7:33:38 PM

---

Thanks, Niles. We were honored to host Dr. Ebisawa in the Operations Center and appreciated the information that he shared with us following the tragic earthquake and tsunami on March 11.

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

From: Chokshi, Niles  
Sent: Thursday, March 17, 2011 7:21 PM  
To: Leeds, Eric; Weber, Michael  
Subject: FW: 転送:Chokshiさんへの返信  
Importance: High

Mike and Eric,

I am forwarding a message I received from Dr. Ebisawa of JNES whom you met last Friday. He wants to convey his thanks for use of facility and opportunity to talk to you.

Niles

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

From: [ebisawa-katsumi@jnes.go.jp](mailto:ebisawa-katsumi@jnes.go.jp) [<mailto:ebisawa-katsumi@jnes.go.jp>]  
Sent: Thursday, March 17, 2011 2:40 AM  
To: Chokshi, Niles; [abe-hiroshi@jnes.go.jp](mailto:abe-hiroshi@jnes.go.jp)  
Subject: 転送:Chokshiさんへの返信  
Importance: High

Dear Niles

Would you please receive my sincere gratitude for your kind hospitality to Mar.11 meeting and special care guiding me to the NRC Headquarter Operations Center and introducing to Mr. Eric Leeds and Mr. Michael Weber.

It was precious experience for me to visit the center and to get newest information of the incident from Japan, using stable and clear phone of the center. I hope information I explained at that meeting would have some meaning to NRC.

Would you please convey my deep thanks to Mr. Eric Leeds and Mr. Michael Weber?

And here I thank you again for your encouragement to us addressing the disaster.

Our current issue is spent fuel pit cooling of Fukushima No 1 site unit 3 and 4. Today, helicopters succeed water spray several times to Reactor Building of these units.

Best regards;

Katsumi

BA/72

**From:** Lubinski, John  
**To:** Nelson, Robert  
**Subject:** RE: FYI: NRR Reorg Subcommittee Activities  
**Date:** Thursday, March 17, 2011 9:18:00 AM

---

Thanks for providing and agreeing to work on a message for staff.

**From:** Nelson, Robert -  
**Sent:** Tuesday, March 15, 2011 3:47 PM  
**To:** Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Glitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian  
**Subject:** FYI: NRR Reorg Subcommittee Activities

I'm following up on a commitment that I made at today's LT meeting regarding our subcommittee schedule and status of activities. Our schedule, prepared before the earthquake in Japan, is attached.

Status –

1. Reviewed and assessed ET goals/direction/expectations.
2. Brainstormed possible reorg actions/scenarios
3. Developed pro & cons for most of item 2.
4. Reviewed current distribution of staff by branch in each division
5. Discussed several specific consolidation scenarios.
6. Developed a preliminary draft reorg based on 544 FTE for FY12
7. Informed NTEU that we are evaluating an office reorg.

The preliminary draft reorg has not been fully vetted with the members of the subcommittee. We had planned to discuss it at our next weekly meeting. Given that two of our subcommittee are staffing the Ops Center, I'm not sure when and to what degree we'll be able to reengage.

I also committed to develop a message that we could send to the staff concerning our activities. I'll take an IOU on that commitment.

NELSON

BA/73

## Murphy, Andrew

---

**From:** Murphy, Andrew  
**Sent:** Friday, March 18, 2011 8:49 AM  
**To:** 'uchiyama-yuichi@jnes.go.jp'; Alejandro.HUERTA@oecd.org; Ali, Syed  
**Cc:** okano-kenta@jnes.go.jp; kobayashi-koichi@jnes.go.jp; yamazaki-hiroaki@jnes.go.jp  
**Subject:** RE: Appology of absence of JNES in IAGE meeting

Dear Mr. Uchiyama,

We can all appreciate why you and your colleagues are unable to attend the WGIAGE meetings at OECD this year. I thank you for letting us know about your travel plans. Again any effort on your part to prepare material on the Workshop on Seismic Observations from Deep Borehole are appreciated; I will be pleased to present them. If it is difficult for you to prepare this material, I can offer comments on the progress of this effort from my own knowledge of the Workshop.

I am pleased to hear through Dr Ali that the whole JNES team was able to return to Tokyo safely. My thoughts and prayers for all of Japan adversely affected by the earthquakes and tsunami with special prayers for our colleagues and counterparts in nuclear regulation and the nuclear power industry.

Stay well and let us know would we can support you.

Andrew Murphy

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

**From:** [uchiyama-yuichi@jnes.go.jp](mailto:uchiyama-yuichi@jnes.go.jp) [<mailto:uchiyama-yuichi@jnes.go.jp>]  
**Sent:** Thursday, March 17, 2011 9:09 PM  
**To:** [Alejandro.HUERTA@oecd.org](mailto:Alejandro.HUERTA@oecd.org); Murphy, Andrew; Ali, Syed  
**Cc:** [okano-kenta@jnes.go.jp](mailto:okano-kenta@jnes.go.jp); [kobayashi-koichi@jnes.go.jp](mailto:kobayashi-koichi@jnes.go.jp); [yamazaki-hiroaki@jnes.go.jp](mailto:yamazaki-hiroaki@jnes.go.jp)  
**Subject:** Appology of absence of JNES in IAGE meeting

Dear Mr.Huerta, Dr. Murphy, Dr. Ali,

This is Uchiyama, in JNES.

As you know, we have a very big trouble in Japan.

All people relating nuclear safety are struggling to contain this situation.

Because of this, the management of JNES decided to prohibit participations in oversea meetings.

I and Mr. Okano, who is in charge of EQ observation in deep bore hole project, were planning to participate in Seismic and Concrete Sub-group meetings from the Seismic Safety Department of JNES. But we cannot participate because of the reason above. Moreover, it is thought that the greater part of possible participants from Japan will be absent too.

Please understand this situation.

But I want to make an effort to deliver the electronic file about the draft report of the workshop on earthquake observation in deep borehole.

Truly yours,  
18 Mar., 2010  
Y. Uchiyama, JNES

BA/74

**From:** Dyer, Jim  
**To:** Grobe, Jack  
**Subject:** RE: A call from Jack Grobe re: Important Meeting Today at 3:15 in 17-B4  
**Date:** Friday, March 18, 2011 1:08:02 PM

---

Thanks Jack. Jim

**From:** Mills, Vivian,  
**Sent:** Friday, March 18, 2011 12:31 PM  
**To:** Dyer, Jim  
**Subject:** A call from Jack Grobe re: Important Meeting Today at 3:15 in 17-B4  
**Importance:** High

Hi Jim,

Jack Grobe called regarding a meeting that will take place today at 3:15 in 17-B4 in preparation for the Commission meeting on Monday regarding Japan. He says it is important that you attend and he is pretty sure that resources will be discussed.

*Vivian Mills*

*Contract Secretary*

*Division of the Controller*

*Office of the Chief Financial Officer*

*U. S. NRC/T-9F15a*

*Telephone: (301) 415-7379*

*Fax (301) 415-5545*

*vivian.mills@nrc.gov*

BA/75

**From:** Dorman, Dan  
**To:** Leeds, Eric  
**Subject:** RE: SPF seismic capability  
**Date:** Friday, March 18, 2011 1:39:38 PM

---

One should be available in the RST. Mike Case (or maybe it was Bill Ruland or Pat Hiland; the shifts are beginning to blur!) and Eva Brown pulled a page from it to send to Chuck after the Japanese asked for advice on how to address a dry pool.

Chuck mentioned the other one when he first got over there. It may be cited in the ET Chron log on Tuesday morning around 0500.

**From:** Leeds, Eric  
**Sent:** Friday, March 18, 2011 1:25 PM  
**To:** Dorman, Dan  
**Subject:** FW: SPF seismic capability

We're having problems identifying the NUREGs. Below is some interesting info. We're still trying.

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-1270

**From:** Holahan, Gary  
**Sent:** Friday, March 18, 2011 1:23 PM  
**To:** Johnson, Michael; Leeds, Eric  
**Cc:** Howe, Allen  
**Subject:** SPF seismic capability

SFP Cooling SRP

## II. ACCEPTANCE CRITERIA

### Requirements

Acceptance criteria are based on meeting the relevant requirements of the following Commission regulations:

Mike,  
Eric,

With some extra looking into this, it may (hopefully) be that the lack of seismic qualification maybe for the SFP cooling systems as opposed the structure itself.

See SRP below:

If more comes to mind, I will let you know.

Gary

BA/76

SRF Acceptance Criteria for SP Cooling:

*"1. General Design Criterion (GDC) 2 contained in Appendix A to 10 CFR Part 50, as related to **structures** housing the system and the system itself being capable of withstanding the effects of natural phenomena such as earthquakes, tornadoes, and hurricanes. Acceptance for meeting this criterion is based on conformance to positions C.1, C.2, C.6, and C.8 of RG 1.13 and position C.1 of RG 1.29 for safety-related and position C.2 of RG 1.29 for nonsafety-related portions of the system.*

***This criterion does not apply to the cleanup portion of the system and need not apply to***

***the cooling system** if the fuel pool makeup water system and its source meet this criterion, the fuel pool building and its ventilation and filtration system meet this criterion,*

*and the ventilation and filtration system meets the guidelines of RG 1.52.*

*The cooling and makeup system should be designed to Quality Group C requirements in accordance with RG 1.26. However, when the cooling system is not designated Category I it need not meet the requirements of ASME Section XI for inservice inspection of nuclear plant components."*



**From:** Flory, Shirley  
**To:** RES Distribution; Cruz, Holly; Nguyen, Quynh; Santiago, Patricia; Weaver, Kathy; Wertz, Trent  
**Subject:** RES PLAN OF THE WEEK: MARCH 21-25, 2011  
**Date:** Friday, March 18, 2011 2:49:24 PM  
**Attachments:** POW 03 21 11.docx

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BA/77

## **RES PLAN OF THE WEEK: MARCH 21-25, 2011**

### **Significant Public Meetings**

- |          |   |
|----------|---|
| March 21 | Commission Meeting on NRC Response to Recent Nuclear Events In Japan, 9:00 am, OWFN 1 <sup>st</sup> Floor Commissioners Hearing Room. |
| March 24 | Commission Meeting: Part 50.46a Rulemaking, 9:00 am-12:30 pm, OWFN 1 <sup>st</sup> Floor Commissioners Hearing Room.                  |
| March 24 | Public Meeting on SRM to SECY 10-0121, 1:30-5:00 pm, TWFN 2B3.  |

### **Significant Internal Activities/Non-Public Meetings**

- |          |   |
|----------|---|
| March 21 | Communication Strategy for Cancer Study, 10:00-10:30 am, Church Street 3A2.   |
| March 21 | ET Member Training, 1:00-2:00 pm, Op Center, ET Room.   |
| March 21 | Monthly Status: Regulatory Guide Update Program, 1:00-2:00 pm, Church Street 5A4.   |
| March 21 | DOE Simulation Hub and DSA Path Forward, 1:00-2:00 pm, Church Street 5C19.  |
| March 21 | Comments on Draft SECY Paper on NRC Involvement in NSAS's MARS Science Laboratory, 1:30-2:00 pm, Church Street 6A1.   |
| March 21 | Code Development and Maintenance Initiative, 2:00-3:00 pm, Church Street 3A4.   |
| March 21 | Phone: Congressional Liaison Team Briefing, 3:00-4:00 pm (Sheron)   |
| March 21 | Potential Revision of 50.55a Format, 3:00-4:00 pm, OWFN 7B6.  |
| March 21 | Sandia Fuels Project, 4:00-5:00 pm, Church Street 6A1.  |
| March 21 | Dry Run for EPR LBLOCA Presentation to ACRS Subcommittee, 4:00-5:00 pm, Church Street 3A2.  |
| March 22 | NRC Research – EPRI Information Exchange Meeting, 9:00 am-12:00 noon, CSB.  |
| March 22 | RES Seminar: Seismic Research at LBNL to be presented by Robert Budnitz, Prof. Boris Jeremic, Prof. Bozidar Stojadinovic, and Ann Kammerer (DE), 10:00-11:30 am, TWFN Auditorium. |
| March 22 | Strategic Acquisition Executive Steering Committee Meeting, 10:30-11:30 am, TWFN 10A1.  |

March 22	iPWR User Need Coordination Status, 11:00 am-12:00 noon, Church Street 3C19.
March 22	Speed of Trust- Meeting #2, 12:00 noon-1:00 pm, 6h floor huddle room.
March 22	Communication Tools for NAS Study and Briefing on Spanish Study, 1:00-2:00 pm, Church Street 6A1.
March 22	Lessons Learned and Issue Resolution Program, 2:00-3:00 pm, Church Street 6A2.
March 22	Discuss National Stakeholder Input for IAEA Safety Standards, 3:00-4:00 pm, OWFN 17B4.
March 22	Commissioner Svinicki Periodic with Brian Sheron, 3:15-3:45 pm.
March 22-24	Internal CCF Workshop (INL, RES, NRR, Regions) on future research activities in CCF modeling and analysis (DeMoss, Shen)
March 23	ERB Succession Planning Meeting, 8:00 am-12:00 noon, PDC Room D, Gateway.
March 23	MELLLA-Status Briefing, 11:00-11:30 am, Church Street 3A2.
March 23	Focus Group Meeting, 11:00 am-12:00 noon, Church Street 5A4.
March 23	OPM Interview Request (Headquarters Managers), 1:30-3:00 pm, Teleconference, 1-866-753-1184, passcode 2447550.
March 23	NRC Executive Leadership Seminar: Building Engagement Capital, 1:30-3:30 pm, TWFN Auditorium.
March 23	Phone: Congressional Liaison Team Briefing, 3:00-4:00 pm (Sheron).
March 23	PSAM 11 & ESREL 2012 Teleconference, 4:30-5:00 pm, 888-469-2075, passcode: 11394.
March 24	RST Remote Access Training, 1:00-3:00 pm, RST Room.
March 24	Leadership Panel Prep Call, 2:00-2:30 pm, 800-369-2173, passcode: 42946.
March 24	DEDMRT OD Monthly Meeting, 2:00-3:00 pm, OWFN 17H6.
March 24	FY 2013 Budget Chairman's Guidance with VTC/Teleconference, 4:00-5:30 pm, OWFN 1 <sup>st</sup> Floor Commissioners' Hearing Room.
March 25	Executive Resources Board (ERB) Meeting, 10:00-11:00 am, OWFN 17B4.

- |          |   |
|----------|---|
| March 25 | DRA Mid-Year Appraisal Meeting, 10:00 am-12:00 noon,<br>Church Street 4C19.   |
| March 25 | CRGR Review DG 1240, Condition Monitoring Program for Electric<br>Cables Used in Nuclear Power Plants, RG 1.218, 1:00-3:00 pm,<br>TWFN 2B5. |

**Ongoing and Upcoming International Activities**

- |             |   |
|-------------|---|
| March 28-29 | CSNI/WGRisk Meeting on Digital I&C Taxonomy (Taylor)                      |
| March 28-31 | CSNI/WGRisk Annual Meeting and Semi-Annual Bureau Meeting<br>(Siu, Coyne) |

**Upcoming Activities/Meetings/Accomplishments Planned for the Near Future**

- |             |   |
|-------------|---|
| April 5     | RES will be participating in briefing the ACRS Future Reactors<br>Subcommittee on NGNP R&D Plan (S. Basu)   |
| April 6     | RES will be participating in briefing the ACRS Subcommittee on Materials,<br>Metallurgy and Reactor Fuels to discuss the research on Consequential-<br>Steam Generator Tube Rupture. The meeting will be held in TWFN ACRS<br>Hearing Room. (M. Salay, K. Wagner, DE and DRA staff) |
| April 26-28 | RES will be participating in the 4th Annual Very High Temperature<br>Reactor (VHTR) R&D Technical Review Meeting, hosted by DOE and INL.<br>The meeting will be held in Albuquerque, New Mexico. Hotel will be<br>selected soon. (FSTB and NRAB staff)                              |

**Other Issues of Note (New Employees, Recruiting, Non-Op Plan Priority Items)**

**ROUTINE/RECURRING, LOWER LEVEL MEETINGS**

- |          |  |
|----------|--|
| March 21 | PMDA Weekly BC Meeting, 10:00-11:00 am, Church Street 6A5.           |
| March 21 | DRA Management Meeting, 10:00-11:00 am, Church Street 4C19.          |
| March 21 | DSA Weekly Branch Chief Meeting, 10:30-11:30 am, Church Street 3C19. |
| March 21 | DE Weekly Staff Meeting, 11:00 am-12:00 noon, Church Street 5C19.    |
| March 21 | DRA SLS Weekly Meeting, 1:30-2:30 pm.                                |
| March 21 | DSA Weekly Counterparts Meeting with Ader/Ruland, 3:00-4:00 pm.      |
| March 21 | DRA/NRR/NRO Counterpart Call, 4:00-5:00 pm.                          |
| March 22 | Staff Meeting (CMB & CIB), 8:15-8:45 am, Church Street 5A4.          |
| March 22 | RES Front Office Standup Meeting, 8:45-9:45 am, Church Street 6A1.   |

March 22	DSA BC/SL (NARB/FSTB) Meeting, 10:00-10:45 am, Church Street 3C17.
March 22	ATMIS/Roadmap Meeting, 11:00-11:30 am, Church Street 6A2.
March 22	ETB (Ott) Weekly Meeting, 11:30 am-12:00 noon.
March 22	Spending Plan with CMB, 1:30-2:30 pm, Church Street 5A4.
March 22	PRAB (Coyne) Weekly Meeting, 4:00-4:30 pm.
March 23	RES Front Office Standup Meeting, 8:45-9:45 am, Church Street 6A1.
March 23	NGNP EM Integration/Assessment Meeting, 9:00-10:00 am, Church Street 3C19.
March 23	Staff Meeting (MEEB & DIC), 9:45-10:30 am, Church Street 5A4.
March 23	DSA BC/SL (HEB/SPB) Meeting, 10:00-10:45 am, Church Street 3C17.
March 23	Spending Plan with DICB, 11:00 am-12:00 noon, Church Street 5A4.
March 23	HFRB (Peters) Weekly Meeting, 11:30 am-12:00 noon.
March 23	RES/NRO Advanced Reactor Coordination Meeting/Conference Call, 3:30-4:30 pm, Church Street 2C19/TWFN 7A1.
March 23	PRB (DeMoss) Weekly Meeting, 4:00-4:30 pm.
March 24	Staff Meeting (SGSEB & RGDB), 8:15-8:45 am, Church Street 5A4.
March 24	RES Front Office Standup Meeting, 8:45-9:45 am, Church Street 6A1.
March 24	DSA BC/SL (RSAB/CDB) Meeting, 10:00-10:45 am, Church Street 3C17.
March 24	Spending Plan with MEEB, 10:30-11:30 am, Church Street 5A4.
March 24	SOARCA Status, 11:00 am-12:00 noon, Church Street 3A4.
March 24	OEGIB (Beasley) Weekly Meeting, 11:30 am-12:00 noon, Church Street 4A4.
March 24	Spending Plan with SGSEB, 3:00-4:00 pm, Church Street 5A4.
March 24	Fuels Meeting, 3:00-4:00 pm, Church Street 3A4.
March 24	FRB (Salley) Weekly Meeting, 4:00-4:30 pm, Church Street 4A4.
March 25	RES Front Office Standup Meeting, 8:45-9:45 am, Church Street 6A1.

**From:** Lew, David  
**To:** Muessle, Mary  
**Cc:** Dean, Bill; Leeds, Eric  
**Subject:** FW: Governor office  
**Date:** Friday, March 18, 2011 3:45:19 PM

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Mary,

I lost track of who is covering for Jim Trapp while he is in Japan. I wanted you to be aware that NYS (Andrew Feeney) informed me that the Governor Cuomo was unhappy that the NRC has not yet responded to his request for a meeting, and that the Governor was considering a call to Bill Daley in Office of the President. I shared this information with Anna Bradford for her awareness and possible frustration that she may encounter if she should engage the Governor's office. I understand that the Governor's office response to the Chairman's offer for a conference call was that they would rather have a meeting with a NRC senior staffer. Let me know if you have any questions.

Dave

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**From:** Bradford, Anna  
**Sent:** Friday, March 18, 2011 1:24 PM  
**To:** McNamara, Nancy  
**Subject:** Governor office

Hi Nancy,

I talked to the Chairman just now and he decided he would try to schedule a phone call (rather than trying to schedule a meeting) with the Lt Governor. We will set that up through our office, but I just wanted to close the loop with you.

Thanks!

Anna Bradford  
Policy Advisor for Nuclear Materials  
Office of Chairman Jaczko  
U.S. Nuclear Regulatory Commission  
301-415-1827

BA/78

**From:** Ling, Horace  
**To:** Leeds, Eric  
**Subject:** Invitation to apply to the Harvard Leadership in Crises Program Program April 10-15, 2011  
**Date:** Friday, March 18, 2011 3:47:44 PM

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Dear Eric,

I'm writing to you because you attended a Harvard Executive Education program and are involved in the Nuclear industry. In view of the recent crisis in Japan involving the Nuclear Power industry, I would like to invite you to apply to the Leadership in Crises program at Harvard University April 10-15<sup>th</sup>. The program has been running for 10 years with a healthy group of FEMA, Homeland Security, first responders and other federal/state agencies, but I would like to have someone from the Nuclear power industry come to provide that perspective as well. It will be a great networking and executive development opportunity to whomever attends and could be an **important strategic investment for the Nuclear power industry** to make with these stakeholders.

Each year we bring about 50 leaders together for a one week Executive Education Program called Leadership in Crisis that prepares Leaders to face extraordinary circumstances—natural disasters, major technology failures in industry or transportation, and public health emergencies such as emergent infectious diseases. Leadership in Crises examines what constitutes excellent performance in a crisis, and what it takes to achieve it. The program offers participants an analytical framework for understanding the difference between a crisis and a routine emergency. Moreover, it provides an in-depth look at the role a leader plays in identifying and executing the appropriate response in each situation. I hope that you will take this opportunity seriously and consider who from your organization would be a good representative. Considering the late notice and the short timeframe in which you have to make a decision, I am authorized to give a tuition discount if that would help get a person from your organization to attend.

For more information and to apply to the 2011 Leadership in Crisis Program (April 10-15, 2011), please click on this link - <http://ksgexecprogram.harvard.edu/Programs/lic/overview.aspx>

You may also call me at 617-496-9714 or send email to this address if you have any questions. The time frame is short, but it's an opportunity that will not be available until this time next year.

Sincerely,

Horace

BA/79

## Murphy, Andrew

---

**From:** SSA [ssa@cc.memberclicks.com] on behalf of SSA [SSA@seismosoc.org]  
**Sent:** Friday, March 18, 2011 3:53 PM  
**To:** Murphy, Andrew  
**Subject:** SSA Annual Meeting - Hotel Cutoff Extended

To help accommodate late registrations due to the added special session on the Japan and New Zealand earthquakes, the Memphis Marriott has extended their room reservation cutoff.

**The SSA discounted hotel room rate will stay in effect until March 26.**

To reserve a room, go to: [https://resweb.passkey.com/Resweb.do?mode=welcome\\_ei\\_new&eventID=2629107](https://resweb.passkey.com/Resweb.do?mode=welcome_ei_new&eventID=2629107)

The **deadline to submit abstracts** for the added session is **March 25**.

To submit an abstract go to: <http://www.seismosoc.org/meetings/2011/absub/>

You may continue to **register for the annual meeting online** through **April 1**.

To register, go to: <http://www.seismosoc.org/meetings/2011/registration.php>

We hope to see you in Memphis!

Sincerely,  
SSA Staff

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This email was sent to [andrew.murphy@nrc.gov](mailto:andrew.murphy@nrc.gov) by [SSA@seismosoc.org](mailto:SSA@seismosoc.org)

powered by  memberclicks

Seismological Society of America | 201 Plaza Professional Building | El Cerrito, California 94530 | United States

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BA/80



**From:** Sheron, Brian  
**To:** Case, Michael; Coe, Doug; Correia, Richard; Gibson, Kathy; Lui, Christiana; Richards, Stuart; Sanglimino, Donna-Marie; Scott, Michael; Uhle, Jennifer; Valentin, Andrea  
**Subject:** FW: FTE Projection Reports Posted  
**Date:** Friday, March 18, 2011 5:42:07 PM

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**From:** Cain, Brendan

**Sent:** Friday, March 18, 2011 5:40 PM

**To:** Atkinson, Jeanne; Azeem, Almas; Batkin, Joshua; Bell, Hubert; Bellinger, Alesha; Bolduc, Angela; Brenner, Eliot; Brown, Frederick; Brown, Rohn; Brydson, Ava; Buchholz, Jeri; Campbell, Andy; Carpenter, Cynthia; Coleman, Judy; Cook, Bonita; Crutchley, Mary Glenn; Dambly, Jan; Davis, Kristin; Delligatti, Mark; Dosch, William; Dyer, Jim; Gallagher, Johanna; Gallo, Jenny; Gardin, Kathy; Gartman, Michael; Golder, Jennifer; Greene, Kathryn; Grobe, Jack; Gusack, Barbara; Harves, Carolyn; Hayden, Elizabeth; Hudson, Jody; Jacobs-Baynard, Elizabeth; Johnson, Debby; Johnson, Joanne; Jonsson, Dawn; Kasputys, Clare; Katoski, Alice; Kelley, Corenthis; Lopez, Joseph; Mahoney, Darlene; Mattingley, Joel; McCrary, Cheryl; Morris, James; Negrin, Darlene; New, Edward; Newell, Karenina; Oklessen, Edward; Perry, Jamila; Powell, Amy; Powell, Dawn; Ramirez, Anne; Rheume, Cynthia; Royal, Judith; Schum, Constance; Sentz, Brian; Shay, Jason; Sheron, Brian; Sotiropoulos, Dina; Stout, Kathleen; Tallarico, Alison; Todd, Colleen; Usilton, Brenda; Vietti-Cook, Annette; Whetstine, Jack; Williams, Donald; Williams, Evelyn; Bollwerk, Paul; Bouling, Ramona; Broadwater, Lynne; Brown, Milton; Brown, Terrise; Decker, Sue; Doane, Margaret; Donaldson, Leslie; Ferrell, Kimberly; Fopma, Melody; Givvines, Mary; Grancorvitz, Teresa; Hudson, Sharon; Johnson, Michael; Johnson, Sandra; Jones, Kimberly; Joosten, Sandy; Carsley, Leonard; Lewis, Robert; Lopez-Nagle, Martie; Mamish, Nader; Marks, Sharon; Martin, Gillian; McClain, Nicole; McCree, Victor; Cohen, Miriam; Mitchell, Reggie; Mohler, Brian; Moorin, Laurette; Muessle, Mary; Nibert, Patty; PMAS-HR Resource; Rabideau, Peter; Redden, Lindsey; Remsburg, Kristy; Reyes, Luis; Rubic, Mark; Salter, Susan; Sapp, Lynne; Shnayder, Yana; Silberfeld, Dafna; Simmons, Tammy; Solorio, Ilka; Tenaglia, Mickey; Thomas, Loretta; Tracy, Glenn; Trent, Glenn; Virgilio, Martin; Warner, MaryAnn; Wingfield, Ted; Zimmerman, Roy

**Subject:** FTE Projection Reports Posted

The FTE Projection Reports for Pay Period 12 have been posted to Sharepoint. The reports for Pay Period 11 have also been updated to include the Delta Reports for Fees and NWF.

To go directly to the FTE Reports Sharepoint page, you may click on the following link:

<http://portal.nrc.gov/edo/hr/workforce-mgmt/reporting/fte/FTE%20Projection%20Reports/Forms/AllItems.aspx?View=%7b209CA50B%2dAFD9%2d4A86%2dA914%2dA0F8607307CC%7d>

To navigate to the FTE reports page from the NRC home page, the path is:

Sharepoint -> Executive Director's Office -> Human Resources -> Workforce Management -> Analytics and Reporting -> FTE Reports

Thanks,  
Brendan

BA/81

**From:** Scott, Michael ;  
**To:** Howe, Allen; Gratton, Christopher; Leeds, Eric  
**Cc:** Sheron, Brian; Gibson, Kathy; Uhle, Jennifer  
**Subject:** BRIAN SHERON'S COMMENTS ON JAPAN COMM BRIEF PRESENTATION  
**Date:** Friday, March 18, 2011 5:52:38 PM

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Brian has been downtown and just now saw the slides. He had a couple of comments.

1. Slide 4 talking points discuss our collaboration with other Federal agencies, but bullets do not refer to those stakeholders in particular. This was similar to a comment made during today's dry run. Please ensure that collaboration and the role of other agencies are highlighted in the presentation.
2. Please consider the following in case the question arises: NRC has issued an IN for reactors regarding the Japan events. Begs the question: What about nonreactor facilities – lessons learned or impacts there?

Thanks

BA/82

**From:** Leeds, Eric  
**To:** Borchardt, Bill; Virgilio, Martin; Weber, Michael  
**Cc:** Grobe, Jack; Boger, Bruce; LIA04 Hoc; Brenner, Eliot; Hayden, Elizabeth  
**Subject:** FYI: Press Release for Information Notice  
**Date:** Friday, March 18, 2011 5:55:00 PM

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Our first communication to the industry on the Fukushima event has been issued and is public, along with the OPA press release. FYI

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-1270

**From:** McGinty, Tim  
**Sent:** Friday, March 18, 2011 5:17 PM  
**To:** Leeds, Eric; Boger, Bruce; Howe, Allen  
**Subject:** FW: Press Release for Information Notice

The Information Notice is publically available (on the Generic Communications part of the NRC public website), has been declared in ADAMS, and OPA is going to issue a press release. FYI. Tim

**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 4:56 PM  
**To:** Taylor, Robert; Rosenberg, Stacey  
**Cc:** McGinty, Tim; Burnell, Scott; Akstulewicz, Brenda  
**Subject:** RE: Press Release for Information Notice

It's just been declared and is going on the internet site now.

Thanks!

Eric

**From:** Taylor, Robert  
**Sent:** Friday, March 18, 2011 4:44 PM  
**To:** Rosenberg, Stacey; Bowman, Eric  
**Subject:** RE: Press Release for Information Notice

Any word on the IN status?

**From:** Rosenberg, Stacey  
**Sent:** Friday, March 18, 2011 3:30 PM  
**To:** Taylor, Robert  
**Subject:** RE: Press Release for Information Notice

Thanks so much Rob!!

**From:** Taylor, Robert  
**Sent:** Friday, March 18, 2011 3:27 PM

BA/83

**To:** Bowman, Eric  
**Cc:** Rosenberg, Stacey; McGinty, Tim; Burnell, Scott; Akstulewicz, Brenda  
**Subject:** FW: Press Release for Information Notice  
**Importance:** High

Eric,

You are a go for issuing the IN. Please reply to all when the IN is out to let us know we can go with the press release. Thanks for your patience.

Regards,  
Rob

**From:** Burnell, Scott  
**Sent:** Friday, March 18, 2011 3:24 PM  
**To:** Taylor, Robert; Brenner, Eliot; Akstulewicz, Brenda  
**Subject:** FW: Press Release for Information Notice  
**Importance:** High

Rob;

We're good with ET approval, so tell NRR to push its buttons.

Brenda, please make this final and we'll wait for Rob to tell us NRR has sent the IN out. Thanks.

Scott

**From:** Taylor, Robert  
**Sent:** Friday, March 18, 2011 2:04 PM  
**To:** Brenner, Eliot  
**Cc:** Burnell, Scott  
**Subject:** Press Release for Information Notice

Eliot,

Attached in the press release Scott drafted last night. It has been blessed by Ops Center ET and is ready for the next step (your review?). NRR is still driving to issue the IN today.

Regards,  
Rob

**From:** Grobe, Jack  
**To:** Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric  
**Cc:** Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Glitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Lubinski, John  
**Subject:** Re: Support and Logistics for the Japan Commission Meeting  
**Date:** Friday, March 18, 2011 6:17:32 PM

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Oops - I made a mistake. Cathy Haney will be in France so Trish Milligan should also be expected to cover Radiological Consequence Assessment as well as Emergency Preparedness. Thanks.

Jack Grobe, Deputy Director, NRR

**From:** Grobe, Jack  
**To:** Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Grobe, Jack; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric  
**Cc:** Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Glitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Brown, Milton; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Sheron, Brian; Lubinski, John  
**Sent:** Fri Mar 18 18:06:05 2011  
**Subject:** Support and Logistics for the Japan Commission Meeting

Ladies and Gents,

We want to ask your support for several aspects of the Commission meeting on Monday morning regarding the situation in Japan.

First, the only staff at the Commission table will be Bill Borchardt.

In the well, we anticipate having the two available DEDOs (I understand that Mike Weber will be on shift) and one representative from the front office of each of the following offices (either the office director or deputy)

NRR, NRO, NSIR, RES, NMSS, FSME, OPA, OCA, OIP, CFO, ACRS

Annette Vietti-Cook has indicated that she will reserve the "quadrant" of seats nearest the microphone (on the left side of the room as the Commissioners would see it) for NRC staff. As I understand it, the right side will be for reporters and the central area will be open for general public.

In the area for NRC staff, there will be 39 seats.

From a staff perspective, we would like the highest priority available for the following individuals whom Bill will call upon to answer (on camera) any more detailed questions on the indicated subjects. Bill will have the list and ask for this person to respond to any question where he wants more detailed support. Some of these folks will likely already be in the well. The microphone has been moved to allow television camera access to any

BA784

individual answering questions.

Protection Against Natural Disasters – Gary Holahan  
Station Blackout – George Wilson  
Severe Accident and Spent Fuel Pool Accident Progression – Jennifer Uhle  
Radiological Consequence Analysis – Cathy Haney  
Hydrogen Fires and Explosions – MarkHenry Salley  
Public Stakeholder Outreach – Eliot Brenner  
State Outreach – Josie Piccone  
International Interactions – Margie Doane  
10CFR50.54(hh)(2)/B.5.b – Eric Bowman  
Seismic Issues, Tsunami Issues, GI-199 – Annie Kammerer  
Mark I containment issues – Tim Collins  
Emergency Preparedness – Trish Milligan  
Emergency Operating procedures/SAMGs – Donnie Harrison

We understand that these people are available for the meeting. If not, please coordinate with Allen Howe to provide an equivalently capable individual.

That leaves 26 seats in the staff section for TAs and other Division Directors and above who should attend the meeting.

SECY is arranging for an e-mail to be sent out to the staff to indicate where televisions are available for other interested staff to observe the Commission meeting.

Thanks for your support.

Jack Grobe, Deputy Director  
for Engineering and Corporate Support  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

**From:** Sheron, Brian  
**To:** Coe, Doug; Coyne, Kevin; Case, Michael; Richards, Stuart  
**Cc:** Uhle, Jennifer  
**Subject:** FW: Meeting Request Follow Up  
**Date:** Friday, March 18, 2011 10:18:13 PM

---

See e-mail string below. Who do we have that can support NRR on this? I can't open the link to the report because I'm on web mail. It sound like it is GI-199 related.

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**From:** Dean, Bill  
**Sent:** Friday, March 18, 2011 7:33 PM  
**To:** Wittick, Brian; Leeds, Eric; Andersen, James  
**Cc:** Muessle, Mary; Lew, David; Grobe, Jack; Boger, Bruce; Sheron, Brian; Uhle, Jennifer  
**Subject:** Re: Meeting Request Follow Up

I believe RES assistance may be appropriate for this given the GI-199 subject matter.  
Bill Dean  
Regional Administrator  
Region I, USNRC  
Sent from NRC BlackBerry

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**From:** Wittick, Brian  
**To:** Leeds, Eric; Andersen, James  
**Cc:** Muessle, Mary; Lew, David; Dean, Bill; Grobe, Jack; Boger, Bruce  
**Sent:** Fri Mar 18 18:21:58 2011  
**Subject:** RE: Meeting Request Follow Up

Eric,

I just spoke to Hipschman. Apparently the core of their interest is the following report.

[http://adamswebsearch2.nrc.gov/idmws/DocContent.dll?library=PU\\_ADAMS^pbntad01&LogonID=76b41771c7675f39f80edfad53e3cf59&id=102500110](http://adamswebsearch2.nrc.gov/idmws/DocContent.dll?library=PU_ADAMS^pbntad01&LogonID=76b41771c7675f39f80edfad53e3cf59&id=102500110)  
Let me call the state POC and get back to you.

VR  
Brian

---

**From:** Leeds, Eric  
**Sent:** Friday, March 18, 2011 6:21 PM  
**To:** Andersen, James  
**Cc:** Wittick, Brian; Muessle, Mary; Lew, David; Dean, Bill; Grobe, Jack; Boger, Bruce  
**Subject:** RE: Meeting Request Follow Up

Jim -

Happy to help. Is this a telecom, or a meeting here, or a meeting there? Who am I briefing and on what?

Since its NY, do we want to bring RI along with us?

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-1270

From: Andersen, James

BA/85

Sent: Friday, March 18, 2011 5:50 PM

To: Leeds, Eric

Cc: Wittick, Brian; Muessle, Mary; Lew, David; Dean, Bill; Grobe, Jack; Boger, Bruce

Subject: RE: Meeting Request Follow Up

Eric, are you or another senior manager in NRR available next week to meet with the individuals from New York?

Jim A.

From: Hipschman, Thomas

Sent: Friday, March 18, 2011 4:29 PM

To: Andersen, James; Leeds, Eric

Cc: Wittick, Brian

Subject: FW: Meeting Request Follow Up

FYI – Haven't heard from Brian and didn't want to wait to pass this along to you.

Thomas Hipschman

Policy Advisor for Reactors

Office of Chairman Gregory B. Jaczko

301-415-1832

From: Thomas Hipschman

Sent: Friday, March 18, 2011 3:04 PM

To: Brian Wittick

Subject: FW: Meeting Request Follow Up

FYI – the Chairman has agreed that a senior manager from NRR should meet with them.

Thomas Hipschman

Policy Advisor for Reactors

Office of Chairman Gregory B. Jaczko

301-415-1832

From: Pace, Patti

Sent: Friday, March 18, 2011 1:48 PM

To: Hipschman, Thomas

Cc: Bradford, Anna; Batkin, Joshua; Coggins, Angela

Subject: FW: Meeting Request Follow Up

Hi Tom,

Anna asked me to forward this to you. Can you please work with NRR to make this happen? The folks from NY are eager to confirm something ASAP.

Thanks,

Patti Pace

Assistant to Chairman Gregory B. Jaczko

U.S. Nuclear Regulatory Commission

301-415-1820 (office)

301-415-3504 (fax)

From: Hilary Jochmans [<mailto:Hilary.Jochmans@exec.ny.gov>]

Sent: Friday, March 18, 2011 1:42 PM

To: Pace, Patti

Cc: Thomas Congdon; Bradford, Anna; Warren, Roberta

Subject: RE: Meeting Request Follow Up



Thank you, Patti. I greatly appreciate your assistance. I certainly understand the constraints on the Chairman's time. We would appreciate a meeting with the Senior Staff you suggest on Tuesday in person. Please let me know what other information you need from me, and then who the staffer will be and when where.

Thanks again,  
Hilary

From: Pace, Patti [<mailto:Patti.Pace@nrc.gov>]  
Sent: Friday, March 18, 2011 1:37 PM  
To: Hilary Jochmans  
Cc: Thomas Congdon; Bradford, Anna; Warren, Roberta  
Subject: Meeting Request Follow Up

Dear Hilary,

Chairman Jaczko will not be available for a face to face meeting next week due to his role in the ongoing NRC response to the situation in Japan. He values the very good relationship between the NRC and State of New York. He has offered to make himself available for a phone call next week if that would be acceptable to Lt. Governor Duffy. If the Lt. Governor would prefer to meet with a senior NRC staff person we could work on that as an alternative.

Please let me know how you would like to proceed.

Many thanks,

Patti Pace  
Assistant to Chairman Gregory B. Jaczko  
U.S. Nuclear Regulatory Commission  
301-415-1820 (office)  
301-415-3504 (fax)

From: Hilary Jochmans [<mailto:Hilary.Jochmans@exec.ny.gov>]  
Sent: Thursday, March 17, 2011 3:22 PM  
To: Pace, Patti  
Cc: Thomas Congdon  
Subject: Follow up to Conversation

Hi Patti – It was great to chat with you. Glad to hear you are doing well. Thanks so much for your offer to help with this meeting request.

On Tuesday, the NYS Lt. Governor, Robert Duffy, NYS Director of Operations, Howard Glaser and NYS Deputy Secretary for Energy, Tom Congdon, would like to come to Washington to meet with the Chairman. Specifically, they would like to be briefed on the September 2010 NRC report including the status of the follow up review. If the Chairman is not available, they would like to meet with an appropriate Commissioner or senior staffer.

I greatly appreciate your assistance with this request. Please let me know if you need any additional information.

Thanks,  
Hilary

Hilary F. Jochmans, Director  
New York State Washington Office of the Governor  
202-434-7100

## Kauffman, John

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**From:** Coe, Doug  
**Sent:** Friday, March 18, 2011 11:14 PM  
**To:** Beasley, Benjamin; Demoss, Gary; Coyne, Kevin; Salley, MarkHenry; Stutzke, Martin; Siu, Nathan; Peters, Sean; Nicholson, Thomas; Barnes, Valerie; Ott, William; Davis, Chon; Davis, Mildred; Hudson, Daniel; Littlejohn, Jennene; Nelson-Wilson, Carlyleamaryllis; Siu, Carolyn  
**Cc:** Kauffman, John; Correia, Richard  
**Subject:** RE: Monday staff meeting

Folks,

Since the Commission meeting starts at 9am on Monday, the normal 10am DRA mgmt/FO team meeting at 10 will be delayed. I encourage you to watch this Commission meeting if possible. If the Commission meeting concludes by 10:30, we will have the DRA meeting at 10:30. If the Commission meeting goes longer, we'll reschedule for the afternoon if possible depending on what else is going on.

I also want to take a moment to thank you for the support you have given to Kevin during this past challenging week while I was out. I truly appreciate the teamwork and dedication that have been displayed this past week. We still have numerous challenges ahead of us, and I look forward to meeting them with you.

Again, my sincere thanks,  
Doug

BA/86



**Taylor, Renee**

---

**From:** Borchardt, Bill  
**Sent:** Saturday, March 19, 2011 11:45 AM  
**To:** Schmocker Ulrich  
**Subject:** RE: Accident in Japan

Dear Ueli,

Thank you for your thoughts. It is a stressful period but it is gratifying to see the nuclear community pull together to address a very difficult situation.

Best Regards,  
Bill

**From:** Schmocker Ulrich [<mailto:Ulrich.Schmocker@ensi.ch>]  
**Sent:** Saturday, March 19, 2011 5:51 AM  
**To:** Borchardt, Bill  
**Subject:** AW: Accident in Japan

Dear Bill

Thank you very much for your prompt response. It seems that we all suffer from enough and reliable information. It is a nuclear disaster what happens in Japan and to be honest, I never would believe that such a scenario could happen (6 NPPs in trouble!). I still have problems to understand why the Japanese were not able to recover the cooling at least for the fuel pools. I ask myself if the Japanese do have performed a SAMG project - to some extent their AM seems not be very professional. I hope we will understand it later when all the information are available. The consequences for the nuclear industry worldwide are enormous - Switzerland stopped the process for constructing new builds and Germany - you know - shut down 7 plants and will move out of nuclear as fast as possible. Don't ask me how we can now stop the CO2 release and the climate change.

I saw you in the German TV news together with your Chairman. You looked tired - I believe the time is stressful for you and not easy. I personally be out of the business and do not have to stay before the media. This is now done by Hans Wanner. His problem is, that he is an expert in waste disposal, but not in nuclear safety and have little knowledge on severe accidents. This makes the situation difficult from him.

I wish you all the best and hope that the situation in Japan finally will not result in a complete disaster with a huge contaminated area.

Best regards  
Ueli

**Von:** Borchardt, Bill [<mailto:Bill.Borchardt@nrc.gov>]  
**Gesendet:** Montag, 14. März 2011 17:09  
**An:** Schmocker Ulrich  
**Cc:** Straub Markus; Doane, Margaret; Mamish, Nader  
**Betreff:** RE: Accident in Japan

Unfortunately, we have found it very difficult to get reliable and specific information on the event also. We have our operations center staffed 24/7. I suggest that you call 301-816-5100 and ask to speak to the international liaison. Our liaison will provide all the info we can.

Best Regards,  
Bill

**From:** Schmocker Ulrich [<mailto:Ulrich.Schmocker@ensi.ch>]  
**Sent:** Monday, March 14, 2011 10:56 AM  
**To:** Borchardt, Bill

BA/87

**Cc:** Straub Markus  
**Subject:** Accident in Japan

Dear Bill

Sorry to disturb you. We at ENSI are completely busy to inform the public, the politicians and the media about the accidents happened in Japan. Our problem is that the information we receive from Japan are only the official ones given by the government and some information from the licensee's web-side. Based on this information it is very difficult to come up with a consistent picture about the accident scenario. We assume that NRC may have additional information channels and may have a better and more consistent picture about the accident in Japan. Would it be possible to receive from NRC some additional information for our own use? Could you give us a contact point at NRC which we can contact by mail or phone? Of course we would forward to NRC any information we received but I believe that all we know you know even better. Thank you very much for your help.

Best regards

Ueli and Georg (Schwarz)

Dr. Ulrich Schmocker  
Swiss Federal Nuclear Safety Inspectorate (ENSI)  
Industriestrasse 19  
CH-5200 Brugg

[Ulrich.Schmocker@ensi.ch](mailto:Ulrich.Schmocker@ensi.ch)  
[www.ensi.ch](http://www.ensi.ch)  
Tel. +41 56 460 86 64

My new e-mail address from April 1, 2011 is:  
[JU.Schmocker@bluewin.ch](mailto:JU.Schmocker@bluewin.ch)

---

**From:** ET07 Hoc  
**Sent:** Tuesday, March 22, 2011 7:05 PM  
**To:** Hoc, PMT12  
**Subject:** FW: NEA Data Comparing International Recommendations for Citizens  
**Attachments:** NEA Compilation Emergency Response Governmental Decision and Recommendation[1].pdf

**From:** LIA02 Hoc  
**Sent:** Tuesday, March 22, 2011 7:03 PM  
**To:** ET02 Hoc; ET07 Hoc  
**Subject:** NEA Data Comparing International Recommendations for Citizens

Let us know if you have any questions, thank you.  
Danielle

BA/88

**Governmental Decisions and Recommendations**

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<p><b>Q1:</b></p> <p><b>What has your government recommended with regard to your citizens living in or visiting Japan?</b></p>	Australia	<p>As a precautionary measure, that Australians within an 80 km zone from the Fukushima nuclear power plant move out of the area.</p> <p>As the situation continues to develop, all Australians in Japan are strongly encouraged to follow the protective measures recommended by the Japanese and Australian Governments. This may include sheltering.</p> <p>Australians returning home from Japan are highly unlikely to be contaminated or exposed to significant radiation and will not require checks for radioactivity. However, if people wish to seek medical advice they should contact their local GP.</p> <p>ARPANSA and the Chief Medical Officer advise that iodine tablets are only required when exposed to substantial radiation doses from radioactive iodine. There is no current need for those returning from Japan or those in Japan outside the exclusion Zone to consider the use of potassium iodide tablets.</p> <p>At the present time, Australia's food standards Regulator, Food Standards Australia New Zealand (FSANZ), considers the risk of Australian consumers being exposed to radionuclides in food imported from Japan to be negligible.</p> <p>Australia does not import fresh produce from Japan. In fact Australia imports very little food from Japan. Imports are limited to a small range of specialty products, for example seaweed-based products, sauces etc.</p> <p>A joint communique for the World Health Organization, the International Atomic Energy Agency, the World Meteorological Organization, the International Maritime Organization and the International Civil Aviation Organization advises that there is no current restriction) on international flight and maritime operations can continue normally into and out of Japan's major airports and sea ports</p> <p>Full text at <a href="http://www.arpansa.gov.au">www.arpansa.gov.au</a></p>	Last Updated 0900 AEDST (UTC+11) March 19	Various categories -Australians in Japan; Australian Passengers returning from Japan; Medical Practitioners; Food Imports; Advise to Airlines and Shipping

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<b>Austria</b>	Partial travel warning for the north east of Japan. It is also recommended that Austrians should leave this area and in addition the Tokio Province The Austrians in Japan are recommended to strictly follow the instructions of authorities in Japan.	Since 15.03.2011	Travelers; Austrians in Japan
<b>Belgium</b>	Travel advice for Japan runs as follows: All trips to Japan are advised against till further notice. Belgian citizens whose stay in Japan is not essential are being advised to leave the country.  organized consular assistance of Belgian citizens from Japan on a voluntary basis		
<b>Czech Republic</b>	Recommendation of the national regulatory authority (State Office for Nuclear Safety - SONS) and Ministry of foreign affairs (MFA):  MFA ( <a href="http://www.mz.cz">www.mz.cz</a> ): To travel to north-east parts of the island Honsue is not recommended in particular to the areas up to 80 km from Fukushima NPP. To travel to Tokyo and north – east parts of Japan should be limited only to urgent cases. The Czech citizens living in the affected areas should leave those areas. Czechs living in Japan should not consume the food from the affected areas and should avoid buying the food at local market places. SONS ( <a href="http://www.suib.cz">www.suib.cz</a> ) To travel to other parts of the Asia there is no restriction. The Czech embassy in Tokyo has been provided by iodine tablets, but no other protective means have been delivered. All Czechs in Japan are encouraged to follow and to respect the recommendations of the local Japanese authorities. Czechs returning home from Japan if wish could ask for the whole body measurement. There is a contact to the measuring facility ( <a href="http://www.suro.cz">www.suro.cz</a> ) SONS advise that iodine tablets for preventive use are not recommended. There is no current need for those returning from Japan or those in Japan outside the exclusion Zone to consider the use of potassium iodide tablets. At the present time, the Czech Agriculture and Food Inspection Authority (CAFIA)	Since 15.3.2011	Various categories –Czechs in Japan; Czechs returning from Japan; Food in Japan; Iodine tablets; Food Imports;

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
	<p>assure the measurement of all from Japan imported food stuff.</p> <p>The Czech Republic does not import fresh food from Japan. Only small range of foodstuff and food products is imported to the Czech Republic.</p> <p>Full texts on <a href="http://www.sujb.cz">www.sujb.cz</a>; <a href="http://www.mz.cz">www.mz.cz</a>; <a href="http://www.suro.cz">www.suro.cz</a>; <a href="http://www.szpi.gov.cz/en">http://www.szpi.gov.cz/en</a></p>		
<b>France</b>	<p>Travel to Japan is strongly discouraged.</p> <p>For French living in Tokyo : they are recommended to leave the Tokyo area for the south of Japan or for France.</p> <p>In addition to the air capabilities of Air France, the French authorities have made available two government planes.</p> <p>Travel in the prefectures of Hokkaido, Aomori, Iwate, Miyagi, Fukushima, Ibaraki, Chiba, is strongly discouraged.</p> <p>Recommendation to follow the instructions given by the Japanese authorities in case of announcement of a worsening situation.</p> <p>Regarding the issue of KI, pills were sent last week to the French Embassy in Tokyo and were pre-distributed to our nationals.</p> <p>This doesn't mean that the French authorities recommend the ingestion of stable iodine!!!</p>	Updated on March 21	
<b>Ireland</b>	<p>[DFA] Advise avoiding non-essential travel to Japan, including Tokyo, and do not travel to affected areas in the north-eastern part of the main, Honshu island of Japan.</p> <p>[DFA] Advises against all travel to this area [ Fukushima and 30 km zone].</p> <p>Given the difficulties arising from the present situation, including potential disruptions to the supply of essential goods and services, [DFA] would encourage Irish citizens to consider leaving the north east of Japan and the Tokyo region. This is particularly the case for people with small children.</p> <p>[DFA = Dept of Foreign Affairs]</p>	15 March	Irish citizens considering travelling to Japan and those living in/currently visiting Japan
<b>Italy</b>	<p>The Italian Embassy in Japan strongly recommends to the fellow countrymen to turn away from the four prefectures affected by the tsunami, from the prefectures to the north of the capital and from Tokyo itself</p>	March 15, 2011	Italian fellow in Japan
<b>Luxembourg</b>	<p>If presence is not necessary and if feasible, to move to the southern parts of Japan.</p> <p>Follow advices of Japanese authorities</p>	14/03/2011	50 persons



Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<b>Slovenia</b>	<p>Slovenian citizens living in Japan were recommended to follow the instructions issued by local authorities. They were warned that in case of bad weather condition the radioactive contamination might spread to central part of Honshu island including Tokyo region. People were recommended to take this information in to account when planning their stay in Japan.</p> <p>All travels to Japan were dissuaded. If a trip can not be postponed extra caution and follow up from other sources of information was recommended.</p>	March 15, 2011	Slovenian citizens in Japan and Slovenian citizens planning to visit Japan.
<b>Sweden</b>	<p>It is recommended that Swedish residents within 80 kilometres of the Fukushima reactors evacuate.</p> <p>Also, it is currently being planed by the Swedish government to offer to all Swedish citizens in Japan transport back to Sweden.</p>	2011-03-16	
	<p>It is recommended that Swedish residents within 80 kilometres of the Fukushima reactors evacuate.</p> <p>Also, it is currently being planed by the Swedish government to offer to all Swedish citizens in Japan transport back to Sweden.</p>	2011-03-19 18:30 UTC time	
<b>Switzerland</b>	<p>The Foreign Ministry advises not to travel to the north-east of Japan and to the prefectures of Nagano and Niigata.</p> <p>The Foreign Ministry advises not to travel to Japan, neither for touristic nor other not urgent reasons.</p> <p>For Swiss citizens staying in Japan: The Foreign Ministry recommends all Swiss citizens staying in the affected area in the north-east of Japan and within the wider area of Tokyo/Yokohama, should temporary leave the region if safely possible, if their presence is not necessary.</p> <p>Swiss citizens are urged to follow the instructions of the local authorities.</p>	Immediately	<p>Swiss citizens living or staying in Japan</p> <p>Swiss citizens intending to travel to Japan</p>
<b>Portugal</b>	<p>Recommendation was made to Portuguese citizens to leave Tokyo and "go south". No indications/recommendation to leave Japan were adopted. The Portuguese Embassy remains operational in Tokyo. ITN is advising the staff of the Portuguese Embassy (electronically, by phone, email) on radiation-related matters</p>	17-18 March	<p>Portuguese citizens living in Japan</p> <p>Staff at the Portuguese Embassy</p>

Emergency Response Governmental Decision and Recommendations Information Exchange

Country		Decision taken or Recommendation made	Applicable Date	Applicable Population
	<b>United Kingdom</b>	Advising UK nationals withing 80km of the Fukushima Daiichi Nuclear Power Plant to evacuate the area		
	<b>United States</b>	<p>US citizens living within 50 miles (80 km) of the Fukushima Daiichi Nuclear Power Plant have been adviced to evacuate the area or take shelter indoors if evacutation is not practical</p> <p>State Department has urged US citizens to defer non-essential travel to Japan at this time</p> <p>Voluntary departure of eligble family members of USG personnel in Japan has been authorized</p> <p>State Department message:  <a href="http://travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html">http://travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html</a> </p>		

U.S. Embassy

Tokyo, Japan

March 16, 2011

Statement by U.S. Ambassador John V. Roos

The United States Nuclear Regulatory Commission (NRC), the Department of Energy and other technical experts in the U.S. Government have reviewed the scientific and technical information they have collected from assets in country, as well as what the Government of Japan has disseminated, in response to the deteriorating situation at the Fukushima Nuclear Power Plant. Consistent with the NRC guidelines that apply to such a situation in the United States, we are recommending, as a precaution, that American citizens who live within 50 miles (80 kilometers) of the Fukushima Nuclear Power Plant evacuate the area or to take shelter indoors if safe evacuation is not practical.

We want to underscore that there are numerous factors in the aftermath of the earthquake and Tsunami, including weather, wind direction and speed, and the nature of the reactor problem that affect the risk of radioactive contamination within this 50 mile (80 km) radius or the possibility of lower-level radioactive materials reaching greater distances.

The U.S. Embassy will continue to update American citizens as the situation develops. U.S. citizens in need of emergency assistance should send an e-mail to [JapanEmergencyUSC@state.gov](mailto:JapanEmergencyUSC@state.gov) with detailed information about their location and contact information, and monitor the U.S. Department of State website at [travel.state.gov](http://travel.state.gov).

The United States is continuing to do everything in its power to help Japan and American citizens who were there at the time of these tragic events. To support our citizens there, the Embassy is working around the clock, we have our consular services available 24 hours a day to determine the whereabouts and well-being of all U.S. citizens in

### Emergency Response Governmental Decision and Recommendations Information Exchange

Japan and we have offered our Japanese friends includes disaster response experts, search and rescue teams, technical advisers with nuclear expertise and logistical support from the United States military.

Emergency Response Governmental Decision and Recommendations Information Exchange

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<b>Q2:</b>  What has your government recommended with respect to the monitoring of passengers returning, by air, from Japan?	Austria	No recommendations by the Austrian government. Austrian Airlines organized contamination measurements for flights from Tokio to Vienna	Since 16.03.2011	travelers
	Belgium	Possibility for screening of the thyroid gland in Belgium on a voluntary basis for Belgian citizens planning to return, returning or returned from Japan  If proven necessary from the voluntary screening, a total body count can be proceeded to.		
	Czech Republic	Monitoring of food and foodstuff imported from Japan is based on EC recommendation, and performed by the Czech Agriculture and Food Inspection Authority and State Veterinary Administration. There is only a small range of the food/foodstuff imported from Japan. <a href="http://www.szpi.gov.cz/en">http://www.szpi.gov.cz/en</a>	17.03.2011	
	France	Notice issued from the French Foreign Ministry ( <a href="http://www.diplomatie.gouv.fr">http://www.diplomatie.gouv.fr</a> ) to passengers coming from Japan <ul style="list-style-type: none"> <li>- Contact point to know more about radiation exposure from nuclear facilities</li> <li>- Contact point to know about relatives in Japan</li> <li>- A questionnaire is available for those French people who where in Japanese territory since 11 March so that they can be contacted if needed. Questionnaire available at <a href="http://www.invs.sante.fr">www.invs.sante.fr</a></li> </ul>		
		People arriving from an area located up to 60 km from the Fukushima NPP are proposed to have a whole body counting at the IRSN facilities to check the absence/presence of internal contamination. People arriving from Tokyo are not proposed to have this in-vivo measurement. The situation might evolve; it is still under discussion within the French government.	March 21	
	Ireland	No direct flights from Ireland to Japan.		
	Italy	No specific recommendations so far, according to my knowledge		
	Luxembourg	No recommendation		
	Slovenia	No monitoring of passengers was introduced.		
	Sweden	Passengers from Japan who have been in the area within 80 kilometers from the Fukushima plant can, if requested, be offered monitoring through their ordinary caregivers.	2011-03-17	

Emergency Response Governmental Decision and Recommendations Information Exchange

	<b>Switzerland</b>	Reception centre for returning people who were staying in the evacuation zones	Since 16.3.	People arriving in Switzerland who were staying in the evacuation zones
	<b>Portugal</b>	No monitoring is in place.  However, representatives from the General Directorate of Health, ITN, and the emergency-related agencies provide at the Lisbon airport information upon arrival for passengers arriving from Japan	Week 14-18 March	Passengers returning from Japan
	<b>United Kingdom</b>	No officials statement to date Contingency plans for monitoring people at airports are being developed	March 19	
	<b>United States</b>	Radiation detection devices are routinely used by Customs and Border Protection to screen passengers  Public messages and health alerts for travelers are developed and being cleared for release.	March 21	

Emergency Response Governmental Decision and Recommendations Information Exchange

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<b>Q3:</b>  <b>What has your government recommended with respect to the importing of food or goods from Japan?</b>	<b>Austria</b>	Monitoring of food- and feedstuff from Japan based on EC recommendation.	Since 15.03.2011	----
	<b>Czech Republic</b>	No direct commercial flights from Japan to the Czech republic. Approx. 100 Czech citizens have been transferred from Japan back by air force (after arrival all passengers and airplane were monitored and no contamination was estimated) Currently - all who wish could ask for whole body measurement after arrival from Japan		
	<b>France</b>	This point is still under discussion in the French government	March 21	
	<b>Ireland</b>	Considering situation in light of EC (DG SANCO) recommendation to to the effect that Member States should analyse food and feed from Japan. Food Safety Authority of Ireland (FSAI) checking with Customs & Excise re direct imports to Ireland and liaising with FSA (UK). FSAI/DAFF/RPII to discuss further in the next few days. (DAFF = Dept of Agriculture, Fisheries and Food; RPII = Radiological Protection Institute of Ireland)		
	<b>Italy</b>	Italian Health Minister has ordered the ban on imports of food from Japan (fish and worked vegetables) dated after March 11, 2011	March 16, 2011	Italian
	<b>LU</b>	No direct importations	17/03/2011	
	<b>Slovenia</b>	Additional control of foodstuffs imported from Japan is introduced in agreement with common EU approach.		
	<b>Sweden</b>	None so far.		
	<b>Switzerland</b>	Foodstuffs <i>Spot Checks of imported goods</i>  <i>Feeding Stuffs</i> <i>Spot Checks of imported goods</i>	25.03.11   25.03.11	
	<b>Portugal</b>	No decision is taken yet, waiting decisions at the European Union level.  Most likely the recommendation from DG-SANCO (RASFF - to analyse the level of radioactivity in feed and food from plant or animal origin (mainly fishery products) imported from today from Japan) will be adopted soon.	Next week ?	

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<b>United Kingdom</b>	No additional measures, Criteria being used by Japan are at least as restrictive as EU criteria	March 19	
<b>United States</b>	<p>Japan has halted all export from affected region</p> <p>Based on current information there is no risk to the US food supply</p> <p>Food &amp; Drug Administration's is flagging all imports of FDA regulated products from Japan and is paying special attention to shipments from companies in the affected area</p> <p>US Custom &amp; Border Patrol routinely use radiation detection equipment to screen food imports, cargo and travellers</p> <p>FDA has posted fact sheet on food and medical goods importation from Japan:  <a href="http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm">http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm</a></p>	March 20	

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
<b>Belgium</b>	Iodine tablets are put at the disposal of the Belgian embassy in Japan, the intake of which only happens at the advice of the Japanese authorities.		
<b>France</b>	<p>KI pills are being provided to French nationals in Japan</p> <p>They are being advised not to take KI and instead to follow the advice of Japanese authorities</p>	March 21	
	<p>Possibility to get iodine tablets at the French embassy (although information is given that Japanese authorities will proceed if needed to distribute iodine tablets to people)</p> <p>Information about the intake of iodine tablets and other recommendations for French citizens in Japan is available at:  <a href="http://www.diplomatie.gouv.fr/fr/IMG/pdf/Messages_pour_la_communaute_francaise_au_Japon.pdf">http://www.diplomatie.gouv.fr/fr/IMG/pdf/Messages_pour_la_communaute_francaise_au_Japon.pdf</a></p>		
<b>Germany</b>	<p>German embassay has KI tablets</p> <p>Current policy is not to distribute</p>	March 21	
<b>Japan</b>	KI has been distributed to the public	March 21	

Emergency Response Governmental Decision and Recommendations Information Exchange

Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
United Kingdom	Distributing KI to nationals in Japan with priority for children and pregnant or breast-feeding women Instructed not take KI unless advised to by Japanese authorities or UK government	March 20	
United States	US is making KI available to US government personnel and dependents in Japan as a precautionary measure Instructions are not to consume KI unless advised by US government Statement from State Department: <a href="http://travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html">http://travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html</a>	March 21	

Activation of a call center for information of the public	Austria	Information for concerned public	Since 12.03.2011	Persons concerned
	Czech Republic	Information available on web sites: <a href="http://www.sujb.cz">www.sujb.cz</a> <a href="http://www.suro.cz">www.suro.cz</a> <a href="http://www.szpi.cz">www.szpi.cz</a> <a href="http://www.mz.cz">www.mz.cz</a> Radiation protection issues – call center - during working hours (SÚJB), media, news		
	Switzerland	Special attention to the high volume sampler measurements	14.03.11	
		Measurement of additional air filters and precipitation samples	21.03.11	
		Collection and measurements of high altitude air samples	23.03.11	



## Emergency Response Governmental Decision and Recommendations Information Exchange

### General Question:

It is likely that, in the coming weeks, there will be discussion of the collective dose received by the Japanese population. I also feel that it is likely that there will be, in the press, discussion of the number of projected cancer deaths, using the collective dose and the 5%/Sv risk factor. Given this situation, I feel that it would be useful for the RP community represented by the CRPPH to consider how such claims could be addressed.

- Do you agree that we could address this issue?
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate?

### Austria

- Do you agree that we could address this issue? YES
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate?

### Italy

- Yes
- I'd need some more time to formulate this answer. I think the right way is that proposed by the Chernobyl forum for that accident

### Luxembourg

- In respect for what is at stake in Japan, we are not willing to enter such a discussion right now. If really a need, it should be postponed to a more adequate date.

### Slovenia

- It should be stressed that 5%/Sv refers to cancer incidence risk and not to cancer deaths risk.

### Sweden

- Concerning the General Question we prefer not to address that right now, but are all in favour of co-ordination in these topics.

### Portugal

- Do you agree that we could address this issue? **YES**
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate? **As you are well aware, the correctness of using "collective dose" for these purposes is disputed by some experts... but in my very personal opinion, the number obtained should be used as an estimation – better than no number !**

**From:** Weber, Michael  
**Sent:** Friday, March 25, 2011 8:02 AM  
**To:** PMT01 Hoc  
**Cc:** LIA08 Hoc; LIA06 Hoc; ET01 Hoc; ET05 Hoc; OST02 HOC  
**Subject:** Fyl - Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March  
**Attachments:** Triage Report - TE-11-0721-Addendum D --- 23 March 2011 Revision 1.docx

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

**From:** Sheron, Brian  
**To:** HOO Hoc  
**Cc:** Weber, Michael; Virgilio, Martin  
**Sent:** Fri Mar 25 07:15:43 2011  
**Subject:** FW: Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March

Please forward to PMT Director. Thx.

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

**From:** NITOPS [mailto:NITOPS@nnsa.doe.gov]  
**Sent:** Thursday, March 24, 2011 8:09 PM  
**To:** Aoki, Steven; Aragon, Antonio; Aragon, Antonio; Binkley, Steve; Budnitz, Bob; Casson, William (Bill); Dudder, Gordon B; Garwin, Dick (EOP); Garwin, Dick (IBM); Myers, Steven; NITOPS; NITSolutions; Peterson, Per; Peterson, Steven J; Pitts, William Karl; Poneman, Daniel; Sheron, Brian; Spanard, Richard J.; Swanson, Joel (LLNL); Szilard, Ronalo; Wimer, Nathan; Wimer, Nathan; Woessner, William S.  
**Cc:** NITOPS  
**Subject:** Revised Report: Triage Report -- TE-11-0721-A, Addendum D for 23 March

Please find attached the Triage report for measurements taken approximately 8km from the NPP.

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

BA/89

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**Triage Event: TE-11-0721-A Addendum D - Revision 1 (Correction to Ratio Filenames)**

Date(s): 23 Mar 2011  
Callout(s): Callout 21 Mar 2011, 9:49 EDT; Bridgeline 10:15 EDT  
Event Type: DOE SEAR Event, Level 1  
Location: Japan  
Submitted by: Field Collections through NITOPS  
Email(s): N/A  
Triage Web: TE-11-0721 Addendum D, Continuing Event  
Contact(s): A. Aragon (Triage FTL); R. Spanard (Triage FTL)  
Responder(s): J. Bounds (LANL), W. Casson (LANL), N. Wimer (LLNL)  
Report Date: 23 Mar 2011, edited by N. Wimer

**List of data files used in the analysis.**

UNK	2011_03_23_16_33_020.spc	Lat/Long 37.35288683, 140.97889316
UNK	2011_03_23_15_00_130.spc	Lat/Long 36.8681086, 140.14207716
CAL	2011_03_22_22_36_200 Cs137.spc	(Per web submission)
BKG	2011_03_23_07_04_370_FIS8_Bkgd.spc	

**Summary:**

These two spectrum files were transmitted to Triage as part of a continuing high-priority analysis of field spectra collected in Japan at highway locations on approaches to the Fukushima Plant. Triage analysts were asked to provide nuclide identification, determine activity ratios for radionuclides evident in the spectra, and append to the Compilation XLS file.

As with the compilation being appended to, these spectrum files indicate coolant release nuclides, present as air activity concentrations and ground deposition in the field of view of an HPGe detector held 1 meter above the ground. They are well-enough developed that a detailed screening for non-volatile species was performed, with none observed. Definitive determination of whether fuel releases have occurred is expected to require HPGe assays from grounds of the plant itself.

**Triage Assessment:**

These spectrum files were collected with an HPGe ORTEC Detective-EX, with data acquisition on 23 March 11. Triage observed the spectrum was more developed compared with other sample spectra analyzed to date, with durations of approximately 20 minutes and deadtimes approaching 80%.

Nuclides observed were consistent with other Japan HPGe spectra taken at a distance, reflecting coolant-release compositions. There are no unidentified nuclides. Given unknown source-detector detail, absolute activities cannot be estimated: rough activity ratios relative to I-131 are shown in Table 1 below.

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Radionuclide	Activity relative to I-131 for "2011_03_23_16_33_020.Chn"	Activity relative to I-131 for "2011_03_23_15_00_130.chn"
I-131	1.0 (Defined)	1.0 (Defined)
I-132	0.245	0.290
I-133	0.006	0.003
Te-129	0.185	0.119
Te-129m	0.168	0.077
Te-132	0.262	0.108
Cs-134	0.176	0.043
Cs-136	0.029	0.005
Cs-137	0.155	0.049
La-140	0.002	Not detectable

Table 1. Relative nuclide activity ratios for TE-11-0721-A Addendum D spectrum files (23 Mar 11).

C:\2011\_03\_23\_16\_33\_020.Chn,1 - I

live-time(s) = 534.46  
chi-square = 400

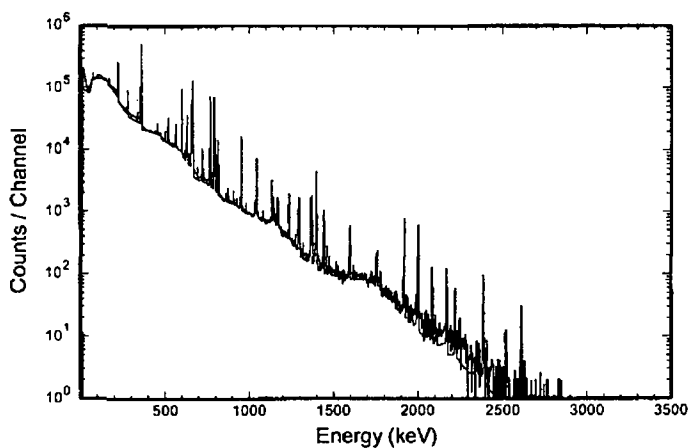


Figure 1. Gamma spectrum fitting of "2011\_03\_23\_15\_00\_130.chn" field gamma assay. Lines corresponding to I-131, I-132, Te-132, I-133, Cs-134, Cs-136, Cs-137, Te-129, Te-129m, and La-140 are evident; non-volatile nuclide reflecting potential fuel release were searched for in detail and not observed.

**Recommendations for follow on activities:**

These two high-priority field gamma-assay compositions represent coolant-only release, and discerning potential reactor fuel release will almost certainly require HPGe assay on the grounds of the Fukushima plant.

~~OFFICIAL USE ONLY~~

**From:** Dorman, Dan  
**To:** Taylor, Robert  
**Subject:** Fw: Ambassador Roos's inquiry about flooding containments -- ADDENDUM  
**Date:** Sunday, March 27, 2011 1:49:34 AM

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---

**From:** Cherry, Ronald C <CherryRC@state.gov>  
**To:** Scott, Michael; Taylor, Robert  
**Cc:** Dorman, Dan; Kelly, John E (NE) <JohnE.Kelly@Nuclear.Energy.Gov>; Duncan, Aleshia D <DuncanAD@state.gov>  
**Sent:** Sun Mar 27 01:44:35 2011  
**Subject:** RE: Ambassador Roos's inquiry about flooding containments -- ADDENDUM

Mike, Rob,

Dan suggested I talk to you about what was discussed on the 1600 JST conference call yesterday with TEPCO, specifically with respect to the idea of flooding containments. I'm trying to run this down in response to a question we received from DOE HQ overnight.

Thanks very much.

Ron

~~SBU~~

This email is UNCLASSIFIED.

BA/90

**From:** Giessner, John  
**To:** Taylor, Robert  
**Subject:** Fw: April 3 briefing notes and Radiation Survey Map of the site  
**Date:** Sunday, April 03, 2011 5:48:17 AM  
**Attachments:** 20110402 1800 Facility Area Survey Data.pdf  
Fukushima Daiichi Daily Update 04-03[1].docx

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(Sent from Blackberry)

---

**From:** Hochevar, Albert R. (INPO) <HochevarAR@INPO.org>  
**To:** Scott, Michael; Giessner, John; Blamey, Alan; Miller, Marie  
**Sent:** Sun Apr 03 05:42:02 2011  
**Subject:** FW: April 3 briefing notes and Radiation Survey Map of the site

All,  
FYI,  
Al

---

**From:** Spinnato, Roger E (WANO)  
**Sent:** Sunday, April 03, 2011 6:24 PM  
**To:** INPO EmergencyResponseCtr (INPO); INPOERCTech  
**Cc:** Gambone, Robert L (INPO); Hochevar, Albert R. (INPO); Farr, David M (WANO); Shirayanagi TC; Tsuchihashi; fujii@wano-tc.or.jp; felgate@wanocc.org; hopkinson@wanocc.org; igancio.araluce@wanopc.org; jan.bens@wanopc.org; Maddox, James E. (INPO); Garchow, David F.(INPO)  
**Subject:** April 3 briefing notes and Radiation Survey Map of the site

I have attached the survey map of the reactor building and our briefing notes. Please note that there is no update to the excel spreadsheet today.

Roger Spinnato

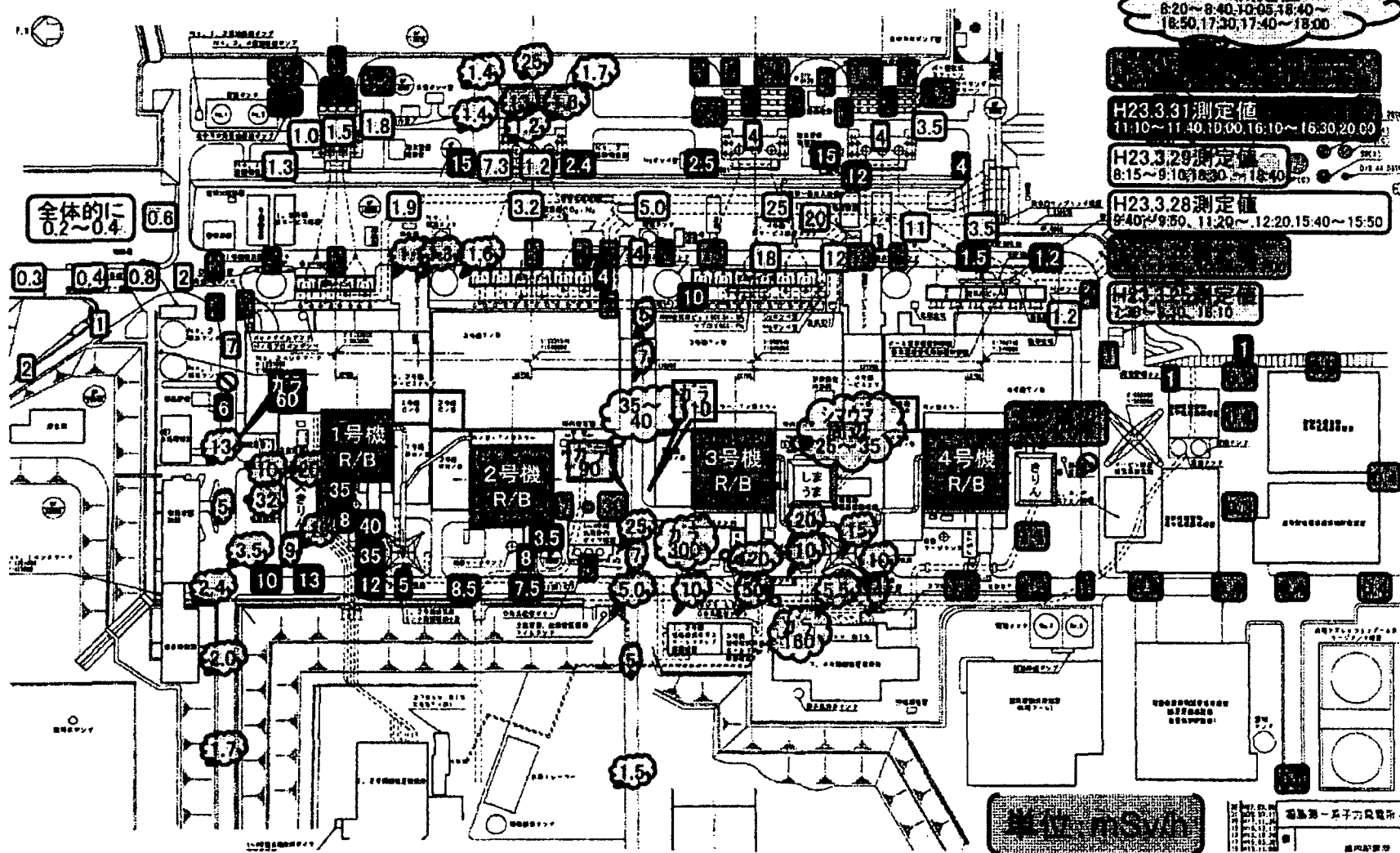
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~~Thank you~~

BA/91

P. 11



## Fukushima Daiichi Daily Update

April 3, Sun 17:00

### **1. Major evolutions**

On April 2, high level contaminated water was found flowing out from a crack of a pit near the intake facility of Unit 2 into the sea. TEPCO tried temporary concrete pouring into the crack. [reported 4/2]  
However, concrete had not been solidified due to large amount of water in the pit. They are trying to dig a hole at the upstream side and inject high polymer.

946 infants of 0-15 years old were inspected for Thyroid, at Kawamata and Ildate Township 3/28-3/30. Inspection revealed radiation level lower than the limit value of 2 micro Sv/h. The two townships are located on the border of 30 km from Fukushima Daiichi station and Nuclear Safety Commission of Japan urged possible exposure in these areas.

Government and Tepco started environmental monitoring of the evacuation zone between 20km and 30km to provide additional information for better investigation of radioactive material spread.

79.4 Bq/ liter of I-131 was detected from the sea water sample taken 3/30 at 40 km south of Fukushima Daiichi site. It is two times of the reference level.

Fresh water transfer was conducted from US military barge #1 to Filtrate Tank, 4/2 10:20-16:40. Barge #2 was on site, 4/2 09:10.

### **2. Unit status**

#### **Unit 1:**

Reactor parameters are higher than other units but relatively stable;

	04/03 03:00	04/02 04:00	04/01 06:00
Reactor Pressure	0.290/0.542 MPa g	0.288/0.520 MPa g	0.293/0.495 MPag
FW Nozzle Temperature	256.7 C	261.5 C	255.2 C
RPV Bottom Temperature	117.2 C	118.0 C	119.7 C
Injection flow rate	6.0 m3/h (4/2 20:27)	7.0 m3/h(4/1 16:18)	8.0 m3/h (3/29 8:32)
D/W pressure	0.155 Mpa abs	0.160 MPa abs	0.170 MPa abs

Latest fresh water supply to SFP was 90 tons on 3/31 13:03-16:04.

#### **Unit 2:**

Reactor parameters are relatively stable, FW Nozzle temp decreasing.

	04/03 03:00	04/02 04:00	4/01 06:00
Reactor Pressure	-0.016/-0.018 MPa g	-0.011/-0.014 MPa g	-0.014/-0.016 MPa g
FW Nozzle Temperature	153.4 C	155.0C	163.6C
RPV Bottom Temperature	→	→	Indication not correct
Injection flow rate	8.0 m3/h (4/2 20:43)	→	9.0 m3/h (3/30 14:00)
D/W pressure	0.105 MPa abs	0.110 MPa abs	0.110 MPa abs

SFP temperature	70.0 C	72.0 C	48.0 C
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Latest fresh water supply to SFP was 70 tons on 4/1 14:56-17:05.



**Unit 3:**

Reactor parameters are relatively stable;

	04/03 02:30	04/02 01:30	4/01 05:45
Reactor Pressure	0.011/-0.088 MPa g	0.025/-0.086 MPa g	0.018/-0.086 MPa g
FW Nozzle Temperature	90.6 C*	90.8 C*	92.6 C*
	*under examination		
RPV Bottom Temperature	115.9 C	119.4 C	116.3 C
Injection flow rate	→	→	7.0 m3/h (3/29 14:39)
D/W pressure	0.1061 MPa abs	0.1055MPa abs	0.107 MPa abs

75 tons of fresh water was supplied to SFP, 4/2 9:52-12:54.

**Unit 4:**

180 tons of fresh water was supplied to SFP, 4/1 8:28-14:14.

**Common pool:**

32 C (4/3 02:30)

**3. T/B and Trench drainage****Unit 1**

CST water transfer completed to Suppression Pool Water Surge Tank, 3/31 12:00-4/2 15:26.

**Unit 2**

H/W water transfer to CST started 4/2 17:10.

Cameras were installed to monitor water level of the trench vertical well and T/B basement, 4/2.

**Unit 3**

H/W water transfer to CST will start 4/2. [reported 4/2]

**Unit 4**

No new development reported.

**4. Site Environmental Data**

According to the latest measurement 4/2, overall dose rates on site are decreasing except several hot spots.

# Plant parameters of Fukushima-Daiichi NPS

- \* 1: Gauge out of order
- \* 2: Not monitored

03 April at 06:00

Unit number	1	2	3	4	5	6
Water Injection to RPV	Continuous fresh water injection by using feed water system line Flow rate: 6.0m <sup>3</sup> / Hr (100L/ min) Measured by temporary instrumentation (02 April at 20:27)	Continuous fresh water injection by using fire FP system line Flow rate: 8.0m <sup>3</sup> / Hr (133L/ min) Measured by temporary instrumentation (02 April at 20:43)	Continuous fresh water injection by using fire FP system line Flow rate: 7.0m <sup>3</sup> / Hr (116L/ min) Measurement by temporary instrumentation (29 March at 14:39)	Cold Shut Down	Cold Shut Down	Cold Shut Down
Reactor water level	Fuel range A: - 1650 mm Fuel range B: - 1650 mm (03 April at 03:00)	Fuel range A: - 1500 mm (03 April at 03:00)	Fuel range A: - 1850 mm Fuel range B: - 2250 mm (03 April at 00:230)	* 2	Shutdown range 1785 mm (03 April at 06:00)	Shurdown range 2010 mm (03 April at 06:00)
Reactor pressure	0.290 MPa(g) (A) 0.542 MPa(g) (B) (03 April at 03:00)	- 0.016 MPa(g) (A) - 0.018 MPa(g) (B) (03 April at 03:00)	0.011MPa(g) (A) - 0.088MPa(g) (C) (03 April at 02:30)	* 2	0.007 MPa(g) (03 April at 06:00)	0.005 MPa(g) (03 April at 06:00)
Reactor water temperature	Could not be monitored without PLR flow			* 2	65.5°C (03 April at 06:00)	23.2°C (03 April at 06:00)
Reactor pressure vessel temperature	Feed water nozzle: 256.7°C RV lower part: 117.2°C (03 April at 03:00)	Feed water nozzle: 153.4°C RV lower part: * 1 (03 April at 03:00)	Feed water nozzle: 90.6°C(suspected) RV lower part: 115.9°C (03 April at 02:30)	* 2 for unit 4 Monitored by coolant temperature for units 5 & 6		
D/ W S/ C pressure	D/ W: 0.155MPa (abs) S/ C: 0.160MPa (abs) (03 April at 03:00)	D/ W: 0.105MPa (abs) S/ C: Downscaled (suspected) (03 April at 03:00)	D/ W: 0.1061MPa (abs) S/ C: 0.1748MPa (abs) (03 April at 02:30)	* 2		
CAMS	D/ W: 3.18× 10 <sup>1</sup> Sv/ h S/ C: 1.53× 10 <sup>1</sup> Sv/ h (03 April at 03:00)	D/ W: 3.50× 10 <sup>1</sup> Sv/ h S/ C: 9.47× 10 <sup>1</sup> Sv/ h (03 April at 03:00)	D/ W: 2.22× 10 <sup>1</sup> Sv/ h S/ C: 9.11× 10 <sup>1</sup> Sv/ h (03 April at 02:30)	* 2		
D/ W design pressure	384 kPa(g)	384 kPa(g)	384 kPa(g)	* 2		
D/ W maximum operating pressure	427 kPa(g)	427 kPa(g)	427 kPa(g)			
SFP water temperature	* 1	70.0 °C (03 April at 03:00)	* 1	* 1	31.0°C (03 April at 06:00)	27.0°C (03 April at 06:00)
FPC surge tank level	4500 mm (03 April at 03:00)	5350 mm (03 April at 03:00)	* 1	5050 mm (03 April at 02:30)	* 2	
Power source	Off site power delivered (P/ C 2C)		Off site power delivered (P/ C 4D)		Off site power delivered (as ordinary condition)	
Other information	Unit 3; RPV metal temperature under investigation Unit 2; S/ C pressure under investigation			Common SFP: around 32(°C) (02 April at 07:30)	5u:SFP cooling mode (02 April 17:56)	6u:Shurdown cooling mode (02 April 18:18)

Pressure conversion:  
Gauge pressure(MPa g)=Absolute pressure(MPa abs) - Atmospheric pressure (standard atmospheric pressure 0.1013 MPa)

---

**From:** LIA06 Hoc  
**Sent:** Wednesday, March 30, 2011 8:05 AM  
**To:** Snodderly, Michael; Franovich, Mike; Marshall, Michael; Orders, William; Castleman, Patrick  
**Cc:** Blount, Tom; Wittick, Brian; Boger, Bruce; Virgilio, Martin  
**Subject:** FYI: Slides for consortium  
**Attachments:** US Government - Industry Consortium Structure Rev 1.pptx

Attached are the slides that outline the consortium structure that I described during the 0730 brief today.

Thanks

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

BA/92

# US Government Coordination





# The White House

POC: Julie Bentz (202) 456-2289



## National Security Staff

- Assist in assessing ability of US private sector companies to loan equipment to Japan, understanding contaminated items may not be returned (3/23 0800)
- Reconvene interagency group to develop “tripwires” for decision-making based on DOE “bounded model”(3/23 0800)
- Coordinate interagency efforts regarding need for and availability of dosimetry for US military and civilian response personnel
- Form working group to study potential radiological impacts to mail, imports, and airport processes (3/18 0800)
- Make a recommendation regarding release of analysis to GoJ and public (3/21 0930)
  - DOE, DOS support



## Office of Science and Technology Policy

- Provide Deputies with a comprehensive analysis of all agencies’ radiation data, modeling and analysis (3/23 0800)
- Offer US Embassy Tokyo and PACOM recommendations on additional guidance to AMCIT in light of higher radioactivity levels found in Tokyo’s tap water (3/23 0800)
- Provide Deputies with all germane US Public Action Guidelines (PAGs) that currently exist (3/23 0800)
- Coordinate to provide relevant US health and nuclear expertise to DOD and DOS for contingency planning (3/21 0930)





# Defense

POC: Crisis Management Team (703) 614-3323



## United States Pacific Command

- USG contact for nuclear industry consortium
- Provide transport for all requested equipment and DOE AMS (3/14 0800)
- Deploy CBRNE Consequence Management Response Force (3/15 0800)



## Naval Reactors

- Provide radiological monitoring data to DOE and OSTP and provide breakdown of I-131 particulate (3/21 0930)

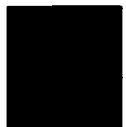




# US Agency for International Development

POC: NRC Watch Desk (202) 712-4384

- Designated principal federal agency for overall response effort
- Complete assessment of humanitarian efforts and needs on the ground (3/14 0800)
- Provide travel arrangements for US civilian nuclear specialists





# Environmental Protection Agency

- Offer US Embassy Tokyo and PACOM recommendations on additional guidance to AMCIT in light of higher radioactivity levels found in Tokyo's tap water (3/23 0800)
- Mobilize fixed and mobile monitoring capabilities that may be used for radiation detection and monitoring within US (3/14 0800)
  - DOE Support







# Health and Human Services



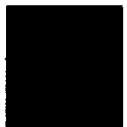
## **Centers for Disease Control and Prevention**

- Work with NSS, FEMA to develop proposal on how much pediatric and tablet KI the US could provide Japan, if asked, as well as replenishment plan (3/23 0800)



## **Food and Drug Administration**

- Offer US Embassy Tokyo and PACOM recommendations on additional guidance to AMCIT in light of higher radioactivity levels found in Tokyo's tap water (3/23 0800)





# Homeland Security



## **Federal Emergency Management Agency**

- Work with HHS, CDC to develop proposal on how much pediatric and tablet KI the US could provide Japan, if asked, as well as replenishment plan (3/23 0800)



## **United States Coast Guard**

- Issued a Notice to Mariners on 18 March recommending vessels avoid transiting within 50 miles (80 km) of the Fukushima Daiichi Nuclear Power Plant

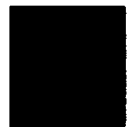




# Energy

POC: Operations Center (202) 586-8100

- Provide Aerial Measurement System capabilities for plume migration data collection and analysis
- Provide the USG lead to consolidate information flow to and from US and Japanese nuclear experts (3/12 1100)
- Provide detailed list of expertise & supplies that may be needed & specify support required to operate (3/14 0800)
  - NRC support
- Maintain and circulate the bounding case scenario model (3/21 0800)
  - NRC, OSTP, CDC, HHS , DOS, DOD support





# State

POC: Task Force 1 (202) 647-6611



## **US Embassy Japan**

- USG focal point to convey available US resources to Japanese
- USG focal point to obtain information from GoJ





# Nuclear Regulatory Commission

Operations Center (301) 816-5100

- Develop USG position regarding health & welfare of US citizens in light of nuclear accident AND how would US nuclear plants handle similar natural disasters (3/12 1100)
- Provide assessment of implications of core meltdown (3/14 0800)
- Develop plume model scenarios and share within federal family (3/14 0800)



# US Nuclear Industry Consortium



## UNITED STATES FEDERAL GOVERNMENT SUPPORT



U.S. Ambassador  
to Japan



### Disaster Assistance Response Team



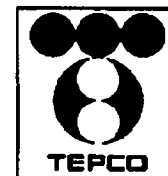
NRC Site Team  
Japan

NRC HQ  
Operations Center

#### Executive Team

- Reactor Safety Team
- Protective Measures Team
- Liaison Team

## GOVERNMENT OF JAPAN RESPONSE



NISA Nuclear and Industrial Safety Agency

## UNITED STATES Industry Consortium

INPO

EPRI ELECTRIC POWER  
RESEARCH INSTITUTE

HITACHI

AREVA

BECHTEL

### Define Roles & Responsibilities

- Government
- Industry
- Points of Contact

### Equipment Needs

### Engineering Support

## UNITED STATES

### FEDERAL GOVERNMENT SUPPORT



#### Role & Responsibility



#### Role & Responsibility

- Overall Federal Government Coordination



#### Roles & Responsibility

- Technical/Engineering Advisor (RST, PMT)
- NRC Site Team Support
- Logistics Support



#### Role & Responsibility

- Logistics Support
- Equipment
- Dose Assessment



#### Role & Responsibility

- Logistics Support
- Equipment

### INDUSTRY SUPPORT



#### Role & Responsibility

- Overall Industry Coordination
- Engineering Support
- Equipment



#### Role & Responsibility

- Engineering Support



#### Roles & Responsibility

- Engineering Support
- Equipment



#### Role & Responsibility

- Engineering Support
- Equipment



#### Role & Responsibility

- Engineering Support
- Equipment



**Quayle, Lisa**

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**From:** Casto, Chuck  
**Sent:** Saturday, April 02, 2011 10:21 PM  
**To:** 'Wall, Marc M'; Monninger, John; Cipullo, Timothy L; Collins, Elmo  
**Cc:** Howard, E. Bruce; Cipullo, Timothy L; Zumwalt, James P  
**Subject:** RE: MOFA meeting

Either Elmo, Chuck or John will attend.....

---

**From:** Wall, Marc M [<mailto:WallMM@state.gov>]  
**Sent:** Sunday, April 03, 2011 12:03 PM  
**To:** Casto, Chuck; Monninger, John; Cipullo, Timothy L  
**Cc:** Howard, E. Bruce; Cipullo, Timothy L; Zumwalt, James P  
**Subject:** MOFA meeting

MOFA Director General Miyagawa has asked to meet with someone from the NRC team to discuss how we assess the state of our collaboration now with the GOJ. Miyagawa is head of MOFA's Disarmament, Non-Proliferation, and Science Department. He has been attending the evening meetings at the cabinet and raised the issue of reimbursement at our last session.

He has proposed meeting with us Monday afternoon, anytime except between 2:30 pm and 3 pm. I and perhaps someone else from my office would like to join you.

Will a NRC representative be available?

Marc

This email is UNCLASSIFIED.

BA/93

**From:** RMTPACTSU\_ELNRC  
**To:** LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; LIA12 Hoc; Harrington, Holly; McIntyre, David; Burnell, Scott; ET07 Hoc  
**Subject:** FW: ECHO Civ Protection Phasing Out Japan Ops  
**Date:** Thursday, April 07, 2011 2:16:42 PM  
**Attachments:** Letter phasing out - Japan (2).doc

---

**From:** Brown, Patterson W [mailto:BrownPW@state.gov]  
**Sent:** Thursday, April 07, 2011 7:29 AM  
**To:** Bartolini, Mark (DCHA/OFDA) [USAID]; Chan, Carol(DCHA/OFDA) [USAID]; OD\_Expanded [USAID]; RMT\_PACTSU; RMTPACTSU\_DMP; RMTPACTSU\_INC; RMTPACTSU\_PC; RMTPACTSU\_RM  
**Subject:** ECHO Civ Protection Phasing Out Japan Ops

All,

ECHO's civil protection unit is phasing out its Japan support. ECHO HA will continue from their latest €10 allocation.

Happy to answer questions.

Best,  
Patterson

**Patterson W. Brown**  
USAID Humanitarian Assistance and Food Security Advisor  
U.S. Mission to the European Union  
+32 (0)2 811-5512

This email is UNCLASSIFIED.

BA/94



## **EUROPEAN COMMISSION**

**DIRECTORATE-GENERAL FOR HUMANITARIAN AID and CIVIL PROTECTION - ECHO**

**DIRECTOR GENERAL**

Brussels,  
DG ECHO (2011)  
ARES Reg Nr:  
ARES Save Nr: 426411

H.E. Nobutake Odano  
Ambassador  
The Mission of Japan to the European Union  
5-6 Square de Meeus  
1000 Brussels  
Belgium

Your Excellency,

Let me express my deepest admiration for the immediate and efficient response of the Japanese Government and its people to the terrible tragedy that struck your country on 11 March. We are thoroughly impressed with the speed and effectiveness of the emergency response and recovery that Japan demonstrated in the aftermath of this disaster.

I am also very pleased to reconfirm the EU's engagement and reassure you of our full commitment to provide the assistance needed to Japan. As far as the in-kind assistance provided is concerned, we are glad to inform you, that a significant amount of assistance has already been channelled through the EU Civil Protection Mechanism to the Fukushima, Ibaraki, Miyagi, Tochigi and Yamagata Prefectures. Denmark, Finland, France, Hungary, Lithuania, the Netherlands, Slovakia, Sweden and the UK provided nearly 400 tons of in-kind assistance, consisting of food, tents, blankets, sleeping bags and mattresses, shoes, gloves, boots, bottled water, medical equipment and dose rate devices. In addition, a team of 16 civil protection experts has been deployed to Japan in order to facilitate the delivery of this assistance and relieve the Japanese government as much as possible of the administrative and technical burdens related to the logistics of this operation.

As of this stage, according to our information on the situation on the ground, the vast majority of key infrastructure (highways, ports and airports) has been restored, and electricity, gas and water supply are being restored as well. Also, an efficient emergency water supply system to provide a water trucking service to the prefectures has been established. Although some emergency needs still remain in the worst affected areas, it is our understanding that Japan is moving quickly from the emergency response to the recovery phase.

Taking into consideration the short-term mandate of the EU Civil Protection Mechanism, which focuses its activities on the very early stages of an emergency, it is our intention now to phase out the civil protection activities in the coming days and to continue our engagement for Japan through a change of focus from civil protection in-kind assistance to a financial contribution to the efforts of our partners in the Red Cross family.

This approach is reflected in the DG ECHO funding decision of 1 April, which provides a contribution of € 10 million to assist more than 30,000 persons in the most affected areas through support to the Red Cross for the coming 6 months.

Let me assure you that the scaling down of the civil protection in-kind assistance channelled to Japan via the EU Civil Protection Mechanism does not mean that we consider the emergency over. The Mechanism will continue monitoring the situation and will maintain its contacts with the relevant Japanese authorities.

Should a need for further specific in-kind assistance arise, the Mechanism remains available and stands ready to assist again. Let me once again thank you for our excellent cooperation, and assure you of our most sincere solidarity with the Japanese people at this difficult time.

Yours sincerely,

Peter ZANGL

---

**From:** LIA08 Hoc  
**Sent:** Tuesday, April 12, 2011 9:10 PM  
**To:** Liaison Japan; Carpenter, Cynthia; RST01 Hoc; Hoc, PMT12; OST01 HOC; Al Hochevar; Alice Caponiti; Blamey, Alan; Blount, Tom; Boger, Bruce; Casto, Chuck; Christensen, Harold; Craig Gaddis; DORLCAL Resource; Dorman, Dan; DprNrrCal Resource; Emche, Danielle; ET05 Hoc; ET07 Hoc; FOIA Response.hoc Resource; Giitter, Joseph; Glenn Southern; HOO Hoc; INPO; INPO; INPO; INPO; INPO; INPO; INPO; LIA01 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; McDermott, Brian; McGinty, Tim; Miller, Chris; Monninger, John; Morris, Scott; NRC Liaison at USAID; OST02 HOC; PACOM Watch Officer; Pentagon Japan Crisis Team J-4 Desk; Peter Lyons; Hoc, PMT12; Rick Nielsen; Robert Gambone; Robert Mercer; Ross-Lee, MaryJane; RST01 Hoc; RST01B Hoc; Sal Golub; Sal Golub; Steve Aoki; Tom Vavoso; Virgilio, Martin; Weber, Michael; Wiggins, Jim; William Webster; Zimmerman, Roy  
**Subject:** daily updates to the US-Japan Nuclear-Related Assistance Tracker  
**Attachments:** Copy of Nuclear Team Asks and Offers Tracker 04-13-2011.xlsx

Attached is the updated Tracker based on the 20:00 EDT, April 12, 2011 consortium Call.

Joe Rivers  
LT Coordinator

BA/95

US-Japan Nuclear-Related Assistance Tracker

Equipment/Supplies/Services Requested by GOJ													
Emb No.	NRC No.	Equipment/Service Being Requested	Priority (Hi Med Lo)	Date of request	Requesting GOJ Office	GOJ Action Office & POC	USG Action Office & POC	Target Date	Training Needed?	Cost / Reimbursement	Status of Response	Open/ Closed	Comments (for USG use)
High Priority Requests													
21		Devices for condensing radiation contaminated water & Information on evaporation technology	Hi	3/29 draft list	NISA		DOE Cherry, Duncan; DOD: Adm. Gregory				Expanded request: On March 28 DCCS Fukuyama asked for information on measures to remove contaminated water.	O	4/9: Items 21-21i: No new information. GoJ needs to provide more information based on Alan Blamey's email request.
21a	30, 31 & 32	Assistance in dealing with accumulated radioactive water in turbine buildings	Hi	3/27 meeting	NISA		DOE Cherry, Duncan; NRC				DOE paper provided to Amb. Roos and Amb Fujisaki on 3/29/11. Management of cont. water.	O	
21b	30 & 31	Water storage tanks (6) and a trailer (1) for contaminated water at IF	Hi	4/01, NISA-DOE mtg	NISA, TEPCO	NISA - Oshima; TEPCO - Umino	DOE Cherry, Duncan		No		TEPCO will pay shipping costs, requests estimate for sea & air shipment. DOE to provide these. NEXT STEPS: DOE/State Embassy Team and NISA/TEPCO had a telecon this morning to discuss options. DOE and SRS evaluating both "by sea" and "by air" freight options. Also, if urgent, but GOJ cannot pay, we will consider DoD Airlift.	O	GoJ sourcing other donors, cost to ship by air is \$1.3M. DOE personnel on the call (Ron Cherry/Alice) will follow-up about cost estimates.
21c	32	Information on "evaporation technologies"	Hi	3/28 - DCCS Fukuyama	NISA		DOE Cherry, Duncan				DOE in the process of determining appropriate contacts for sources of technology. Additional info from GOJ may be needed.		
21e	13	Direct request from GOJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.	Hi		NISA		DOE Cherry, Duncan				DOE considering Basic Ordering Agreement. GOJ wants to know if there will be a consultation fee. DOE needs to understand scope of work to estimate cost.	O	NEXT STEPS: DOE- Duncan to follow up with NISA to learn potential scope of work.
21f		Determine whether temporary radwaste processing skids are available or would be a good idea (for removing contaminated water)	Hi		NISA		INPO					O	Private to Private transfer. Close after passing to TEPCO.

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21g	30	Temporary holding tanks (for removing contaminated water)	Hi		NISA	DOE; DOD; INPO				Need to hold discussions with GOJ at working level.	O	Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba Team has investigated the use of large storage bladders to be used as temporary contaminated water storage. These bladders can hold up to 189,000 liters per bladder. Bladders can eventually be handled as a relatively small volume of solid waste. Need to develop a single water management team to handle all water issues once decision is made on how to proceed forward. DOE has been contacted by a private company from Nw Jersey.
21h	31	Tanker trucks as a temporary holding area (for removing contaminated water)	Hi		NISA	DOE; DOD; INPO				Need to hold discussions with GOJ at working level.	O	Develop recommendations for removal of water in basements of Units 1,2 and 3 per Task Tracker #3235. The Toshiba team is concerned that the relative capacity of tanker trucks is small and that the trucks will have to remain onsite once contaminated. This option should be reserved for special situations.
21i	32	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	Hi		NISA	DOE					O	Secretary Chu reportedly told this to the Japanese. The Toshiba Team has developed draft plans for water treatment with a focus on fission product removal and minimization of solids waste processing.
4	19	Germanium semiconductor detectors	Hi	3/25 GOJ list	MEXT, NISA, MAFF, TEPCO	MAFF: Y.Yamada MHLW: T.Tokiwa TEPCO: H.Kanehama	DOE Cherry			INPO - US industry does not have spare detectors at this time (3/29). Detectors will be used to test contamination of water and food. MHLW to receive 1 loaned detector. Wants to know the weight (already emailed this question to DOE?). NISA requests at least 1; wants to know how many available. Cabinet Secretariat (CAS) to discuss with MAFF and local governments and provide to USG total number requested. MEXT withdrew request for 3 detectors because they lack shielding. Training expense is free of charge (4/1). DOE delivered 2 detectors on 4/05/11. 4 more detectors from Naval Research Labs scheduled to arrive at Yokota on 4/11.	O	DOE - may offer TEPCO 2 units and discuss about not to return the instruments. NEXT STEPS: DOE - Cherry will add POCs for USG. Send to DartDOELiaison1@ofda.gov and request update. DOE has loaned 2 detectors on 4/06/11. 4 additional detector were shipped from Naval Research Laboratory (NRL) and will be received in Yokota AB on April 11. Fedex tracking # 9178 16713088 and # 9178 16713099. 4/9: breaking this down into each requestor; next version will have each of the ministries listed; due to be tested and calibrated. Per PACOM J4, required liquid N2 is available at Yokota AB.
4a	19	HPGe for NIPH			National Inst. Of Public Health	Koji KOSAKA	DOE Cherry	Yes	none to GOJ	NIPH has requested 1 HPGe to test drinking water samples. DOE has agreed to this request and is currently working on the logistics and timing for delivery.	O	DOE has earmarked 1 of the HPGe's that has been tested to fulfill this requirement. DOE is working with NIPH to confirm delivery details.
4b	19	HPGe for MHLW			MHLW Food Safety Dept.	Makoto Kanie	DOE Cherry	Yes	none to GOJ	MHLW has requested at least 1 HPGe for their Food Safety Dept. to test food samples.	O	DOE is working to determine the priority of this request before agreeing to it.

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4c	19	HPGe for MAFF		MAFF	Yukiko YAMADA	DOE Cherry	Yes	none to GOJ	MAFF has requested 2 HPGe's to test agricultural samples from potentially affected areas. DOE has agreed to this request and is currently working on the logistics and timing for delivery.	O	DOE is currently working with MAFF to determine whether to loan 1 of the HPGe's that are currently available, or whether it would be better to wait and deliver a matching pair once they have been tested.
4d	19	HPGe for TEPCO		TEPCO	Kosue FUSHIMI	DOE Cherry	Yes		TEPCO has requested 2 HPGe's for use at the Fukushima Dai-ri NPS. TEPCO is requesting that the HPGe's be donated with no expectation of returning the devices due to expected contamination.	O	DOE tentatively agreed to this request but has not yet made a final determination, based on TEPCO's desire to not return the devices. DOE has not yet asked, and TEPCO has not yet indicated, whether TEPCO could be willing to pay for the detectors. DOE is working to determine the priority of this request before asking for potential payment.
13a	34	Request for the following: 2,100 units-Rad Survey Meters, 2,600 units-Personal Dosimetry, 5,100 units-iodine absorbent masks, 33,000 units-iodine absorption cans	HI	NISA, MOD		DART			DART shipped 2,000 dosimeters; will see what it can do further. GOJ is considering allowing residents in the 20km evacuation zone return to their homes to collect belongings. Will need a large number of dosimeters. NISA requests USG inform GOJ how many we can provide. MOFA to provide info on number procured from other donor nations.	O	List provided to Alan Blamey and Al Hochevar for cabinet meeting 4/2/11. Japan still requesting as many dosimeters as possible. Donor's meeting set for 4/11 or 4/12 will give more information on total # needed and coordination of efforts. Received approval for locating fixed monitoring devices.
		Other Open Requests									
2a	22	loaning ground radiation monitoring devices, mobile and stationary (incl radiation friskers -20 hand /foot/cloth monitors)	3/25 GOJ list	MEXT, NSC, NISA, MOFA, TEPCO	JAEA: M.Kanamori	DOE Cherry			Mobile ground monitoring began 3/17. Discussions ongoing re fixed ground-based monitors. Need GOJ approval to proceed; MOFA is coordinating. Need to determine locations for fixed monitoring stations.	O	Mobile monitoring is closed. Stationary monitoring is the open item. This was a GoJ request and the idea is to possibly install a system such as the EPA Radnet system. DOE currently has operating air samplers on the roof of the US Embassy, at the consequence Management Team HQ in Yokota AB, and occasional field deployments. DOE is working to install 8 "infield" radiation detection backpacks in "unattended mode" ringing Fukushima NPP from 10 to 30 miles within small police stations (Koban). MEXT has approved the DOE request, and awaiting Japanese National Police Agency (NPA) approval. NPA approval obtained 4/8. Read to ship via air early next week.



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2b		(Incl radiation friskers --hand /foot monitors)	3/28 Cab mtng	MEXT, NSC, NISA, MOFA	JAEA: M.Kanamori TEPCO: H.Kanehara	NRC Blamey; INPO			Elaborates on request above - 20 hand/foot detectors from Bruce Co., STP, San Onofre Determined to send. Discussing of shipping expense (4/5). The Bruce Power Station in Canada has approx. 20 detectors to send to GOJ. They plan to ship 20 by sea (25 days) or allow the GOJ to pay for air shipment, in which case the detectors can reach the GOJ much sooner.	O	(Commercial to TEPCO) This activity is awaiting authorization of commercial transport for Bruce monitors. (U.S. Embassy to advise). INPO to query utility-arranged transport of SONGS and STP equipment. Process of approving transportation needs to be solidified Shipping payments are being investigated as to who will pay for shipments. STP has 1 parcel that is internally contaminated that may be shipped to Bruce Co. to be included in their shipment to Japan. Alan Blamey will attempt to have to moved forward quickly through the DART team. Equipment has no low-level contamination. SONGS and STP items have shipped. Bruce not shipped yet. Wait for information from GOJ as they may want sooner and may pay for it. No change on item; ship by air next week. Mark Scullion (GOC) appears interested in helping to ship. NRC recommends we allow Mr. Scullion time to provide funding for shipping before we discuss with GOJ.	
5	21	Robotic monitoring devices - 1 robot, 3 radiation sensors.5 Radiation hardened cameras & Gamma Camera, plus extra video link for the iRobot	3/25 list, quantity set 3/26	METI, NISA, TEPCO	METI: Hatada	DOE Cherry, Duncan	Shipment o/a 4/6/11	yes-DOE proposed training through QinetiC Japan office	DOE to pay for equipment and experts	O	Scheduled to arrive in Japan 4/8/11. NISA to inform USG whether it wants DOE experts (at no cost). DOE coordinates with NRC, DOD/USFI. U.S. confirmed 3/26 Cabinet meeting can provide QinetiC Talon, M2, Radiation-hardened cameras. Per 3-31 WG meeting, DOE will also provide additional radiation sensor kits. There may be a 6-week back order on the M2. Property title transfer documents completed. Technical contact for training provided.	DOE is handling Ground robotics and hardened cameras only. UAVs and handhelds are separate. DOE is looking to send 1) Robotics expert and 2) cameras expert. NEXT STEP: DOE - check if GOJ needs technical experts. FEDEX Tracking Number (PRO) is 54501824. DOE is awaiting a decision from GOJ this evening. 4/9: equipment expected to arrive imminently. Shipment due at AIST on 4/9. NEXT STEP: schedule technical training.
5a		Information on Radiation shielding materials for vehicles.	3/26 cabinet meeting; 3/29 list	METI, NISA					NRC provided information on tungsten materials; METI still wants advice on shielding for heavy equipment.	O	Japan provided additional information on 8 April to DOE HQ. Shielding info received and forwarded to DOE HQ.	
5b		Radiation-hardened cameras & Gamma Camera	3/26 cabinet meeting	METI, NISA		DOE	4/6/2011 shipment expected		US confirmed at 3/26 cabinet meeting that it can provide camera and system for mapping gamma rays. DOE to send five cameras and one gamma camera.	O	Tied to item #5 - this equipment is with the robots.	
18	27	Potassium Iodide (KI) preparation 1 million 17-dose bottles	3/25 list	NISA, MHLW, MOFA		HHS Dr. Colemanto provide; USAID to transport; Embassy Gabor			MOFA said 3/30 it would accept the 1 million bottles (17 doses each) of liquid KI offered; requested via note verbale to DOS in D.C. (3/30); USG to share grant document text with GOJ before shipping.	O	Industry had tablets available, but HHS had liquid tablets that they were to provide. A. Blamey to verify with GOJ. May be caught up in logistics. Coming from USAID and CDC. Currently tied up within GOJ legal.	

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24		Medical triage re: exposure to radiation (decontamination capability)	3/25 list	MHLW, NSC, NISA, MEXT, MOD-Col. Towne	DOD; DOE; USAID; NIH Coleman				MOD Initially identified as principal action ministry along with MHLW, subsequently changed 3/29. Chem Bio Initial Response Force (CBIRF) provided for this purpose.	O	4/9: Need to clarify with USAID re: CBIRF support.
25	28	INFO: Extinguishant/coolant	3/25 list	NISA					Request further info from GOJ. We need more information on the specific needs of the GOJ.	O	A. Blamey to Verify with GOJ what is exactly needed in this request
27		U.S. cooperation in bringing private sector engineers into Shielding WG	3/26 meeting - Nagashima	NISA	NRC				Not Included on draft 3/29 request list	O	Items 27, 29 and 29b are interrelated. 4/9: Action for Alan Blamey to coordinate with INPO and determine what is meant by shielding.
29		Assessment of structural stability of spent fuel pools	3/27 - Nagashima ; 3/28 - Fukuyama	NISA	NRC reactor Safety Team				In preparation for decisions on shielding. NRC completed assessment of current spent fuel pool weight. Further analysis needed.	O	Need GOJ input
29b	33	Japan asked for NRC expertise on temporary shielding options, to determine whether the NPP Plant buildings are strong enough to hold up under additional pressure		NISA	NRC				From Cabinet Office Crisis Mgt. Team Meeting notes 3-28-2011. We would like further details into the specific items the GOJ is requesting.	O	NRC has completed a gross analysis and does not have sufficient information to perform a detailed analysis for shielding. From Cabinet Office Crisis Management Team Meeting notes, 3/28/11. A. Blamey to discuss further with Japan
32	111	GEH is following up on the Nitrogen purge issue analysis		NISA, TEPCO					GE is following	O	NRC Japan to confirm with GE. 4/9: NRC has analysis for review.
33		Clarify for RST the indications that can be used to assess RPV integrity and location of core. (RST request)		NISA	NRC				ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/9: Ongoing
34		List alternative flowpaths that can be used for purging, given accessibility challenges. (RST request)		NISA	NRC				GE to provide 3/29 list, INPO providing technical review	O	INPO to confirm this was provided. 4/9: NRC RST reviewing.
35		Confirm RST recommendation that RPV injection can be maximized once containment has been purged and vented (RST)		NISA	NRC				Technical: Ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/9: Ongoing
Closed Requests											

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1	16	Aerial survey for AMS measurement, data sharing and analysis	3/25 GOJ list	MEXT, NSC, NISA, MAFF	MEXT: N. Akasaka	DOE Cherry, Duncan	N/A		DOE coordinates with MEXT, NSC, NISA, MOFF, MOFA. Daily sharing of AMS data and products. Per 4/4 meeting with GOJ, agreement on joint aerial surveys 4/6-4/12. Joint Staff is sharing U.S. aerial survey info USFJ-Yokota.	C	NRC's PMT provided this info to the white house (NITOPS). The feedback was that NITOPS won't task NARAC to run analysis until approval is received from the White House
3	18	Conduct simulation by radiation diffusion model (compare with SPEEDI data)		NSC, MEXT		DOE Cherry, Duncan			DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ has provided SPEEDI source term to NRC 3/25 and meteorological data with NARAC.	C	DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ discussed with NARAC on an idea to estimate the source term from monitoring data. GOJ provided information on meteorological data which is open to public.
5c		Westinghouse working on the UAV request and coordinating with Texas A&M expert		TEPCO					Westinghouse working with Texas A&M University expert.	C	
5d		GOJ request for shielding		INPO					This has been closed out. (Confirm how and by whom?)	C	
6	21a	Robotic debris clearing machines	3/25 list, quantity set 3/26	MEXT, NISA		DOE Cherry, Duncan	N/A	N/A	DOE coordinates with NRC, DOD/USFJ. Japan dropped request for equipment 3/28. An options paper to mitigate contaminated water was provided to Embassy on 4/7/11.	C	Based on discussions with Embassy, the K-MAX helicopter is not needed, however Per NNSA (Jay Tilden) a whole range of remote heavy equipment will likely be needed. This is an open item being discussed by the Remote Control Project Team.
7	22	Provision of data obtained from UAVs	3/25 list	MOD, MOFA		DOD			GOJ is receiving Global Hawk Images	C	Follow up action with Japan. Handled separately from Ground robotics and hardened cameras NISA will hold a meeting to discuss and determine needs for vaugue items on the lists.
8	23	Unmanned helicopter - GOJ is looking for helicopter to spray nondispersant.	3/25 list	MOD, NISA, MOFA		OOD DAO			4 T-Hawks on-site. MOD looking into DOD options (KS); repeated by Mr. Nagashima on 3/27 as unmanned helicopter with camera. NRC agreed 3/27 to follow using specs provided by Japan; NISA promised documents stating Japan's needs. MOD is not interested in KMAX.	C	PACOM indicated no longer needed and taken off the table.
9	24	Transportation of fresh water by barges and delivery of pumps	3/25 list	MOD, NISA		POL-MIL, DAO		PACOM paid \$3m for h9, 9b, 10, 11.	Provided. Arrangement made for three vendor support representatives to stay and train. Per J4 the barges have been outfitted and tested and are 10 hrs from the NPP site and should arrive Weds. Need STA Barges are in Fukushima and pumping.	C	There is one train that is installed. There is no need for further trains. DOD has the appropriate guidance. Alan Blamey will work with Japanese embassy officials to re-validate the need for this asset. R. Neilson says that second train is in Australia. A. Blamey to determine from Embassy if still needed and to share with R. Neilson so that Bechtel and can be advised
9a	24	Water barges		MOD, NISA		J4, PACOM		PACOM gave to GOJ. (Need to confirm.)		C	

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9b	24	Fresh water supply pumps from Bechtel			NISA				PACOM paid \$3m for #9, 9b, 10, 11.	First train in Japan	C	
10	3	High quality pumps and hoses.		3/26 meeting and previous discussion	TEPCO		NRC		PACOM paid \$3m for #9, 9b, 10, 11.	CLOSED: NRC rec'd info 3/26 on possible hose and said would investigate further; request withdrawn at 3/29 Cab meeting.	C	
11	3	High pressure hose (3 x 500 m) and couplers (for cooling reactor)		3/25 list and previous discussion	NISA		NRC; OOD		PACOM paid \$3m for #9, 9b, 10, 11.	Hose delivered as part of Australia/Bechtel equipment; in J-Village.	C	
12		Protective body armor	HI	3/25 list	NISA - Sakuna, MOD	NISA, MOD	NRC - Blamey			INPO provided info on commercial sources. Body Armor Closed.	IC	
19	29	Bottled water for infant formula		3/25 list	MHLW		USAID/OFDA	4/01 - 4/02		USAID and USFJ responded with initial stocks; paperwork underway at USAID/State for possible delivery April 1-2. Confirmed delivery to Tokyo Met. Gov. warehouse.	C	On the Embassy list for tracking
20		Heat exchanger to be used in spent fuel pool.	HI	3/27 Nagashima; 3/29 list	NISA		NRC; INPO (Al Hochevar, 678-451-3017 (cell))			TEPCO is trying to get a system design. Placed a design order with Toshiba. INPO can provide info for free. TEPCO may pursue commercial procurement of heat exchanger.	C	NEXT STEPS: Check if Shaw has a commercial contract to do work on this. Closed - TEPCO has contract and is pursuing purchase.
21d	108	Obtain contact info for industry personnel with experience in handling and disposal of open pools/trenches of high dose rate(>100 R/hr) water. Rcvd Mar 29 from Al Hochevar from Hososn	HI		NISA					Contacts developed and provided through INPO - Al Hochevar	C	
23		INFO: Technical support on radiation technology, nuclear technology, and health effects		3/25 list	MHLW CAS NSC NISA MEXT MOD		Dr. Coleman (NIH via HHS); USAID					
23a		Information on KI and drinking water									C	
23b		Health cooperation in three areas: environmental monitoring; KI policy; risk communication			CAS	Dr. Akashi	USAID, State, NIH Coleman, CDC, USDA, DOD			Both sides agreed to the recommendations in these three areas.	IC	

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26		Incorporate PNNL into crisis mgmt dialogue/Spent Fuel WG		3/26, 3/28 - DCCS Fukuyama	NISA		DOE Cherry; NRC				PNNL team in Tokyo and providing support.	O	PNNL team in Tokyo and providing support.
28		Assessment of possible fuel damage in units 1, 2, 3		3/27 - Hosono	NISA		NRC				NRC provided brief response at meeting.	C	
29a	107	Information on shielding for individual rooms and for the facility in general			NISA						Provided to GOJ through INPO-AI Hochevar.	C	
30	106	Information on tools/methods for moving damaged fuel, plus contacts of those with experience at TMI-2 and Chernobyl. From Mr. Hosono.			NISA		Hosono's Office				Provided to GOJ through INPO-AI Hochevar on 3/30.	C	
31	110	SAMG Technical Document			TEPCO						Guidance has been sent to INPO contact in Japan and is being updated. Includes injection rate and best assessment to plant conditions; TEPCO confirmed receiving info at 4/7 meeting with INPO.	C	TEPCO received.
36	118	Requests for military air transport			MOD		IA, PACOM				PACOM is involved in review and approval of all requests for military airlift to Japan. Requests should include weight and dimensions of the cargo. 1st choice should be commercial carrier for timely delivery; should limit requests to materiel that is difficult for commercial carriers to deliver.	C	

U.S. Offers (including Commercial to Commercial)						
	date offered	USG agency	Embassy office responsible	status		
balloons for unmanned radiation measurement	3/26/2011	NOAA	ECON	Japan accepted in principle; Japan to identify appropriate ministry		
200-300 pieces of radiation measurement equipment		INPO through NRC		3/26 Japan said it would take all equipment offered		
provide info on options for spent fuel transfer	3/26/2011	NRC				
U.S. expert on radiological tolerance of food to travel to Japan for consultations with FCS	3/26/2011	FDA	FAS	DCCS Fukuyama asked that FDA and FSC communicate directly		
Canadian power plant to provide equipment for hand/foot monitoring	3/27/2011	INPO				
information on contamination control	3/28/2011					
Chem Bio Initial Response Force (CBIRF)		DOD	USFJ?	Currently, CBIRF team is at Yokota Air Base, conducting training with S		

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**From:** LIA08 Hoc  
**Sent:** Thursday, April 21, 2011 12:01 PM  
**To:** Hoc, PMT12; RST01 Hoc; OST01 HOC; Zimmerman, Roy  
**Subject:** Latest update to the Nuclear Assistance Tracker matrix - 4/21  
**Attachments:** Nuclear Team Asks and Offers Tracker 04-21-2011.xlsx  
  
**Importance:** High

FYI. Tim talks below about a Thursday evening (NRC)/Friday morning (Japan) Consortium call - I had this call down as now occurring Monday and Wednesday evenings EDT, only. I have asked Tim to clarify.

Clyde  
Liaison Team Coordinator  
US Nuclear Regulatory Commission  
email: [lia08.hoc@nrc.gov](mailto:lia08.hoc@nrc.gov)  
Desk Ph: 301-816-5185

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**From:** Cipullo, Timothy L [<mailto:CipulloTL@state.gov>]  
**Sent:** Thursday, April 21, 2011 5:49 AM  
**To:** Aaron Leong; Abbot, Charles Spencer (TDY/DAO); Awan, Riaz X (Sofia - DOE); Basalla, Suzanne I; Berger, William (RDMA/OFDA); Boger, Bruce; Cherry, Ronald C; Damian Peko; DART DOE Liaison; Norwood, Donald; Duncan, Aleshia D; Gabor, Robert R; Tracy, Glenn; Helen Peterson; Howard, E. Bruce; James McKenna; Jay Tilden; Joint Support Force; LIA08 Hoc; Rick Nielsen; Garchow, Steve; Tokyo, BACC; Wall, Marc M  
**Cc:** Wall, Marc M; Howard, E. Bruce; Gabor, Robert R; Abbot, Charles Spencer (TDY/DAO); Alapp  
**Subject:** latest update to the Nuclear Assistance Tracker matrix - 4/21  
**Importance:** High

Attached is the latest version of the Nuclear Assistance Tracker matrix. It includes feedback from the GOJ from the 4/20 Working Group meeting, plus updates from DOE. We will use this for the Thursday/Friday Consortium call.

Regards,

Tim

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This email is UNCLASSIFIED.

BA/96



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Equipment/Supplies/Services Requested by GOJ										
Emb No.	Equipment/Service Being Requested	Priority (Hi Med Lo)	Date of request	Requesting GOJ Office	GOJ Action Office & POC	USG Action Office & POC	Training Needed?	Cost / Reimbursement	Status of Response	Open/ Closed Comments (for USG use)
	<b>High Priority Requests - Equipment &amp; Supplies</b>									Consortium Call info: Tuesday & Friday 0800 JST/1900 EDT (301) 816-5120, passcode: 1234, alternate number 800-772-3842, passcode: 1234
4a	HPGe for MHLW	Hi		MHLW Food Safety Dept.	T. Tokiwa tokiwa-takeshi@mhlw.go.jp 03-3595-2368	DOE Cherry	Yes	none to GOJ	MHLW has requested up to 4 HPGe's detectors for drinking water analysis. DOE has identified 4 HPGe detectors that should satisfy the MHLW request. DOE is the National Institute of Public Health (NIH) request for 1 HPGe to test drinking water still active?	DOE is performing testing on detectors, with expected completion on 4/18. If no problems are identified, delivery of the first HPGe may be as soon as 4/20. DOE has completed testing of 4 HPGe detectors. One requires additional work before it is ready for delivery. Training is being completed for these HPGe detectors. DOE expects to deliver detectors to Wako City the week of 4/25
4b	High Purity Germanium Detectors (HPGe) for MAFF	Hi		MAFF	Yukiko YAMADA yukiko_yamada@nm.maff.go.jp 03-3502-8095	DOE Cherry	Yes	none to GOJ	MAFF has requested 2 HPGe's to test agricultural samples from potentially affected areas. DOE has provided "loan documentation" on the policy, including liability for the loaned HPGe's. DOE has provided MAFF with training materials for the detectors. MAFF and DOE agreed to schedule delivery of two detectors the week of 4/18.	DOE finalizing translation of training materials. DOE has completed translation of training materials. Once loan paperwork is updated and completed by DOE, delivery will be scheduled with MAFF, estimated 4/22.
4c	HPGe for TEPCO	Hi		TEPCO	Takenaka takenaka.keisuke@tepcoco.jp 03-6373-4958	DOE Cherry	Yes		TEPCO has requested 2 HPGe's for use at the Fukushima Dai-ni NPS. TEPCO is requesting that the HPGe's be donated with no expectation of returning the devices due to expected contamination. On 4/12 TEPCO asked whether DOE is prioritizing HPGe's to agencies that offered to return them (MHLW, MAFF, NISA). DOE has confirmed that no HPGe detectors have yet been found to meet the TEPCO request.	DOE is looking for surplus detectors for donation to GOJ. As of 4/20, DOE has not identified any surplus HPGe detectors within DOE.

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4d	HPGe for NISA	Hi	NISA	NISA: Y. SAKUMA sakuma-yasuhiro@meti.go.jp 03-3501-1087	DOE Cherry	Yes	none to GOJ	NISA has requested up to 10 HPGe detectors for long-term loan and free of charge. DOE is still working to identify which HPGe detectors satisfy the NISA request. DOE will provide NISA the expected policy on liability in case equipment is damaged while being used.	O	DOE has earmarked 1 of the HPGe detectors that has been tested to fulfill this requirement. DOE is awaiting receipt of software and completion of training materials before scheduling delivery with NISA. DOE is also compiling a list of potential HPGe detectors available for loan within DOE. In the U.S. DOE is working with NIPM to confirm delivery details. Training expense is free of charge (4/1). DOE delivered 2 detectors on 4/05/11. 4 more detectors from Naval Research Labs scheduled to arrive at Yokota on 4/11. DOE loaned 2 detectors on 4/06 (to whom?). Additional detectors were shipped from Naval Research Laboratory (NRL) and will be received in Yokota AB on 4/11. (Please confirm). Per PACOM J4, required liquid N2 is available at Yokota AB.
13a	Request for the following: 2,100 units-Rad Survey Meters, 2,600 units-Personal Dosimetry	Hi	NISA, MOD		DART			DART shipped 2,000 dosimeters; will see what it can do further. GOJ is considering allowing residents in the 20km evacuation zone return to their homes to collect belongings. Will need a large number of dosimeters. NISA will provide the number of Rad survey meters and Personal Dosimeters to be requested. MOFA provided info on number procured from other donor nations on 4/12.	O	List provided to Alan Blamey and Al Hochevar for cabinet meeting 4/2/11. Japan still requesting as many dosimeters as possible. Donor's meeting set for 4/11 or 4/12 will give more information on total # needed and coordination of efforts. Received approval for locating fixed monitoring devices. DART to provide update on dosimeters from Illinois.
13b	Request to know the number of personal dosimeters (in addition to those provided in request 13a) the USG could provide free of charge and pre-calibrated.	Hi	NISA		DART - Bill Berger wberger@usaid.gov, NRC - Steve Garchow Steve.Garchow@nrc.gov			The GOJ revised its evacuation plan on 4/11 and METI will check on # of dosimeters needed. GOJ requests # of GOJ is requesting up to 500 personal dosimeters that if they could be provided free of charge and pre-calibrated.	O	EPA Region 5 informed NRC-CDC liaison on 4/13 that EPA has a large number of electronic personnel radiation dosimeters that are ready to be or have already been sent to Japan. NEXT STEPS: NRC - verify EPA availability. EPA POC: jablonowski.eugene@epa.gov; Naval Reactors - check on possible large stock (approx 50,000 units) of personal dosimeters. POC: James.McKenna@usf.mil Other donor countries provided total of 1,250 radiation survey meters and 58,294 personal dosimeters.
13c	Request to know the number of survey meters (in addition to those provided in request 13a) the USG could provide free of charge and pre-calibrated.	Hi	NISA		DART - Bill Berger wberger@usaid.gov, NRC - Steve Garchow Steve.Garchow@nrc.gov			Survey meters have been broken out from the request for personal dosimeters (13b). METI will inform USG on number of survey meters needed.	O	NRC to follow up on number that may be available at no charge, if any.

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20	Heat exchanger to be used in spent fuel pool.	HI	3/27 Nagashima; 3/29 list	NISA, TEPCO	NISA: Ohshima oshima-toshiyuki@meti.go.jp 03-3501-0621	NRC; INPO (Al Hochevar, 678-451-3017 (cell))	TEPCO is trying to get a system design. Placed a design order with Toshiba. INPO can provide info for free. TEPCO may pursue commercial procurement of heat exchanger. We will close this item once NISA believes it will not need any additional information. At 4/20 meeting, NISA asked to keep this open until it can confirm whether any additional info is needed.	O	NEXT STEPS: Check if Shaw has a commercial contract to do work on this. Shaw is not involved with this. Closed—TEPCO has contract and is pursuing purchase—NEXT STEPS: NRC to resend INPO report to NISA, TEPCO and ask if they have any further information needs.	
21b	Water storage tanks (6) and a trailer (1) for low-level contaminated water at 1F	HI	4/01, NISA-DOE mtg	NISA, TEPCO	NISA - Oshima oshima-toshiyuki@meti.go.jp 03-3501-0621; TEPCO - Umino Akihiro@tepcoco.jp 03-6373-6044	DOE Cherry, Duncan	No	NEXT STEPS: DOE/State Embassy Team and NISA/TEPCO had a telecon this morning to discuss options. DOE and ERS evaluating both "by sea" and "by air" freighting options. Also, if urgent, but GOI cannot pay, we will consider DoD Airlift. TEPCO was investigating sea transport as of 04/12. At 4/14 crisis mgt. working group meeting, GOI reported tanks should be shipped by sea and DOE had agreed to pay shipping cost. DOE provided shipping cost estimates. TEPCO was informed it would need to cover air shipping costs and the USG might cover sea shipping. Need to confirm this with DOE and estimate timing of arrival. At 4/20 WG, NISA and TEPCO confirmed that DOE-funded sea transport (taking 30-45 days) is acceptable. TEPCO will check whether domestic companies exist that can fabricate the tanks in country, and find information on where Japanese companies currently acquire such tanks locally.	O	GOI sourcing other donors, cost to ship by air is \$1.6M. DOE personnel on the call (Ron Cherry/Alice) will follow-up about cost estimates. NEXT Steps: DOE - confirm whether DOE will pay cost of sea freight.
High Priority Requests - Information Requests/Inquiries										
21	Devices for condensing radiation contaminated water & Information on evaporation technology	HI	3/29 draft list	NISA	NISA: OHSHIMA oshima-toshiyuki@meti.go.jp 03-3501-0621	DOE Cherry CherryRC@state.gov, Duncan DuncanAD@state.gov	Expanded request: On March 28 DCCS Fukuyama asked for information on measures to remove contaminated water. DOE sent white paper to Dr. Ohshima on 4/8. NISA to confirm whether Dr. Ohshima has all the information he requested.	O		

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Other Open Requests - Equipment & Supplies									
2a	Measurement by DOE using ground radiation monitoring devices, mobile and stationary	3/25 GOJ list	MEXT, NSC, NISA, MOFA	JAEA: M. Kanamori	DOE Cherry	Mobile ground monitoring began 3/17. Installation of unattended in-field monitoring equipment completed on 4/15. Data sharing will begin when testing has been completed. We can close this item after data sharing procedures are finalized.	O	Mobile monitoring is closed. Stationary monitoring is the open item. This was a GoJ request and the idea is to possibly install a system such as the EPA Radnet system. DOE currently has operating air samplers on the roof of the US Embassy, at the consequence Management Team HQ in Yokota AB, and occasional field deployments. DOE is working to install has installed 8 "infield" radiation detection backpacks in "unattended mode" ringing Fukushima NPP from 20 to 45 km <del>10 to 30 miles</del> within small police stations (Koban). MEXT has approved the DOE request. Once notification process is completed for radiation detection alarms, GOJ and USG officials will be provided access to the real-time data.	
2b	Loaning friskers --hand /foot monitors	3/28 Cab mtng	MEXT, NSC, NISA, MOFA	TEPCO: TAKENAKA takenaka.keisuke@tepcoco.jp 03-6373-4958	NRC Blamey; INPO	20 hand/foot detectors from Bruce Co., STP, San Onofre <del>Determined to send. Discussing of shipping expense (4/5).</del> The Bruce Power Station in Canada has approx. 20 detectors to send to GOJ. <del>They plan to ship 20 by sea (25 days) or allow the GOJ to pay for air shipment, in which case the detectors can reach the GOJ much sooner.</del> Alan Blamey invited TEPCO on 4/12 to talk directly with INPO. <del>GOJ to confirm whether this is a Government-to-Government or a Commercial-to-Commercial transaction.</del> Bruce shipped 2 hand/foot monitors by air. 4/20 - NISA is working with Narita customs to clear 2 detectors. TEPCO still wants the additional 18 detectors and is coordinating sea shipping.	O	authorization of commercial transport for Bruce monitors. (U.S. Embassy to advise). INPO to query utility-arranged transport of SONGS and STP equipment. Process of approving transportation needs to be solidified. Shipping payments are being investigated as to who will pay for shipments. STP has 1 parcel that is internally contaminated that may be shipped to Bruce Co. to be included in their shipment to Japan. Alan Blamey will attempt to have to moved forward quickly through the DART team. Equipment has no low-level contamination. SONGS and STP items have shipped. Bruce not shipped yet. Wait for information from GoJ as they may want sooner and may pay for it. No change on item; ship by air next week. Mark Scullion (GOC) appears interested in helping to ship. NRC recommends we allow Mr. Scullion time to provide funding for shipping before we discuss with GOJ.	

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	Robotic monitoring devices - 1 robot, 3 radiation sensors, 5 Radiation-hardened cameras & Gamma Camera, plus extra video link for the IRobot	3/25 list, quantity set 3/26	METI, NISA, TEPCO	METI: Hatada hatada-hiroyuki@meti.go.jp 03-3501-1512 x 75167; NISA: SAKUMA sakuma-yasuhiro@meti.go.jp 03-3501-1087; TEPCO: YOSHINO	DOE Cherry, Duncan	yes-DOE providing training	DOE to pay for equipment and experts	U.S. confirmed 3/26 Cabinet meeting can provide QinetiQ Talon, M2, Radiation-hardened cameras. Per 3/31 WG meeting, DOE will also provide additional radiation sensor kits. DOE/Idaho National Laboratory (INL) determined M2 cannot be refurbished due to unavailability of unique components. Property title transfers document completed 4/9. Equipment delivered to AIST 4/13. INL team provided training at AIST on 4/14-15. Meeting with METI, TEPCO, and JAEA held 4/16 to determine follow-up training. Further assistance may be necessary in using the robots on-site. Training by INL provided training to TEPCO and JAEA at Hitachi Naka. INL experts to remain on standby during training in Onahama through 4/23. We will close this once NISA and TEPCO feel there is no longer a need for further assistance.	O	DOE is handling Ground robotics and hardened cameras only. UAVs and handhelds are separate. At 4/14 Crisis Mgt. Working Group Meeting, it was agreed to keep item open while training and other follow-up support is ongoing.
18	Potassium Iodide (KI) preparation 1 million 17-dose bottles	3/25 list	NISA, MHLW, MOFA		HHS Dr. Colemanto provide; USAID to transport; Embassy Gabor			MOFA said 3/30 it would accept the 1 million bottles (17 doses each) of liquid KI offered; requested via note verbale to DOS in D.C. (3/30); USG to share grant document text with GOJ before shipping.	O	Industry had tablets available, but HHS had liquid tablets that they were to provide. A. Blamey to verify with GOJ. May be caught up in logistics. Coming from USAID and CDC. Currently tied up within GoJ legal.
24	Medical triage re: exposure to radiation (decontamination capability)	3/25 list	MHLW, NSC, NISA, MEXT, MOD-Col. Towne		DOD; DOE; USAID; NIH Coleman			MOD initially identified as principal action ministry along with MHLW, subsequently changed 3/29. Chem Bio Initial Response Force (CBIRF) provided for this purpose.	O	4/9: Need to clarify with USAID re: CBIRF support. CBIRF exercises planned with JSDF through 4/22.
<b>Other Open Requests - Information Requests/Inquiries</b>										
33	Clarify for RST the indications that can be used to assess RPV integrity and location of core. (RST request)		NISA		NRC			ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/9: Ongoing NRC to prepare list of what we have available.
34	List alternative flowpaths that can be used for purging, given accessibility challenges. (RST request)		NISA		NRC			GE to provide 3/29 list, INPO providing technical review. NISA will confirm whether any additional info is needed by 4/22.	O	INPO to confirm this was provided. 4/9: NRC RST reviewing.

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35	Confirm RST recommendation that RPV injection can be maximized once containment has been purged and vented (RST)		NISA	NRC		Technical: Ongoing project, comments that shift focus are received during 1100 status call 3/29	O	4/19: Ongoing
<b>Closed Requests</b>								
1	Aerial survey for AMS measurement, data sharing and analysis	3/25 GOJ list	MEXT, NSC, NISA, MAFF	MEXT: N.Akasaka	DOE Cherry, Duncan	DOE coordinates with MEXT, NSC, NISA, MOFF, MOFA. Daily sharing of AMS data and products. Per 4/4 meeting with GOJ, agreement on joint aerial surveys 4/6-4/12. Joint Staff is sharing U.S. aerial survey info USFJ-Yokota.	C	NRC's PMT provided this info to the white house (NITOP5) The feedback was that NITOP5 won't task NARAC to run analysis until approval is received from the White House
2c	Loaning mobile radiation monitors	3/25 GOJ list	MEXT	IAEA (MEXT): N. KANAMORI neat-102@neat.gr.jp 029-264-2681	INPO: Hochevar	no cost - donated	C	Six sets of Teletectors from San Onofre and several kinds of detectors from South Texas Project/INPO arrived at NEAT/IAEA on 4/8/11. We thought this was redundant with 2b, but it was a separate request and is now fulfilled.
3	Conduct simulation by radiation diffusion model (compare with SPEEDI data)		NSC, MEXT		DOE Cherry, Duncan	DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ has provided SPEEDI source term to NRC 3/25 and meteorological data with NARAC.	C	DOE coordinates with NSC. NSC is the leading POC with the GOJ. GOJ discussed with NARAC on an idea to estimate the source term from monitoring data. GOJ provided information on meteorological data which is open to public.
5a	Information on Radiation shielding materials for vehicles.	3/26 cabinet meeting; 3/29 list	METI, NISA		DOE Cherry	NRC provided information on tungsten materials. DOE provided response to TEPCO questionnaire on 4/12. GOJ to confirm this is closed.	C	Japan provided additional information on 8 April to DOE HQ. Preliminary response from DOE received 4/8. Forwarded to METI. GOJ proposed to close action at 4/14 WG meeting.
5c	Westinghouse working on the UAV request and coordinating with Texas A&M expert		TEPCO			Westinghouse working with Texas A&M University expert.	C	
5d	GOJ request for shielding		INPO			This has been closed out. (Confirm how and by whom?)	C	
6	Robotic debris clearing machines	3/25 list, quantity set 3/26	METI, NISA		DOE Cherry, Duncan	N/A	C	DOE coordinates with NRC, DOD/USFJ. Japan dropped request for equipment 3/28. An options paper to mitigate contaminated water was provided to Embassy on 4/7/11. Based on discussions with Embassy, the K-MAX helicopter is not needed, however Per NNSA (Jay Tilden) a whole range of remote heavy equipment will likely be needed. This is an open item being discussed by the Remote Control Project Team.
7	Provision of data obtained from UAVs	3/25 list	MOD, MOFA		DOD	GOJ is receiving Global Hawk images	C	Follow up action with Japan. Handled separately from Ground robotics and hardened cameras NISA will hold a meeting to discuss and determine needs for vauge items on the lists.

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8	Unmanned helicopter - GOJ is looking for helicopter to spray nondispersant.		3/25 list	MOD, NISA, MOFA		DOD DAO	4 T-Hawks on-site. MOD looking into DOD options (KS); repeated by Mr. Nagashima on 3/27 as unmanned helicopter with camera. NRC agreed 3/27 to follow using specs provided by Japan; NISA promised documents stating Japan's needs. MOD is not interested in KMAX.	C	PACOM indicated no longer needed and taken off the table.
9	Transportation of fresh water by barges and delivery of pumps		3/25 list	MOD, NISA		POL-MIL, DAO	PACOM paid \$3m for #9, 9b, 10, 11. Provided. Arrangement made for three vendor support representatives to stay and train.	C	There is one train that is installed. There is no need for further trains. DOD has the appropriate guidance. Alan Blamey will work with Japanese embassy officials to re-validate the need for this asset. R Neilson says that second train is in Australia. A. Blamey to determine from Embassy if still needed and to share with R. Neilson so that Bechtel and can be advised
9a	Water barges			MOD, NISA		J4, PACOM	PACOM gave to GOJ. (Need to confirm.) Per J4 the barges have been outfitted and tested. Barges are in Fukushima and pumping.	C	
9b	Fresh water supply pumps from Bechtel			NISA			PACOM paid \$3m for #9, 9b, 10, 11. First train in Japan	C	
10	High quality pumps and hoses.		3/26 meeting and previous discussion	TEPCO		NRC	PACOM paid \$3m for #9, 9b, 10, 11. CLOSED: NRC rec'd info 3/26 on possible hose and said would investigate further; request withdrawn at 3/29 Cab meeting.	C	
11	High pressure hose (3 x 500 m) and couplers (for cooling reactor)		3/25 list and previous discussion	NISA		NRC, DOD	PACOM paid \$3m for #9, 9b, 10, 11. Hose delivered as part of Australia/Bechtel equipment; in I-Village.	C	
12	Protective body armor	Hi	3/25 list	NISA - Sakuna, MOD	NISA, MOD	NRC - Blamey	INPO provided info on commercial sources. Body Armor Closed.	C	
19	Bottled water for infant formula		3/25 list	MHLW		USAID/OFDA	USAID and USFJ responded with initial stocks; paperwork underway at USAID/State for possible delivery April 1-2. Confirmed delivery to Tokyo Met. Gov. warehouse.	C	On the Embassy list for tracking
21a	Assistance in dealing with accumulated radioactive water in turbine buildings	Hi	3/27 meeting	NISA		DOE Cherry, Duncan; NRC	DOE paper provided to Amb. Roos and Amb. Fujisaki on 3/29/11. Management of cont. water. Closed by GOJ on 4/12/11	C	
21c	Information on "evaporation technologies"	Hi	3/28 - DCCS	Fukuyama NISA		DOE Cherry, Duncan	DOE in the process of determining appropriate contacts for sources of technology. Additional info from GOJ may be needed. Closed by GOJ on 4/12/11	C	

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21d	Obtain contact info for industry personnel with experience in handling and disposal of open pools/trenches of high dose rate(>100 R/hr) water. Rcvd Mar 29 from Al Hochevar from Hoson	HI	NISA			Contacts developed and provided through INPO- Al Hochevar	C	
21e	Direct request from GOJ to Pacific Northwest Labs for technical assistance with water decontamination and storage issues.	HI	NISA	DOE Cherry, Duncan		DOE considering Basic Ordering Agreement. GOJ wants to know if there will be a consultation fee. DOE needs to understand scope of work to estimate cost. Closed by GOJ on 4/12/11.	C	NEXT STEPS: DOE- Duncan to follow up with NISA to learn potential scope of work.
21f	Determine whether temporary radwaste processing skids are available or would be a good idea (for removing contaminated water)	HI	NISA	INPO		Closed by GOJ on 4/12/11.	C	Private to Private transfer. Close after passing to TEPCO.
21g	Temporary holding tanks (for removing contaminated water)	HI	NISA	DOE; DOD; INPO		Need to hold discussions with GOJ at working level. Withdrawn by GOJ on 4/12/11. TEPCO can procure these within Japan.	C	Develop recommendations for removal of water in basements of Units 1, 2 and 3 per Task Tracker #3235. The Toshiba Team has investigated the use of large storage bladders to be used as temporary contaminated water storage. These bladders can hold up to 189,000 liters per bladder. Bladders can eventually be handled as a relatively small volume of solid waste. Need to develop a single water management team to handle all water issues once decision is made on how to proceed forward. DOE has been contacted by a private company from Nw Jersey.
21h	Tanker trucks as a temporary holding area (for removing high-level contaminated water)	HI	NISA	DOE; DOD; INPO		Need to hold discussions with GOJ at working level. Withdrawn by GOJ on 4/12/11. TEPCO can procure these within Japan.	C	Develop recommendations for removal of water in basements of Units 1, 2 and 3 per Task Tracker #3235. The Toshiba team is concerned that the relative capacity of tanker trucks is small and that the trucks will have to remain onsite once contaminated. This option should be reserved for special situations.
21i	Investigate whether there is a technology that would absorb contaminated materials from water (for removing contaminated water)	HI	NISA	DOE		Closed by GOJ on 4/12/11.	C	Secretary Chu reportedly told this to the Japanese. The Toshiba Team has developed draft plans for water treatment with a focus on fission product removal and minimization of solids waste processing.
23	INFO: Technical support on radiation technology, nuclear technology, and health effects	3/25 list	MHLW CAS NSC NISA MEXT MOD	Dr. Coleman (NIH via HHS); USAID				



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23a	Information on KI and drinking water							C	
23b	Health cooperation in three areas: environmental monitoring; KI policy; risk communication		CAS	Dr. Akashi	USAID, State, NIH Coleman, CDC, USOA, DOO		Both sides agreed to the recommendations in these three areas.	C	
25	INFO: Extinguishant/coolant	3/25 list	NISA				Request further info from GOJ. We need more information on the specific needs of the GOJ. TEPCO had been looking at equipment from American Defense Systems, but was able to procure the same type of product locally. Closed by GOJ on 4/12/11.	C	A. Blamey to Verify with GOJ what is exactly needed in this request
26	Incorporate PNNL into crisis mgmt dialogue/Spent Fuel WG	3/26, 3/28 - OCCS Fukuyama	NISA		DOE Cherry; NRC		PNNL team in Tokyo and providing support. Need to confirm with GOJ that we can close this, now that the PNNL team has arrived.	C	PNNL team in Tokyo and providing support.
27	U.S. cooperation in bringing private sector engineers into Shielding WG	3/26 meeting - Nagashima	NISA		NRC		Not included on draft 3/29 request list. NISA does not need any more private sector engineers at this time. Will notify the USG if this changes.	C	Items 27, 29 and 29b are interrelated. 4/9: Action for Alan Blamey to coordinate with INPO and determine what is meant by shielding.
28	Assessment of possible fuel damage in units 1, 2, 3	3/27 - Hosono	NISA		NRC		NRC provided brief response at meeting.	C	
29	Assessment of structural stability of spent fuel pools	3/27 - Naga- shima; 3/28 - Fukuyama	NISA		NRC reactor Safety Team		In preparation for decisions on shielding. NRC completed assessment of current spent fuel pool weight. Further analysis needed. Closed by the GOJ on 4/12/11. If NISA gets new information, we may have to reopen this request.	C	Need GoJ Input
29a	Information on shielding for individual rooms and for the facility in general		NISA				Provided to GOJ through INPO-Al Hochevar.	C	
29b	Japan asked for NRC expertise on temporary shielding options, to determine whether the NPP Plant buildings are strong enough to hold up under additional pressure		NISA		NRC		From Cabinet Office Crisis Mgt. Team Meeting notes 3-28-2011. Closed by the GOJ on 4/12/11. If NISA gets new information, we may have to reopen this request.	C	NRC has completed a gross analysis and does not have sufficient information to perform a detailed analysis for shielding. From Cabinet Office Crisis Management Team Meeting notes, 3/28/11. A. Blamey to discuss further with Japan
30	Information on tools/methods for moving damaged fuel, plus contacts of those with experience at TMI-2 and Chernobyl. From Mr. Hosono.		NISA	Hosono's Office			Provided to GOJ through INPO-Al Hochevar on 3/30.	C	

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							Guidance has been sent to INPO contact in Japan and is being updated. Includes injection rate and best assessment to plant conditions; TEPCO confirmed receiving info at 4/7 meeting with INPO.		
31	SAMG Technical Document		TEPCO					C	TEPCO received.
32	GEM is following up on the Nitrogen purge Issue analysis		NISA, TEPCO				GE is following. No need for further analysis. Closed by GOJ on 04/15/2011.	C	NRC Japan to confirm with GE. 4/9: NRC has analysis for review.
36	Requests for military air transport		MOD		J4, PACOM		PACOM is involved in review and approval of all requests for military airlift to Japan. Requests should include weight and dimensions of the cargo. 1st choice should be commercial carrier for timely delivery; should limit requests to materiel that is difficult for commercial carriers to deliver.	C	
37	Protective body armor with very high radiation tolerance	HI	CAS Hosono	METI: HATADA hatada-hiroyuki@meti.go.jp 080-3093-9172 TEPCO: WATANABE watanabe.kunimichi@tepco.co.jp 03-6373-4882	DOE Cherry, NRC Blamey Alan.Blamey@nrc.gov		In parallel to GOJ gov to gov request, TEPCO is discussing commercial to commercial procurement. NRC's Blamey provided info to METI's Funaki on 4/13 about a private US vendor that is working with Toshiba to provide tungsten vests to TEPCO. We do not believe DOE or US Navy would have additional shielding options. Offer of lead blankets appears in separate sheet - "Other U.S. Offers."	C	

U.S. Offers (including Commercial to Commercial)						
	date offered	USG Agency Offering	GOJ Agency to Receive	Need Addressed	Costs	status
balloons for unmanned radiation measurement	3/26/2011	NOAA				Japan accepted in principle; Japan to identify appropriate ministry
200-300 pieces of radiation measurement equipment		INPO through NRC				3/26 Japan said it would take all equipment offered
U.S. expert on radiological tolerance of food to travel to Japan for consultations with FCS	3/26/2011	FDA				DCCS Fukuyama asked that FDA and FSC communicate directly
Chem Bio Initial Response Force (CBIRF)	3/29/2011	DOD	MOD			Currently, CBIRF team is at Yokota Air Base, conducting training with SDF.
600 lead blankets, currently in Atsugi, available for donation. 500 blankets @ 76cm x 30cm 100 blankets @ 46cm x 15cm	4/15/2011	USFJ	TBD, but must be within GOJ for G-to-G transfer	Vehicle shielding, workspace shielding	<del>none for blankets, need to pay for transportation from Atsugi</del>	USFJ is confirming what costs, if any, will be involved

**King, Mark**

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**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, Niles; Sanfilippo, Nathan; Cabbage, 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  
**Attachments:** Fukushima - safety measures at other NPPs.pdf; Fukushima event - seismic damage to NPPs.pdf

Just got back from the 5<sup>th</sup> 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

BA/97

**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 30<sup>th</sup>)**

Nuclear and Industrial Safety Agency  
April 4<sup>th</sup> , 2011

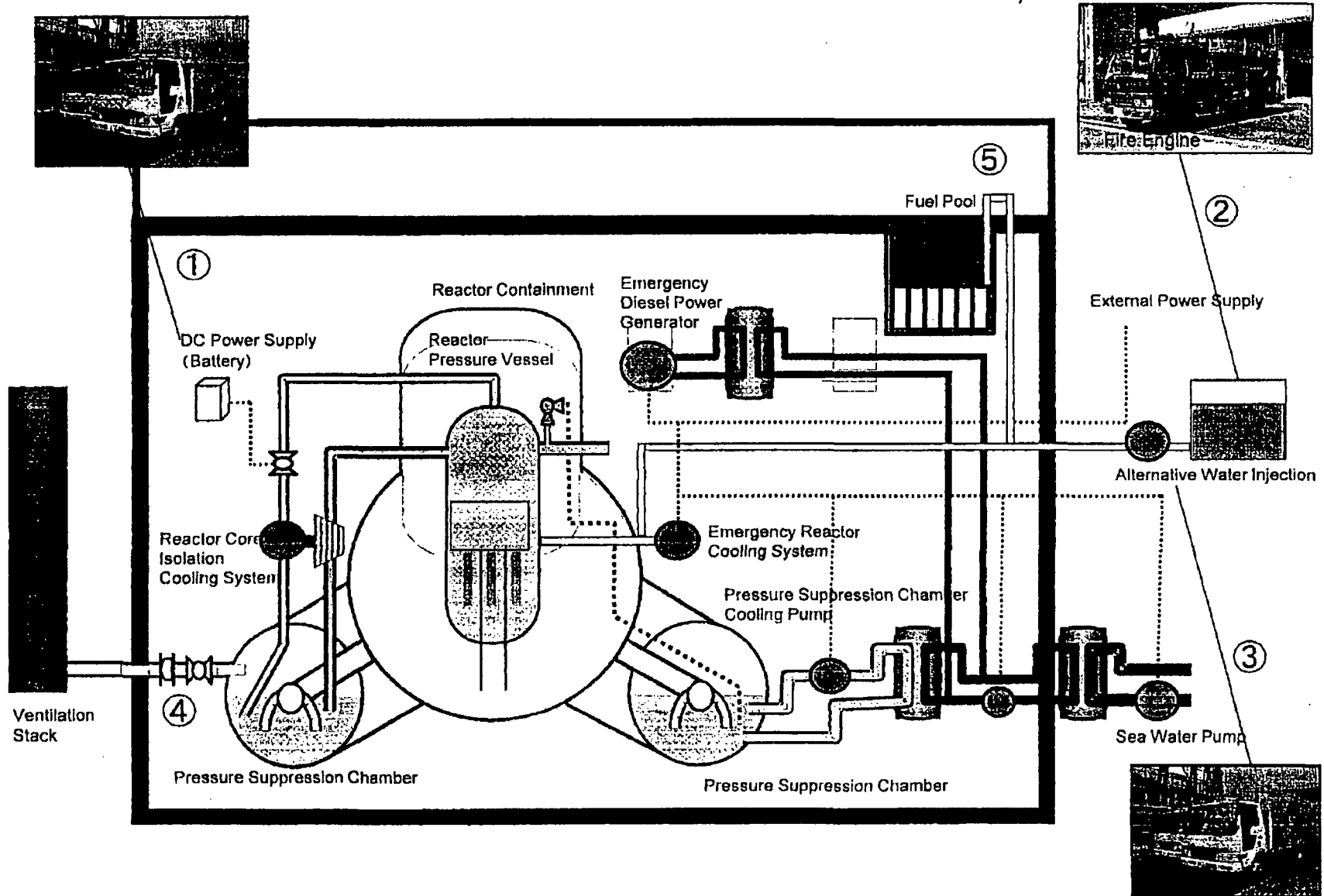
# Summary

- 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

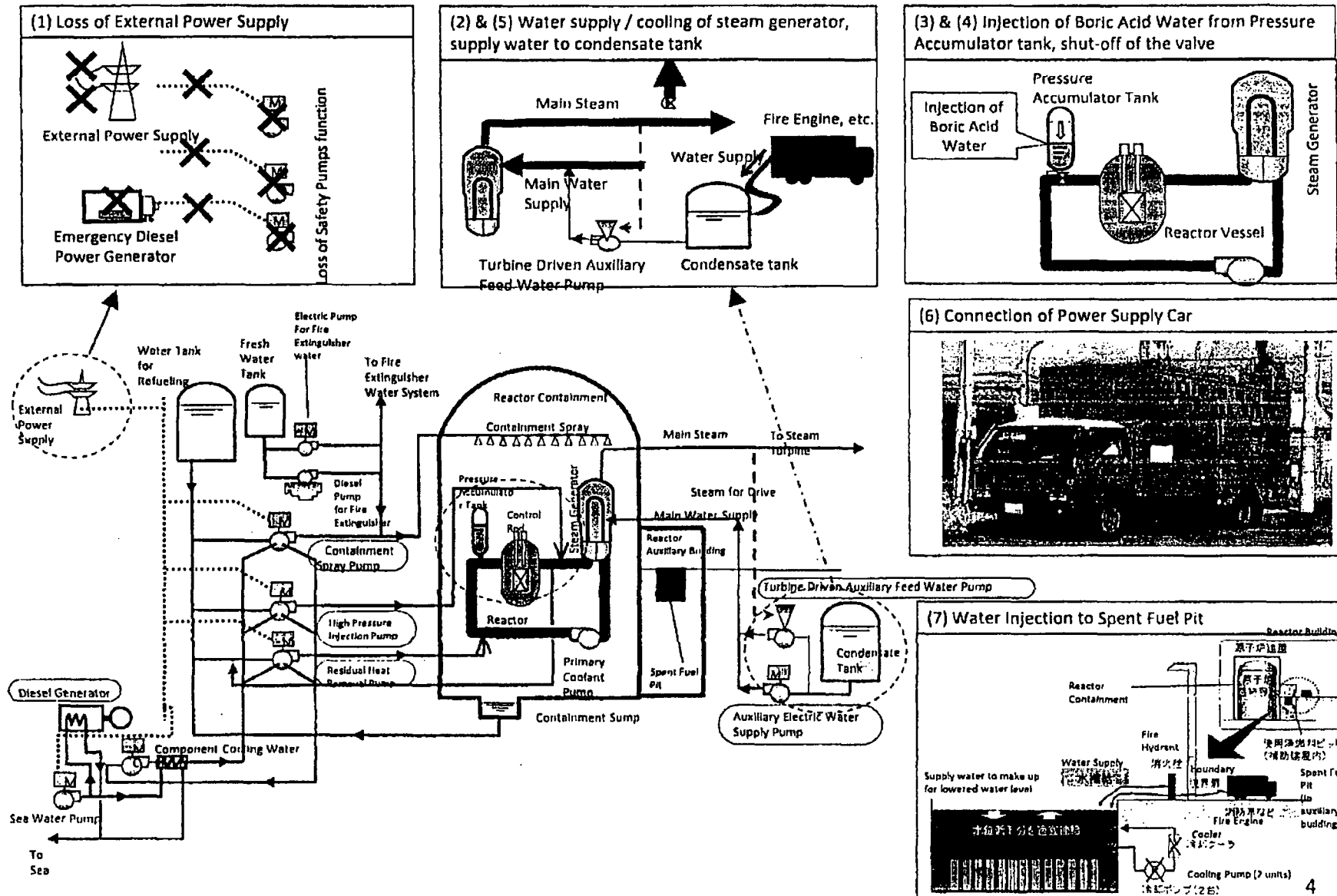
Phase	Emergency Safety Measures	Drastic measures
	Short term	Medium-to-Long term
Expected completion	Approx. 1 month (around mid-April)	Decide as per debate at Accident Investigation Commission, etc.
Target (Required standard)	Depending on tsunami, prevent core damage and occurrence of spent-fuel damage 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	<u>Securing equipment:</u> <ul style="list-style-type: none"> <li>• Deploy power-supply vehicles (to cool reactors and spent-fuel pools).</li> <li>• Deploy fire engines (to supply coolant water).</li> <li>• Deploy fire hoses (to secure water-feeding path from fresh-water tank, sea-water pit, etc.).</li> </ul> <u>Developing manual:</u> <ul style="list-style-type: none"> <li>• Develop implementation procedures for emergency measures utilizing above-mentioned equipment.</li> </ul> <u>Training:</u> <ul style="list-style-type: none"> <li>• Implementation of training on emergency measures based on implementation procedures manual.</li> </ul>	<u>Securing equipment</u> <ul style="list-style-type: none"> <li>• Build seawalls.</li> <li>• Deploy watertight doors.</li> <li>• Devise other necessary equipment-related measures.</li> </ul> <p>*To be followed by implementation of equipment-related improvements as necessary (e.g.: secure spare air-cooled diesel generators, sea water pump motors).</p> <u>Develop manual</u> <u>Conduct training</u>
Confirmation by NISA, etc.	<ul style="list-style-type: none"> <li>• Approval of amendment of ministerial ordinance to ensure effectiveness of emergency safety measures as well as operational safety program that incorporates those measures.</li> <li>• Rigorous vetting of implementation status of emergency safety measures by means of inspection, etc.</li> </ul>	
Operators' response	<ul style="list-style-type: none"> <li>• Efforts under way to procure equipment. (Locations to set them up also being secured).</li> <li>• Manual compiled anew drawing on recent accident. Training being implemented.</li> <li>• Strive to improve emergency safety measures continuously, even after their confirmation, to ensure their reliability.</li> </ul>	

# 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**

4<sup>th</sup> April, 2011

Nuclear and Industrial Safety Agency (NISA)  
Japan Nuclear Energy Safety Organization (JNES)

Japan

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Note: Some data 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.

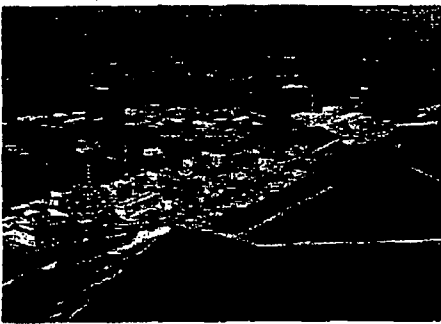
# 1. Outline of earthquake and nuclear reactors



2

## 1-1. 2011 off Tohoku Pacific Earthquake

Fukushima Dai-ichi 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



Fukushima Dai-ni NPP



3

## 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



4

## 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-)

5

## 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

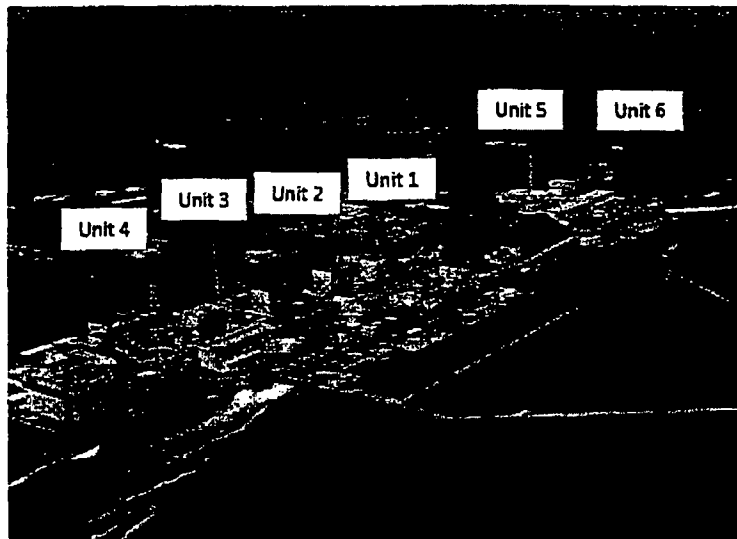
- Fukushima Dai-ichi (I) Unit 4,5,6

-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 °C, but afterward the three units have been cold shut down.

6

## 2. Outline of Fukushima Dai-ichi NPS



7

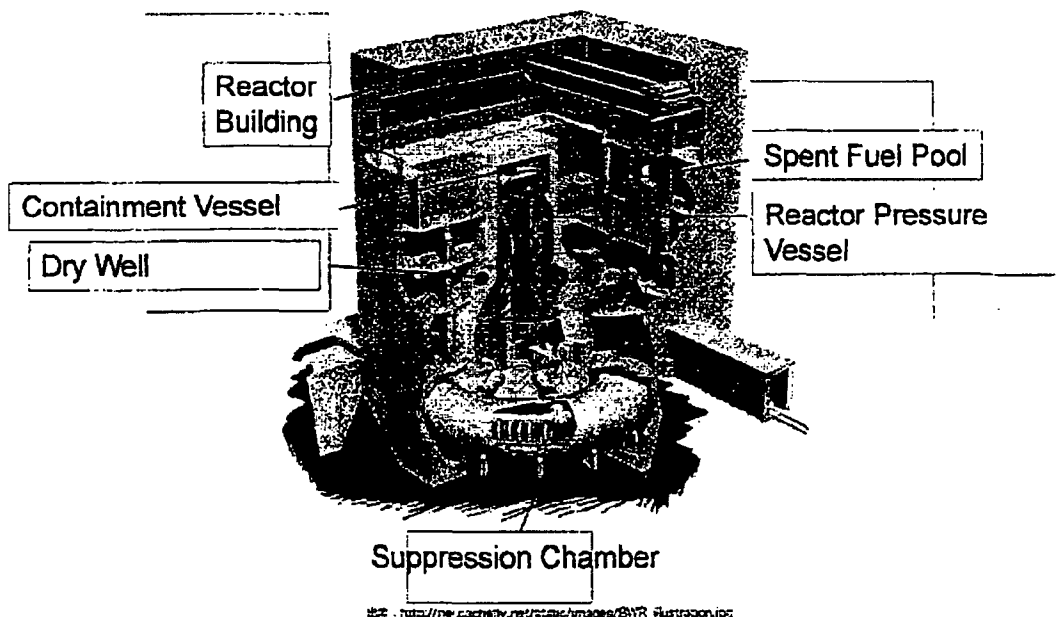
## 2-1. Summary of Fukushima Dai-ichi NPS

	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°C	300°C	300°C	300°C	302°C	302°C
Max. Pressure of the CV	0.43MPa	0.38MPa	0.38MPa	0.38MPa	0.38MPa	0.28MPa
Max. Temp of the CV	140°C	140°C	140°C	140°C	138°C	171°C(D/W) 105°C(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

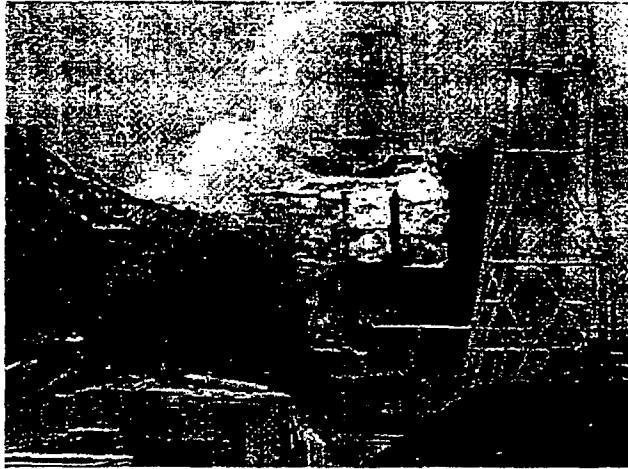
8

## 2-2. Overview of Mark-1 Type BWR (Unit 1,2,3 and 4)



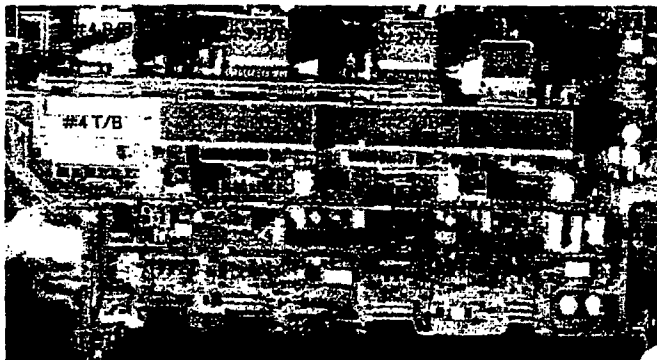
9

### 3. Report concerning incidents at Unit 1 through 6 in the Fukushima Dai-ichi NPS



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#### 3-1. Satellite view of Fukushima Dai-ichi NPP



Many structures facing the bay are destroyed

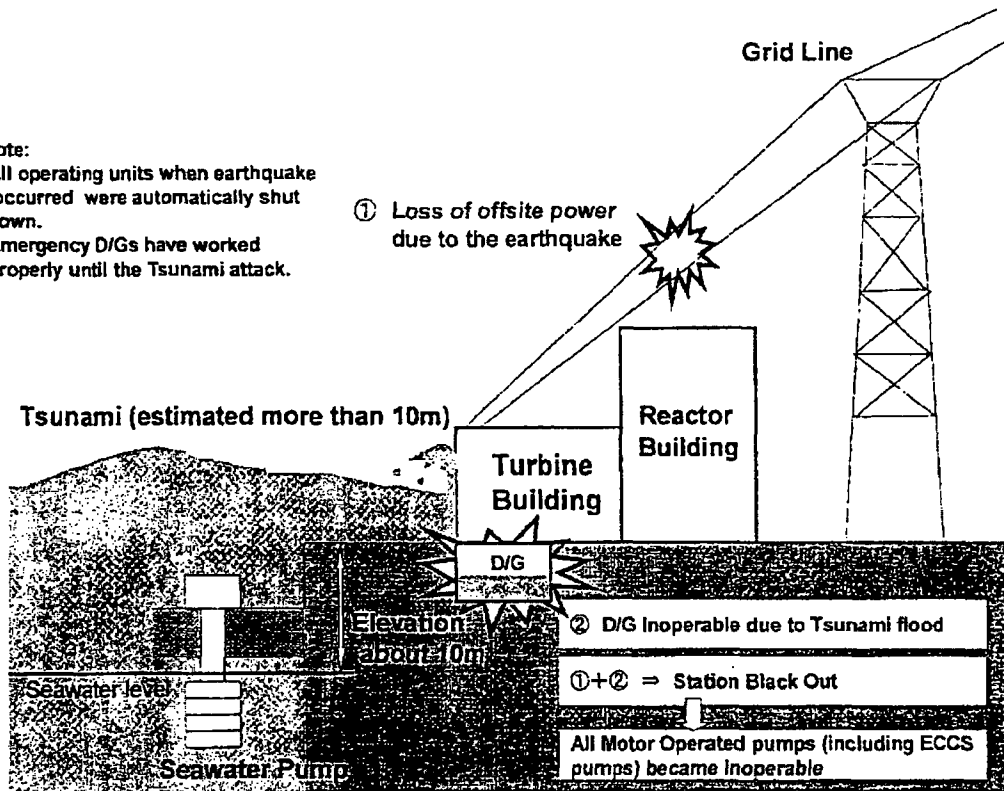
Source: Google Earth

11

### 3-2. Major root cause of the damage

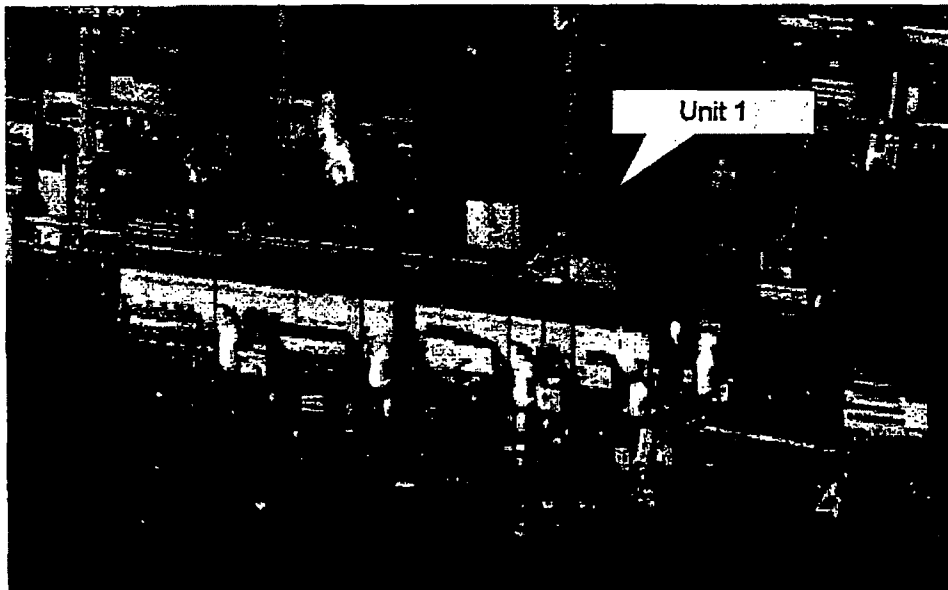
**Note:**

- All operating units when earthquake occurred were automatically shut down.
- Emergency D/Gs have worked properly until the Tsunami attack.



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### 3-3. Accident Progression at Unit 1 Reactor



13



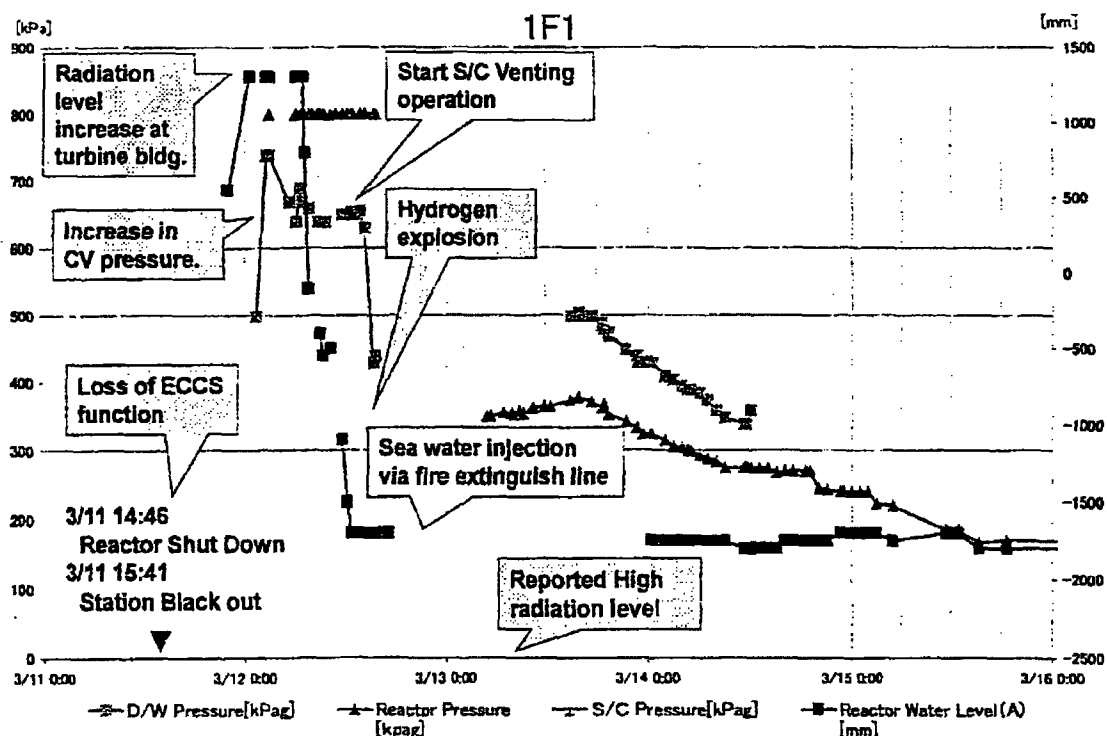
### 3-4. Chronology of Unit 1 after the earthquake

#### ● Unit 1

- 11<sup>th</sup> ● Under operation, Automatic shutdown by the earthquake
- Loss of A/C power
- Loss of water injection function
- 12<sup>th</sup> ● Unusual increase of PCV pressure
- Started to vent
- Sound of explosion
- Started of injection of seawater and borated water to the core
- 22<sup>nd</sup> ● Rise of reactor temperature (383°C) → Drop (26th 05:00 144.3°C)
- 23<sup>rd</sup> ● Water supply line in addition to the Fire Extinguish line. Switched to water supply line only.(Flow rate: 7m<sup>3</sup>/h)
- 24<sup>th</sup> ● Lighting in the Central Control Room was recovered.
- 25<sup>th</sup> ● Started fresh water injection
- 29<sup>th</sup> ● Switched to the water injection to the core using a temporary motor operated pump.
- 31<sup>st</sup> ● White smoke was confirmed to generate continuously
- Freshwater is being injected into the RPV

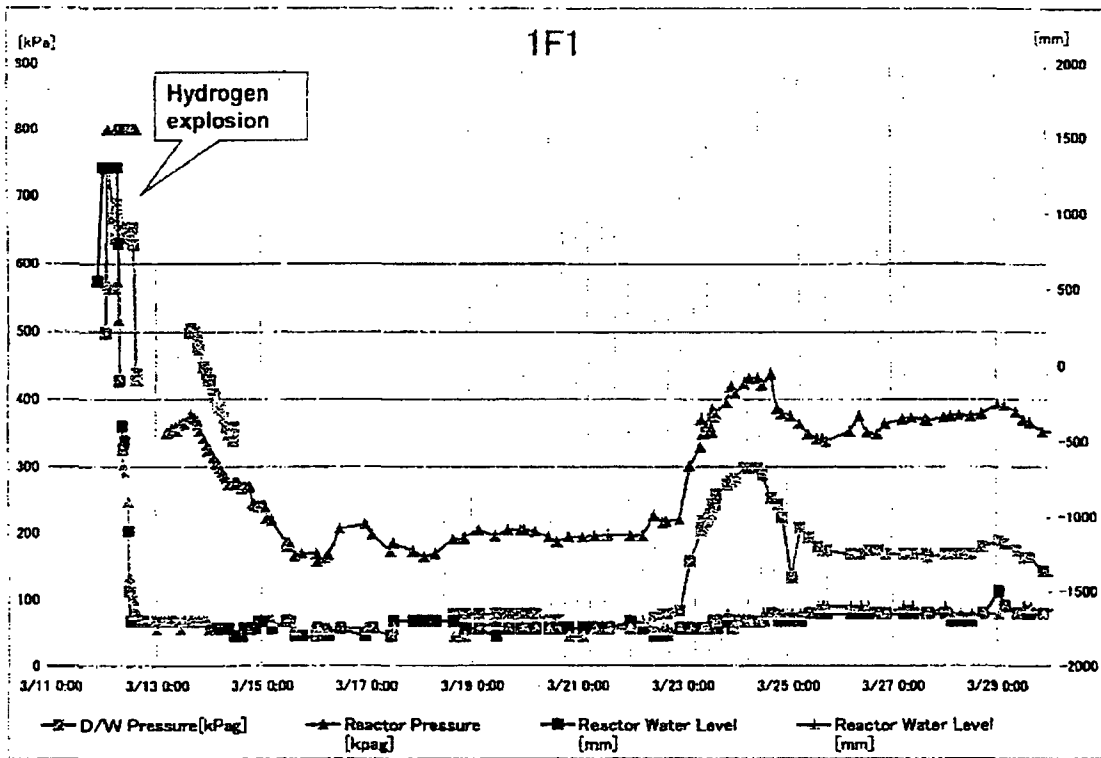
14

### 3-5. Trend data of Unit 1 until March 15



15

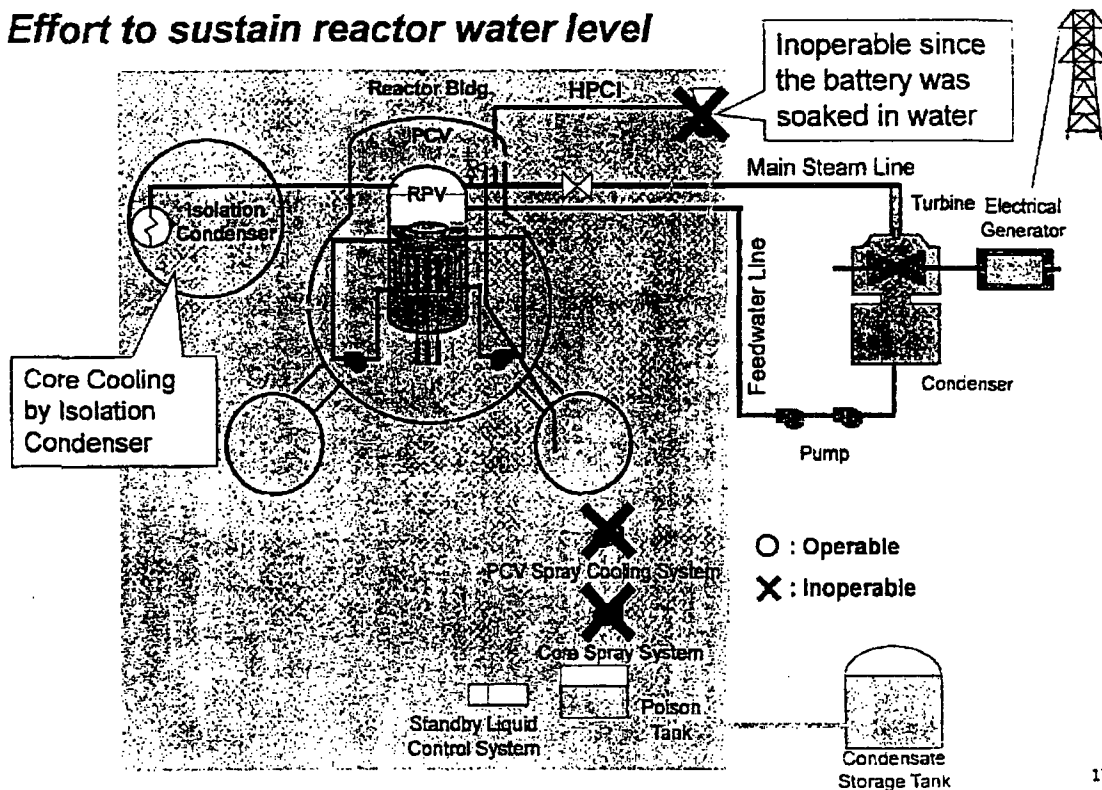
### 3-6. Trend data of Unit 1 until March 30



16

### 3-7. Major event progression at Unit 1 (1/4)

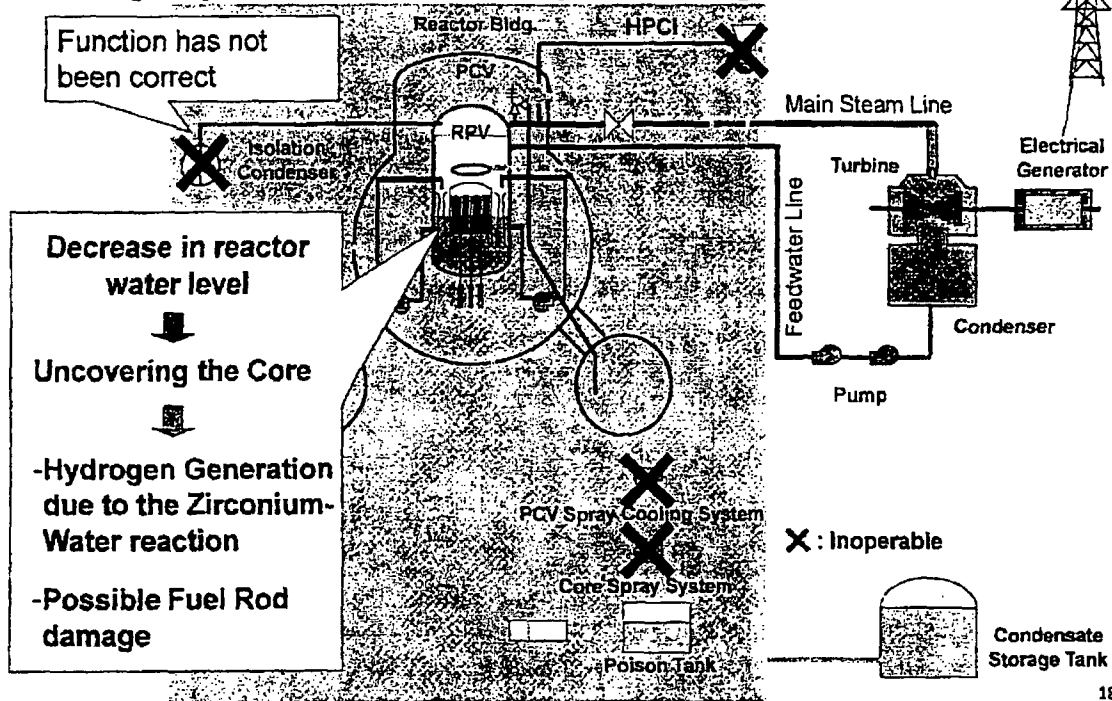
#### Effort to sustain reactor water level



17

### 3-7. Major event progression at Unit 1 (2/4)

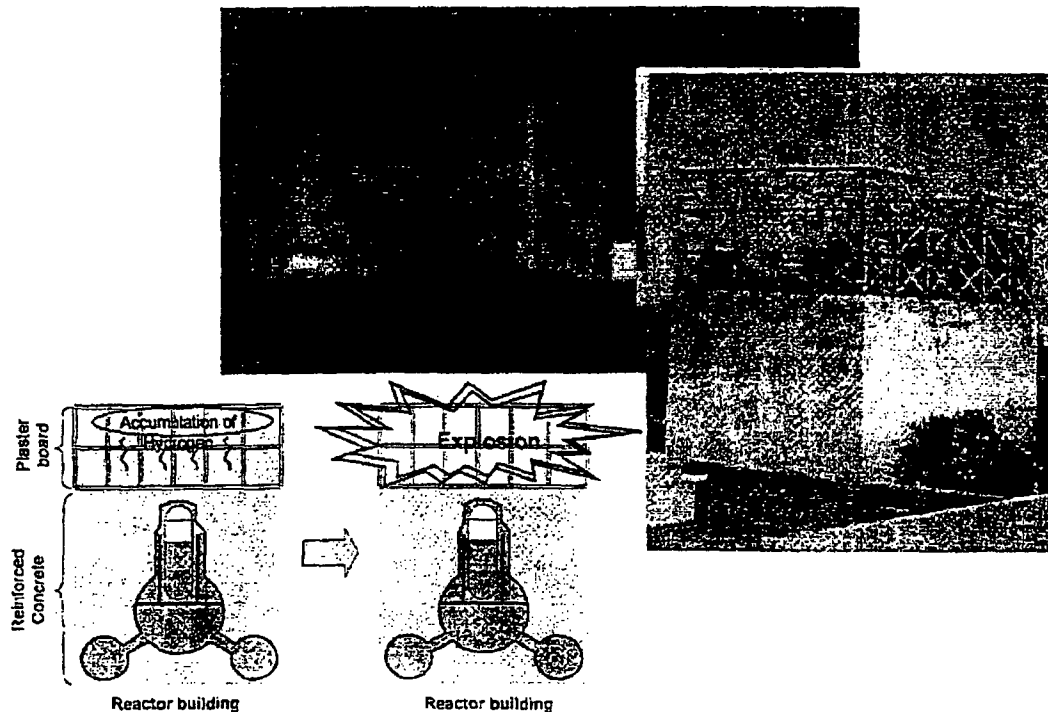
**Decrease in reactor water level due to loss of cooling capability of emergency condenser, followed by uncovering the core**



18

### 3-7. Major event progression at Unit 1 (3/4)

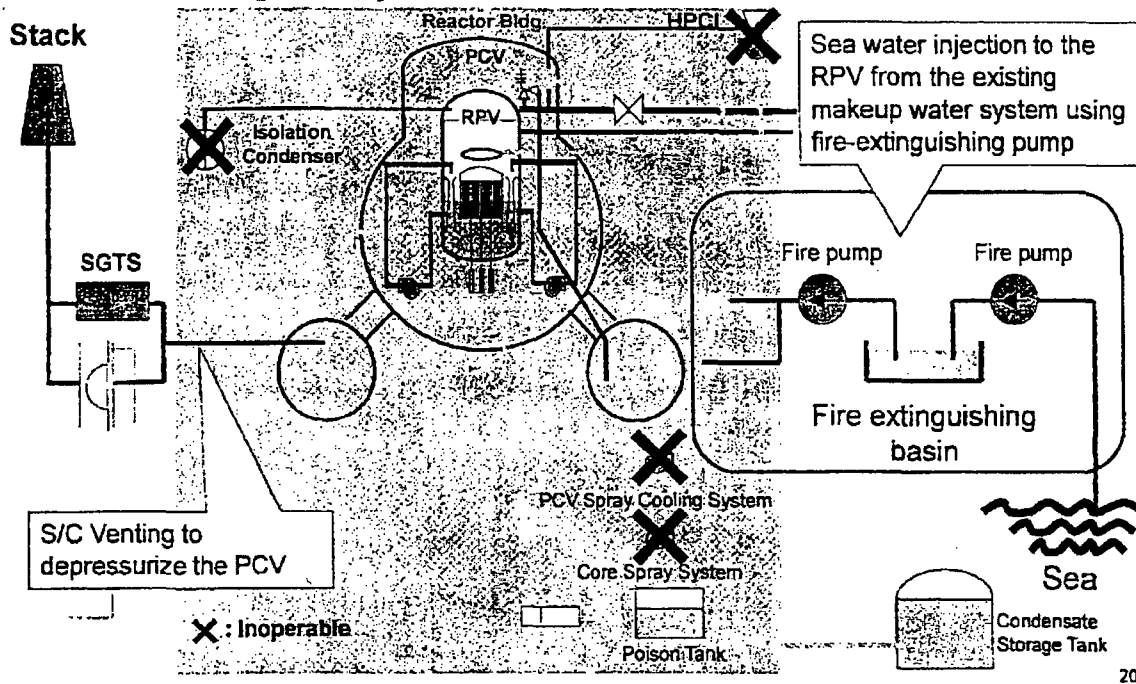
**Hydrogen explosion in the operation floor**



19

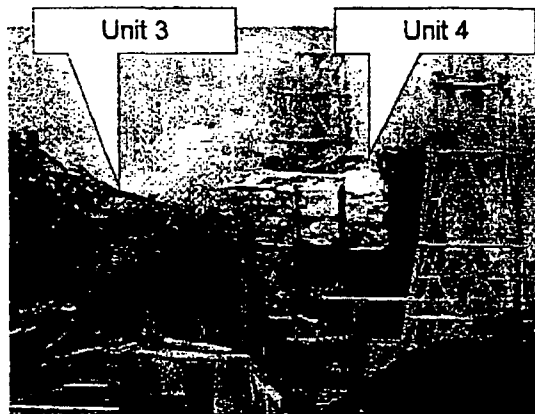
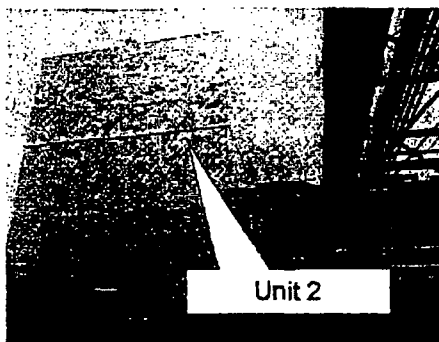
### 3-7. Major event progression at Unit 1 (4/4)

- Sea water injection using fire water pump
- S/C Venting to depressurize the PCV



20

### 3-8. Accident Progression at Unit 2 through 4 reactors



21

### 3-9. Chronology of Unit 2 after the earthquake (1/2)

#### ● Unit 2

- 11<sup>th</sup> ● Under operation, Automatic shutdown by the earthquake
  - Loss of A/C power
  - Loss of water injection function
- 14<sup>th</sup> ● Loss of water cooling function
  - Unusual increase in PCV pressure
- 15<sup>th</sup> ● Sound of explosion
  - Possible damage of the suppression chamber
- 20<sup>th</sup> ● Injection of about 40 tons of seawater into SFP through fire extinguishing system.
  - Injection of seawater to the Spent Fuel Pool (SFP)
- 21<sup>st</sup> ● White smoke generated
- 22<sup>nd</sup> ● Injection of seawater to the Spent Fuel Pool (SFP)
- 25<sup>th</sup> ● Injection of seawater to SFP

22

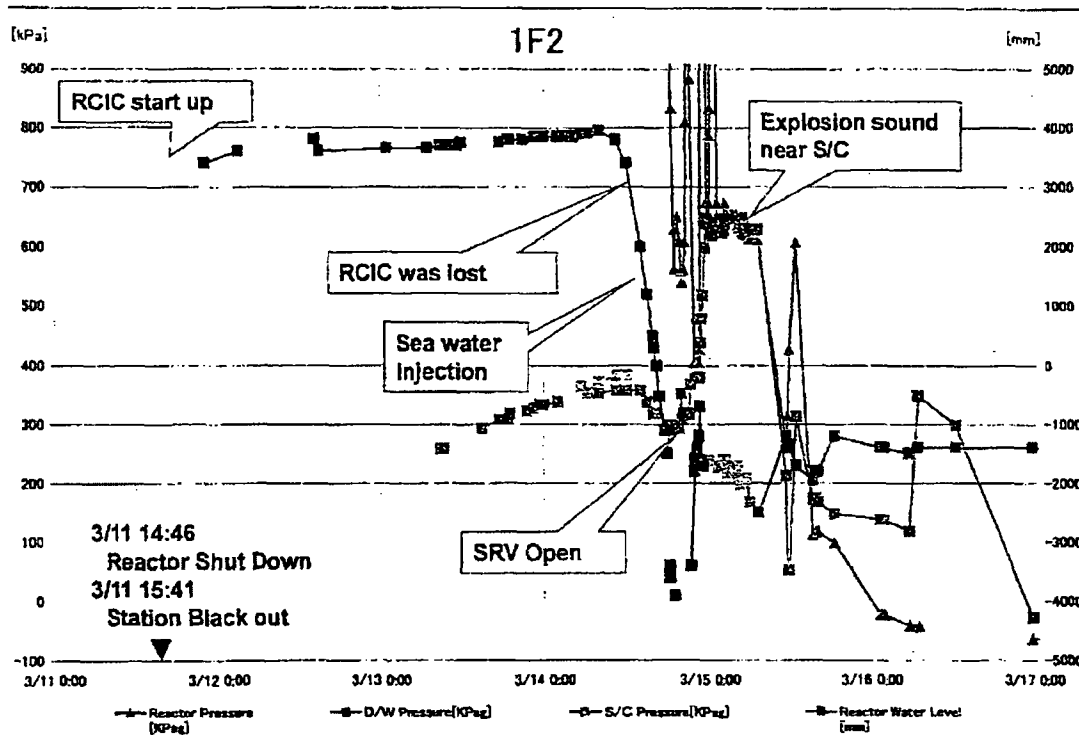
### 3-9. Chronology of Unit 2 after the earthquake (2/2)

#### ● Unit 2(Continued)

- 26<sup>th</sup> ● Lighting in the Central Control Room was recovered
- 27<sup>th</sup> ● Switched to the water injection to the core using a temporary motor-driven pump.
- 29<sup>th</sup> ● 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.
- 30<sup>th</sup> ● 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.
- 31<sup>st</sup> ● White smoke was confirmed to generate continuously.
  - Fresh water is being injected to the spent fuel pool and the RPV

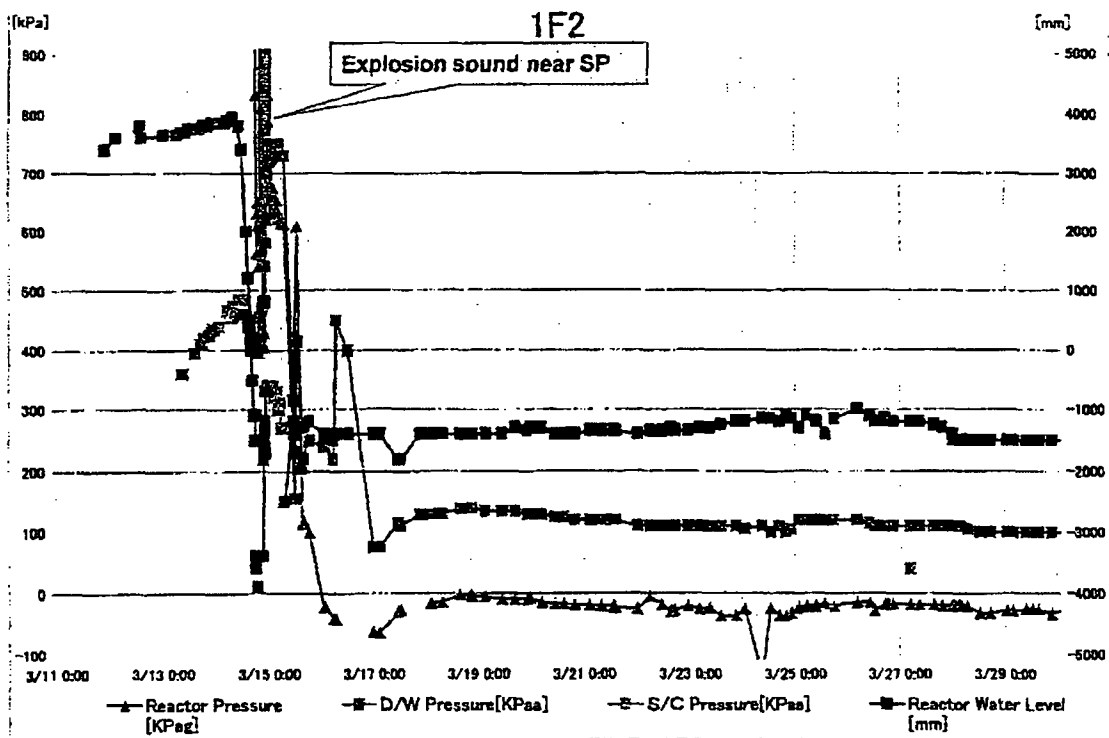
23

### 3-10. Trend data of Unit 2 until March 17



24

### 3-11. Trend data of Unit 2 until March 30



25

### 3-12. Chronology of Unit 3 after the earthquake (1/2)

#### ● Unit 3

- 11<sup>th</sup> ● Under operation, Automatic shutdown by the earthquake  
● Loss of A/C power
- 13<sup>th</sup> ● Loss of water injection function  
● Started to vent
- 14<sup>th</sup> ● Unusual increase in PCV pressure  
● Sound of explosion
- 16<sup>th</sup> ● White smoke generated
- 17<sup>th</sup> ● 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)
- 18<sup>th</sup> ● 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)
- 19<sup>th</sup> ● Water spray from the ground by High pressure water-cannon trucks by  
Hyper Rescue Unit of Tokyo Fire Department.

26

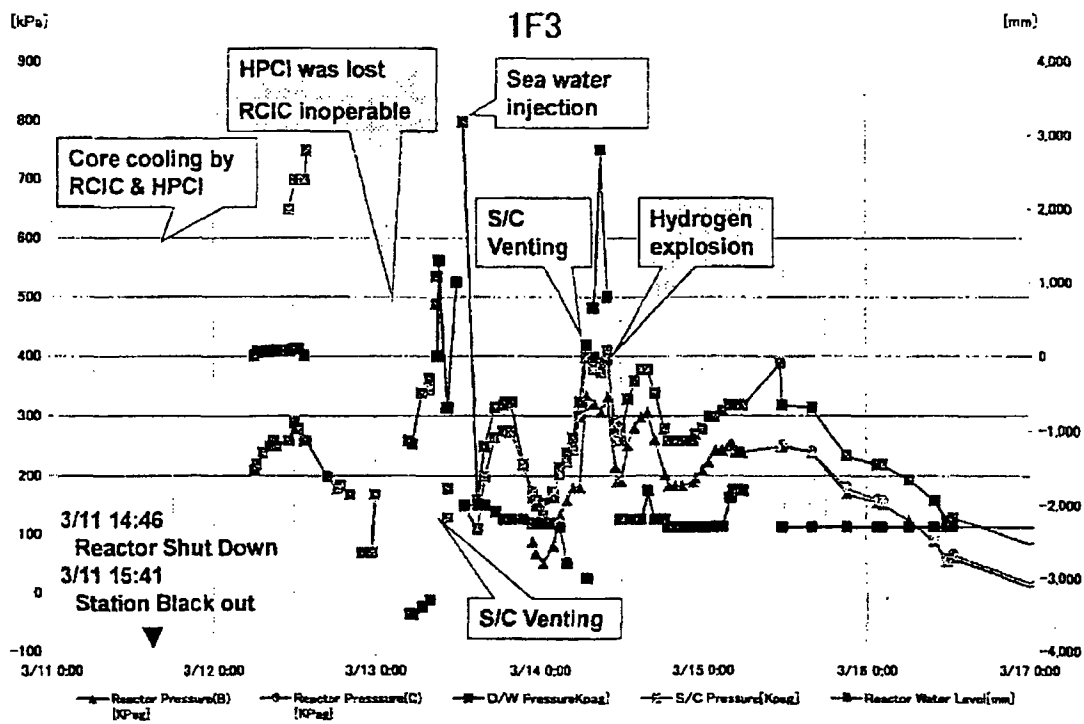
### 3-12. Chronology of Unit 3 after the earthquake (2/2)

#### ● Unit 3(Continued)

- 20<sup>th</sup> ● Sprayed by Hyper Rescue Unit of Tokyo Fire Department
- 22<sup>nd</sup> ● Lighting in the Central Control Room was recovered.
- 23<sup>rd</sup> ● Injection of seawater to the SFP
- 24<sup>th</sup> ● Injection of seawater to the SFP
- 25<sup>th</sup> ● Water spray (Emergency fire support team)  
● Started fresh water injection
- 27<sup>th</sup> ● Water spray by Concrete Pump Truck
- 28<sup>th</sup> ● 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
- 29<sup>th</sup> ● Started to spray freshwater by Concrete Pump Truck
- 31<sup>st</sup> ● White smoke was confirmed to generate continuously  
● Fresh water is being injected to the spent fuel pool and the RPV

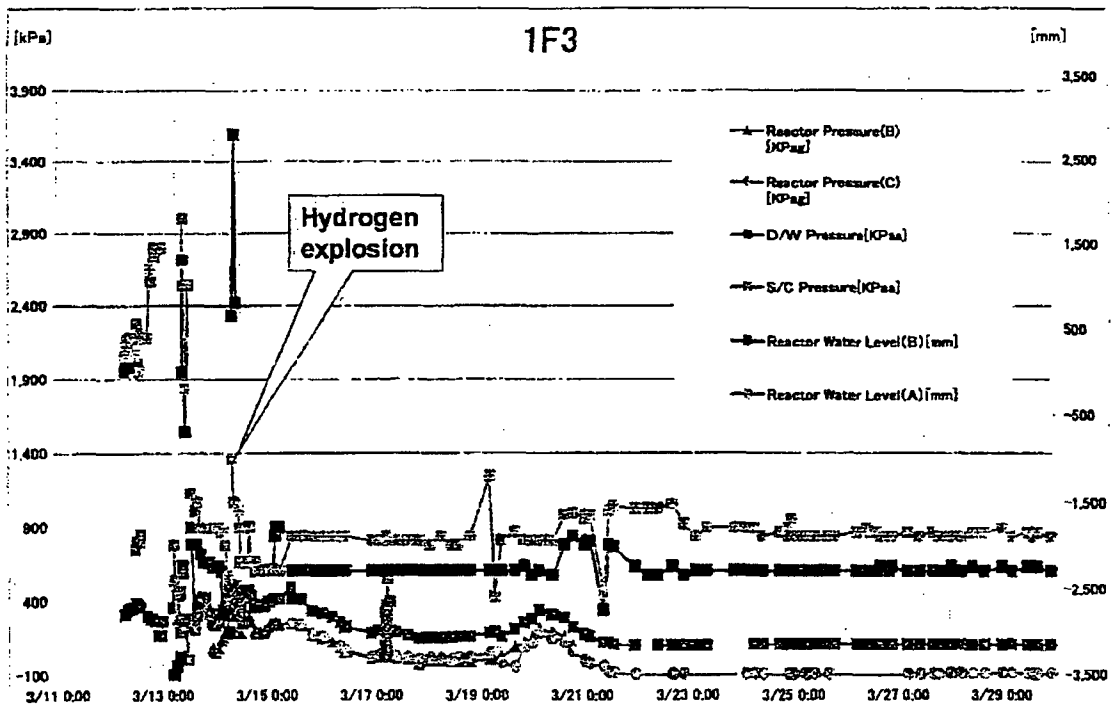
27

### 3-13. Trend data of Unit 3 until March 17



28

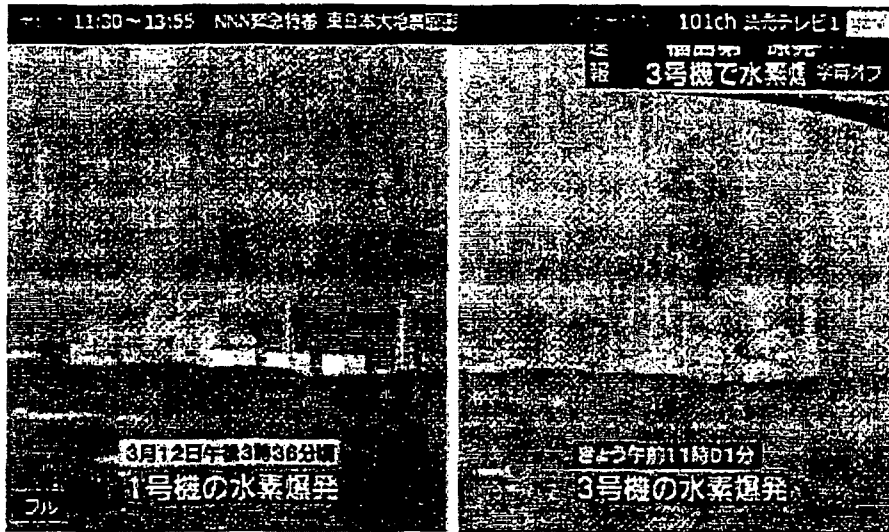
### 3-14. Trend data of Unit 3 until March 30



29



### 3-15. Hydrogen explosion at Unit 1 & 3



Unit 1

Unit 3

30

### 3-16. Chronology of Unit 4 after the earthquake

#### ● Unit 4

- 14<sup>th</sup> ●Water temperature in the Spent Fuel Pool, 84°C
- 15<sup>th</sup> ●Damage of wall in the 4<sup>th</sup> floor confirmed  
●Fire occurred in the 3<sup>rd</sup> floor (12:25 extinguished)
- 16<sup>th</sup> ●Fire occurred. TEPCO couldn't confirm any fire on the ground.
- 20<sup>th</sup> ●Water spray over the spent fuel pool by Self Defense Force
- 21<sup>st</sup> ●Water spray over the spent fuel pool by Self Defense Force
- 22<sup>nd</sup>-24<sup>th</sup> ●Water spray (Concrete Pump Truck (3 times)
- 25<sup>th</sup> ●Injection of seawater to SFP via the Fuel Pool Cooling Line (FPC)  
●Water spray (Concrete Pump Truck)
- 27<sup>th</sup> ●Water spray (Concrete Pump Truck)
- 29<sup>th</sup> ●Lighting in the Central Control Room was recovered.
- 30<sup>th</sup> ●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

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### 3-17. Chronology of Unit 5 & 6 after the earthquake

#### ● Unit 5&6

- 20<sup>th</sup> ● Unit 5 under cold shutdown (Water temperature of reactor water is less than 100°C)  
● Unit 6 under cold shutdown (Water temperature of reactor water is less than 100°C)
- 21<sup>st</sup> ● Water spray over the Common Spent Fuel Pool started
- 22<sup>nd</sup> ● Recovering power supply of unit 5 and 6 is completed.
- 24<sup>th</sup> ● The power was started to be supplied. Cooling also started
- 30<sup>th</sup> ● Back up power of Unit 6 is in working condition and external power was supplied to Unit 5 as of March 30<sup>th</sup>

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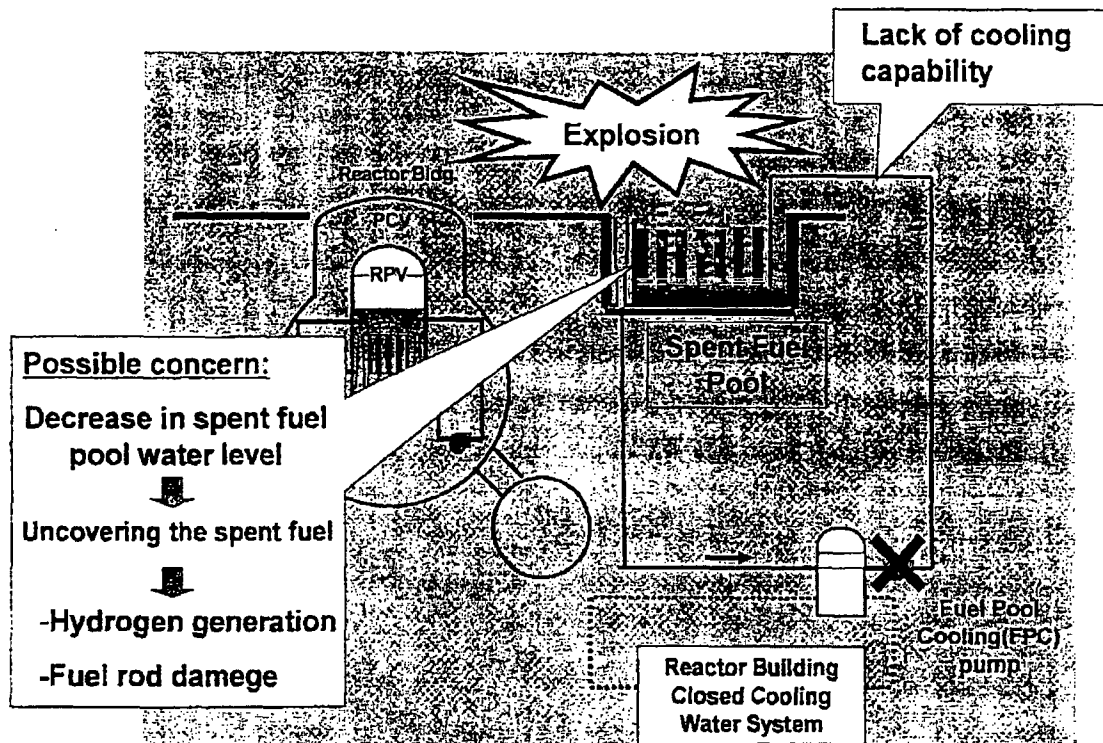
#### 4. Report concerning incidents at spent fuel pools in the Fukushima Dai-ichi NPS



Photo: Water spray into the SFP in Unit 4 using concrete pump truck

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#### 4-1. Possible concerns about Spent Fuel Pool



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#### 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 <sup>3</sup> )	1,020	1,425	1,425	1,425	1,425	1,497

#### Condition of the fuel in the Spent Fuel Pool

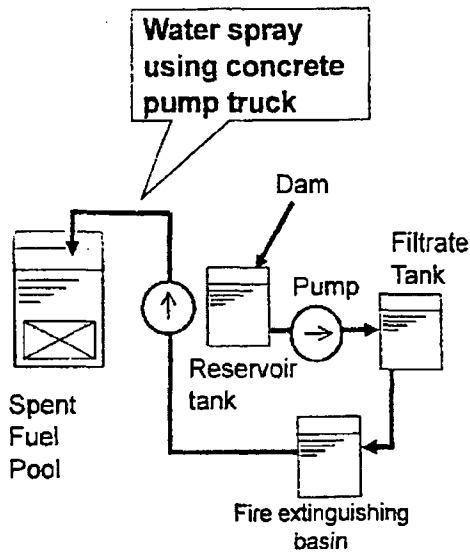
Unit 1	Unit 2	Unit 3	Unit 4
-Most recent shut down was on Sep.27,2010	- Most recent shut down was on Nov.18,2010	- Most recent shut down was on Sep.23,2010	-Most recent shut down was on Nov.29,2010 -All fuel assembly was removed from the core and located in the pool due to the core shroud replacement

35

### 4-3. Measures taken to cool the Spent Fuel Pool (1/4)

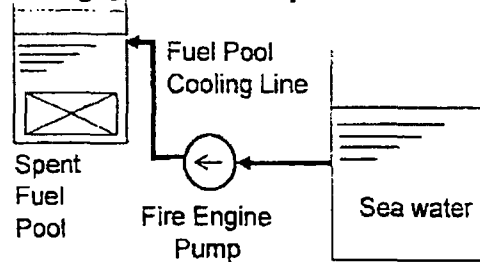
#### Unit 1

Fresh water injection

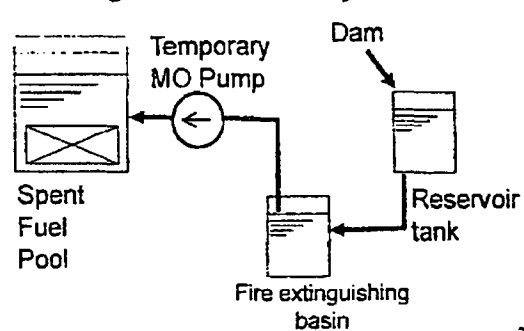


#### Unit 2

[1st Stage] Sea water injection



[2nd Stage] Fresh water injection

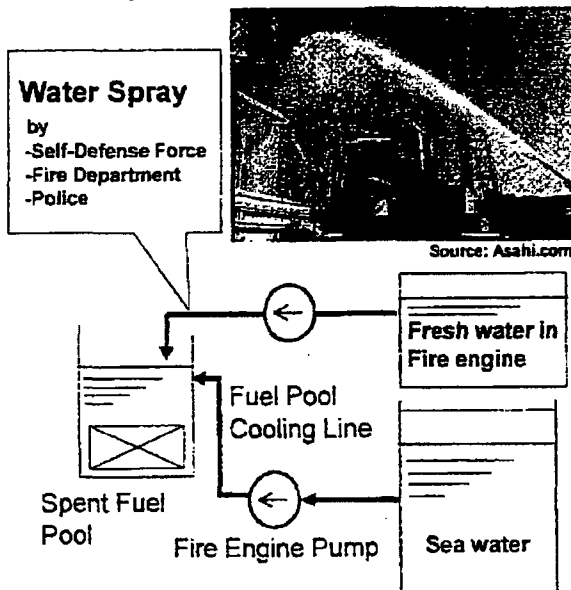


36

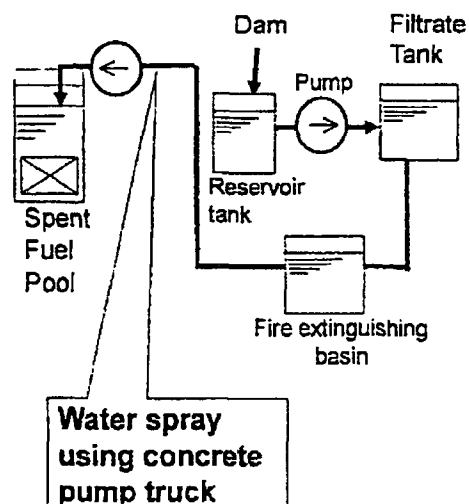
### 4-3. Measures taken to cool the Spent Fuel Pool (2/4)

#### Unit 3

[1st Stage] Sea water injection



[2nd Stage] Fresh water injection



\* Sea water discharge by helicopters of the Self Defense Force

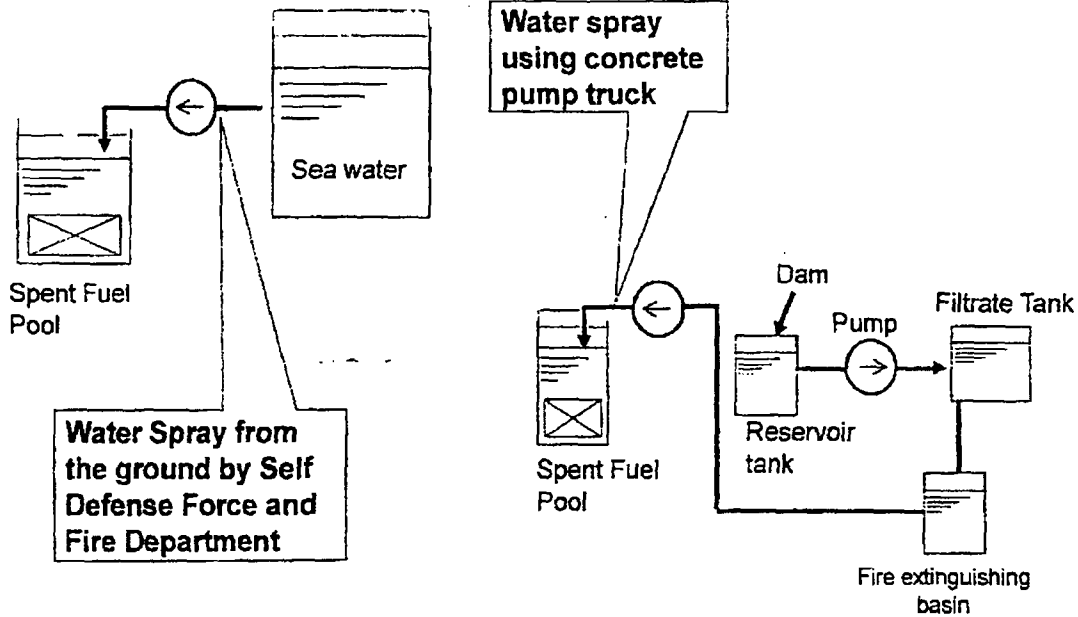
37

### 4-3. Measures taken to cool the Spent Fuel Pool (3/4)

#### Unit 4

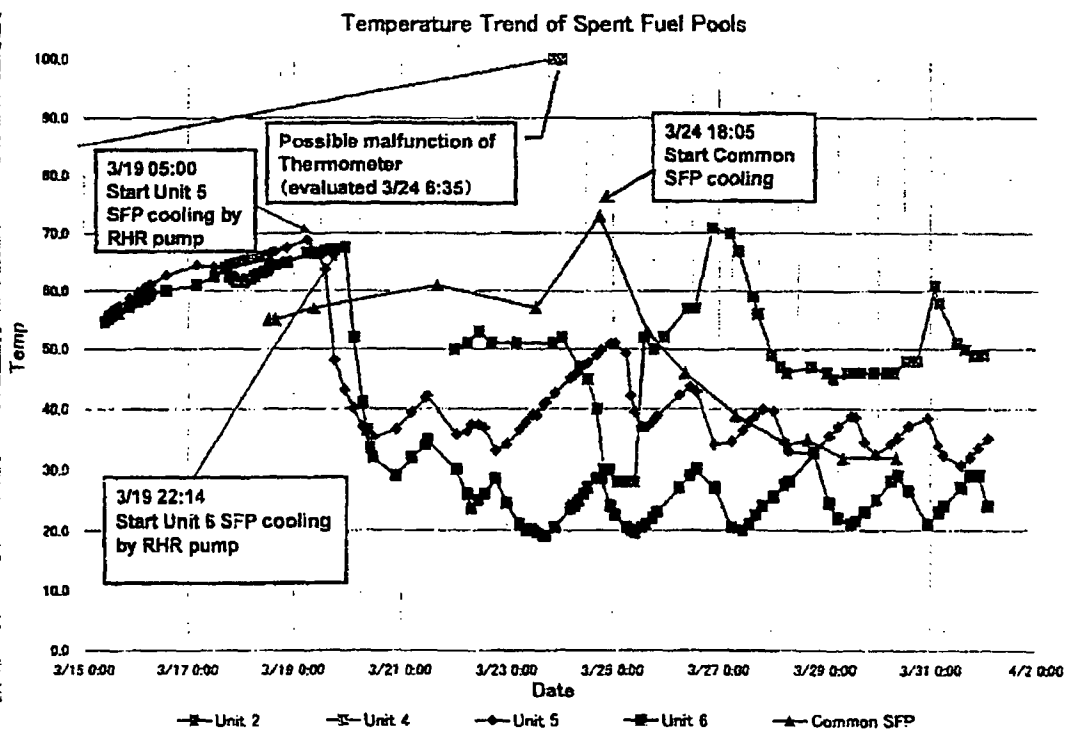
【1st Stage】 Sea water injection

【2nd Stage】 Fresh water injection



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### 4-3. Measures taken to cool the Spent Fuel Pool (4/4)



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#### 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.

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## 5. Action taken by the government

## 5. Action Taken by the Government(1/5)

**March 11<sup>th</sup>, 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 event occurred at Fukushima Daiichi NPS, TEPCO, in accordance with the Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
  - Direction for the residents within 3km radius from Unit 1 to evacuate
  - Direction for the residents within 10km radius from Unit 1 to stay in-house
- 24:00 ●Vice Minister of Economy, Trade and Industry, Ikeda arrived at the Local Emergency Response Headquarters

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## 5. Action Taken by the Government(2/5)

**March 12<sup>nd</sup>, 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-ichi NPS, TEPCO, pursuant to Act on Special Measures Concerning Nuclear Emergency Preparedness as follows:
  - Direction for the residents within 3km radius from Fukushima Dai-ichi NPS to evacuate
  - Direction for the residents within 10km radius from Fukushima Dai-ichi NPS to stay in-house
- 17:39 ●Prime Minister directed evacuation of the residents within the 10 km radius from Fukushima-Dai-ichi NPS
- 18:25 ●Prime Minister directed evacuation of the residents within the 20km radius from Fukushima Dai-ichi NPS
- 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.

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## 5. Action Taken by the Government(3/5)

### March 13<sup>th</sup>, 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 15<sup>th</sup>, 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 20<sup>th</sup>, 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

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## 5. Action Taken by the Government(4/5)

### March 21<sup>st</sup>, 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 25<sup>th</sup>, 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.

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## 5. Action Taken by the Government(5/5)

**March 25<sup>th</sup>, 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 29<sup>th</sup>, 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 30<sup>th</sup>, 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.

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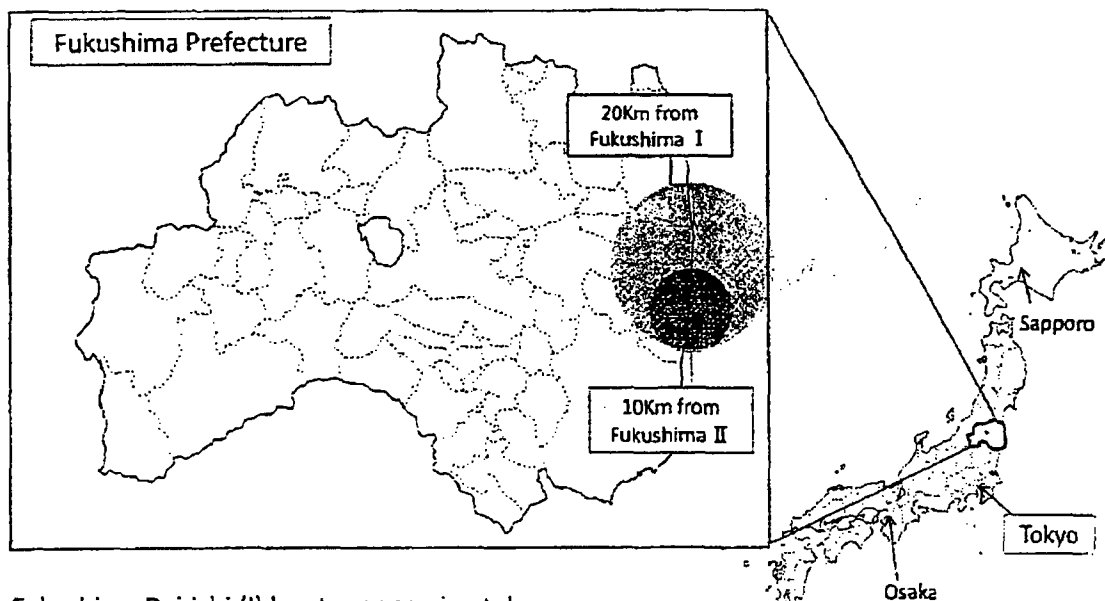
## 6. Current situation on resident evacuation and radiation exposure, etc

## 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.
- At 18:25 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.

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## 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

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## 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 Medical University Hospital. Simple decontamination procedure was given without surveying. They were hospitalized for follow-up.

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## 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.

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## 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)

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## 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.

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## **7. Implementation Status of Radiation Monitoring**

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### **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.

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## 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

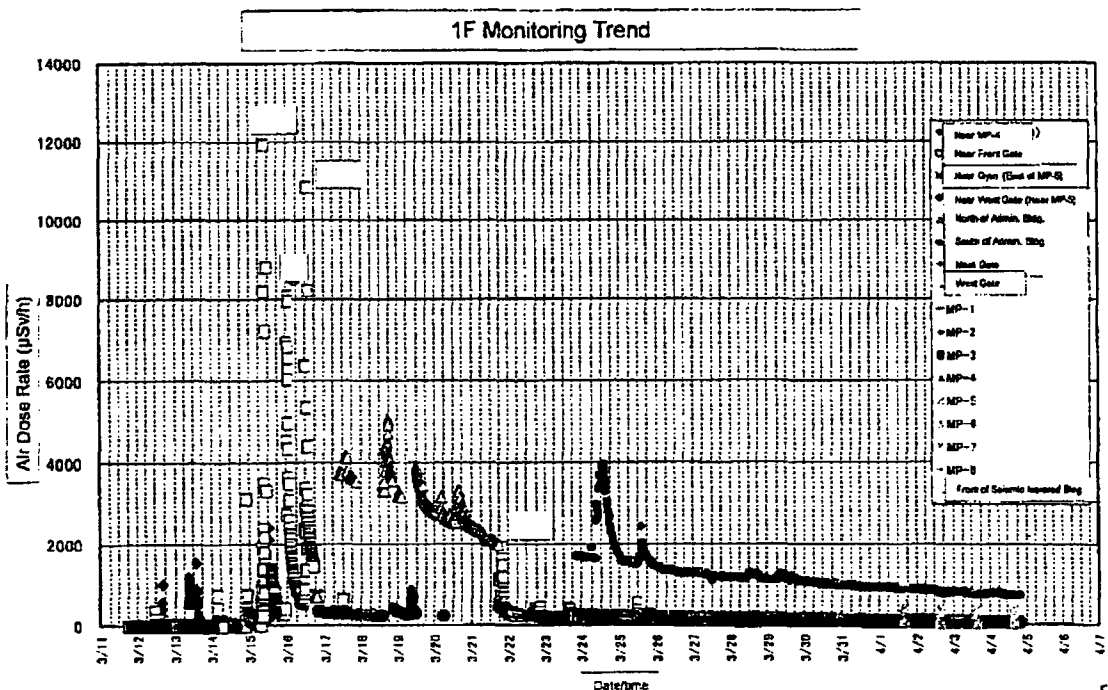
- MEXT measured radioactive substance concentrations and dose rates in the air using aircrafts.

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## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(1/7)

### ① Measurement of air dose rate

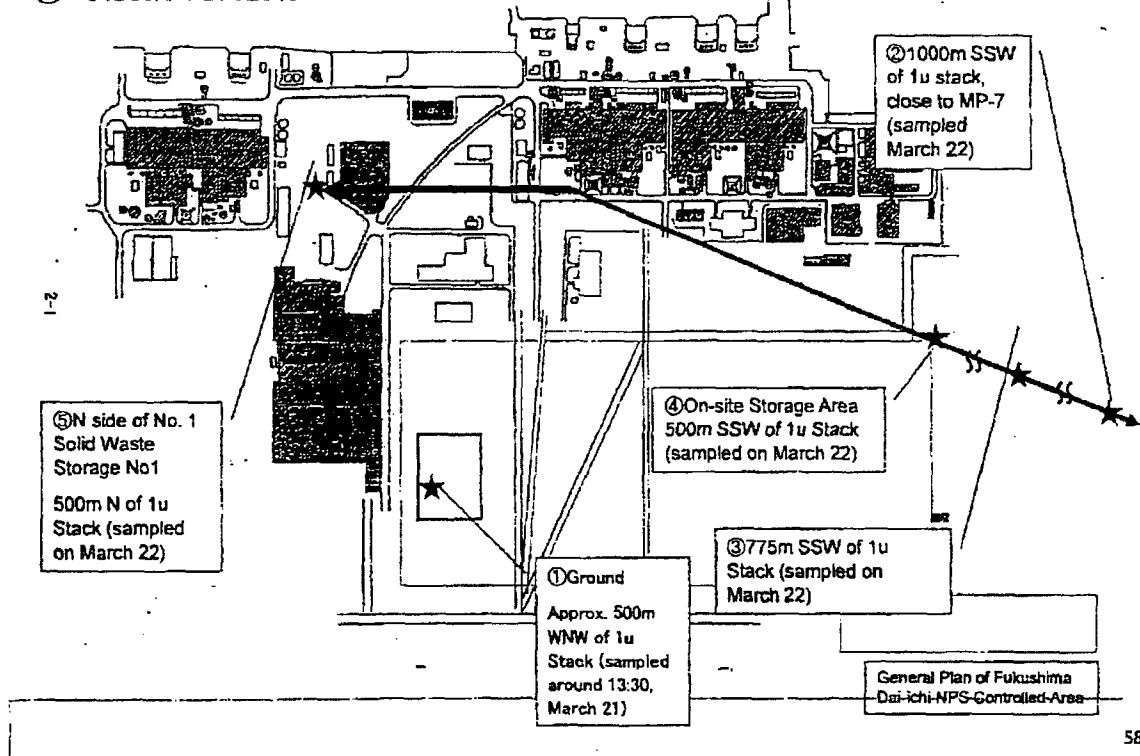
○Registered 11930 $\mu$ Sv/h around Front Gate on March 15.



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## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(2/7)

### ② Detection of radioactive material in the soil on the site of Fukushima Dai-ichi NPS



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## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(3/7)

### ② Detection 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<sup>2</sup>·dry soil)

Sampling Spot	Time of sampling	Pu-238	Pu-239, Pu-240
① Site field	13:30, March 21	$(5.4 \pm 0.62) \times 10^{-1}$	$(2.7 \pm 0.42) \times 10^{-1}$
② 1km away from Unit 1 exhaust stack	7:00, March 22	N.D	$(2.6 \pm 0.58) \times 10^{-1}$
③ 0.75km away from Unit 1 exhaust stack	7:10, March 22	N.D	$1.2 \pm 0.12$
④ 0.5 km away from unit 1 exhaust stack	7:18 March 22	N.D	$1.2 \pm 0.11$
⑤ Solid waste storage	7:45 March 11	$(1.8 \pm 0.33) \times 10^{-1}$	$(1.9 \pm 0.34) \times 10^{-1}$
Ordinary domestic soil		N.D ~ $1.5 \times 10^{-1}$	N.D ~ 4.5

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## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(4/7)

### ③ Water 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/cm <sup>3</sup> )			
	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	$2.7 \times 10^{-1}$
Co-60 (about 5 years)	N.D	N.D	$2.7 \times 10^2$	N.D
Mo-99 (about 66 hours)	N.D	N.D	N.D	$1.0 \times 10^6$
Tc-99m (about 6 hours)	N.D	$8.7 \times 10^4$	$2.2 \times 10^3$	$6.5 \times 10^{-1}$
Ru-106 (about 370 days)	N.D	N.D	N.D	$3.3 \times 10^6$
Ae-108m (about 418 years)	N.D	N.D	N.D	N.D
Te-129 (about 70 minutes)	N.D	N.D	N.D	$2.6 \times 10^1$
Te-129m (about 34 days)	N.D	N.D	N.D	$1.3 \times 10^1$
Te-132 (about 3 days)	N.D	N.D	N.D	$1.4 \times 10^1$
I-131 (about 8 days)	$1.5 \times 10^5$	$1.3 \times 10^7$	$3.2 \times 10^5$	$3.6 \times 10^2$
I-132 (about 2 hours)	N.D	N.D	N.D	$1.3 \times 10^1$
I-134 (about 53 minutes)	N.D	N.D	N.D	N.D
Cs-134 (about 2 years)	$1.2 \times 10^5$	$2.3 \times 10^6$	$5.5 \times 10^4$	$3.1 \times 10^1$
Cs-136 (about 13 days)	$1.1 \times 10^4$	$2.5 \times 10^5$	$6.5 \times 10^2$	$3.7 \times 10^2$
Cs-137 (about 30 years)	$1.3 \times 10^5$	$2.3 \times 10^6$	$5.6 \times 10^4$	$3.2 \times 10^1$
Ba-140 (about 13 days)	N.D	$4.9 \times 10^5$	$1.9 \times 10^4$	N.D
La-140 (about 2 days)	N.D	$1.9 \times 10^5$	$3.1 \times 10^3$	$7.4 \times 10^{-1}$

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## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(5/7)

### ③ Stagnant 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)	3,100m <sup>3</sup>	6,000m <sup>3</sup>	4,200m <sup>3</sup>
Depth of vertical pit	16.9m	16.3m	21.7m
Depth of water in vertical 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

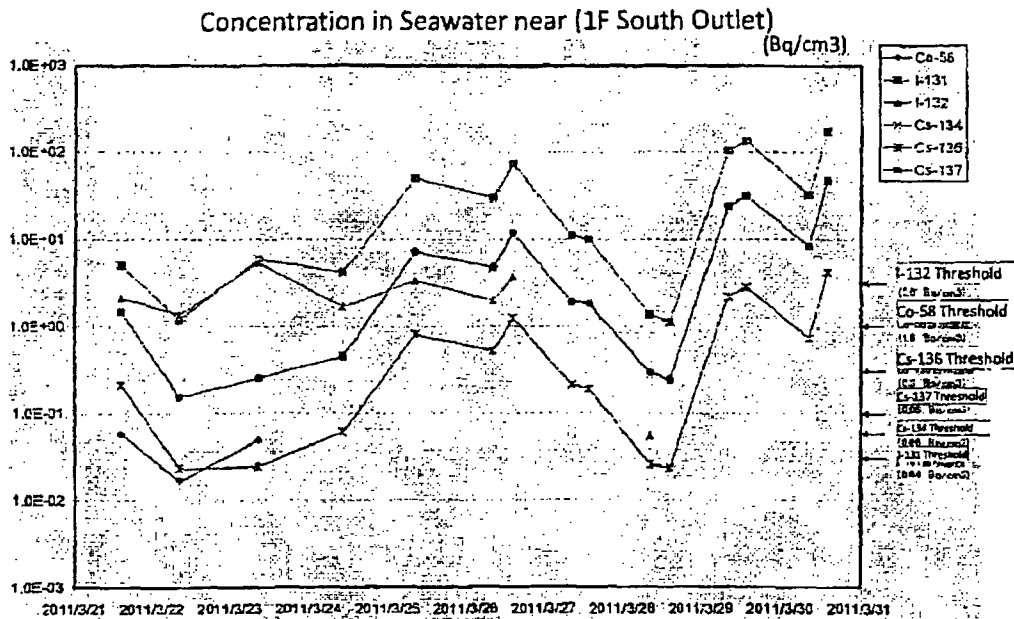
51



## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(6/7)

### ④ Radioactivity Concentration of Seawater Samples Near 1F South Outlet

- Concentration of radioactive iodine 131 recorded on March 31<sup>st</sup> was approx. 4385 times the limit set for water outside the environmental monitoring area.

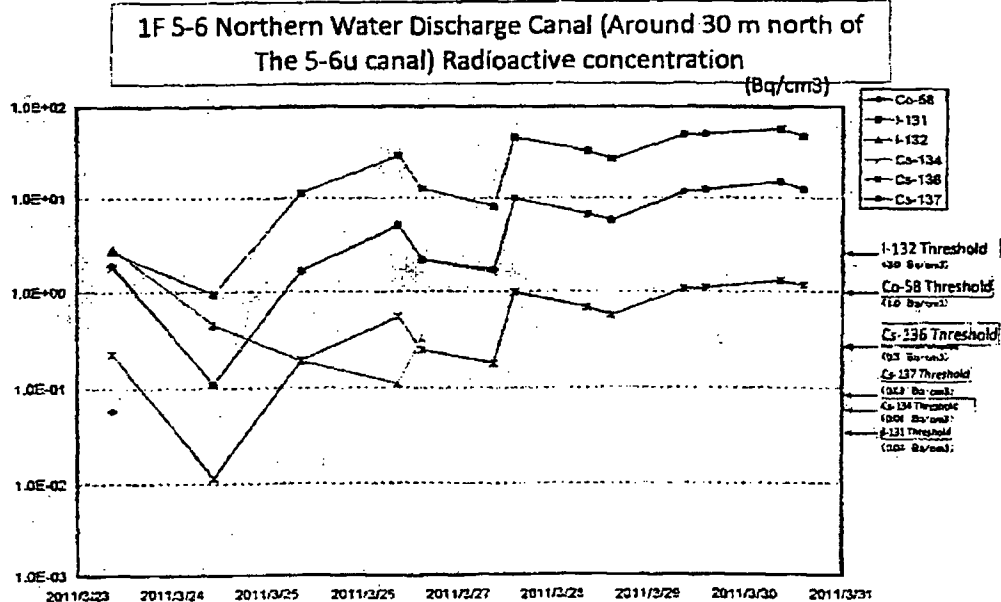


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## 7-2. Monitoring On-site(1F) (conducted by TEPCO)(7/7)

### ⑤ Radioactivity Concentration of Seawater Samples Near Unit 5 and 6 of 1F in North Outlet

- Concentration of radioactive iodine 131 recorded on March 31<sup>st</sup> was approx. 1425 times the limit set for water outside the environmental monitoring area.



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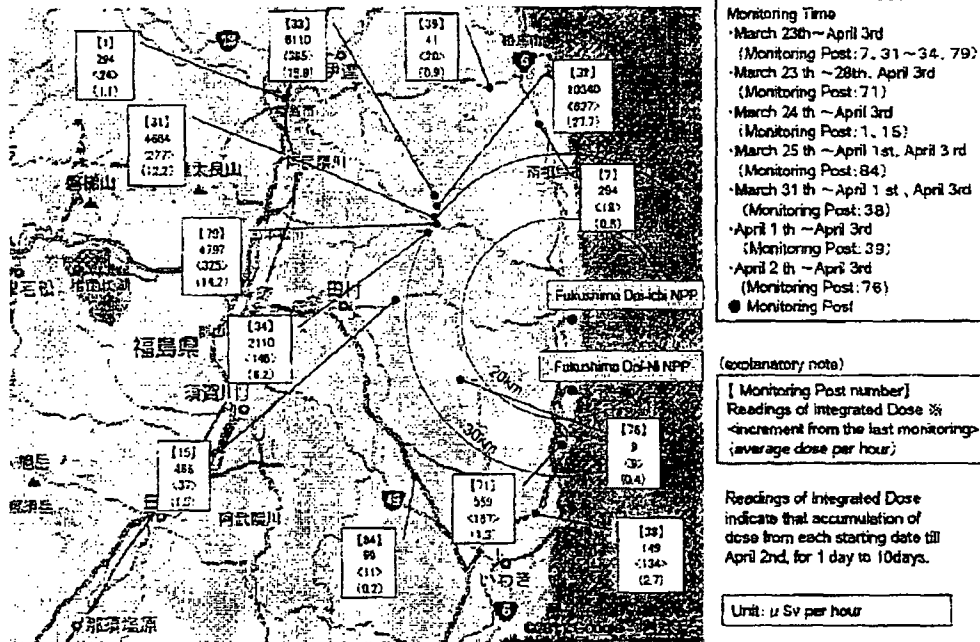
65

### 7-3. Monitoring by MEXT and local nuclear emergency response HQ(3/6)

#### ② Cumulative Doses Measured

- Air dose rate cumulatively measured since April 3 topped 10,340 $\mu$ Sv at #32, approximately 30km North West from 1F.

Readings of Integrated Dose at Monitoring Post out of Fukushima Dai-ichi NPP



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### 7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

#### ③ Concentration of Radioactive Materials

- Soil Samples

Sampling Point	Address of Sampling Point	Sample	Sort or Region	Sampling Time and Date	Radioactivity Concentration (Bq/kg)	
					<sup>137</sup> I	<sup>137</sup> Cs
[2-1] (About 40km North West)	Iitate Village	Land Soil	Soil	2011/3/16 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 12:30	207,000	38,900
	Iitate Village	Land Soil	Soil	2011/3/22 12:00	256,000	51,400
	Iitate Village	Land Soil	Soil	2011/3/23 12:25	135,000	32,200
	Iitate Village	Land Soil	Soil	2011/3/24 13:03	41,500	1,870
	Iitate Village	Land Soil	Soil	2011/3/25 13:05	255,000	27,900
	Iitate Village	Land Soil	Soil	2011/3/26 12:00	564,000	217,000
	Iitate Village	Land Soil	Soil	2011/3/28 15:30	82,000	28,600
	Iitate Village	Land Soil	Soil	2011/3/27 11:40	189,000	29,100
	Iitate Village	Land Soil	Soil	2011/3/27 12:00	60,800	20,800
	Iitate Village	Land Soil	Soil	2011/3/28 11:50	14,900	2,040
	Iitate Village	Land Soil	Soil	2011/3/28 12:10	23,100	860
	Iitate Village	Land Soil	Soil	2011/3/28 11:50	53,700	4,650
	Iitate Village	Land Soil	Soil	2011/3/28 12:10	51,400	25,100
	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	27,600
	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	1,140
	Iitate Village	Land Soil	Soil	2011/4/2 11:45	61,900	30,800

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### 7-3. Monitoring by MEXT and local nuclear emergency response HQ(4/6)

#### ③ Concentration of Radioactive Materials

##### ● Dust Samples

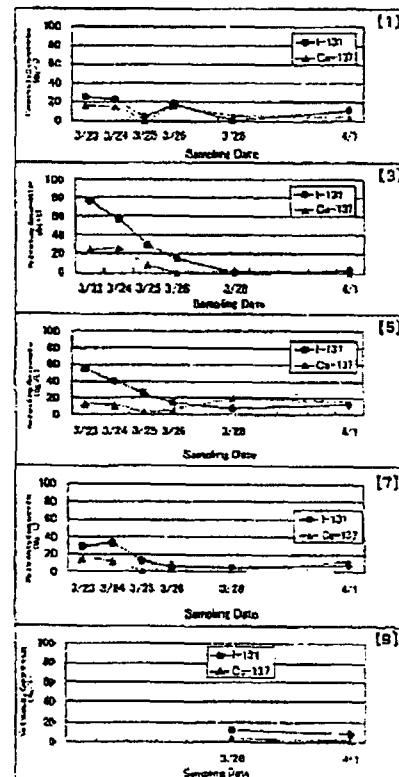
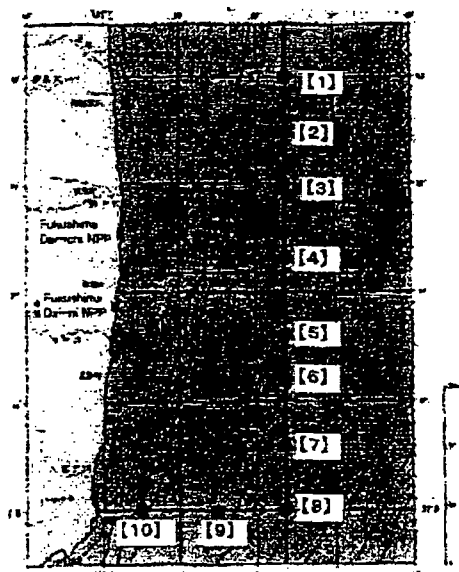
Sampling Point	Sampling Time and Date	Radioactivity Concentration (Bq/m <sup>3</sup> )		Reading (μSv/h)
		<sup>131</sup> I	<sup>137</sup> Cs	
【2-1】(About 40 km North West)	3/21 13:00~13:20	12.80	2.37	4.1
	3/22 12:26~12:46	5.87	ND	4.2
	3/23 12:50~13:10	2.99	ND	16.8
	3/24 13:30~13:50	5.80	1.51	10.0
	3/25 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

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### 7-3. Monitoring by MEXT and local nuclear emergency response HQ(5/6)

#### ④ Sea 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.



Notes: "Not Detectable" is illustrated as 0Bq/L.

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### 7-3. Monitoring by MEXT and local nuclear emergency response HQ(6/6)

#### ⑤Aerial Monitoring

- Flight Details : April 1<sup>st</sup>, 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 (μ Sv/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 ]	Kooriyama (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 ]	Utsunomiya (Tochigi Prefecture)	36° 35.02 ' N 140° 00.49 ' E	888 [737]	13:14	0.0147

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## 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 21<sup>st</sup> 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.

72

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## 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 damage, 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>

73

## 9. Remarks

74

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9. Remarks
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- 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

75

**Wittick, Brian**

---

**From:** Wittick, Brian  
**Sent:** Thursday, April 14, 2011 5:54 AM  
**To:** Liaison Japan  
**Subject:** FW: 13 Apr Mtg Notes (1900)  
**Attachments:** 13 Apr Notes (1900).doc

Notes from the Wed Cabinet meeting. Note Chuck's opening remarks.

BA/98



13 Apr Meeting (1900)

**Summary: Apologies for raising disaster to Level 7. GOJ instructed all power plants to (1) establish redundant external power supplies; (2) providing multiple diesel generators; and (3) providing electricity supply in a high altitude so that power supply once current begin within an hour. Sensors began to be sent to Koyama today. Remaining will be sent tomorrow and beyond. Set-up is moving smoothly. Next meeting: Tuesday, 18 April 1900. Meetings Tuesday and Thursday to follow.**

\*Fukuyama: We were able to meet with Mr. Gregson and Mr. Clarkson and were warmed by this good relationship. I let them know that we look for good US-Japan relations and plant stability ASAP. With the rise to Level 7, which caused a lot of international concern, we offer our apologies and ask for your understanding that the announcement was raised based on data that became available. I met with mayors of evacuated areas (Kawamata and Iitate). They were left in the regrettable position of having to leave home, job, fields and hometown behind, but it reflected the dire nature of the accident and it made me realize that we need to move this to a close ASAP.

*NRC: We understand that estimations are difficult. I have a personal story about Japanese people. I have been here for a month and the event occurred just over a month ago. Last Saturday night, I was able to relax with the AMEMB at a nightlife establishment. We had a wonderful time talking to Japanese friends and listening to music. Word soon spread that we were AMEMB staff and nuclear experts. One by one they came up and shook my hand and even held my face with their hands sharing their wish that this incident be resolved ASAP. The band played the song America as their last song. It was a heartfelt moment, as Japanese and Americans, wishing that this could be resolved. You would be there for us in our time of need and it was clear that the Japanese people are depending on all of us here to have the strength, courage, wisdom overcome this. The concern reminded me of how much Japan and the world is depending on us. We are ready to do whatever it takes to support our leaders and friends in Japan.*

Hosono: Thank you for those warm words. I renewed my determination to overcome this with the US. But tough times remain. I was not able to attend last week because of a strong aftershock. GOJ and TEPCO share the realization that the greatest challenge of going forward are aftershocks and tsunami. We are trying to overcome this problem by: (1) Establishing redundant external power supplies; (2) providing as many diesel generators as possible in the event that external power supplies are severed; and (3) providing electricity supply in a high location so that power supply can begin within an hour. Fukushima Daiichi is a very tough environment, so preparing all 3 of the above will be difficult. Regarding other power plants, we have instructed this 3-layer protection.

We have received a lot of advice on the Fukushima Daiichi structural integrity. We would like to continue to have your suggestions regarding power supply, etc.

2 more points: First, we were successful in getting water samples for spent fuel #4. We will pass the resulting data as it becomes available. Second, we express gratitude for the high-performance Tungsten vests, which was excellent information. As I recall, I believe I requested this gear more than 5 times, which you may have thought I was tenacious.

*NRC: We agree with redundant power supplies. Also, we appreciate the engineer discussions and would like to continue the discussions regarding redundant power and pumping systems as well.*

\*GOJ points in normal font. US points in italics

13 Apr Meeting (1900)

TEPCO: We continued water injection into #1-#3. We injected water into #3 spent fuel pools (#3 (35t), #2 (60t) and #3 (190t)). Also we took measurements in #4 spent fuel yesterday. We will be able to report by tomorrow on detailed reports, but I understand that Iodine is  $10^2$  bekerel per  $c^3$ . Spent fuel pool in #4: Temp was 90 deg Celsius, air sample radiation was 84ms/hour, water was 5m below normal, but water depth of 2m above top of fuel still present. At 1935, we discharged water from the turbine building. According to this morning's data, the vertical trench water was down 43mm as of 1935hrs. Today on #2, we placed 3 more silt fences (total 4). Also, we set steel plates in front of the screens. Nitrogen inertion into #1 continues. Yesterday a 6.3 aftershock, but no extraordinary events occurred.

Nagashima: We are grateful for Talon robots and radiation-hardened camera; they are operational.

NISA: A report on regular (daily) meetings: We report on plant status, and yesterday we discussed the IAEA Level 7 rating. We also received reports of the 2PM aftershock. Also, we notified of water sampling in #4 and, tomorrow, will discuss resulting data. We are also thinking of expert-level discussions to address what we discussed yesterday. We have DOE institutions, JAE, JAENS and have discussions and analysis. Discussions were very interesting today. We would also like to have expert consultation redundant power, cooling systems, and pumping systems. Industry-industry discussions are addressing mitigation strategy and wastewater handling. This will be reported later; we are reviewing their discussion topics. TEPCO is working on a mid-term plan. Once consolidated, the expert meeting will be able to lead discussions through the entire plan. Also, re protective action, we will be awaiting the scope of work identified by the US.

*NRC: Model you have set up is very helpful. I understand that the discussions were so good that they didn't want the meeting to end. We will resume ASAP.*

Cabinet Secretariat: We held a liaison coord mtg between Econ Minister Wall and my people. This was helpful in disposing of various issues and consolidating where multiple agencies are resolved. We completed the US-Japan Nuclear Asst tracker and will deliver it to the US for review. We hear there are US proposals. We hope that you add those proposals and return. We will meet again on Friday. The US side will explain about added projects at that time.

*Wall: Meetings were useful. We look forward to deepening dialogue.*

MOD: This morning, we commenced setting up ground monitoring equipment in Koriyama (6 MOD, 1 USFJ). Remainder will be set tomorrow and beyond; this is moving smoothly.

Ito: We see lots of WG progress and technical work. This gathering is overseeing progress. We propose we reduce this meeting in frequency. Would next Tuesday work for you?

Next meeting: 7PM on Tuesday, 18 Apr. We will meet Tuesday and Thursday for now.

13 Apr Meeting (1900)

TEPCO: We continued water injection into #1-#3. We injected water into #3 spent fuel pools (#3 (35t), #2 (60t) and #3 (190t)). Also we took measurements in #4 spent fuel yesterday. We will be able to report by tomorrow on detailed reports, but I understand that Iodine is  $10^2$  bekerel per  $c^3$ . Spent fuel pool in #4: Temp was 90 deg Celsius, air sample radiation was 84ms/hour, water was 5m below normal, but water depth of 2m above top of fuel still present. At 1935, we discharged water from the turbine building. According to this morning's data, the vertical trench water was down 43mm as of 1935hrs. Today on #2, we placed 3 more silt fences (total 4). Also, we set steel plates in front of the screens. Nitrogen inertion into #1 continues. Yesterday a 6.3 aftershock, but no extraordinary events occurred.

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*Wall: Meetings were useful. We look forward to deepening dialogue.*

MOD: This morning, we commenced setting up ground monitoring equipment in Koriyama (6 MOD, 1 USFJ). Remainder will be set tomorrow and beyond; this is moving smoothly.

Ito: We see lots of WG progress and technical work. This gathering is overseeing progress. We propose we reduce this meeting in frequency. Would next Tuesday work for you?

Next meeting: 7PM on Tuesday, 18 Apr. We will meet Tuesday and Thursday for now.

---

**From:** OST01 HOC  
**Sent:** Friday, April 15, 2011 6:19 AM  
**To:** Johnson, Michael; Zimmerman, Roy; RST01 Hoc; Hoc, PMT12; LIA08 Hoc  
**Subject:** FW: Fax from 81355105111  
**Attachments:** File1.PDF

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

From: HOO Hoc  
Sent: Friday, April 15, 2011 6:08 AM  
To: LIA07 Hoc; LIA08 Hoc; OST01 HOC  
Subject: FW: Fax from 81355105111

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

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

From: hoo1 [mailto:[hoo1.hoc@nrc.gov](mailto:hoo1.hoc@nrc.gov)]  
Sent: Friday, April 15, 2011 6:08 AM  
To: HOO Hoc  
Subject: Fax from 81355105111

RECEIVE NOTIFICATION FOR JOB 00018163

Notice for: HOO1

Remote ID: 81355105111

Received at: 04/15/2011 06:06

Pages: 2

Routed by:

Routed at: 04/15/2011 06:06

BA/99

Way Forward to an End of the Fukushima-Daiichi Accident  
(Draft)

1 Basic Principle

- By stably cooling reactors and SFPs and controlling the release of radioactive substances, the TEPCO is fully committed to the return of those who evacuated from the areas around the Fukushima-Daiichi and to assuring the safety to the Japanese people.

2 Goals

- Following Step 1 and 2 are set as Goals.
  - Step 1: Securing declining trend of the amount of radiation
  - Step 2: Controlling radioactive materials and significantly lowering the amount of radiation(The period after Step 2 is regarded as "mid-term challenges")
- Followings are timeframes for the achievement of the Goals.
  - Step 1: about 3 months
  - Step 2: about 3-6 months after Step 1

3 Ongoing Works

- In order to achieve Goals above, ongoing works are categorized into three areas. Concrete objectives are set in each of five challenges, and various measures will be taken simultaneously (see table in the next page).
- For the achievement of Step 1, following two points are especially important.
  - (1) Preventing large-scale hydrogen explosion in reactors (Unit 1-3)
    - ✓ Nitrogen is being/will be injected into the PCV so that the ratios of hydrogen and oxygen are lowered.
  - (2) Preventing the release/leakage of high-level contaminated water to outside the site (Unit 2)
    - ✓ We will ①prepare multiple storages, and ②build treatment facilities for contaminated water.

To: ET

Thanks,  
Hew

## Roadmap for Further Measures

	Challenges	Step 1 (Objectives and Measures)	Step 2 (Objectives and Measures)
Cooling	Reactors	①Stable Cooling <ul style="list-style-type: none"> <li>- nitrogen injection</li> <li>- flooding</li> <li>- heat exchangers</li> </ul> ②Until sealing off the Unit 2 PCV, continuing cooling while controlling the increase of the contaminated water	③Sufficient cooling in each Unit <ul style="list-style-type: none"> <li>- maintaining and enhancing measures in Step 1</li> </ul>
	SFPs	④Stable Cooling <ul style="list-style-type: none"> <li>- enhanced reliability of injection</li> <li>- recovery of circulating cooling system</li> <li>- enhanced R/B structure</li> </ul>	⑤Maintaining SFP's water level with more stable cooling <ul style="list-style-type: none"> <li>- automated injection</li> <li>- heat exchangers</li> </ul>
Control	Containment, Treatment, Storage and Recycle of Contaminated Water	⑥Sufficient storage for high-level water not to be spilled over <ul style="list-style-type: none"> <li>- storage/treatment facilities</li> </ul> ⑦Storing/treating low-level water <ul style="list-style-type: none"> <li>- storage facility and decontamination treatment</li> </ul>	⑧Sufficient storage and decreasing the total amount of contaminated water <ul style="list-style-type: none"> <li>- further storage/treatment facilities</li> <li>- desalination and recycle</li> </ul>
	Control of Radioactive Substances to Air and Soil	⑨Preventing spread of radioactive substances from buildings/sites <ul style="list-style-type: none"> <li>- spread of fixatives</li> <li>- removal of debris</li> <li>- covering of R/Bs</li> </ul>	⑩Preventing spread of radioactive substances from the sites and covering each buildings
Monitoring and Removing Radiation	Measuring, Reducing and Publicizing Radiation Dose in Designated Zones	⑪Informing results of intensive monitoring activities ⑫Sufficiently reducing radiation dose in Evacuation/Planned Evacuation/Preparing for Evacuation Zones	

**Huffert, Anthony**

---

**From:** Walcott, Naomi [WalcottN@state.gov]  
**Sent:** Sunday, April 17, 2011 9:52 PM  
**To:** Huffert, Anthony  
**Cc:** Gepford, Heather  
**Subject:** RE: Health Working Group

Tony,

Sorry I missed you over the weekend, but I'd look forward to meeting briefly if you're available. Aside from meetings today at 1:00 and 5:00, my schedule is flexible. Alternatively, if you are available to come to tomorrow's Health Working Group meeting, it would be a good chance for everyone there to hear about the Protective Measures Team so you wouldn't need to repeat it twice.

Best regards,  
Naomi

Naomi Walcott  
Second Secretary  
Environment, Science, Technology and Health Unit  
Economic Section  
U.S. Embassy Tokyo  
Tel: (03) 3224-5315  
Fax: (03) 3224-5019  
Email: [walcottn@state.gov](mailto:walcottn@state.gov)

This email is UNCLASSIFIED.

**From:** Huffert, Anthony [<mailto:Anthony.Huffert@nrc.gov>]  
**Sent:** Friday, April 15, 2011 6:48 PM  
**To:** Walcott, Naomi  
**Cc:** Gepford, Heather  
**Subject:** RE: Health Working Group

Naomi,

Yes, Heather Gepford and I would be glad to stop by your office to discuss what the Protective Measures Team and the Health Working Group. Our schedules were filled with meetings today, but tomorrow and Sunday should be open. Please let us know when we may stop by your office.

Best regards,

Tony

**From:** Walcott, Naomi [<mailto:WalcottN@state.gov>]  
**Sent:** Thursday, April 14, 2011 3:05 AM  
**To:** Huffert, Anthony  
**Subject:** Health Working Group

Tony,

BA/100

I work with Bruce Howard, also at the Embassy, who passed me your contact information. I am working at the Embassy on coordinating among offices and individuals working on health-related aspects to the current situation. Would I be able to drop by at your convenience to talk with you about what you'll be working on and what the Protective Measures Team does?

Also, there is a Health Working Group meeting that will meet next Tuesday from 2:30 – 3:30 in the Press Briefing Room #2 (second floor). Would you be available or interested to attend to meet some of the others in the Embassy who handle various aspects of health and safety issues? It will likely be chaired by Suzanne Basalla, the Ambassador's Senior Advisor.

Best regards,  
Naomi

Naomi Walcott  
Second Secretary  
Environment, Science, Technology and Health Unit  
Economic Section  
U.S. Embassy Tokyo  
Tel: (03) 3224-5315  
Fax: (03) 3224-5019  
Email: [walcottn@state.gov](mailto:walcottn@state.gov)

This email is UNCLASSIFIED.



**Weaver, Tonna**

---

**From:** Operations Center Bulletin  
**Sent:** Wednesday, March 16, 2011 12:51 PM  
**To:** Operations Center Bulletin  
**Subject:** UPDATE: NRC IS RESPONDING TO JAPANESE EVENTS

**THIS IS NOT A DRILL**

**The Office of Public Affairs is expecting a large volume of calls from media and the general public regarding the latest statements from the State Department and the NRC regarding the situation in Japan. ALL CALLS from media or the general public on this topic must be referred to Regional Public Affairs or the 301-415-8200 number for HQ employees.**

**THIS IS NOT A DRILL**

**\*\*\*\*\*Event Information is Attached\*\*\*\*\***

The NRC is responding to an event.

Please contact the NRC Executive Support Team if necessary at 301-816-5100 or reply to this e-mail.

BA/101

**Weaver, Tonna**

---

**From:** Yarsky, Peter  
**Sent:** Monday, March 21, 2011 9:24 PM  
**To:** Mendiola, Anthony; Miranda, Samuel; Klein, Paul  
**Subject:** RE: Do you have a copy of the slides you can send me.... Thanks  
**Attachments:** NRCExecutiveBriefingR1.ppt

---

**From:** Mendiola, Anthony  
**Sent:** Monday, March 21, 2011 9:23 PM  
**To:** Yarsky, Peter; Miranda, Samuel; Klein, Paul  
**Subject:** Do you have a copy of the slides you can send me.... Thanks  
**Importance:** High

BA/102

Executive Briefing  
March 22, 2011

# Preliminary Analysis on Salt Accumulation in RPV Bottom

Junichi Hakii

Nuclear Asset Management Dep.

TEPCO

# Risks of Salt Accumulation

- Loss of Cooling of Fuel
  - Loss of Function of SRV
    - Degradation of Efficiency of Heat Exchanger (if we are able to go into mid or long term heat removal)
      - SCC (significant increase of Crack Growth Rate)

# Loss of Cooling of Fuel

- Injection of Sea Water Starts
  - Unit 1: March 12 20:20
  - Unit 2: March 14 16:30
  - Unit 3: March 13 13:10
- Regulator's Concerns on March 16
- I was told to examine the same Concern by Superintendant's on March 16
- Efforts to accelerate the preparation on Fresh Water

# Rough Estimation of Time Limit (1)

Total Sea Water Injected as of March 20 15:00

- Unit 1(1,380 MWth): 3,530 ton
- Unit 2(2,381 MWth): 5,880 ton
- Unit 3(2,381 MWth): 4,389 ton

Scenario

- Saturated (Already saturated)
  - Starts of Accumulation Salt (Already progressed)
  - Level of Accumulated Salt Reaches to the Lower End of Fuels = Loss of Cooling
-

## Rough Estimation of Time Limit (2)

Injected Flow Rate of Sea Water after 24:00  
March 20 Assumed in the Following Way

- Unit 1: 115 l/min (Its Latent heat is equal to then decay heat (=0.3% of Thermal Power )
- Unit 2 and 3: 190 l/min

Salt Production and accumulated Rate

- All Salt of Injected Sea Water Remains and Accumulates in RPV

# Rough Estimation of Time Limit (3)

## Time Limits For

- Unit 1: March 31 (19 days)
- Unit 2: March 31 (17 days)
- Unit 3: April 2 (20 days)

## These Estimation Based on

- Support of CRIEPI
- Insights of Specialist of Sea Water Desalination Plants Systems



# Discussion (1)

Adequacy of Criteria of Loss of Cooling-  
What is Appropriate Criteria ?

Adequacy of Density of Accumulated Salt (I  
intentionally assume 1 gram/cm<sup>3</sup> instead  
of theoretical density 2.16 because 2.16 is  
neither conceivable nor conservative

Further Insights of Chemistry Specialists –  
Any Potential Risks

## Weaver, Tonna

---

**From:** Nakanishi, Tony  
**Sent:** Tuesday, March 22, 2011 3:08 AM  
**To:** Liaison Japan; LIA01 Hoc  
**Subject:** NISA Plant Parameter data

This site has the plant data as published by NISA.

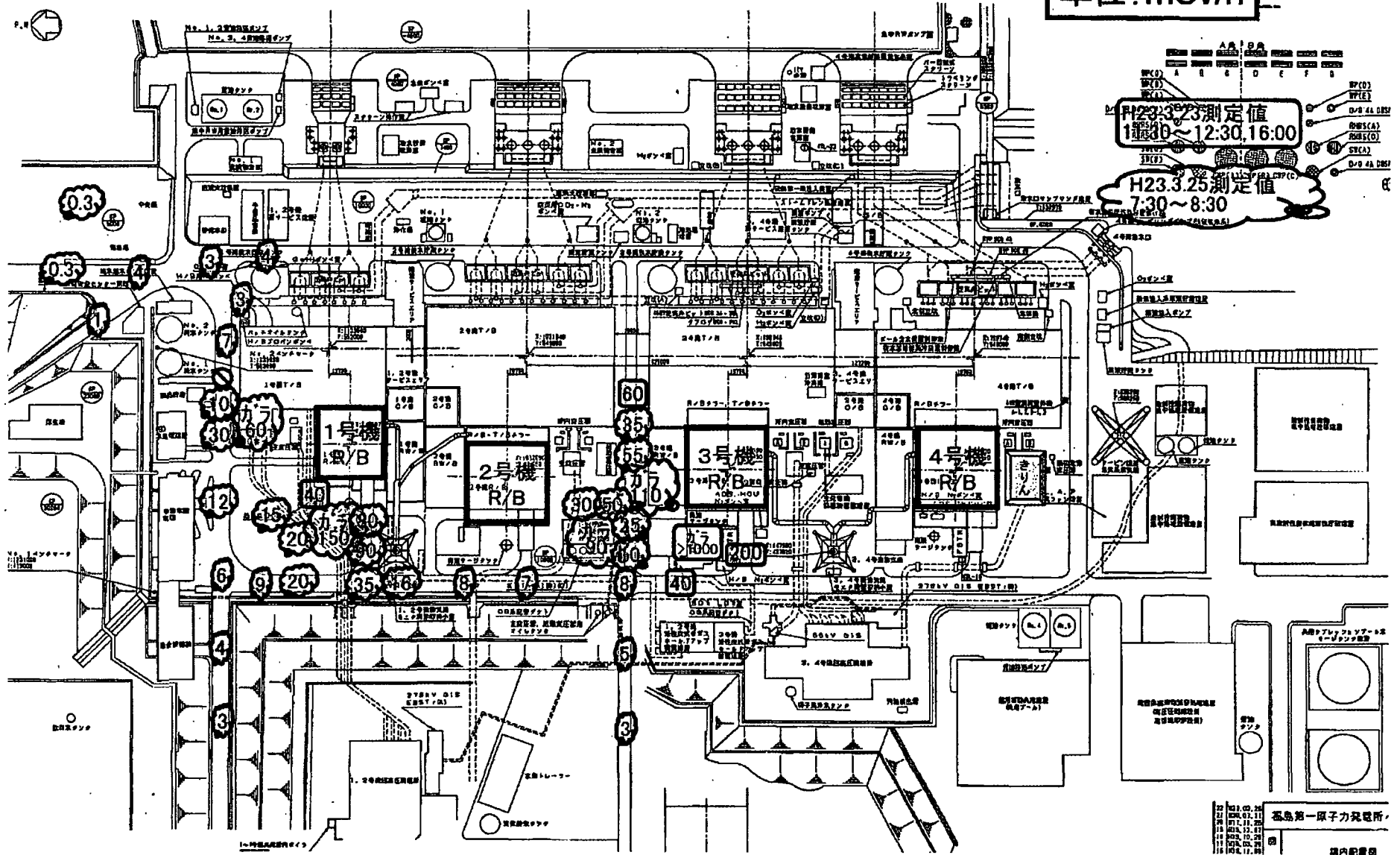
Go to the pdf links towards the bottom.

<http://www.meti.go.jp/press/20110322003/20110322003.html>

BA/103

# 福島第一サーベイマップ(平成23年3月25日8:30現在)

単位: mSv/h



## Weaver, Tonna

---

**From:** 佐藤 隆 [sato.h.takashi@tepc.co.jp]  
**Sent:** Monday, March 28, 2011 9:17 PM  
**To:** Nakanishi, Tony  
**Subject:** Re: NRC Meetings for March 29, 2011  
**Attachments:** 20110329\_1FSurveyMapR0.ppt

Dear Tony,

I am very sorry.  
Please check again.

Takashi Sato

---

東京電力株式会社  
本店 原子力・立地業務部  
原子力企画グループマネージャー  
佐藤 隆 (Takashi Sato)  
〒100-8560 東京都千代田区内幸町1-1-3  
TEL : 03-6373-4721  
FAX : 03-3596-8538  
E-Mail : [sato.h.takashi@tepc.co.jp](mailto:sato.h.takashi@tepc.co.jp)

---

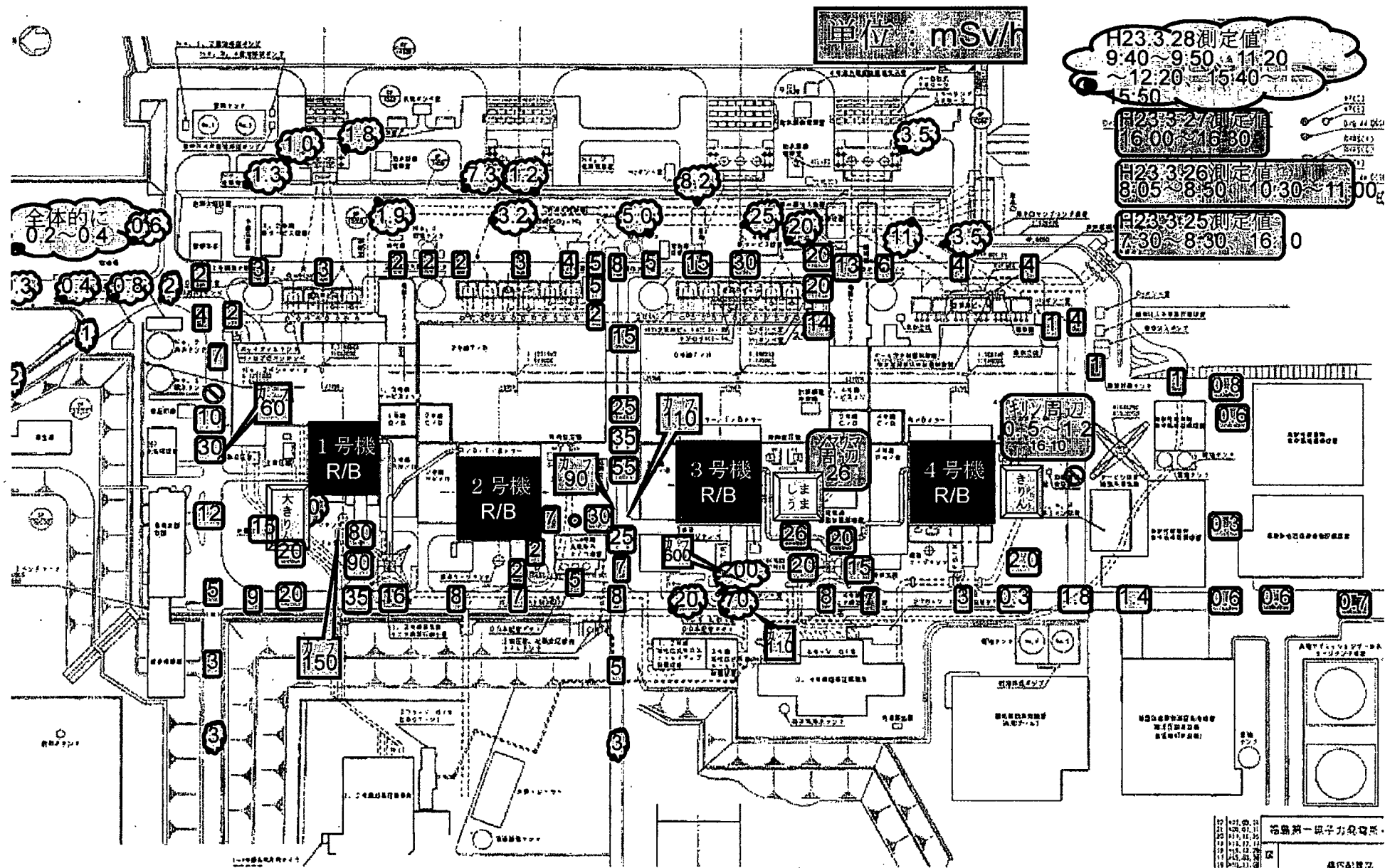
----- Original Message -----

**From:** "Nakanishi, Tony" <[Tony.Nakanishi@nrc.gov](mailto:Tony.Nakanishi@nrc.gov)>  
**To:** ""?? ?"" <[sato.h.takashi@tepc.co.jp](mailto:sato.h.takashi@tepc.co.jp)>  
**Sent:** Tuesday, March 29, 2011 10:13 AM  
**Subject:** RE: NRC Meetings for March 29, 2011

> Sato-san,  
>  
> I am unable to open this document. It looks like the file is not a  
> powerpoint file. Can you reconfirm?  
>  
> Thank you,  
>  
> Tony  
>  
> -----Original Message-----  
> **From:** 佐藤 隆 [<mailto:sato.h.takashi@tepc.co.jp>]  
> **Sent:** Monday, March 28, 2011 9:00 PM  
> **To:** Nakanishi, Tony  
> **Subject:** Re: NRC Meetings for March 29, 2011  
>  
> Dear Tony,  
>  
> Thank you very much.  
> Here is the revised survey map.  
>  
> Takashi Sato  
> TEPCO

BA/104

福島第一サーベイマップ (平成23年3月28日 15:50現在)



**Weaver, Tonna**

---

**From:** Nakanishi, Tony  
**Sent:** Monday, March 28, 2011 9:33 PM  
**To:** Liaison Japan; LIA01 Hoc  
**Subject:** FW: NRC Meetings for March 29, 2011  
**Attachments:** 20110329\_1FSurveyMapR0.ppt

fyi

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

**From:** 佐藤 隆 [mailto:satoh.takashi@tepcoco.jp]  
**Sent:** Monday, March 28, 2011 9:17 PM  
**To:** Nakanishi, Tony  
**Subject:** Re: NRC Meetings for March 29, 2011

Dear Tony,

I am very sorry.  
Please check again.

Takashi Sato

-----  
東京電力株式会社  
本店 原子力・立地業務部  
原子力企画グループマネージャー  
佐藤 隆 (Takashi Sato)  
〒100-8560 東京都千代田区内幸町1-1-3  
TEL : 03-6373-4721  
FAX : 03-3596-8538  
E-Mail : [satoh.takashi@tepcoco.jp](mailto:satoh.takashi@tepcoco.jp)  
-----

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

**From:** "Nakanishi, Tony" <Tony.Nakanishi@nrc.gov>  
**To:** ""?? ?"" <[satoh.takashi@tepcoco.jp](mailto:satoh.takashi@tepcoco.jp)>  
**Sent:** Tuesday, March 29, 2011 10:13 AM  
**Subject:** RE: NRC Meetings for March 29, 2011

> Sato-san,  
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> Thank you,  
>  
> Tony  
>

> -----Original Message-----

> **From:** 佐藤 隆 [mailto:satoh.takashi@tepcoco.jp]  
> **Sent:** Monday, March 28, 2011 9:00 PM  
> **To:** Nakanishi, Tony  
> **Subject:** Re: NRC Meetings for March 29, 2011

BA/105

>  
> Dear Tony,  
>  
> Thank you very much.  
> Here is the revised survey map.  
>  
> Takashi Sato  
> TEPCO  
>





---

**From:** Parker, Nicole  
**Sent:** Friday, March 11, 2011 1:45 PM  
**To:** Schmidt, Rebecca  
**Subject:** FW: Redacted 2011 and 2010 Memo on Yucca Mountain Closure  
**Attachments:** Final Version of Redacted Memo 030911.pdf; Redacted Final 2010 Memo Plan for High Level Waste.pdf

---

**From:** Parker, Nicole  
**Sent:** Friday, March 11, 2011 12:32 PM  
**To:** Powell, Amy; Brenner, Eliot  
**Cc:** Haney, Catherine; Davis, Jack; Kokajko, Lawrence; Mohseni, Aby; Stablein, King; Kotra, Janet; Chidichimo, Gabriele; Valencia, Jennifer; Dorman, Dan  
**Subject:** Redacted 2011 and 2010 Memo on Yucca Mountain Closure

Good Afternoon

Attached are the 2011 and 2010 Redacted Memos.

Once you have received them please let us know.

I will wait one hour before sending the memos to get Declared and made public.

Thanks

Nicole Parker

BA/106

REVISED on March 1, 2011, to correct NRC Form 757, Section C, to reflect three staff members' non-concurrences and their requests that their non-concurrences be made public

February 4, 2011

MEMORANDUM TO: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

FROM: Catherine Haney, Director */RA/*  
Office of Nuclear Material Safety and Safeguards

SUBJECT: UPDATE ON THE YUCCA MOUNTAIN PROGRAM

The purpose of this memorandum is to describe the status of the Yucca Mountain Program. Since October 1, 2010, the U.S. Nuclear Regulatory Commission (NRC) staff's activities have focused on the orderly closure of the NRC staff's safety review of the license application submitted by the U.S. Department of Energy (DOE) for authorization to construct a geologic repository at Yucca Mountain (YM), NV. This memorandum also describes the staff's plans to capture the knowledge it acquired during more than 3 decades of pre-licensing preparation and more than 2 years of licensing review activities.

Program Status and Termination of Safety Review

Effective on October 1, 2010, the staff ceased its safety review of the YM license application. Consequently, the staff is converting the remaining volumes of its safety evaluation report (SER) ("Volume 3: Review of Repository Safety after Permanent Closure," "Volume 2: Review of Repository Safety before Permanent Closure," and "Volume 4: Review of Administrative and Programmatic Requirements") into technical evaluation reports, which will be published as NUREG reports in the knowledge management series. These reports will document the staff's technical review activities and technical conclusions but will contain no staff findings of regulatory compliance.

Knowledge Capture and Orderly Closure of Supporting Licensing Proceedings

The NRC staff is archiving the institutional, regulatory, and technical knowledge amassed over nearly 3 decades as it evaluated YM and other potential sites for deep geologic disposal of spent fuel and high-level waste. The staff is evaluating and documenting the lessons learned from (1) the development and implementation of site-specific regulations and guidance documents for geologic disposal, (2) the conduct of a licensing proceeding under Subpart J,

CONTACT: Lawrence E. Kokajko, NMSS  
301-492-3158

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"Procedures Applicable to Proceedings for the Issuance of Licenses for the Receipt of High-Level Radioactive Waste at a Geologic Repository," of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 2, "Rules of Practice for Domestic Licensing Proceedings and Issuance of Orders," and (3) the establishment and the operation of the Licensing Support Network (LSN). The staff will preserve this knowledge as a resource for future use. Associated with this, on October 1, 2010, the staff directed the Center for Nuclear Waste Regulatory Analyses (CNWRA) to stop its license application review activities. The staff redirected CNWRA to focus its YM-related efforts on the preservation of knowledge and records management. As the High Level Waste (HLW) repository knowledge management tasks are completed, CNWRA will transition to non-HLW Repository work using fee-based resources to evaluate the safety and environmental impacts of longer term storage of spent nuclear fuel and to support the staff's development of a longer term waste confidence rulemaking plan.

The NRC staff established priorities for activities it will undertake commensurate with available resources and closure of the licensing review. As part of this effort, the staff will document its technical review of the license application in technical evaluation reports (NUREGs). These reports will capture the scientific findings, knowledge, and experience of the staff's technical review, the development of requests for additional information, and an evaluation of the license application without stating the conclusion that would be needed to support a licensing decision. The first of these, documenting postclosure review activities, is planned for completion in the second quarter of fiscal year (FY) 2011. Resources permitting, reports on the staff's preclosure (Volume 2) and administrative (Volume 4) reviews will follow later in the third and fourth quarters of FY 2011.

During the first quarter of FY 2011, the staff established its process for developing the technical evaluation reports and began preparation of those reports. The staff is responding to a Freedom of Information Act request for access to staff drafts of SER Volumes 2 and 3. Technical staff members continued to provide input to the Office of the General Counsel on adjudicatory hearing-related matters to assist in responding to orders from the Construction Authorization Board 4 (CAB4 or the Board), including directives on case management and identification of witnesses. Departing and other senior technical staff members were interviewed on videotape for knowledge capture and as a future training resource. Personnel from the Office of Administration and the Atomic Safety and Licensing Board Panel (ASLBP or the Panel) initiated discussions with the General Services Administration and other government agencies about preparatory activities to close and decommission the Las Vegas Hearing Facility (LVHF), including its computer systems, physical infrastructure, and physical security infrastructure. During this period, the high-level waste core group continued discussions about the budget for orderly closure of the YM program to ensure coordination with preparation for renewal of the CNWRA contract and other contractual matters.

#### Hearing Process and Activities

CAB4 has continued to preside over the YM proceeding after denying the Department of Energy license application withdrawal motion in June 2010. The NRC staff, as required, has kept the Board informed of the status of the staff's application review activities. Specifically, on

The Commissioners

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November 29, 2010, the staff informed CAB4 that it would not issue SER Volume 3 in November 2010 as previously planned, and that a revised schedule is indeterminate. On December 8, 2010, CAB4 ordered the staff to submit by December 22, 2010, a full explanation of its schedule change for the issuance of Volume 3 and directed the parties to confer and seek to reach agreement on a discovery status report by January 25, 2011. The staff replied on December 22, 2010, also indicating that the schedule for SER Volumes 4 and 2 was indeterminate. On December 14, 2010, CAB4 ruled on the Phase 1 legal issues and denied petitions for rule waivers. The Board also directed affected parties to submit a joint stipulation, or differing views, regarding the effects of the Board's Phase 1 legal issue rulings on admitted contentions by January 21, 2011. The major parties (including the NRC staff) timely responded and also filed differing views. In addition, DOE filed a January 21, 2011, motion seeking a suspension of the proceeding through May 20, 2011 and Nevada filed a January 20, 2011, motion seeking reconsideration of the rejection of a contention in its initial petition. CAB4 has not yet ruled on the suspension motion.

Absent contrary direction it is our understanding that the Panel plans to maintain the adjudicatory infrastructure for the repository licensing proceeding, including the Las Vegas Hearing Facility (LVHF), the Licensing Support Network (LSN), and the LVHF component of the Digital Data Management System (DDMS), until the end of FY 2011. At that time shut-down of the infrastructure would need to be accomplished to avoid the agency requiring Nuclear Waste Fund (NWF) money that has not been appropriated in order to complete the shut-down after FY 2011. We understand that ASLBP plans to send a memorandum in February that discusses this matter more fully and includes key action points for an orderly shutdown.

Resources

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The Commissioners

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Coordination

The Office of the General Counsel has reviewed this paper and has no legal objection. The Office of the Chief Financial Officer has reviewed this paper for resource implications and has no objections.

Three staff members in NMSS filed non-concurrences on this memorandum (Enclosures 2-4). These non-concurrences are included in the interest of providing the Commission with alternative views.

This paper contains pre-decisional procurement and budget information and should be withheld from public disclosure.

Enclosures:

1. [ ]
2. Non-Concurrence dated January 18, 2011
3. Non-Concurrence dated February 1, 2011
4. Non-Concurrence dated February 2, 2011

cc: SECY  
EDO  
OGC  
OCA  
OPA  
CFO  
ASLBP

[ ]

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~~—OFFICIAL USE ONLY— SENSITIVE INTERNAL INFORMATION—~~

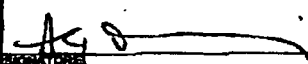
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Enclosure 1

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NRC FORM 757 REV 100 10/10 0-2000		U.S. NUCLEAR REGULATORY COMMISSION	
NON-CONCURRENCE PROCESS			
<b>SECTION A - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL</b>		ADAMS ACCESSION NO.	
TITLE OF DOCUMENT		ML183146391	
Update on the Yucca Mountain Program		SPONSOR PHONE NO.	
DOCUMENT SPONSOR		301-492-3054	
Catherine Haney		PHONE NO.	
NAME OF NON-CONCURRING INDIVIDUAL		301-492-3182	
Aby Mahood			
<input type="checkbox"/> DOCUMENT AUTHOR <input checked="" type="checkbox"/> DOCUMENT CONTRIBUTOR <input checked="" type="checkbox"/> DOCUMENT REVIEWER <input checked="" type="checkbox"/> ON CONCURRENCE			
TITLE		ORGANIZATION	
Deputy Director		HLWRS/WMSS	
<b>REASONS FOR NON-CONCURRENCE</b> <p>Although the Commission Memorandum describes the current status of the program, it also addresses a path forward that seems to me to contain policy issues that require Commission direction or guidance. For example, whereas the application of Nuclear Waste Funds to FY 2011 was only authorized for orderly shutdown activities under a CR guidance and as specifically directed by the Chairman, the ongoing ASLEB hearings require that those funds also support legal activities in ongoing Yucca Mountain licensing proceedings. If there are no constraints in using FY2011 or carryover NWF monies to support licensing activities, then it would be a policy issue to direct the staff to apply resources to orderly shutdown instead of completing and testing the remaining SER volumes, especially since the Commission has not reversed the ASLEB's decision that denied DOE's motion to withdraw its application. The Memorandum also indicates that site-based resources (rather than NWF) might be needed to shut down the Las Vegas Hearing Facility, which would be another policy issue, in my opinion.</p> <p>For the reasons above, I respectfully refuse to concur.</p>			
 SIGNATURE		<input type="checkbox"/> CONTINUED IN SECTION D	
		DATE 1/18/2011	
AND COPY TO BE FURNISHED TO SUPERVISOR AND PERSONNEL OFFICE			

NRC FORM 757 (0-2000)

Use ADAMS Template NRC-608

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ENCLOSURE 2


NRC FORM 757 REV 05/10/99 (4-0000)		U.S. NUCLEAR REGULATORY COMMISSION	
<b>NON-CONCURRENCE PROCESS</b>			
TITLE OF DOCUMENT <i>Update on the Yucca Mountain Program</i>		ADAMS ACCESSION NO. ML103146391	
SECTION B - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL'S SUPERVISOR (THIS SECTION SHOULD ONLY BE COMPLETED IF SUPERVISOR IS DIFFERENT THAN DOCUMENT SPONSOR.)			
NAME <i>Larson E. Kelys</i>		PHONE NO. <i>202-474-3158</i>	
TITLE <i>Director, Division of High-Level Waste Reporting Safety</i>		ORGANIZATION <i>NRC</i>	
COMMENTS FOR THE DOCUMENT SPONSOR TO CONSIDER <input type="checkbox"/> I HAVE NO COMMENTS <input checked="" type="checkbox"/> I HAVE THE FOLLOWING COMMENTS <i>See attached sheet.</i>			
SIGNATURE <i>[Signature]</i>		<input type="checkbox"/> CONTINUED IN SECTION D DATE <i>10 Jan 2011</i>	
<small>Use ADAMS Template NRC-608</small>			



Re: Memorandum to the Commission entitled, "Update on the Yucca Mountain Program"

Given the unique nature of the NRC's High-Level Waste Program, its associated review of the DOE Yucca Mountain license application, and its attendant internal and external issues, it seems reasonable to expect that professional staff can differ in what constitutes a policy question suitable for Commission deliberation. Mr. Aby Mohseni, Deputy Director for the Licensing and Inspection Directorate in the Division of High-Level Waste Repository Safety, suggests that there are embedded in this memorandum at least two policy matters appropriate for the Commission to consider: (1) application of Nuclear Waste Funds for orderly closure while the licensing proceeding is still ongoing; and (2) use of fee-based resources to close the Las Vegas Hearing Facility and its associated infrastructure (such as LSN). The Commission itself has not yet decided on the ASLBP CAB-4 ruling (LBP-10-11), and there is enough complexity and uncertainty to suggest that the staff seek Commission direction on these issues rather than have the staff provide, in essence, a status report. While the Commission could make this memorandum a voting matter on its own once it is received, it seems more appropriate for Agency senior leadership to acknowledge it at the outset. I believe this is Mr. Mohseni's view.

Therefore, while either way could lead to the same outcome (i.e., Commission deliberation on orderly closure and funding), I tend to agree with Mr. Mohseni that the embedded policy matters should be addressed at the outset.

  
Lawrence E. Kokajko, Director  
Division of High-Level Waste Repository Safety  
Office of Nuclear Material Safety and Safeguards

18 January 2011

<small>NRC FORM 707 REVISED 10-1-90 (5-2000)</small>		<small>U.S. NUCLEAR REGULATORY COMMISSION</small>	
<b>NON-CONCURRENCE PROCESS</b>			
<b>TITLE OF DOCUMENT</b> Update on the Yucca Mountain Program		<b>ADAMS ACCESSION NO.</b> MEL163140391	
<b>SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR</b>			
<b>NAME</b> Catherine Haney		<b>PHONE NO.</b> 301-492-3554	
<b>TITLE</b> Office Director			
<b>ORGANIZATION</b> NMSS			
ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE (This section should be revised, as necessary, to reflect the final outcome of the non-concurrence process, including a complete discussion of how individual concerns were addressed.)  <div style="text-align: center;">- See Attached -</div>			
<input type="checkbox"/> CONTINUED IN SECTION D			
<b>SIGNATURE - DOCUMENT SPONSOR</b> <i>C Haney</i>	<b>DATE</b> 2-4-11	<b>SIGNATURE - DOCUMENT SIGNER</b> <i>C Haney</i>	<b>DATE</b> 2-4-11
<b>NON-CONCURRING INDIVIDUAL (To be completed by document sponsor when process is complete, i.e., after document is signed):</b>			
<input checked="" type="checkbox"/> CONCURS <input type="checkbox"/> NON-CONCURS <input type="checkbox"/> WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)		<input type="checkbox"/> WANTS NCP FORM PUBLIC <input checked="" type="checkbox"/> WANTS NCP FORM NON-PUBLIC	

NRC FORM 707 (5-2000)
Use ADAMS Template NSIC-009
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NON-CONCURRENCE PROCESS

TITLE OF DOCUMENT <b>Updated on the Yucca Mountain Program</b>		ADAMS ACCESSION NO. <b>ML110540412</b>	
SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR			
NAME <b>Catherine Haney</b>			
TITLE <b>Office Director</b>		PHONE NO. <b>301-492-3554</b>	
ORGANIZATION <b>NMSS</b>			
ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE (This section should be revised, as necessary, to reflect the final outcome of the non-concurrence process, including a complete discussion of how individual concerns were addressed.)  <b>Section C revised on March 01, 2011, to reflect that the non-concurring individual would like the NCP Form to be made public and that he/she non concurs on the document.</b>  <p style="text-align: center;">See Attached</p>			
<input type="checkbox"/> CONTINUED IN SECTION D			
SIGNATURE - DOCUMENT SPONSOR <i>Catherine Haney</i>	DATE <b>3-1-11</b>	SIGNATURE - DOCUMENT SIGNER <i>Catherine Haney</i>	DATE <b>3-1-11</b>
NON-CONCURRING INDIVIDUAL (To be completed by document sponsor when process is complete, i.e., after document is signed):			
<input type="checkbox"/> CONCURS		<input type="checkbox"/> WANTS NCP FORM PUBLIC	
<input checked="" type="checkbox"/> NON-CONCURS		<input type="checkbox"/> WANTS NCP FORM NON-PUBLIC	
<input type="checkbox"/> WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)			

I carefully considered the concerns raised in Mr. Mohseni's non-concurrence on the memo titled, "Update on the Yucca Mountain Program." Prior to, and immediately after he filed the non-concurrence, Mr. Mohseni and I discussed his concerns with the memo. Since Mr. Mohseni filed his non-concurrence, the memorandum has been revised to reflect new resource information and recent discussion with the ASLBP regarding closure of the Las Vegas Hearing Facility (LVHF) and the associated infrastructure. Subsequent to this last revision, Mr. Mohseni was given the opportunity to revise his non-concurrence based on the revised memo. He chose not to revise his statement.

Mr. Mohseni believes there are at least two policy issues embedded in the memorandum:

1. Application of Nuclear Waste Funds for orderly closure instead of supporting hearing and licensing activities, including issuance of the remaining SER volumes.
2. Use of fee-based resources to close the Las Vegas Hearing Facility and its associated infrastructure (such as LSN).

The purpose of the memorandum to the Commission is to describe the status of the Yucca Mountain Program and staff's plans to capture the knowledge it acquired during pre-licensing preparation and licensing review activities. The memo was not intended to raise policy issues or topics that have previously been discussed and resolved at the Commission level.

The application of Nuclear Waste Funds (NWF) for orderly closure instead of completing and issuing the remaining SER volumes has been well vetted with the Commission. I am not aware of any new information that would warrant raising it as a policy matter in this memorandum. For example, in a October 6, 2010, memorandum to Chairman Jaczko and Commissioners Svinicki, Magwood, and Apostolakis (COMWCO-10-002), Commissioner Ostendorff stated that use of FY 2011 Continuing resolution funds "is a significant policy matter that I believe warrants the Commission's attention, and which requires that the Commission give direction to the staff to avoid confusion on the Commission's intent for operation under the Continuing Resolution." He went on to propose that "...Staff continue to follow the pre-established schedule for the SER and issue the remaining SER Volumes accordingly." This matter was subsequently closed by Annette Vietti-Cook's October 14, 2010, memorandum to Commissioner Ostendorff that stated, "A majority of the Commission declined to participate on this matter. In the absence of a quorum, your proposal is not approved."

Use of funds to support continued review of the Yucca Mountain application was the topic of several Congressional letters. In an October 27, 2010, letter to the Honorable Jim Sensenbrenner (ML102980673) Chairman Jaczko responded to Congressman Sensenbrenner's concerns about reports regarding the NRC's review of DOE's Yucca Mountain application. The response to Question 1 (quoted below) also indicates that the Commission has already considered Mr. Mohseni's first issue.

"Question 1. On what legal authority are you grounding your decision to terminate review of the license application based on a budget request, rather than existing law?

O Answer - Neither the text of the Fiscal Year (FY) 2010 Energy and Water Development and Related Agencies Appropriations Act and its underlying committee reports, nor the Fiscal Year 2011 Continuing Resolution provide the Commission with express direction on how it is to expend its appropriations from the Nuclear Waste Fund for Yucca Mountain activities. In the absence of an express direction, the approach the NRC is following is consistent with the terms of the Continuing Resolution, the Commission's Fiscal Year 2011 budget request, the general principles of appropriations law, and past U.S. Nuclear Regulatory Commission (NRC) practice. The Commission declined to revisit this decision in voting earlier this month."

I am mindful that there are limited resources available to complete orderly closure activities during FY2011 while the NRC hearing activities and Federal court litigation is ongoing. As of December 28, 2010, 1.8 FTE has been expended by the ASLBP and OGC to support the ongoing ASLBP hearing and litigation in the U.S. Court of Appeals for the District of Columbia. (As a reference point, NMSS has expended 9.0 FTE.) Expenditure of FY2011 HLW funds, in this manner, has been supported by OEDO, OGC, ASLBP, and CFO, and has not been viewed to be a matter of policy although these offices and I recognize that use of the funds to support NRC hearings should be closely monitored because they could consume NWF resources that are currently needed for orderly closure in FY 2011. In addition, because there are no HLW funds in FY 2012, depletion of NWF money would bring the administrative hearing process to a halt in FY 2011.

In response to Mr. Mohseni's second concern that the memorandum contains an embedded policy issue regarding use of fee-based resources to close the Las Vegas Hearing Facility and its associated infrastructure, the memorandum has been revised to reflect several recent discussions with CFO, ASLBP, NMSS, and OGC. Originally, the memorandum stated that the Atomic Safety and Licensing Board "Panel plans to maintain the adjudicatory infrastructure for the repository licensing proceeding, including the LSN, the LVHF, and the LVHF component of the Digital Data Management System (DDMS), until the Panel receives direction from the Commission to implement the closure of that infrastructure." The memorandum previously notes that "since no Nuclear Waste Fund (NWF) resources are available in FY 2012, starting on October 1, 2011, fee-based funds will be needed to support the LVHF and its infrastructure." The revised memorandum no longer raises the issue of using fee based funds to close the Las Vegas Hearing Facility or other YM hearing infrastructure. This change was made to clearly inform the Commission that orderly closure would be accomplished this fiscal year with available NWF money. Therefore, Mr. Mohseni's second issue is no longer raised by the memorandum.

*Catherine Haney*  
2-3-11

NON-CONCURRENCE PROCESS

SECTION A - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL

TITLE OF DOCUMENT

Update on the Yucca Mountain Program  
DOCUMENT SPONSOR

Catherine Haas

NAME OF NON-CONCURRING INDIVIDUAL

Janet P. Kotra

ADAMS ACCESSION NO.

NEL103148091

SPONSOR PHONE NO.

301-492-3554

PHONE NO.

301-492-3190

☒ DOCUMENT AUTHOR

☐ DOCUMENT CONTRIBUTOR

☐ DOCUMENT REVIEWER

☒ ON CONCURRENCE

TITLE

Senior Project Manager

ORGANIZATION

NMSS/NMSS/TMSS

REASONS FOR NON-CONCURRENCE

I have prepared and revised dozens variations of this memorandum. When, on June 14, 2010, the Chairman ordered the Director of NMSS to postpone issuance of Safety Evaluation Report Volumes 1 and 3, HLWRS and NMSS managers became concerned the entire Commission may not be fully aware of the policy, legal and budgetary consequences of such redirection. I was believed that a diligent staff, struggling to honor commission obligation & needed programmatic and policy guidance from the entire Commission arrived with a fair assessment of the facts. I was given to understand the memorandum was not to refer to any of the related policy issues, a decision with which I disagreed. Later, in September, it became clear that, rather than postpone issuance of individual SER volumes, the Chairman's intent was to terminate the staff's safety review altogether. Using the continuing resolution as justification, the Chairman, through OEDO and the CFO, told staff that all work on the SER must stop, including Volume 3 on post closure safety, which was already complete, and undergoing management review. Written guidance to this effect appeared later, in an October 4, 2010 memorandum. The Chairman later met with the Yucca Mountain Team on October 12, 2010. He explained that the decision to shut down the staff's review of the application was his alone and that staff should move to orderly closure of NRC's Yucca Mountain program. This, despite the fact that, then, as now, the Nuclear Waste Policy Act remains in effect, the hearing process continues, and the Commission has yet to issue a decision on whether DOE may legally withdraw the application. Over time, repeated rounds of comment (formal and otherwise) from OEDO, the CFO and the General Counsel were incorporated. Time and again these comments diluted or contradicted the direct language offered by NMSS and ASLEP staff. Both staff sought to outline policy, programmatic and budgetary difficulties faced by their offices as they tried to cover the costs of both shutting down a complex and valuable national program and infrastructure while still supporting an ongoing hearing process. This new long-suffering memorandum is characterized as a "status report." Throughout its tortured evolution, I continued to make countless changes during a most unorthodox process, despite growing reservations, so long as the description of the program's history and status remained reasonably accurate. At this juncture, I can no longer support this memorandum. I believe

☒ CONTINUED IN SECTION D

SIGNATURE

Janet Phelan Kotra

DATE

2/11/2011

NON-CONCURRENCE PROCESS

TITLE OF DOCUMENT

Update on the Yucca Mountain Program

ADAMS ACCESSION NO.

ML183148391

SECTION D: CONTINUATION PAGE

CONTINUATION OF SECTION

☒ A ☐ B ☐ C

that, in its present form, this memorandum appears to imply that the NRCSS staff voluntarily, or, worse still, on its own volition, sought to terminate NRC staff's independent review of the Yucca Mountain License application and end staff's support for a full and impartial hearing process for that application. It has been my experience that members of the NRCSS staff, who have conducted a fair, independent and technically sound safety review, and who worked earnestly to prepare the required Safety Evaluation Report, stood down from that duty only with enormous reluctance. As currently drafted, this memorandum makes no reference to the facts surrounding the Chairman's termination of the NRC staff's review of the Yucca Mountain license application. Absent this crucial context, a reader is left with the mistaken impression that this termination and the "orderly shutdown" of the NRC staff's licensing review and hearing process was staff's preferred and well-considered course of action, initiated by the NRC's technical staff. Nothing could be further from the truth. Furthermore, absent proper context, the reader would also conclude that NRCSS staff prepared this memorandum to inform a passive Commission about "staff's" course of action, after the fact, to alert the heretofore uninvolved Commission about problems and difficulties to which "staff's" course have led. For these reasons, I must respectfully withdraw my concurrence of December 2, 2010.

NON-CONCURRENCE PROCESS

TITLE OF DOCUMENT Update on the Yucca Mountain Program		ADAMS ACCESSION NO. ML103140391
SECTION B - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL'S SUPERVISOR (THIS SECTION SHOULD ONLY BE COMPLETED IF SUPERVISOR IS DIFFERENT THAN DOCUMENT SPONSOR.)		
NAME King Stablein		PHONE NO. 301-492-3199
TITLE Chief, Projects Branch B, Division of High-Level Radioactive Safety		
ORGANIZATION NMSS		
COMMENTS FOR THE DOCUMENT SPONSOR TO CONSIDER <input type="checkbox"/> I HAVE NO COMMENTS <input checked="" type="checkbox"/> I HAVE THE FOLLOWING COMMENTS  I agree wholeheartedly with Dr. Kotra's comments and agree specifically that this status report lacks the necessary context and information to adequately characterize the confusion, chaos, and anguish occasioned by the Chairman's unilateral decision to disrupt the orderly process of JER development. My nonconcurrence comments will amplify some of the points made by Dr. Kotra.		
SIGNATURE King Stablein		DATE 2/2/11

☐ CONTINUED IN SECTION D



## NON-CONCURRENCE PROCESS

**TITLE OF DOCUMENT**

Update on the Yucca Mountain Program

**ADAMS ACCESSION NO.**

ML103140391

**SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR**

**NAME**

Catherine Haney

**TITLE**

Office Director

**PHONE NO.**

301-492-3554

**ORGANIZATION**

NMSS

**ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE** (This section should be revised, as necessary, to reflect the final outcome of the non-concurrence process, including a complete discussion of how individual concerns were addressed.)

- see attached -

☐ CONTINUED IN SECTION D

**SIGNATURE - DOCUMENT SPONSOR**

*Catherine Haney*

**DATE**

2-4-11

**SIGNATURE - DOCUMENT SIGNER**

*Catherine Haney*

**DATE**

2-4-11

**NON-CONCURRING INDIVIDUAL** (To be completed by document sponsor when process is complete, i.e., after document is signed):

☐ CONCURS

☒ NON-CONCURS

☐ WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)

☐ WANTS NCP FORM PUBLIC

☒ WANTS NCP FORM NON-PUBLIC

## NON-CONCURRENCE PROCESS

TITLE OF DOCUMENT <b>Updated on the Yucca Mountain Program</b>		ADAMS ACCESSION NO. <b>ML110540412</b>	
SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR			
NAME <b>Catherine Haney</b>			
TITLE <b>Office Director</b>		PHONE NO. <b>301-492-3554</b>	
ORGANIZATION <b>NMSS</b>			
ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE (This section should be revised, as necessary, to reflect the final outcome of the non-concurrence process, including a complete discussion of how individual concerns were addressed.)  <b>Section C revised on March 01, 2011, to reflect that the non-concurring individual would like the NCP Form to be made public and that he/she non concurs on the document.</b>  <b>See Attached</b>			
<input type="checkbox"/> CONTINUED IN SECTION D			
SIGNATURE - DOCUMENT SPONSOR <i>Catherine Haney</i>	DATE <b>3-1-11</b>	SIGNATURE - DOCUMENT SIGNER <i>Catherine Haney</i>	DATE <b>3-1-11</b>
NON-CONCURRING INDIVIDUAL (To be completed by document sponsor when process is complete, i.e., after document is signed):			
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<input checked="" type="checkbox"/> NON-CONCURS		<input type="checkbox"/> WANTS NCP FORM NON-PUBLIC	
<input type="checkbox"/> WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)			

NON-CONCURRENCE PROCESS

SECTION A - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL

TITLE OF DOCUMENT <b>UPDATE ON THE YUCCA MOUNTAIN PROGRAM</b>	ADAMS ACCESSION NO. <b>ML100140391</b>
DOCUMENT SPONSOR <b>Catherine Hasey</b>	SPONSOR PHONE NO. <b>301-492-3554</b>
NAME OF NON-CONCURRING INDIVIDUAL <b>King Stabilein</b>	PHONE NO. <b>301-492-3199</b>

☐ DOCUMENT AUTHOR ☐ DOCUMENT CONTRIBUTOR ☐ DOCUMENT REVIEWER ☒ ON CONCURRENCE

TITLE <b>Branch Chief</b>	ORGANIZATION <b>NMSS/HLWRS</b>
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REASONS FOR NON-CONCURRENCE

Please see attached document.

☐ CONTINUED IN SECTION D

SIGNATURE <i>King Stabilein</i>	DATE <b>2/2/11</b>
------------------------------------	-----------------------

**Reasons for King Stabilein's Nonconcurrency on Memorandum to the Commission entitled  
"Update on the Yucca Mountain Project"**

As Dr. Kotra's direct supervisor, I have witnessed her efforts to prepare and revise this memorandum over the past few months, and we have engaged in continual discussions about whether or not we could support the contents as they twisted and turned to accommodate the many agendas that were influencing the direction of the memo. We grew more and more uncomfortable as we came to understand that neither the context for the current state of the Yucca Mountain program nor the policy issues affecting the program were intended to be part of the final product. I have come to conclude that the memo does not provide the Commission with important information regarding the program, but rather, appears to suggest that the staff has taken the initiative to go in the direction of closure of the program and has had no difficulty in carrying out certain steps to achieve closure by September 30, 2011. In her non-concurrency, Dr. Kotra has skillfully illuminated many fundamental issues with the memo, and I fully support what she has written. In addition, I want to add some thoughts of my own.

Until the Chairman unilaterally brought development of the SER to a halt as of September 30, 2010, the High-Level Waste Repository Safety (HLWRS) staff was on track to deliver all five volumes of the SER in the first part of FY 2011. Volume 3, the key postclosure volume, was virtually complete and could have been issued by the November 2010 date that staff had given to ASLB. When the Chairman met with the HLWRS staff on October 12, 2010, it was pointed out to him that allowing the staff to finish the SER volumes would be by far the most efficient and effective use of Nuclear Waste Fund resources and at the same time would give the Nation the benefit of an independent regulator's evaluation of the Yucca Mountain application. He made it clear during this meeting that, although he recognized that he could choose that path, his view was that it would look more political to publish the SER volumes with findings than to issue them as Technical Evaluation Reports (TERs). Despite his audience's incredulity regarding this position, the Chairman said that the decision was solely his and that he chose to derail the SER development process while directing the staff to begin orderly shutdown of the Yucca Mountain program.

This decision has had profound effects on the Yucca Mountain program, none of which are reflected in the subject status report. As a supervisor in this program, I am keenly aware of the agony experienced by the HLWRS staff as they dutifully followed the Chairman's direction. Many of the staff have worked on the Yucca Mountain program for two decades or longer. To not be allowed to finish the SER, the culmination of those years of precertifying and licensing activity, because of what appears to be the arbitrary decision of one person, was wrenching for the staff. The staff was not aware of any substantive discussion and airing of issues at the Commission level, as would be expected for a decision of this magnitude regarding a program that has existed for 30 years. It felt to the staff as if the Chairman had casually dismissed the staff's sacrifices and effort of those many years without even bothering to engage his fellow Commissioners in the manner that Commission decisions are usually handled. The staff would

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have greatly appreciated, given the importance of this decision, an opportunity to share its views with the entire Commission. There is no recognition in this status update of the staff's frustration over the direction of the program or of the staff's lack of opportunity to present its views, concerns, and insights to the Commission before a final decision was made.

There is also no recognition in this memorandum of the difficulties staff has had to endure because of the lack of a Commission decision regarding whether or not DOE can withdraw its license application. The staff has been caught in a bind which it felt itself incapable of escaping as it attempts to follow the Chairman's direction to carry out orderly closure of the program. Confronted with the reality that there is still an active application before ASLB, certain activities in the staff's Orderly Closure Plan were considered by staff to require that the Commission allow DOE to withdraw its application before staff could carry out those activities. One example is the disposition in the National Archives of the documents that have been needed during the licensing process. The staff, many of whom have been in this program for 20 years or more, are acutely aware of the NWPA and the argument that ASLB crafted in rejecting DOE's request to withdraw its application. Staff should not be put in a situation where the direction from the Chairman appears to be in direct conflict with the NWPA and the fact of an active license application. Absent policy decisions from the Commission, staff has struggled on a daily basis to figure out how to cope with this bizarre situation in a manner which would enable staff to maintain its integrity.

For these reasons, as well as those expressed so eloquently by Dr. Kotra in her nonconcurrency, I respectfully decline to concur on this status update memo.

*King Stabilein* 2/3/11

King Stabilein, Chief  
Projects Management Branch B  
Division of High-Level Waste Repository Safety  
Office of Nuclear Material Safety and Safeguards

I carefully considered the concerns raised in Dr. Kotra's non-concurrence on the memo titled, "Update on the Yucca Mountain Program." Over the last several months, I have met with Dr. Kotra to discuss her concerns on transitioning the Yucca Mountain Program towards closure. Most recently, I met with Dr. Kotra on January 31, 2011, to discuss the concerns she planned to raise with the most recent version of the memorandum. Based on these discussions and my review of her non concurrence, I do not believe that changes are needed to the memorandum.

Dr. Kotra notes in her opening statement that she has "prepared and revised copious variation of this memorandum". She also states that "over time, the memo has been revised to dilute or contradict "the direct language offered by NMSS and ASLBP staffs. Both staffs sought to outline policy, programmatic and budgetary difficulties faced by their offices as they tried to cover the costs of both shutting down and complex and valuable national program and infrastructure while still supporting an ongoing hearing process." Dr. Kotra states that "In its present form, this memorandum appears to imply that the NMSS staff voluntarily, or, worse still, on its own volition, sought to terminate NRC staff's independent review of the Yucca Mountain License application and end staff's support for a full and impartial hearing process for the application. . . . As currently drafted this memorandum makes no reference to the facts surrounding the chairman's termination of the NRC staff's review of the Yucca Mountain license application."

Dr. Kotra is correct in her statement that there have been many iterations of this memorandum. This was due to the evolving nature of the program and the information that I felt needed to be conveyed to the Commission. Dr. Kotra states that she "was given to understand the memorandum was not to refer to any of the related policy issues, a decision with which I disagreed." Over time, the purpose of the paper evolved. The purpose of the Commission memorandum is to describe the status of the Yucca Mountain Program and staff's plans to capture the knowledge it acquired during pre-licensing preparation and licensing review activities. Potential policy issues associated with the closure of the Yucca Mountain project had been decided at the Commission level (reference my response to Mr. Mohsen's non concurrence on this same memo). I am not aware of any new information regarding program closure that would warrant raising it as a policy matter in this memorandum nor did I believe it necessary to raise any facts surrounding the termination of staff's review in this status paper.

Lastly, I do not agree with Dr. Kotra's statement that the "memorandum appears to imply that the NMSS staff voluntarily, or worse still, on its own volition, sought to terminate NRC staff's independent review of the Yucca Mountain License application and end staff's support for a full and impartial hearing process for the application. The memorandum was not intended to document or revisit past decisions on the Project.

*Catherine Haney*  
2-3-11

NON-CONCURRENCE PROCESS

TITLE OF DOCUMENT

ADAMS ACCESSION NO.

SECTION B - TO BE COMPLETED BY NON-CONCURRING INDIVIDUAL'S SUPERVISOR  
(THIS SECTION SHOULD ONLY BE COMPLETED IF SUPERVISOR IS DIFFERENT THAN DOCUMENT SPONSOR.)

NAME

Aby Mohamed

TITLE

Deputy Director

PHONE NO.

301-492-3181

ORGANIZATION

NRC/NRIS/DHL/WRS

COMMENTS FOR THE DOCUMENT SPONSOR TO CONSIDER

☐ I HAVE NO COMMENTS

☒ I HAVE THE FOLLOWING COMMENTS

As Dr. King Stables's supervisor, I agree with his characterization of the program and the shortcomings of the memorandum. I would furthermore point to the inconsistency of the NRC Solicitor's characterization of the status of the program as being suspended due to the Continuing Resolution, implying a temporary and reversible status. In an email to a staff inquiry, the Solicitor agreed with the following characterization:

"In December 2010, the U.S. Court of Appeals lifted a prior order that had held four lawsuits against DOE in abeyance. The Court's December order set the lawsuits for full briefing and for oral argument. All briefs now have been filed, and the Court is scheduled to hear oral argument on March 22, 2011. The lawsuits against DOE claim that DOE has no authority to withdraw the Yucca Mountain license application, and that Congress must specifically authorize such action. As the appeals court proceeding has moved forward, and in view of NRC's limited budget resources under the current Continuing Resolution, NRC has suspended review of the Yucca Mountain license application, and NRC has stated it has no schedule for completion of the review."

This statement is inconsistent with the orderly closure activities outlined in the memorandum, including the termination of the Las Vegas Hearing Facility in FY 2011.

☐ CONTINUED IN SECTION D

SIGNATURE



DATE

2/3/2011

## NON-CONCURRENCE PROCESS

**TITLE OF DOCUMENT**

Update on the Yucca Mountain Program

**ADAMS ACCESSION NO.**

ML103140391

**SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR**

**NAME**

Catherine Haney

**TITLE**

Office Director

**PHONE NO.**

301-492-3554

**ORGANIZATION**

NMSS

**ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE** (This section should be revised, as necessary, to reflect the final outcome of the non-concurrence process, including a complete discussion of how individual concerns were addressed.)

- see attached -

☐ CONTINUED IN SECTION D

**SIGNATURE - DOCUMENT SPONSOR**

*Catherine Haney*

**DATE**

2-4-11

**SIGNATURE - DOCUMENT SIGNER**

*Catherine Haney*

**DATE**

2-4-11

**NON-CONCURRING INDIVIDUAL** (To be completed by document sponsor when process is complete, i.e., after document is signed):

☐ CONCURS

☒ NON-CONCURS

☐ WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)

☐ WANTS NCP FORM PUBLIC

☒ WANTS NCP FORM NON-PUBLIC



## NON-CONCURRENCE PROCESS

**TITLE OF DOCUMENT**

Updated on the Yucca Mountain Program

**ADAMS ACCESSION NO.**

ML110540412

**SECTION C - TO BE COMPLETED BY DOCUMENT SPONSOR**

**NAME**

Catherine Haney

**TITLE**

Office Director

**PHONE NO.**

301-492-3554

**ORGANIZATION**

NMSS

**ACTIONS TAKEN TO ADDRESS NON-CONCURRENCE** (This section should be revised, as necessary, to reflect the final outcome of the non-concurrence process, including a complete discussion of how individual concerns were addressed.)

Section C revised on March 01, 2011, to reflect that the non-concurring individual would like the NCP Form to be made public and that he/she non concurs on the document.

See Attached

☐ CONTINUED IN SECTION D

**SIGNATURE - DOCUMENT SPONSOR**

*Catherine Haney*

**DATE**

3-1-11

**SIGNATURE - DOCUMENT SIGNER**

*Catherine Haney*

**DATE**

3-1-11

**NON-CONCURRING INDIVIDUAL** (To be completed by document sponsor when process is complete, i.e., after document is signed):

☐ CONCURS

☒ NON-CONCURS

☐ WITHDRAWS NON-CONCURRENCE (i.e., discontinues process)

☒ WANTS NCP FORM PUBLIC

☐ WANTS NCP FORM NON-PUBLIC

I carefully considered the concerns raised in Dr. Stablein's non-concurrence on the memo titled, "Update on the Yucca Mountain Program." On February 2, 2011, prior to him filing the non concurrence, I met with Dr. Stablein to discuss his concerns with the memorandum. Based on this discussion and my review of his non concurrence, I do not believe that changes are needed to the memorandum.

Dr. Stablein notes several items that are omitted from or not recognized in the memorandum. They are as follow:

- Important information regarding the program
- The "profound effects" of the decision to transition the Yucca Mountain Program to closure are reflected in the subject status report.
- "...staff's frustration over the direction of the program or of the staff's lack of opportunity to present its views, concerns, and insights to the Commission before a final decision was made."
- "...difficulties staff has had to endure because of the lack of a Commission decision regarding whether or not DOE can withdraw its license application."

Dr. Stablein further states that the paper "appears to suggest that the staff has taken the initiative to go in the direction of closure of the program and has had no difficulty in carrying out certain steps to achieve closure by September 30, 2011."

Mr. Mohseni, Dr. Stablein's supervisor, in his comments on Dr. Stablein's non concurrence states that he agrees with Dr. Stablein's characterization of the program and the shortcomings of the memorandum. In addition, Mr. Mohseni identifies perceived inconsistency with the orderly closure activities outlined in the memorandum, including the termination of the Las Vegas hearing Facility in FY 2011 and comments by the NRC Solicitor on a draft IAEA document that imply a temporary and reversible status (reference Mr. Mohseni's comments on Dr. Stablein's non concurrence).

I have reviewed the list of items that Dr. Stablein believes were omitted from or not recognized in the memorandum and his statement that the paper "appears to suggest that the staff has taken the initiative to go in the direction of closure of the program and has had no difficulty in carrying out certain steps to achieve closure by September 30, 2011." I believe that they all fall outside of the scope of the memorandum or are not needed. The purpose of the Commission memorandum is to describe the status of the Yucca Mountain Program and staff's plans to capture the knowledge it acquired during pre-licensing preparation and licensing review activities.

I have also been informed by the NRC Solicitor that his comments on an interim draft of an IAEA document were not meant to suggest a temporary "suspension" of YM due to budget constraints. The term was drafted by others and his focus was on accurately characterizing the status of Federal court litigation. He understands that the staff is engaged in orderly closure activities. As directed, our FY 2011 activities are focused on the orderly closure of the Program and not on completion of the Safety Evaluation Reports. As stated by the Chairman in

an October 27, 2010, letter to the Honorable Jim Sensenbrenner (ML 102980673), "the approach the NRC is following is consistent with the terms and the Continuing Resolution, the Commission's Fiscal 2011 budget request, the general principles of appropriations law, and past U.S. Nuclear Regulatory Commission (NRC) practice." The approach described in the memorandum is endorsed by the OEDO, CFO, and OGC and the memorandum describes the resource limitations on completing activities in FY2011.

*Catherine Haney*  
2-3-11

March 30, 2010

MEMORANDUM TO: Chairman Jaczko  
Commissioner Klein  
Commissioner Svinicki

FROM: R. W. Borchardt /RA by Martin Virgilio for/  
Executive Director for Operations

SUBJECT: PLANS FOR THE HIGH-LEVEL WASTE  
REPOSITORY PROGRAM

The purpose of this memorandum is to inform the Commission of the U.S. Nuclear Regulatory Commission (NRC) staff's plans for its repository licensing review and the status of the infrastructure for the associated adjudicatory proceeding, in light of recent developments, including the allocation of Fiscal Year (FY) 2010 funding. In announcing the Administration's budget for FY 2011, on February 1, 2010, the President directed the U.S. Department of Energy (DOE) to "discontinue its application to the NRC for a license to construct a high-level waste geologic repository at Yucca Mountain in 2010...." On March 3, 2010, DOE filed a motion with Construction Authorization Board 4 (CAB4) to withdraw its license application for the proposed geologic repository.

#### Background

On June 3, 2008, DOE submitted the Yucca Mountain Repository License Application to the NRC seeking authorization to construct a geologic repository at Yucca Mountain, NV. On September 8, 2008, the staff accepted DOE's application for docketing and review. In response to a notice of hearing published in the *Federal Register* on October 22, 2008, intervention petitions were filed. In May 2009, two interested governments, eight parties, and nearly 300 contentions were admitted to the proceeding. In August 2009, two additional parties were admitted after satisfying Licensing Support Network (LSN) requirements. The allocation of FY 2010 funding is depicted in the pie chart in Enclosure 1. Enclosure 2 provides a revised schedule of tentative completion dates for Safety Evaluation Report Volumes.

#### Licensing Proceedings

On February 1, 2010, DOE moved for an interim suspension of discovery as well as a stay of most aspects of the construction authorization proceeding through the disposition of an additional motion (which DOE said it would file within 30 days) seeking to withdraw, with prejudice, its license application. On February 2, 2010, CAB4 granted DOE's unopposed request for an interim suspension of discovery, pending disposition of DOE's motion to stay.

Contact: Janet Kotra, HLWRS  
301-492-3190

On February 16, 2010, CAB4 granted DOE's motion to stay the proceeding, pending resolution of DOE's expected motion to withdraw its license application. On March 3, 2010, DOE filed a motion seeking to withdraw its license application, with prejudice. By order dated March 5, 2010, CAB4 indicated it will not rule on that motion until after it rules on intervention petitions filed by the State of South Carolina, the State of Washington, and Aiken County, SC. Since that order, additional intervention petitions have been filed by the National Association of Regulatory Utility Commissioners and by the Prairie Island Indian Community.

#### Licensing Review

[

] On January 27, 2010, the staff informed CAB4 that it will complete SER Volumes 1 and 3 by no later than August and November 2010, respectively. The staff is continuing with its safety review and SER preparation at this time. [

] staff will discontinue work on any remaining SER volumes once FY 2010 funds are exhausted and inform the Presiding officer in the proceeding of its actions. As of the end of February 2010, DOE had responded to all the staff's more than 600 requests for additional information. At this time, the staff has not identified a need for any additional information from DOE to complete the SER.

#### Knowledge Capture and Orderly Closure

For close to 30 years, as the United States has considered Yucca Mountain and other sites for deep geologic disposal of spent fuel and high-level waste (HLW), the NRC's HLW program has amassed a vast amount of information about, and experience with, the technical and regulatory issues associated with the potential licensing of a repository. The staff intends to preserve this knowledge as a resource for future use. In the event that the license review is terminated, the staff would document the current status of the license review in a NUREG document to capture much of the Yucca Mountain-specific technical and regulatory knowledge gained by the staff. Also, the staff will need to identify and retain other important technical and regulatory knowledge that could support future changes to the NRC's regulatory framework for HLW and spent fuel disposal. Much of this knowledge has been developed by the NRC staff and the Center for Nuclear Waste Regulatory Analyses (Center). The continued viability of the NRC's HLW Program, including the Center, is critical to maintain the core skills and range of expertise necessary for the NRC to implement future direction in the national program for HLW and spent nuclear fuel disposal. As much as possible, the staff will continue to retain this valuable source of skills and technical insight with fee-based funds and limited use of Nuclear Waste Fund monies.

#### Adjudicatory Hearing Infrastructure

The Atomic Safety and Licensing Board Panel (Panel) intends to maintain the infrastructure for the adjudicatory hearing associated with the HLW repository licensing proceeding, including the LSN, the Digital Data Management System (DDMS), and the Las Vegas Hearing Facility, until the Agency has completed the adjudicatory process regarding the DOE withdrawal request. If

Commissioners

3

there is a final decision terminating the HLW repository licensing proceeding, and the Panel receives Commission direction that no further basis exists for maintaining any infrastructure related to the HLW repository licensing proceeding, the Panel anticipates that it will be able to remove DDMS components from the Las Vegas Hearing Facility and close the facility within 4 to 6 months. (Under the current lease, the Government must give the lessor at least 120 days notice of its intent to vacate.) Assuming adequate fee-based funding, the DDMS would remain functional within the Panel's Rockville, MD, hearing facility for use in the many combined license and other proceedings that the Panel will conduct over the next several years.

Whether the LSN should remain viable as a knowledge management tool once the HLW repository proceeding is terminated is one of the matters currently pending before CAB4. As noted by LSN Administrator Daniel Graser in his December 17, 2009, memorandum to CAB4, the LSN's principal function as the unified search index for the nearly four million documents in the HLW document collections for the various participants will be irrecoverably nullified if the DOE document collection (which constitutes 99 percent of the documentary material available via the LSN) is taken offline and archived. In the event of a non-appealable decision to permit DOE to remove its collection from the LSN and to discontinue the system, the Panel would require approximately 4 months from a final Commission determination to terminate the LSN to complete the decommissioning process.<sup>1</sup>

Enclosures:

1. High-Level Waste Budget for Fiscal Year 2010 (Pie Chart)
2. Tentative Completion Dates for Safety Evaluation Report Volumes

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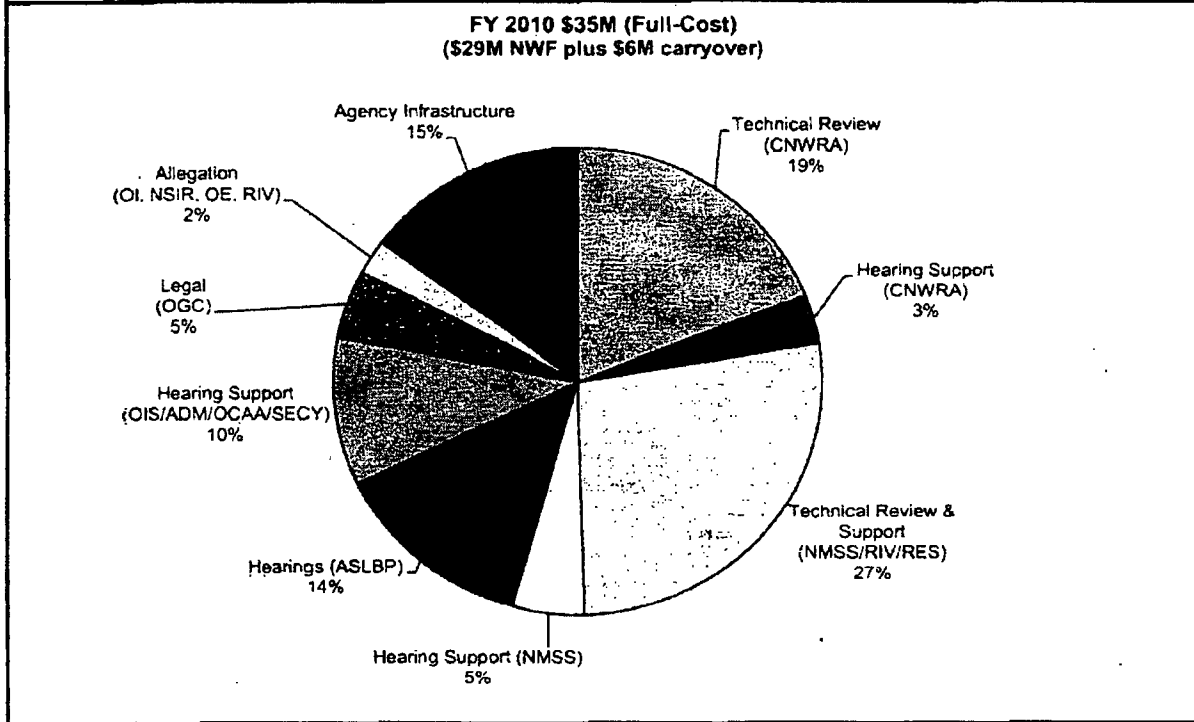
<sup>1</sup> Although recent events, including the filing of several additional intervention petitions, suggest an increased level of adjudicatory activity over the coming months relative to the DOE withdrawal motion, the Panel anticipates that the Panel's current FY 2010 HLW funding should be adequate to cover those hearing-related activities. [

]

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Allocation of HLW Funding  
FY 2010 \$35M Full-Cost  
(\$29M NWF plus \$6M carryover)

HLW Offices	FY 2010 \$35M Full-Cost (\$29M NWF plus \$6M carryover)	
<i>Reserved Carryover</i>	945	3%
Technical Review (CNWRA)	6,676	19%
Hearing Support (CNWRA)	1,178	3%
Technical Review & Support (NMSS/RIV/RES)	9,506	27%
Hearing Support (NMSS)	1,677	5%
Hearings (ASLBP)	4,732	14%
Hearing Support (OIS/ADM/OCAA/SECY)	3,534	10%
Legal (OGC)	1,662	5%
Allegation (OI, NSIR, OE, RIV)	844	2%
Agency Infrastructure	5,200	15%
<b>Total Program (Full-Cost)</b>	<b>35,009</b>	<b>100%</b>



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ENCLOSURE 1

~~OFFICIAL USE ONLY – SENSITIVE INTERNAL INFORMATION~~

**TENTATIVE COMPLETION DATES FOR SAFETY EVALUATION REPORT VOLUMES**

(Milestones to be completed no later than dates shown)

<b>SER Volume Number</b>	<b>Volume 1 General Information</b>	<b>Volume 2* Preclosure</b>	<b>Volume 3* Postclosure</b>	<b>Volume 4* Administrative/ Programmatic</b>	<b>Volume 5* License Specifications</b>
<b>HLWRS Staff completes text and Executive Summary</b>	04/23/2010	09/21/2010	06/14/2010	08/5/2010	09/30/2010
<b>HLWRS Management and OGC Volume Review Complete</b>	06/7/2010	11/3/2010	07/27/2010	09/17/2010	11/15/2010
<b>Resolve Comments and Complete Review by Technical Editor</b>	07/6/2010	12/03/2010	08/24/2010	10/18/2010	12/14/2010
<b>OGC Complete Legal Review</b>	07/20/2010	12/17/2010	09/08/2010	11/01/2010	01/13/2011
<b>NMSS Director Review and Concurrence</b>	07/27/2010	01/04/2011	09/22/2010	11/16/2010	01/27/2011
<b>Final OGC Review Complete with "No Legal Objection"</b>	08/03/2010	01/18/2011	10/06/2010	12/01/2010	02/10/2011
<b>Publication of Final SER Volume</b>	08/31/2010	03/01/2011	11/19/2010	01/14/2011	03/24/2011

\*Work on these volumes will be discontinued once FY 2010 funds are exhausted

ENCLOSURE 2

~~OFFICIAL USE ONLY – SENSITIVE INTERNAL INFORMATION~~



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**From:** Parker, Nicole  
**Sent:** Friday, March 11, 2011 2:14 PM  
**To:** Powell, Amy; Kokajko, Lawrence; Davis, Jack; Schmidt, Rebecca; Stablein, King; Kotra, Janet; Haney, Catherine; Dorman, Dan; Brenner, Eliot  
**Cc:** Valencia, Jennifer; Chidichimo, Gabriele; Benney, Brian  
**Subject:** Upadated Final Version of Redacted Memos  
**Attachments:** Final Version of Redacted Memo 030911.pdf; Redacted Final 2010 Memo Plan for High Level Waste.pdf

Good Afternoon

We made a slight change to the documents in the header and footers we mad a slash through the Official Use Only Sensitive Internal Use Only.

Thanks

BA/107

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**From:** Gatz, Karen L <GatzKL@state.gov>  
**Sent:** Wednesday, March 23, 2011 6:05 PM  
**To:** Stoneman, Shelly O'Neill; Cook, Bette (DCHA/AA); Boots, Michael J.; Gillerman, Elliot CIV OSD LA; john.gray@noaa.gov; Peacock, Nelson; Terrell, Louisa; kathleen.turner@dni.gov; laneje@hq.doe.gov; Murrie, Eden; King, Elizabeth L, HON OSD LA; Lettre, Marcel Mr. (SES) OSD LA; Heimbach, Jay; Arguelles, Adam; Schmidt, Rebecca; Hart, Patrick; Papa, Jim; Carretta, Robert T US PACOM WLO; Jaff, Elizabeth (AID/A); Howard, Nathan R US PACOM WLO; Ganesan.Arvin@epamail.epa.gov; Isaac, Nicole M.; Brian Kamoie; DNI-OLA-FO@dni.gov; Christopher\_Mansour@ios.doi.gov; Dietch, Sarah; Maher, Jessica A.; Sharp, Amy; Degen, Greg; Alejandro Perez; john.gise@dni.gov; kathleen.turner@dni.gov; Walsh, Todd  
**Cc:** Adams, David S; Turk, David M  
**Subject:** Japan Earthquake Update 19

## JAPAN EARTHQUAKE UPDATE 19

In order to focus attention on **congressional inquiries** and provide you with prompt updates about constituents affected by the March 11 earthquake and tsunami in Japan, the Department of State has created a dedicated email address: [JapanUSCcongressional@state.gov](mailto:JapanUSCcongressional@state.gov). If you have already been in contact with us via the **public email address**, [JapanEmergencyUSC@state.gov](mailto:JapanEmergencyUSC@state.gov), there is no need to resend; we have your information on file. In addition, we will add your email address to the State Department Liaison Office's daily Japan updates. If anyone else on your staff would like to be added to the distribution list for this, please email: [PenovarS@state.gov](mailto:PenovarS@state.gov).

Additional information, including an **updated Warden Message**, was issued on March 22 by Embassy Tokyo. The message and a video by Ambassador Roos can be found at <http://japan.usembassy.gov>

An **updated Travel Warning** issued was issued on March 21 announcing that the U.S. Government is making available Potassium Iodide as a precautionary measure for United States Government personnel and dependents residing within locations covered by authorized voluntary departure. Private American citizens are advised to contact their personal physicians or their employer with questions about Potassium Iodide. The text of the announcement is at [http://www.travel.state.gov/travel/cis\\_pa\\_tw/tw/tw\\_5398.html](http://www.travel.state.gov/travel/cis_pa_tw/tw/tw_5398.html).

The U.S. Embassy will continue to update **American citizens** as the situation develops through our Warden network in Japan; these messages, along with other useful information, can be viewed on our website: [www.travel.state.gov](http://www.travel.state.gov) under "Japan Earthquake and Pacific Tsunami." U.S. citizens in need of emergency assistance or with information on loved ones can enter information at the Task Force Alert link on the Japan Earthquake/Tsunami site on [www.travel.state.gov](http://www.travel.state.gov), and provide detailed information about their location and contact information. U.S. citizens in Japan and those concerned about them should monitor that U.S. Department of State website. Additional information is available through the U.S. Embassy Tokyo website at: <http://japan.usembassy.gov/>. Congressional contact information will be updated regularly on <http://travel.state.gov/congress/>.

**International commercial flights** are operating in and out of Japan, and the best way for Americans to get on these flights is to work directly with the airlines. In addition, for those who have made it to the airport in Tokyo already, U.S. consular officers will be available at the Narita airport for the next several days. They will be wearing orange vests that read "U.S. Embassy."

BA/108

**For getting to the airports** from various locations in Japan: The State Dept. has compiled a list of local ground transportation options at: [http://travel.state.gov/travel/cis\\_pa\\_tw/pa/pa\\_5388.html](http://travel.state.gov/travel/cis_pa_tw/pa/pa_5388.html).

**Because of lack of demand, the U.S. Embassy in Tokyo has no plans to charter buses from Sendai to Tokyo, and U.S. government charter flights have been discontinued at this time.**

**Visa inquiries:** For questions concerning U.S. visas for people (not U.S. citizens) seeking to enter the U.S. from Japan, please contact [japanvisainquiries@state.gov](mailto:japanvisainquiries@state.gov). Tokyo, Osaka and Naha Visa Sections are providing only emergency visa appointments. The Fukuoka Visa Section has normal hours and the Sapporo Visa Section is closed until March 21.

**EPA** continues to monitor radiation levels here in the U.S. The [www.epa.gov](http://www.epa.gov) website now has links to the monitors on the West Coast of the U.S.

**DOE** – The Department of Energy has released Radiation Monitoring Data from the Fukushima area and information is at <http://blog.energy.gov/content/situation-japan>.

**How to help:** We encourage cash donations. The web site [www.interaction.org](http://www.interaction.org) has a list of organizations accepting contributions. The American Red Cross is accepting donations of \$10 by texting REDCROSS to 90999.

**USAID** now has an email address for Americans who want to provide assistance (cash donations) to help them direct contributions to organizations on the ground: [japanhelp@ofda.gov](mailto:japanhelp@ofda.gov).

**USAID's Office of Foreign Disaster Assistance (OFDA)** is coordinating the overall response management and humanitarian assistance effort. AID/OFDA can be reached at [RMT\\_PACTSU@ofda.gov](mailto:RMT_PACTSU@ofda.gov) (underscore between RMT and PACTSU), Phone: 202 712 0039.

**The Center for International Disaster Information (CIDI)** – [www.cidi.org](http://www.cidi.org) – is a clearing house for putting people who want to donate to disaster relief missions (in either in case or kind) in contact with NGOs like Interaction. CIDI has the expertise to match up quickly individual U.S. citizens, i.e. congressional constituents, with public and private entities that can provide transport

## **GENERAL OVERVIEW ON AFTERMATH**

The National Police Agency reported 9301 dead, 13,786 missing, 2746 injured, and 236,915 internally displaced persons. The Japanese government estimates the death toll could reach 18,000.

The Japanese government estimates it will cost as much as \$309 billion to rebuild the country.

The Japanese government reportedly will assume at least \$3 billion of Tokyo Electric Power Company's (TEPCO) disaster compensation fund costs.

Delta Airlines will reduce flights to and from Japan by 15 to 20 percent through May due to an anticipated decline in demand and rising fuel costs. Flights between Haneda Airport and Detroit and Los Angeles will be halted and Narita-bound flights will be reduced.

The Japanese government asked all IAEA member states to assure their citizens there are no travel restrictions for Japan, since "misinformation" about travel restrictions is delaying some aid shipments.

Toyota, Honda, and Sony Corp. delayed returning to normal production because of shortages of parts and raw materials caused by earthquake damage to factories in affected areas.

## **U.S. GOVERNMENT ASSISTANCE**

Secretary of State Clinton signed the condolence book at the Japanese Embassy on March 22. The text of her remarks upon signing is at <http://www.state.gov/secretary/rm/2011/03/158812.htm>.

Secretary Clinton was interviewed by two Japanese media outlets – NHK and Fuji TV. She emphasized the commitment of the American people and the United States to stand by Japan to meet the current crises and as Japan rebuilds over the coming years. The transcripts of her remarks are at <http://www.state.gov/secretary/rm/2011/03/158840.htm> and <http://www.state.gov/secretary/rm/2011/03/158844.htm>, respectively.

On March 23, Ambassador Roos visited a disaster relief shelter at an elementary school in Ishinomaki.

In response to a request by the Japanese government, 10,000 nuclear radiation protective units were provided to the Japan Self-Defense Forces (JSDF).

U.S. forces continue to support humanitarian assistance and relief efforts. PACOM delivered 31 tons of food and water to Hanamaki.

Recent media reports that the United States was considering evacuating forces from Yokosuka base in Kanagawa prefecture are false.

An update on U.S. Government assistance to Japan to date can be found at <http://japan.usembassy.gov/e/p/tp-20110322-01.html>

## **FUKUSHIMA DAI-ICHI NUCLEAR ISSUES**

Japanese Nuclear and Industrial Safety Agency authorities admit restoration work at Fukushima remains daunting, notwithstanding the return of power to all six units.

High levels of radiation at various locations on-site remain unchanged, and radiation levels off-site remain relatively low.

The Japan Self Defense Force and the U.S. military agreed March 22 to strengthen significantly high-level information-sharing in the wake of the Fukushima accident, with the U.S. military focusing on understanding the radiation leakage situation and collecting data on the plant.

The Food and Agriculture Organization (FAO), the International Atomic Energy Agency (IAEA), and the World Health Organization (WHO) are working closely in support of the Japanese government's on-going efforts to address food safety issues stemming from the nuclear situation.

Tokyo metropolitan water authorities asked residents not to allow infants to drink tap water, after detecting a contamination level more than twice the accepted level for infants.

Japanese authorities halted distribution of water, milk, and 11 types of vegetables from Fukushima, Gunma, Ibaraki and Tochigi prefectures. The FDA restricted import of produce and dairy products from these four prefectures.

The Education and Science Ministry announced high levels of radioactive cesium in a soil sample collected 24 miles from the Fukushima plant. It might become necessary to remove the contaminated soils. Cesium has a half life of 30 years.

A second IAEA radiation monitoring team is en route to Japan. One team will take measurements in Fukushima prefecture, while the other will focus on Tokyo and surrounding areas.

Miniscule radioactive particles believed to be from Fukushima have been detected at a Reykjavik facility related to the Comprehensive Test Ban Treaty Organization. Wind is predicted to blow out to sea toward the southeast until the morning of March 24 Tokyo time.

## **CONSULAR ISSUES**

Ambassador Roos provided a video message and Embassy Tokyo issued a Warden Message covering the current situation in Japan and guidance for American citizens. The Message addressed concerns about radiation, potassium iodide, radiation and food safety, among other concerns. The video and Warden Message are on the Embassy's web site: <http://japan.usembassy.gov>.

## **INTERNATIONAL ASSISTANCE AND RESPONSE**

Saudi Aramco reported it will donate \$20 million to Japan and also expressed willingness to provide crude oil and liquefied natural gas in the future.

Nepal sent 5000 blankets to Japan and plans to send dry food.

Republic of Korea (ROK) rescue teams returned from Japan March 23. ROK citizens have donated over \$52 million.

Karen L. Gatz  
Senior Congressional Adviser  
Bureau of Legislative Affairs  
Department of State  
Phone: 202-647-8439  
Fax: 202-647-9667



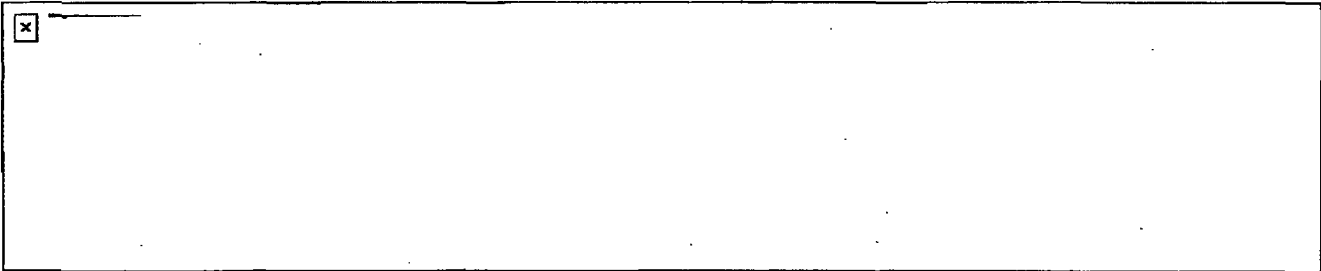
Please consider the environment before printing this e-mail

SBU—  
This email is UNCLASSIFIED.

---

**From:** Political Bulletin <PoliticalBulletin@bulletinnews.com>  
**Sent:** Friday, March 18, 2011 7:28 AM  
**To:** Schmidt, Rebecca  
**Subject:** Today's Political News From The Editors of Bulletin News

If you are using a mobile device or are unable to see the message below, [click here to view](#)



**MEMORANDUM FOR BECKY SCHMIDT**

**SUBJECT: TODAY'S POLITICAL NEWS**

**DATE: FRIDAY, MARCH 18, 2011 - 8:00 AM**

**WASHINGTON NEWS**

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
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
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


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
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Campaign News  
Political Humor



BA/109


**Obama Says "Harmful Levels" Of Radiation Unlikely To Reach US** President Obama's comments that radiation from the nuclear crisis in Japan was unlikely to reach the US are generally portrayed as effective and reassuring. The AP  reports Obama, "trying to reassure a worried nation, declared Thursday that 'harmful levels' of radiation from the Japanese nuclear disaster are not expected to reach the US, even as other officials conceded it could take weeks to bring the crippled nuclear complex under control." The CBS Evening News reported Obama has asked the Nuclear Regulatory Commission "to do a comprehensive review of the safety of America's nuclear plants. ... The President is trying to reassure Americans here at home, protect US citizens in Japan and do all he can to help the Japanese."


AFP  reports the President vowed "to stand by Japan as it recovers and rebuilds, but defended a decision to go beyond Tokyo's advice for evacuating Americans near damaged nuclear plants." ABC World News reported Obama "went out of his way to stress there is no need for alarm here at home." NBC Nightly News says the President "made an unannounced visit to the Japanese Embassy in Washington this morning. He signed a condolence book there for those who perished in the earthquake and the tsunami."


Bloomberg News  reports Obama said the NRC "has conducted an 'exhaustive study' of US plants and they have been 'declared safe for any number of extreme contingencies.'" He said the Administration "will keep the public informed about the nuclear crisis and sought to allay any health concerns in the US." The Los Angeles Times  reports Obama "said precautionary measures against the coming radiation were unneeded; an unspoken reference to a run on iodine tablets in some areas caused by people worried about radiation sickness." USA Today  reports the Food and Drug Administration warns that "many of the ads for 'anti-radiation' potassium iodide pills flooding the Internet may be scams."

USA Today  looks at possible conclusions to the crisis: "One end of the scenario spectrum is relatively benign: The plant is ruined, but major radiation releases are averted and public exposure is minimal. The other is catastrophic: Reactors melt down, caches of used nuclear fuel catch fire and worst-case weather carries contamination over the homes of hundreds of thousands of people."

**Senate Approves Continuing Resolution, Including \$6 Billion In Cuts** The AP  reports Congress "approved an additional \$6 billion in spending cuts Thursday, passing legislation to keep the government running through April 8 and allow time for talks on a larger package of reductions demanded by Republicans." The measure "brought the total of cuts to \$10 billion since Republicans took control of the House in January on a promise to rein in the federal government. It cleared the Senate on Thursday on an 87-13 vote  one day after passing the House."

Bloomberg News  reports lawmakers "working on the longer-term budget today reported little progress toward agreement on how much to cut, which programs to shrink, and what to do with more than 50 policy actions -- such as ending funds for Planned Parenthood -- that House Republicans seek to include in the plan."

McClatchy  reports talks "between top administration officials and senior staff" from the offices of Senate Majority Leader Reid and House Speaker Boehner "have been ongoing, and Reid praised Boehner Thursday for having 'the attitude we need to keep moving forward.'" But "other Democrats continued to complain that Republicans won't budge from their demand that \$61 billion be cut from this fiscal year's spending. And Republicans say that Democrats, who so far have been willing to cut \$10 billion, are too stubbornly protecting a host of unneeded government social programs."

Politico  reports the "tempo of behind-the-scenes talks has increased this week, with Reid confirming a

Wednesday session involving aides representing his office, the White House," and Boehner. Separately, White House budget director Jack Lew "reached out Wednesday to GOP staff on the House Appropriations Committee, which must ultimately be a major force in writing the final bill." But there's "also an almost palpable sense of drift, and the level of paranoia is such that Republican aides won't even admit meeting with the president's team."

The Los Angeles Times [redacted] reports the "outcome of Thursday's vote paralleled the mood this week in the House, as conservative Republicans voted against the measure in greater numbers." The Washington Post [redacted] reports the continuing resolution "did not get Democrats and Republicans any closer to agreeing on a larger deal to fund the government through September, the end of the fiscal year." The Christian Science Monitor [redacted] reports Senate Democrats "went so far as to say Thursday that a deal can't be done unless House Speaker John Boehner of Ohio is willing to break with the tea-party faction in his own caucus."

**Conservative House Defectors Harden Stance On Policy Riders** The Daily Caller [redacted] reports the "large conservative defection on the vote for a three-week continuing resolution Tuesday is cementing a demand by House Republicans for a series of key policy riders in their FY2011 spending bill, H.R. 1 -- even as top Democrats say they have a zero-riders policy." A "key motivation of the 54 Republican defectors was that the short-term CR did not include the policy riders that are in H.R. 1. The riders defund Obamacare, a series of EPA regulations, National Public Radio and Planned Parenthood, among other things."

**House GOP Votes To Defund National Public Radio** The CBS Evening News reported, "On Capitol Hill today, the Republican-controlled house voted to cut off Federal funding for National Public Radio. Republicans say NPR does well enough to fund itself, but Democrats say a cutoff of Federal money would cripple some 600 public radio stations. The bill faces stiff opposition in the Democratic-controlled Senate."

The AP [redacted] reports Republican supporters "said it made good fiscal sense, and Democratic opponents called it an ideological attack that would deprive local stations of access to programs such as 'Car Talk' and 'All Things Considered.'" The bill "passed 228-192 [redacted] along mainly partisan lines, would bar federal funding of NPR and prohibit local public stations from using federal money to pay NPR dues and buy its programs. The prospects of support in the Democratic-controlled Senate are slim."

USA Today [redacted] reports Senate Majority Leader Reid "called NPR and its journalists 'valuable resources to people of all ages across the country.' The Obama administration released a statement Thursday saying it 'strongly opposes' the bill." The Los Angeles Times [redacted] reports the bill "approved Thursday would cut off the thin stream of direct federal money to NPR and would prohibit its local affiliates from using federal dollars to purchase programming from NPR or any other source."

**US, British, French Military Action Against Libya Could Be Imminent** At about 6:30 PM EDT Thursday, the UN Security Council voted 10-0, with five abstentions, to authorize the use of "all necessary measures" to protect Libyan civilians from attacks by forces loyal to Moammar Gadhafi. The US, Bosnia and Herzegovina, Colombia, France, Gabon, Lebanon, Nigeria, Portugal, South Africa, and United Kingdom backed the resolution, while Brazil, China, Germany, India, and Russia abstained. The AP [redacted] reports Obama Administration officials said an effort to ground Gadhafi's air force, which "likely would involve jet fighters, bombers and surveillance aircraft," could begin "by Sunday or Monday." In another item, the AP [redacted] reports the White House said President Obama spoke with both British Prime Minister David Cameron and French President Nicolas Sarkozy after the vote.

ABC World News reported, "The US, France, and Britain are said to be readying possible military action after the United Nations Security Council voted late today to authorize air strikes." On NBC Nightly News, Jim Maceda reported, "That 10-0 vote in favor of a no-fly zone over Libya will give the UN some muscle behind its words, even as the Gadhafi regime seems determined to prove that any resolution is too late to be put into effect. Forces loyal to Moammar Gadhafi believing they're on the verge of victory."

The CBS Evening News reported, "Gadhafi loyalists now control all of western Libya, and he vows to retake cities



in the east now held by rebels. There were bloody battles today along the highway approaching Benghazi where the rebels are headquartered." The Washington Post [link] says the UN "authorized the use of 'all necessary measures' to protect civilians in Libya, opening the door to air and naval attacks" against Gadhafi's forces.

**US Official Warns Gadhafi May Return To Terrorism** Reuters [link] reports Under Secretary of State William Burns on Thursday said the US is concerned that Gadhafi may return to sponsorship of terrorism if he is able to squash the current uprising against his rule. "If Gadhafi is successful, you also face a number of other considerable risks as well," Burns told the Senate Foreign Relations Committee, including "the danger of him returning to terrorism and violent extremism."

**Clinton Reportedly Frustrated With Obama's Indecision On Libya** The Daily [link] reports Secretary of State Clinton is said to be "fed up with a president 'who can't make his mind up' as Libyan rebels are on the brink of defeat." A "Clinton insider" told The Daily, "If you take a look at what's on her plate as compared with what's on the plates of [her predecessors] – there's more going on now at this particular moment, and it's like playing sports with a bunch of amateurs. And she doesn't have any power. She's trying to do what she can to keep things from imploding."

## CAMPAIGN NEWS

**Obama "Quietly" Moving Into Campaign Mode** The Washington Post [link] reports President Obama "is quietly starting to engage personally in his reelection effort. On Wednesday night, for the second time this week, Obama met with major Democratic donors at a Washington hotel. The event was not a fundraiser but was instead a way for Obama to greet and talk to longtime donors on the Democratic National Committee's finance committee and advisory board. He made a similar appearance earlier this month in Miami. Obama has also been meeting with groups of college students on his recent stops across the country, an effort the White House says is not political but seems designed to fire up a key part of the president's base, people under 30."

**Obama Fundraisers Tasked With Bundling \$350,000 Apiece In 2011** The New York Times [link] reports that Jim Messina, manager of Obama's reelection campaign, announced an "ambitious set of marching orders" for "an elite group of 450 donors," tasking each "to raise \$350,000 this year to help finance what is likely to be the most expensive political race in the nation's history." The amount "is more than twice what top Democrats were asked to raise four years ago, several participants of the meeting said, and the donors could be given an even bigger goal next year."



**Obama Scheduled To Attend April 14 DNC Fundraising Event In Chicago** The Chicago Tribune [link] reports that according to anonymous sources, Obama is scheduled to "head home to Chicago to attend an April 14 fundraiser for the Democratic National Committee."


**DeMint Says He Won't Support Romney Without Healthcare Reform Repudiation** The Hill [link] reports that according to an unnamed source close to South Carolina Sen. Jim DeMint (R), the "conservative icon" "would never consider" endorsing former Massachusetts Gov. Mitt Romney for president again in 2012 unless Romney repudiates the health reforms he sought as governor."


The Daily Caller [link] adds "leading conservatives and Mitt Romney supporters" say the Massachusetts healthcare overhaul "will not act as a 'deal-breaker' for a 2012 presidential run, offering him support in the face of growing attacks on 'RomneyCare.'" This piece notes that recently, DeMint "defended Romney amid mounting criticism. 'One of the reasons I endorsed Romney [in 2008] is his attempts to make private health insurance available at affordable prices,' DeMint told The Hill. DeMint blamed the most contested elements of Romney's healthcare reform on the Massachusetts Democratic legislature."

Labeling DeMint a "conservative kingmaker," Carrie Dann writes at the msnbc.com [link] "First Read" blog that he "offered some political cover to GOP presidential candidate Mitt Romney, telling The Hill that the health care bill Romney backed as Massachusetts governor had 'some good ideas' but was 'essentially hijacked by the Democrat Legislature' in the state. And we pondered if that meant the South Carolina Republican might be in Romney's corner

again this cycle."

**More Commentary.** Greg Sargent writes at the Washington Post  "Plum Line" blog that DeMint's apparent reversal on the Massachusetts healthcare law is "some of the clearest proof yet" that "conservatives used to be very supportive of the individual mandate, and only came to see it as the greatest threat to American liberty in our country's history because Obama employed the very same policy tool as one of the pillars of the Affordable Care Act." Meanwhile, Jennifer Rubin writes at the Washington Post  "Right Turn" blog that it indicates that DeMint "is not going to throw away his standing with the Tea Party to give Romney cover for a plan that is an anathema to the base. The problem for Romney now is: If DeMint won't let him get away with defending RomneyCare with spurious arguments, who will?"

**WPost/ABC Poll: Romney Making Strides With Conservatives** Chris Cillizza and Aaron Blake write at the Washington Post  "The Fix" blog that according to the latest Washington Post/ABC News poll, Romney may have succeeded in his five-year quest to "convince conservatives that he is one of them." According to the survey, "sixty percent of Republicans and Republican-leaning independents view the potential GOP presidential candidate favorably, while just 21 percent see him in an unfavorable light. That's an improvement from where he stood in early January 2008."

**Gingrich Calls Obama Passive "Spectator-In-Chief"** Politico  reports Newt Gingrich, speaking Thursday in New Hampshire, "lambasted President Barack Obama...as a 'spectator-in-chief' who is presiding over 'maybe the most passive and out-of-touch presidency in modern American history.'" Gingrich "echoed recent criticisms the president has taken from Republican circles, chiding him for playing golf and unveiling his NCAA tourney brackets on TV while crises proliferate from Japan to Libya." Gingrich told Fox News "host Sean Hannity that Obama is avoiding his job more than when Jimmy Carter was 'micro-managing the tennis courts at the White House.'"

## POLITICAL HUMOR

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### The Latest From Late Night Comedians

**Jay Leno:** "Well, happy St. Patrick's Day, everybody. Or as Congresswoman Michele Bachmann calls it, the 'day we celebrate George Washington driving the snakes across the Potomac River.'"

**Jay Leno:** "Well yesterday on ESPN, President Obama revealed his March Madness picks. And he says with that out of the way he can now get down to the serious business of handicapping the Kentucky Derby."

**Jimmy Fallon:** "President Obama is facing criticism for going on ESPN to pick his NCAA brackets when there are more important issues on his agenda. When he heard this, Obama was like, 'Crap! Was today my fantasy baseball draft? Why didn't you tell me this? Is that today?'"

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This copy of the POLITICAL BULLETIN was sent to **Rebecca.Schmidt@nrc.gov**. You are receiving this because you registered on our website for daily email delivery. If you wish to no longer receive this briefing just [click here](#) to cancel future deliveries.

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**From:** Schmidt, Rebecca  
**Sent:** Friday, March 18, 2011 8:29 AM  
**To:** Riley (OCA), Timothy  
**Subject:** Can you add

Jaime shimek@murray.senate.gov. To list. Maybe she is already on jenny's list

BA1110

---

**From:** FLINT, Alex <af@nei.org>  
**Sent:** Sunday, March 13, 2011 12:27 PM  
**To:** Schmidt, Rebecca  
**Subject:** Re: Phone number

Ah. Give me a couple of minutes.

On Mar 13, 2011, at 12:20 PM, Schmidt, Rebecca wrote:

> Sorry typo-gary andres. Upton's staff director. Chr wanted to call him.

>

> ----- Original Message -----

> From: FLINT, Alex <af@nei.org>

> To: Schmidt, Rebecca

> Sent: Sun Mar 13 12:04:35 2011

> Subject: RE: Phone number

>

> Sorry, I don't know who that is.

>

> -----Original Message-----

> From: Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]

> Sent: Sunday, March 13, 2011 11:55 AM

> To: FLINT, Alex

> Subject: Phone number

>

> Do you have Gary Anders cell number?

>

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BA / 111

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Sent through mail.messaging.microsoft.com

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**From:** Powell, Amy  
**Sent:** Monday, March 14, 2011 6:35 PM  
**To:** Riley (OCA), Timothy  
**Cc:** Schmidt, Rebecca  
**Subject:** RE: @Ops Center

Thanks – I'll send you some questions to walk back to the OPA area, if you would... Give me a few minutes.

**From:** Riley (OCA), Timothy  
**Sent:** Monday, March 14, 2011 6:34 PM  
**To:** Powell, Amy  
**Subject:** @Ops Center

Amy,  
I'm in the Ops Center, eating my dinner. Let me know if there are things I can work on during my shift overnight.  
Thanks,  
Tim  
301-816-5209

BA/112

---

**From:** davidc.brown@exeloncorp.com  
**Sent:** Wednesday, March 16, 2011 9:01 AM  
**To:** Schmidt, Rebecca  
**Subject:** Re: Prepared text of NRC Chairman Jaczko's oral statement

Thx

---

**From:** Schmidt, Rebecca <Rebecca.Schmidt@nrc.gov>  
**To:** Brown, David C. (Washington):(BSC)  
**Sent:** Wed Mar 16 05:26:49 2011  
**Subject:** Fw: Prepared text of NRC Chairman Jaczko's oral statement

Came after I went to bed!

---

**From:** Powell, Amy  
**To:** Brenner, Eliot; Loyd, Susan  
**Cc:** Schmidt, Rebecca; Batkin, Joshua  
**Sent:** Tue Mar 15 22:39:33 2011  
**Subject:** FW: Prepared text of NRC Chairman Jaczko's oral statement

Should have had you on here – sorry.

E – I ran out a "big print" version for GBJ for easy reading at the table that I'll bring tomorrow.

**From:** Powell, Amy  
**Sent:** Tuesday, March 15, 2011 10:04 PM  
**To:** Sharkey, Jeffrey; Bubar, Patrice; Sosa, Belkys; Nieh, Ho; Batkin, Joshua  
**Cc:** Coggins, Angela; Schmidt, Rebecca  
**Subject:** Prepared text of NRC Chairman Jaczko's oral statement

Hi all –

Attached is the prepared text for Chairman Jaczko's oral statement tomorrow at the House Energy and Commerce subcommittees' hearing. We will work from the same text to open the Senate EPW public briefing that afternoon.

Amy

Amy Powell  
Associate Director  
U. S. Nuclear Regulatory Commission  
Office of Congressional Affairs  
Phone: 301-415-1673

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---

**From:** Schmidt, Rebecca  
**Sent:** Wednesday, March 23, 2011 12:33 PM  
**To:** Droggitis, Spiros  
**Subject:** FW: Special Bulletin: Exelon to hold nuclear update conference call for investors  
**Attachments:** image001.jpg

Maybe someone can listen to this tomorrow

**From:** Brown, David C. (Washington):(BSC) [mailto:davidc.brown@exeloncorp.com]  
**Sent:** Wednesday, March 23, 2011 12:31 PM  
**To:** Schmidt, Rebecca  
**Subject:** Fwd: Special Bulletin: Exelon to hold nuclear update conference call for investors

Begin forwarded message:

**From:** "Exelon Corporate Communications Mailbox"  
<CorporateCommunications@exeloncorp.com>  
**Date:** March 23, 2011 11:26:29 AM CDT  
**Subject:** Special Bulletin: Exelon to hold nuclear update conference call for investors

**Exelon.**

# Bulletin

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**Exelon to hold nuclear update conference call for investors**

*Executives to offer perspective on Japan disaster and safety of Exelon's nuclear power plants*

**Who:** John W. Rowe, chairman & CEO, Exelon Corp.

Christopher M. Crane, president & COO, Exelon Corp., and president, Exelon Generation

Charles G. "Chip" Pardee, COO, Exelon Generation

**What:** Exelon senior executives will offer their perspective on the disaster in Japan and provide information on the safety of Exelon's nuclear fleet.

BA/114

**When:** Thursday, March 24, 2011, 9:30-10:30 a.m. ET

**To listen live:** Listen at [www.exeloncorp.com/performance/investors](http://www.exeloncorp.com/performance/investors).

**Replay:** For those employees whose work schedules will not permit them to access the webcast live, a webcast replay will be available on Exelon's website:  
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**From:** Decker, David  
**Sent:** Thursday, March 17, 2011 4:26 PM  
**To:** Powell, Amy; Schmidt, Rebecca; Batkin, Joshua; Coggins, Angela; Dhir, Neha  
**Subject:** FW: Statement by Press Secretary Jay Carney on Senate Passage of the Three-Week Continuing Resolution

FYI - The Senate passed the 3 week CR (HJ Res 48). I'll send this around to the other Commission offices.

David

---

**From:** White House Press Office <noreply@messages.whitehouse.gov>  
**To:** Weil, Jenny  
**Sent:** Thu Mar 17 15:50:34 2011  
**Subject:** Statement by Press Secretary Jay Carney on Senate Passage of the Three-Week Continuing Resolution

THE WHITE HOUSE  
Office of the Press Secretary

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FOR IMMEDIATE RELEASE  
March 17, 2011

**Statement by Press Secretary Jay Carney on Senate Passage of the Three-Week Continuing Resolution**

Today, the Senate passed a short-term funding bill that avoids a government shutdown and gives Congress the time to find common ground on a measure to take us through the end of the fiscal year. Continuing to fund our government in two or three week increments adds uncertainty to our economy and distracts us from other urgent priorities facing our nation. Now is the time for Democrats and Republicans to come together and find a long-term solution that cuts spending without impeding our ability to win the future. We all agree we want to cut spending, which is why we have already met Republicans halfway. But we will continue to oppose harmful cuts to critical investments in education, innovation, and research and development that we need to grow our economy and create jobs – as well as oppose additions to the bill that have nothing to do with fiscal policy. The President is optimistic that Congress can get this done.

###

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[Unsubscribe](#)

The White House | 1600 Pennsylvania Avenue, NW | Washington, DC 20503 | 202-456-1111

BA 7/115

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**From:** Droggitis, Spiros  
**Sent:** Friday, March 18, 2011 6:16 PM  
**To:** Powell, Amy  
**Subject:** FW: Request for NRC participation in IL Senators' Public Meeting

FYI – want to go to Chicago on your way back?

**From:** Riley (OCA), Timothy  
**Sent:** Friday, March 18, 2011 5:56 PM  
**To:** Schmidt, Rebecca  
**Cc:** Droggitis, Spiros  
**Subject:** Request for NRC participation in IL Senators' Public Meeting

Becky,

Jasmine Hunt ([jasmine\\_hunt@durbin.senate.gov](mailto:jasmine_hunt@durbin.senate.gov)), from Sen. Durbin's office, just contacted me to ask for NRC participation in a public meeting to be convened on Friday, March 25<sup>th</sup> at 1pm in Chicago, IL. Senator Durbin and Senator Kirk will both attend and will take questions from a selected panel (not from general public). They have requested the participation of NRC, a Commissioner, if possible. Purpose of meeting is to discuss safety of US nuclear facilities.

BA/116

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**From:** Virgilio, Martin  
**Sent:** Saturday, March 19, 2011 3:09 AM  
**To:** Coggins, Angela  
**Cc:** Zimmerman, Roy; Moore, Scott; Morris, Scott; Wiggins, Jim; Borchardt, Bill; Leeds, Eric; Sheron, Brian; Brenner, Eliot; Schmidt, Rebecca  
**Subject:** REPLY: consortium meeting tomorrow

Angela

By the end of this shift we will have an agenda, list of non NRC attendees and a background package for each participant.

We should have logistical details (location, access, hotel rooms...), too.

We will need to engage Bill and the several of the office directors to finalize the list of NRC participants. We will have a call first thing tomorrow morning to confirm the names of the NRC participants.

Marty

**From:** Coggins, Angela  
**Sent:** Friday, March 18, 2011 10:47 PM  
**To:** Virgilio, Martin  
**Subject:** consortium meeting tomorrow

Marty, please let me know when you've been able to confirm Mr. Borchardt's participation in this consortium meeting tomorrow. **I would love for the Chairman not to have to come in to cover it, if possible.** And thanks for your quick support on setting up a team for our planning efforts. We look forward to seeing them tomorrow! Thanks!

Angela B. Coggins  
Policy Director  
Office of Chairman Gregory B. Jaczko  
U.S. Nuclear Regulatory Commission  
[301-415-1828/angela.coggins@nrc.gov](mailto:301-415-1828/angela.coggins@nrc.gov)

BA 1117

---

**From:** Droggitis, Spiros  
**Sent:** Saturday, March 19, 2011 7:18 AM  
**To:** OCA Distribution  
**Subject:** FW: Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki  
**Attachments:** Doc1.docx; bechtel detailed diagram.pdf; Japan Aid.xlsx; Chairmans March 18 Doc.docx

**From:** LIA07 Hoc  
**Sent:** Saturday, March 19, 2011 6:25 AM  
**Subject:** Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki

Dear Colleagues,

Attached is the report summarizing Chairman Jaczko's meeting with Japanese Ambassador to the U.S. Ichiro Fujisaki, held on March 18, 2011, at 1600 hours EST. We have also included other key documents which provide additional information pertinent to the recent events. Please note this information is "official use only" and is only being shared within the federal family. Please call the Headquarters Operations Office at 301-816-5100 with questions.

International Liaison Team  
U.S. Nuclear Regulatory Commission

BA/118

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**From:** Schmidt, Rebecca  
**Sent:** Sunday, March 20, 2011 11:14 AM  
**To:** Pederson, Cynthia  
**Cc:** Riley (OCA), Timothy; Powell, Amy; Droggitis, Spiros  
**Subject:** FW: Invitation to a Forum on March 25th Chicago, IL  
**Attachments:** image001.png; image002.png; image003.png; image004.png; Invitation Letter Jaczko.pdf

Here you go. We will follow up when we know who the witnesses will be. Thanks for volunteering!

**From:** Riley (OCA), Timothy  
**Sent:** Friday, March 18, 2011 8:30 PM  
**To:** Schmidt, Rebecca  
**Cc:** Powell, Amy  
**Subject:** FW: Invitation to a Forum on March 25th Chicago, IL

Becky,  
Attached is the hardcopy of invitation to attend IL Forum from Senators Durbin and Kirk.

**From:** Hunt, Jasmine (Durbin) [mailto:Jasmine\_Hunt@durbin.senate.gov]  
**Sent:** Friday, March 18, 2011 8:28 PM  
**To:** Riley (OCA), Timothy; Powell, Amy  
**Cc:** Neimeyer, Sarah (Durbin); Walter, Sarah (Kirk)  
**Subject:** Invitation to a Forum on March 25th Chicago, IL

Hello,

Senators Durbin and Kirk would like to invite Chairman Jaczko to a public forum on Friday, March 25<sup>th</sup> in Chicago, IL to discuss the safety of the nuclear power plants in Illinois. They would like to hear his thoughts on how U.S. nuclear standards differ from those in Japan. The forum will be in a 'hearing' style format with questions for the Senators following a short opening statement from all the participants on the panel. Please let me know if you will be able to attend.

Bests,  
Jasmine Hunt

Jasmine N. Hunt

Office of Senator Richard J. Durbin  
Assistant Majority Leader  
711 Senate Hart Office Building  
[jasmine\\_hunt@durbin.senate.gov](mailto:jasmine_hunt@durbin.senate.gov)  
202.224.2152

[Visit Senator Durbin's Website](#) | [Follow Senator Durbin](#):



BA/119



# United States Senate

U.S. SENATE

March 18, 2011

The Honorable Gregory Jaczko  
Chairman, U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Chairman Jaczko:

We would appreciate your participation in a public forum on the safety of nuclear energy and nuclear reactors at 1:00 pm on Friday, March 25<sup>th</sup> at the Everett M. Dirksen U.S. Courthouse in Chicago, Illinois.

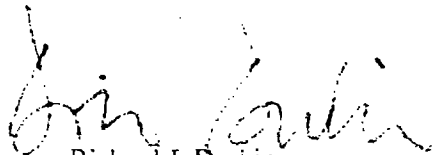
The tragic events in Japan following the 9.0 earthquake and subsequent tsunami has renewed attention on the role of nuclear energy in Illinois and the safety precautions and measures in place at Illinois' nine nuclear power plants and stations.

Through this forum, we hope to hear from stakeholders and experts about the safety features at Illinois' nuclear power plants and preparedness for damage incurred by natural disasters such as tornado, earthquakes, and floods. The reactor units at the Quad Cities and Dresden plants are the same design and approximate age of the units in the Fukushima Daiichi plant. Additionally, the Zion nuclear power station has spent nuclear fuel, the biggest concern at Fukushima, along the shores of Lake Michigan. We would like to highlight any additional protective modifications that may have been taken at the plants after the Three Mile Island accident and the attacks on September 11<sup>th</sup>, 2001.

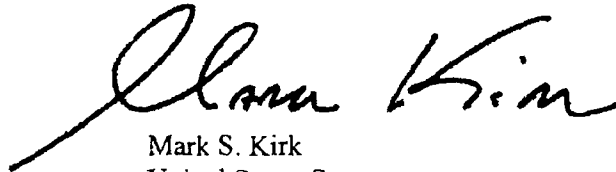
The courthouse is located at 219 S. Dearborn Street and the event will be in room 1418 at 1:00 PM. As a {nuclear energy expert}, we would greatly appreciate hearing your opinions and views on the matter and invite you to participate as a presenter. If you are able to participate, please prepare to make a brief oral statement, no more than five minutes, and remain for questions following all panelist presentations. We understand that as the Chairman of the Nuclear Regulatory Commission, your schedule is very busy and would greatly appreciate the attendance of a professional nuclear scientist for the NRC in lieu of your presence.

I look forward to your participation on March 25th. To confirm your role, or if you have any questions regarding the forum, please contact Jasmine Hunt at (202) 224-2152 or via email at [Jasmine\\_Hunt@durbin.senate.gov](mailto:Jasmine_Hunt@durbin.senate.gov).

Sincerely,

A handwritten signature in cursive script, appearing to read "Dick Durbin".

Richard J. Durbin  
United States Senator

A handwritten signature in cursive script, appearing to read "Mark Kirk".

Mark S. Kirk  
United States Senator

---

**To:** FLINT, Alex  
**Subject:** RE: Hearings?

I have 5 requests so far marginally related for the next 2 :  
Chicago--Sens Durbin and Kirk-- Are IL plants safe--Friday, March 25th -- Don't know who my witness will b

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

From: FLINT, Alex [mailto:af@nei.org]  
Sent: Monday, March 21, 2011 8:04 AM  
To: Schmidt, Rebecca  
Subject: Hearings?

So far, I'm not aware of any specific hearings being scheduled about the Japan situation. Are you?

This electronic message transmission contains information from the Nuclear Energy Institute, Inc. ~~The information is intended solely for the use of the addressee and its use by any other person is not authorized. If you are not the intended recipient, you have received this communication in error, and any review, use, disclosure, copying or distribution of the contents of this communication is strictly prohibited. If you have received this electronic transmission in error, please notify the sender immediately by telephone or by electronic mail and permanently delete the original message.~~

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-----  
Sent through mail.messaging.microsoft.com

BA/120

---

**From:** Schmidt, Rebecca  
**Sent:** Monday, March 21, 2011 8:29 AM  
**To:** FLINT, Alex  
**Subject:** RE: Hearings?

I have had phone calls about several. Should be scheduled by tomorrow. I have a 8:30 and 9:00 meeting this morning. Give me a call when you get a chance

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

**From:** FLINT, Alex [mailto:af@nei.org]  
**Sent:** Monday, March 21, 2011 8:04 AM  
**To:** Schmidt, Rebecca  
**Subject:** Hearings?

So far, I'm not aware of any specific hearings being scheduled about the Japan situation. Are you?

~~This electronic message transmission contains information from the Nuclear Energy Institute, Inc. The information is intended solely for the use of the addressee and its use by any other person is not authorized. If you are not the intended recipient, you have received this communication in error, and any review, use, disclosure, copying or distribution of the contents of this communication is strictly prohibited. If you have received this electronic transmission in error, please notify the sender immediately by telephone or by electronic mail and permanently delete the original message.~~

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-----  
Sent through mail.messaging.microsoft.com

BA/121

---

**From:** davidc.brown@exeloncorp.com  
**Sent:** Monday, March 21, 2011 10:22 AM  
**To:** Schmidt, Rebecca  
**Subject:** RE: Borchardt's remarks

No kidding.

---

**From:** Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]  
**Sent:** Monday, March 21, 2011 10:21 AM  
**To:** Brown, David C. (Washington):(BSC)  
**Subject:** Re: Borchardt's remarks

Don't know yet--always good to know 4 days prior to a hearing!

---

**From:** davidc.brown@exeloncorp.com <davidc.brown@exeloncorp.com>  
**To:** Schmidt, Rebecca  
**Sent:** Mon Mar 21 10:19:26 2011  
**Subject:** RE: Borchardt's remarks

I'll bet. Jasmine told me Friday she did not know if you all would be able to provide a witness.

Who are you sending?

---

**From:** Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]  
**Sent:** Monday, March 21, 2011 10:18 AM  
**To:** Brown, David C. (Washington):(BSC)  
**Subject:** Re: Borchardt's remarks

I will probably be flying in to help our witness. I need to get a hold of the staffer to confirm. We have so many request for hearings

---

**From:** davidc.brown@exeloncorp.com <davidc.brown@exeloncorp.com>  
**To:** Schmidt, Rebecca  
**Sent:** Mon Mar 21 10:15:54 2011  
**Subject:** RE: Borchardt's remarks

Yes. Chip Pardee.

I hear they also invited NRC, Argonne, Illinois Emergency Management Agency, and possibly an NGO.

1:00 pm CT at the Dirksen Building in Chicago.

---

**From:** Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]  
**Sent:** Monday, March 21, 2011 10:10 AM  
**To:** Brown, David C. (Washington):(BSC)  
**Subject:** Re: Borchardt's remarks

BA/122

Tell me, are you guys testifying on Friday at the Durbin/Kirk public meeting ?

---

**From:** davidc.brown@exeloncorp.com <davidc.brown@exeloncorp.com>  
**To:** Schmidt, Rebecca  
**Sent:** Mon Mar 21 10:08:23 2011  
**Subject:** RE: Borchardt's remarks

Thanks very much. Let's try to catch up when the dust settles.

I am in Chicago all week but I'm around all next week.

---

**From:** Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]  
**Sent:** Monday, March 21, 2011 10:07 AM  
**To:** Brown, David C. (Washington):(BSC)  
**Subject:** Re: Borchardt's remarks

I was told SECY would try. OPA will request

---

**From:** davidc.brown@exeloncorp.com <davidc.brown@exeloncorp.com>  
**To:** Schmidt, Rebecca  
**Sent:** Mon Mar 21 09:43:34 2011  
**Subject:** RE: Borchardt's remarks

Thanks.

---

**From:** Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]  
**Sent:** Monday, March 21, 2011 9:42 AM  
**To:** Brown, David C. (Washington):(BSC)  
**Subject:** Re: Borchardt's remarks

I will check with public affairs

---

**From:** davidc.brown@exeloncorp.com <davidc.brown@exeloncorp.com>  
**To:** Schmidt, Rebecca  
**Sent:** Mon Mar 21 09:38:49 2011  
**Subject:** Borchardt's remarks

Hi Becky.

I have Bill's slides.

Do you all plan to post a transcript of his remarks?

Thanks.

David

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**From:** Loyd, Susan  
**Sent:** Tuesday, March 22, 2011 3:49 PM  
**To:** Schmidt, Rebecca; Powell, Amy  
**Cc:** Coggins, Angela; Batkin, Joshua  
**Subject:** Testimony for March 30 and 31

Hi:

Mindy just stopped in and they are overwhelmed by preparing testimony for several hearings plus answering calls, etc. So, I am going to work on the testimony for the Appropriations Committees on March 30 and 31. Could you please send me the latest budget testimony that was prepared and I'll review it to see how we might add some Japan info at the beginning? (I am assuming that this is the way we should do it?)

And, we'll probably have to add some budget stuff related to Japan work (Jim Dyer). Anyway – wanted to let you know that I will be working on this and will appreciate your info and guidance about the hearings and content. Thanks.

Susan

Susan K. Loyd  
Communications Director  
Office of the Chairman  
U.S. Nuclear Regulatory Commission  
Tele: 301-415-1838  
[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)

BA/123



---

**From:** Schmidt, Rebecca  
**Sent:** Monday, April 04, 2011 8:14 AM  
**To:** Dedrick, Kathy (EPW); Caputo, Annie (EPW)  
**Subject:** Week of May 16th

I have all the Commissioners and Chairman in town that week if you want to do a hearing. The Chairman does have a national exercise he is participating in early in the week. Just let me know. Thanks

BA/124

---

**From:** Schmidt, Rebecca  
**Sent:** Monday, April 04, 2011 9:41 AM  
**To:** Rihm, Roger  
**Cc:** Powell, Amy; Landau, Mindy  
**Subject:** RE: 3/29 Mtg with VT Delegation

It did happen. Gene went. He will be in after a dr.'s appt

**From:** Rihm, Roger  
**Sent:** Monday, April 04, 2011 9:30 AM  
**To:** Schmidt, Rebecca  
**Cc:** Powell, Amy; Landau, Mindy  
**Subject:** 3/29 Mtg with VT Delegation

I don't seem to be able to get an answer out of the Chairman's office as to whether this meeting actually happened last week. I have letters from the VT delegation and Rep Olver that I need to respond to, as appropriate, following that meeting. Did the meeting occur? Do I need to follow up? Can one of you tell me what happened and what remains to be done in the letters?

BA/125

---

**From:** Schmidt, Rebecca  
**Sent:** Tuesday, April 05, 2011 2:43 PM  
**To:** McWilliams, Carly  
**Subject:** RE: Invitation: The U.S. Government Response to the Nuclear Power Plant Incident in Japan" on April 6, 2011

It was done at 2:00 but now he has come back with a few changes. I will let you know—hopefully in the next hour

**From:** McWilliams, Carly [mailto:Carly.McWilliams@mail.house.gov]  
**Sent:** Tuesday, April 05, 2011 2:14 PM  
**To:** Schmidt, Rebecca  
**Subject:** RE: Invitation: The U.S. Government Response to the Nuclear Power Plant Incident in Japan" on April 6, 2011

Do you know when Mr. Virgilio's testimony will be ready?

Thanks

**From:** Schmidt, Rebecca [mailto:Rebecca.Schmidt@nrc.gov]  
**Sent:** Friday, April 01, 2011 1:50 PM  
**To:** McWilliams, Carly  
**Subject:** RE: Invitation: The U.S. Government Response to the Nuclear Power Plant Incident in Japan" on April 6, 2011

Thanks. We got it.

**From:** McWilliams, Carly [mailto:Carly.McWilliams@mail.house.gov]  
**Sent:** Friday, April 01, 2011 1:47 PM  
**To:** Schmidt, Rebecca  
**Subject:** Invitation: The U.S. Government Response to the Nuclear Power Plant Incident in Japan" on April 6, 2011  
**Importance:** High

Dear Ms. Schmidt:

Attached is a courtesy copy of Chairman Jaczko's designee's invitation to testify at the Subcommittee on Oversight and Investigations hearing entitled "The U.S. Government Response to the Nuclear Power Plant Incident in Japan" on April 6, 2011. Please confirm upon receipt. I am clerking the hearing and am happy to help with any questions or concerns you may have.

Best regards-

Carly

Carly McWilliams  
House Energy and Commerce Committee

BA/126

Rayburn 2125  
[carly.mcwilliams@mail.house.gov](mailto:carly.mcwilliams@mail.house.gov)

---

**From:** Schmidt, Rebecca  
**Sent:** Wednesday, April 06, 2011 2:46 PM  
**To:** Sharkey, Jeffry  
**Subject:** RE: Question

Normally we do but with 4 hearings last week, they all went up together yesterday. For today's hearing, Nancy reports that the testimony went to the 18<sup>th</sup> floor this morning before the hearing.

**From:** Sharkey, Jeffry  
**Sent:** Wednesday, April 06, 2011 6:13 AM  
**To:** Schmidt, Rebecca  
**Subject:** Question

The Commission reviews draft testimony prior to its dispatch to the Hill. Does OCA provide final testimony to the Commission after it is final, for example, at the time it is delivered to the Committee?

BA/127

---

**From:** Schmidt, Rebecca  
**Sent:** Thursday, April 07, 2011 3:15 PM  
**To:** Belmore, Nancy  
**Cc:** Powell, Amy; Shane, Raeann  
**Subject:** FW: March 30th Hearing\_Testimony of Michael Weber  
**Attachments:** 20110407002540833.pdf

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

**From:** Paffenback, Jean [mailto:Jean.Paffenback@mail.house.gov]  
**Sent:** Thursday, April 07, 2011 12:55 PM  
**To:** Schmidt, Rebecca  
**Subject:** March 30th Hearing\_Testimony of Michael Weber

Dear Rebecca,  
The attached transcript pages contain the remarks of Michael Weber from the hearing of March 30, 2011, for his review and correction, if required.

If a corrected transcript is not received by me by May 9, 2011, it will be assumed that the original transcript is correct. The Editorial Office will then proceed with publishing this document.

Thank you,

Jean Paffenback  
GPO Detailee / Committee on Transportation and Infrastructure Ford House Office Building - Rm 589  
email: [jean.paffenback@mail.house.gov](mailto:jean.paffenback@mail.house.gov)  
phone: 202.226.8777

BA/128

TRANSCRIPT

DO NOT DETACH

FOR

COMMITTEE ON TRANSPORTATION  
AND INFRASTRUCTURE

REVIEW

DATE: April 7, 2011

Referred to: Mr. Michael Weber c/o Rebecca Schmidt

The attached transcript pages contain your remarks from the hearing of March 30, 2011  
(Economic Development)

Please indicate any corrections in ink on the pages provided.

Rules of the Committee on Transportation and Infrastructure.

Rule XIV. *Records*

(a) *Keeping of Records.*— The Committee shall keep a complete record of all Committee action which shall include—

- (1) In the case of any meeting or hearing transcripts, a substantially verbatim account of remarks actually made during the proceedings, subject only to technical, grammatical, and typographical corrections authorized by the person making the remarks involved... [Emphasis added].

If a corrected transcript is not received by 5/9/11 it will be assumed that the original transcript is correct. The Editorial Office will then proceed with publishing this document.

Please return this transcript to:

Jean Paffenback  
Committee on Transportation and Infrastructure  
Phone: (202) 226-8777  
Fax: (202) 226-3475  
jean.paffenback@mail.house.gov

Returning Transcript

With Corrections

\_\_\_\_\_

Without Corrections

\_\_\_\_\_

Remarks Reviewed By \_\_\_\_\_

446 Mr. WEBER. Good morning, Chairman Denham, Ranking Member  
447 Norton, and members of the subcommittee. I am pleased to  
448 appear before you today to represent the United States  
449 Nuclear Regulatory Commission to discuss two aspects: the  
450 emergency planning and preparedness program for nuclear power  
451 facilities in the United States; as well as the protective  
452 action guidance that we recently issued in response to the  
453 events at the Fukushima Daiichi nuclear power plant station  
454 in Japan.

455 NRC's primary mission, as you may know, is to regulate  
456 nuclear power plants, reactors, and materials and waste in a  
457 manner that protects public health and safety, and promotes  
458 the common defense and security.

459 Emergency preparedness is a key element in our defense  
460 in-depth philosophy, and that philosophy ensures quality in  
461 design, construction, and operation of nuclear facilities,  
462 requires redundant safety systems that reduce the chances of  
463 accidents from occurring, and recognizes that, in spite of  
464 all these preparations, unforeseen events can occur, though  
465 through emergency planning and preparedness, mechanisms are  
466 in place to protect the public health in the unlikely event  
467 that these other measures fail.

468 The NRC emergency preparedness and planning regulations  
469 are extensive and require licensees to develop comprehensive  
470 and effective emergency plans as a condition of their license



471 to operate.

472        Nuclear power plant operators are required to provide  
473 extensive emergency response training to emergency plant  
474 workers. For example, they are required to provide severe  
475 accident management training to control room operators, and  
476 to conduct a rigorous drill and exercise program. The NRC  
477 inspects licensees to ensure that they are meeting these  
478 requirements, and monitors their performance.

479        To form a coordinated system of emergency preparedness  
480 and response, the NRC works with licensees, other federal  
481 agencies, state, tribal, local responders and officials, and,  
482 of course, first responders. The program includes an  
483 every-other-year full participation exercise that engages  
484 both on-site and off-site response organizations, as well as  
485 the Federal Emergency Management Agency. And we work with  
486 FEMA to evaluate the quality and the conduct of those  
487 exercises.

488        NRC resident inspectors also observe licensee on-site  
489 emergency drills and exercises. So it's safe to say that  
490 over the 30-plus years of operating experience with 140  
491 operating nuclear power plants in the United States, there  
492 have been thousands of drills and exercises in response to  
493 both abnormal and emergency conditions.

494        For planning purposes, we define two emergency planning  
495 zones, or EPZs, around nuclear power plant sites. The first

496 zone is called the plume exposure pathway, and that scenario  
497 that covers the 10-mile radius in the vicinity of the nuclear  
498 power plant. This area would require the most immediate  
499 protective actions in the event of a severe emergency causing  
500 a large-scale release. Planning for this area is  
501 comprehensive, and includes consideration of protective  
502 measures for members of the public at very low-dose levels,  
503 such as evacuation, sheltering, and administration of  
504 potassium iodide, as appropriate.

505 A second emergency planning zone is the ingestion  
506 pathway EPZ, and this covers a 50-mile radius around each  
507 plant to protect against potential lower-level, longer-term  
508 risks from ingestion of contaminated food, milk, and water.  
509 The comprehensive planning in both the 10 and the 50-mile  
510 EPZs provide a substantial basis for expansion, if necessary,  
511 in response to the emergency.

512 Let me now address NRC's protection action  
513 recommendations that we made recently for U.S. citizens in  
514 Japan to evacuate out to 50 miles from the Fukushima Daiichi  
515 nuclear power plant site. That decision was based on the  
516 best available information we had at the time. NRC began  
517 monitoring of the event with a tsunami warning that was  
518 issued for Hawaii and territories in the West Coast of the  
519 United States early that morning. In order to provide timely  
520 information to the U.S. ambassador to Japan, and to best

521 | protect the health and safety of U.S. citizens in Japan, we  
522 | based our assessment on conditions as we understood them.

523 |       This site has six nuclear power plants, and four of  
524 | those plants continue to face extraordinary challenges.  
525 | Units one, three, and four appear to have suffered  
526 | significant damage as a result of hydrogen explosions. Unit  
527 | four was in a refueling outage, and so it recently  
528 | transferred spent fuel into its spent fuel pool. If the  
529 | water was drained from that pool, it would have posed a risk  
530 | of overheating that fuel, and another large-scale release.  
531 | Radiation monitors were showing very high levels of radiation  
532 | at the plant site, which would pose complications for the  
533 | plant crew in returning to stabilize the reactors, and their  
534 | off-site readings indicating fuel damage was occurring.

535 |       Since communications were limited and there was a high  
536 | degree of uncertainty, it is difficult to accurately assess  
537 | the radiological hazard. However, we conducted calculations  
538 | to evaluate the proper evacuation distance, and we used  
539 | hypothetical but not unreasonable estimates of fuel damage,  
540 | the containment, and other release conditions. Calculations  
541 | demonstrated that EPA's protective action guidelines could be  
542 | exceeded at a distance of 50 miles from the site if a  
543 | large-scale release occurred from the reactors in the spent  
544 | fuel pools.

545 |       We understood that some of our assumptions were

546 conservative, but we believed it was better to err on the  
547 side of protection, especially in the case of a rapidly  
548 deteriorating condition. Acting in accordance with that  
549 framework, and using the best available information we had,  
550 NRC determined that an evacuation out to 50 miles for U.S.  
551 citizens was the appropriate course of action, and we made  
552 that recommendation to the other government agencies,  
553 including the ambassador.

554 This concludes my testimony. I appreciate the  
555 opportunity to appear before you today, and I would be happy  
556 to answer questions.

557 [Mr. Weber's prepared statement follows:]

558 \*\*\*\*\*INSERT 3\*\*\*\*\*

659 | that may not be impacted by the disaster, but would need  
660 | federal assistance to do sheltering operations, so we worked  
661 | on sheltered populations outside of that.

662 |       A lot of this work, you know, was focused on the  
663 | hurricane scenarios. We are trying to move this into New  
664 | Madrid and the other earthquake scenarios where, again, it  
665 | may be that you cannot get resources in fast enough. You're  
666 | going to have to move people to where the resources are.  
667 | This is one advantage we have in these types of events. We  
668 | are such a large country that we do have a lot of resiliency,  
669 | just because of the geographical separation of key resources.  
670 | So it's unlikely we would have a situation where one part of  
671 | the country would be so overwhelmed that the other parts of  
672 | the country wouldn't be able to provide that assistance.

673 |       Mr. DENHAM. Thank you. Now I recognize Ms. Norton for  
674 | five minutes.

675 |       Ms. NORTON. Thank you, Mr. Chairman. Mr. Weber, how  
676 | many nuclear plants in the United States sit on or near fault  
677 | lines, and how many are located on the coast near to areas  
678 | subject to tsunami?

679 |       Mr. WEBER. All the nuclear power plants in the United  
680 | States are near faults. Faults are -

681 |       Ms. NORTON. How come?

682 |       Mr. WEBER. The point is that -

683 |       Ms. NORTON. I mean you must have been looking to locate

684 | them on fault lines.

685 |       Mr. WEBER. No, ma'am. They are sited where they're  
686 | needed for providing the electrical power. But faults and  
687 | seismic activity is one of the external events that is  
688 | considered in the design of the nuclear power plant to ensure  
689 | that, should a large earthquake occur, the plant would remain  
690 | in a safe -

691 |       Ms. NORTON. Would you locate such a nuclear plant on a  
692 | fault line today?

693 |       Mr. WEBER. There are faults throughout the United  
694 | States.

695 |       Ms. NORTON. Well, would you locate a nuclear plant on a  
696 | fault--on or near a fault line today? I repeat my question.

697 |       Mr. WEBER. In siting a nuclear power plant, that is one  
698 | of the things we specifically look at. But not just seismic  
699 | activity. We also look at other natural hazards.

700 |       Ms. NORTON. So you would or would not, Mr. Weber? I have  
701 | only so much time, sir.

702 |       Mr. WEBER. You would take faults into consideration in  
703 | siting a nuclear power plant.

704 |       Ms. NORTON. So the--so you--have you taken them into  
705 | consideration before?

706 |       Mr. WEBER. Yes.

707 |       Ms. NORTON. So you're not doing anything different from  
708 | what you did before, even after the Japan catastrophe.

709 Mr. WEBER. Even in low seismic areas there are faults.

710 Ms. NORTON. I didn't ask you if there were--I asked you  
711 would you build or would you authorize the building of a  
712 plant on a nuclear [sic] fault line, and your answer is yes,  
713 you take into account, and that is a very troubling answer.  
714 What would you do to mitigate potential hazard of a nuclear  
715 plant located on a fault line, or near a part of the coast  
716 susceptible to tsunami?

717 Mr. WEBER. We would make certain that if there were an  
718 earthquake on that fault, or faults near the plant, that the  
719 plant would remain safe. Otherwise, we would not -

720 Ms. NORTON. How would it remain safe? You know, that is  
721 what they thought in Japan.

722 Mr. WEBER. Because the site is specifically designed to  
723 protect against -

724 Ms. NORTON. So was that site. Mr. Weber, I am going to  
725 go on to Mr.--

726 Mr. WEBER. Okay.

727 Ms. NORTON. All you have done is to leave me with really  
728 a set of questions that astonish me. I would have thought  
729 that after this disaster you would say that there were some  
730 steps that you are in the process of taking to mitigate the  
731 effects of disasters. Are there any such steps?

732 Mr. WEBER. We are -

733 Ms. NORTON. Steps after Japan?

734 Mr. WEBER. Yes, ma'am. We are taking both a near-term  
735 and a long-term review of our existing safety program. We  
736 are conducting a 90-day review, which will be followed by a  
737 longer-term review. The purpose of that is to learn what we  
738 can from the experience in Japan, and to specifically look at  
739 whether we need to change our regulatory program to ensure  
740 that, in light of what we have learned from -

741 Ms. NORTON. When is that review due to be completed?

742 Mr. WEBER. The first part of that is due within 90 days  
743 of last week, and the second review is due within 6 months of  
744 the completion of the 90-day -

745 Ms. NORTON. Would you make sure that a copy of that  
746 review is sent to this committee, to its chairman?

747 Mr. WEBER. We can do that.

748 Ms. NORTON. Mr. Fugate, when is the disaster relief fund  
749 due to run out of money?

750 Mr. FUGATE. Based upon the continuing resolutions in  
751 funding, we are sitting at a little over \$1.1 billion in the  
752 current fund. We are also in the process of looking at open  
753 disasters and replenishing that. And, based upon that, all  
754 things being equal, May/June time frames look like we may get  
755 close to what we would call immediate needs funding, where we  
756 would drop under \$1 billion. And we would then look at  
757 reductions in certain activities, most principally hazard  
758 mitigation and certain public assistance. It would not



1009 of note, we have clarified for federally-recognized tribes  
1010 that they can be an eligible applicant, as a grantee, after a  
1011 governor has requested a disaster declaration. This is key  
1012 to the sovereignty of those tribes and, again, was done  
1013 internally to our policy reviews, where there was not a  
1014 conflict in the Stafford Act, but we had that flexibility  
1015 inherent to that, in order to do that.

1016 Mr. FINCHER. Again, we go back to the Gulf oil spill,  
1017 how terrible that was. I am--still, I think good enough that  
1018 no one wants to destroy the environment, that we need to make  
1019 sure that we are safe with our energy, but also, at the same  
1020 time, that if you do not operate and follow the law, you do  
1021 pay a penalty. But again, we need to be steady, while  
1022 careful, and do a good job. And I do appreciate your  
1023 comments to that, guys. Thank you. I would yield back.

1024 Mr. DENHAM. Thank you, Mr. Fincher. Mr. Barletta, you  
1025 are recognized for five minutes.

1026 Mr. BARLETTA. Mr. Weber, do you anticipate any major  
1027 impacts of the radiation from Japan reactors on the U.S.? I  
1028 saw some reports showing certain states experiencing  
1029 low-level effects from the Japan reactors, Pennsylvania being  
1030 one of them, my home state. So I wonder if you could talk  
1031 about that?

1032 Mr. WEBER. Certainly. We do not expect to see harmful  
1033 levels of radiation in the United States, and that includes

1034 the territories--Hawaii, Alaska, Aleutians. We are detecting  
1035 trace levels of contamination from the releases from the  
1036 Fukushima Daiichi emergency. And that is expected. And we  
1037 are working within the federal community to get data from the  
1038 nuclear power plants--which may be some of the data that you  
1039 are referring to--to share that, so that it can be integrated  
1040 with other information taken around the United States,  
1041 including monitoring data from the Environmental Protection  
1042 Agency, to provide confidence to the American public that  
1043 they are not at risk from those releases.

1044 Mr. BARLETTA. So there won't be--you don't anticipate  
1045 any effects in water and rain -

1046 Mr. WEBER. We are seeing elevated levels in rain, for  
1047 example. But those levels are still at a very small amount,  
1048 so that it is not posing a risk to U.S. citizens.

1049 Mr. BARLETTA. And to follow up on Ms. Norton's question,  
1050 how at risk are our nuclear power plants in the United States  
1051 to the type of situation that occurred in Japan?

1052 Mr. WEBER. We are confident that the operating nuclear  
1053 power plants are safe, and that is safe from earthquakes,  
1054 that is safe from tsunamis, and other external  
1055 hazards--hurricanes, tornadoes. That is all part of what we  
1056 look at before we license a plant to operate.

1057 However, having said that, we are taking a close look at  
1058 what was actually occurring in Japan, so that we can learn

1059 | from that experience. At NRC we practice continuous  
1060 | improvement. So we do not want to blow off a significant  
1061 | event like occurred in Japan. We want to learn from that,  
1062 | and continue to improve our programs.

1063 |       Mr. BARLETTA. Thank you. Mr. Chairman, I yield back the  
1064 | balance of my time.

1065 |       Mr. DENHAM. Thank you. We will now start our second  
1066 | round of questioning. The first question I have again, Mr.  
1067 | Fugate, I am concerned about our planning. And there are  
1068 | obviously some things that are unpredictable, have become a  
1069 | bigger challenge for planning. Nobody could have planned  
1070 | what has happened--the catastrophe that has happened in  
1071 | Japan.

1072 |       But here in the United States we have the opportunity to  
1073 | plan for--you know, right now in California, I mean, we are  
1074 | going to see a huge amount of flooding this year we are  
1075 | predicting, because we just--we do not build the water  
1076 | storage facilities or the conveyance facilities, and you have  
1077 | a huge amount of snowfall this year, and now all of a sudden  
1078 | we are in normal 70, 80-degree temperatures in California.

1079 |       Can you explain to me some--the planning that you do,  
1080 | based on some of the risk assessments from other departments?

1081 |       Mr. FUGATE. Well, Mr. Chairman, as you point out, some  
1082 | risks are dynamic. They change seasonally, they may change  
1083 | because of certain climate shifts that we see that we are

1234 up for deployment. And I didn't see the status today, but I  
1235 think the Virginia team is merely awaiting their -

1236 Ms. NORTON. Well, I noticed that the Virginia team came  
1237 back rather quickly. Was that because of concern about a  
1238 nuclear hazard?

1239 Mr. FUGATE. Unfortunately, the answer is not that. It  
1240 was that the search was moving into recovery phase. They did  
1241 not feel that there was going to be much more opportunity for  
1242 rescues. And since those teams are primarily designed to do  
1243 rescues and not body recovery, the Government of Japan asked  
1244 that the teams be released and sent back to the U.S., while  
1245 they continued recovery operations.

1246 Ms. NORTON. Actually, that is reassuring, actually. Mr.  
1247 Weber, one last question--actually, this is a question for  
1248 both of you, because I know that, Mr. Fugate, that you are  
1249 about to undertake in May a much-discussed national exercise  
1250 at--near the New Madrid fault line in the center of the  
1251 country, south center of the country.

1252 One, are you, Mr. Weber, participating in this national  
1253 exercise?

1254 Mr. WEBER. Absolutely.

1255 Ms. NORTON. Are there any nuclear plants located near  
1256 this particular fault line? What are the states, again?  
1257 Tennessee? What are the states?

1258 Mr. WEBER. Ten states, right?

1259 Mr. FUGATE. Yes. Basically from Mississippi north  
1260 through Illinois, across Arkansas, back over to Tennessee.  
1261 When we looked at this exercise, it is based upon the  
1262 historical event. So we are using the event that occurred in  
1263 1811/1812, was a major shock and then several major  
1264 aftershocks in the area of impact, based upon USGS data that  
1265 would indicate where we would see shaking and damages  
1266 occurring across--it's about 8 states that would be seeing  
1267 damages.

1268 There are reports that we could actually have shaking  
1269 motion and impacts outside that area, but it would not result  
1270 in significant damages.

1271 Ms. NORTON. Well, in those 10 states, is there any--are  
1272 there any nuclear plants located along that fault line?

1273 Mr. WEBER. Yes, there are. And in addition to nuclear  
1274 power plants, there is also a large nuclear facility, such as  
1275 the Paducah gaseous diffusion plant, and there is a  
1276 conversion facility in Metropolis, Illinois.

1277 Our preparations were to participate fully in the  
1278 national exercise, so that we could gain from the experience,  
1279 working with our partners in FEMA, the states, the local  
1280 responders.

1281 Ms. NORTON. And, Mr. Chairman, there--the first  
1282 responders, the teams that went from Fairfax and California,  
1283 might well be informative to us. I know we, ourselves, heard

1284 | from the teams that went to Haiti, to see what they could  
1285 | tell us about what would happen if there were an earthquake  
1286 | in Haiti.

1287 |       Mr. Weber, I go back again to fault lines and  
1288 | construction along fault lines. Are you constructing along  
1289 | fault lines because you really don't have any alternative?  
1290 | Knowing that it is a fault line, knowing that none of us can  
1291 | know when the fault line will prove disruptive, what leads  
1292 | you to construct a nuclear facility, in particular, along a  
1293 | fault line? Do you look at other options?

1294 |       Mr. WEBER. Absolutely.

1295 |       Ms. NORTON. Well then why, for example, would a fault  
1296 | line location be chosen?

1297 |       Mr. WEBER. In dealing with faults, we have to  
1298 | distinguish between active and passive faults. Passive  
1299 | faults may have been active millions of years ago, but are no  
1300 | longer considered active.

1301 |       Ms. NORTON. Okay, I am interested in the active ones.

1302 |       Mr. WEBER. The active ones you would obviously not try  
1303 | to site a nuclear power plant or other large nuclear facility  
1304 | on top of that fault. But if you were siting a facility, for  
1305 | whatever reasons, and a fault were active and nearby, you  
1306 | would take that into account in the design of the facility,  
1307 | such that -

1308 |       Ms. NORTON. No, I am asking, in those instances, have

1309 | you, in fact, decided to build or allow a nuclear facility to  
1310 | be built on a fault because there was no other alternative.

1311 |       Mr. WEBER. I am not aware of those instances. I do  
1312 | know, for example, the Diablo Canyon nuclear power station in  
1313 | California, it was discovered during the course of the site  
1314 | investigation that there was a large fault nearby, the Hosgri  
1315 | fault. And that fault was specifically taken into  
1316 | consideration, so that we could have assurance that that  
1317 | facility, if there were an earthquake along that fault, that  
1318 | the Diablo Canyon nuclear power -

1319 |       Ms. NORTON. So what would you do in that case that you  
1320 | wouldn't do if a facility were not located on a fault?

1321 |       Mr. WEBER. You would add stiffening to certain parts of  
1322 | the plant, so that if there were seismic motion, that the  
1323 | plant would be safe. You could stand off the fault, so that  
1324 | if you had subsidence along the fault, that it didn't disrupt  
1325 | critical components in the nuclear power plant. So, there  
1326 | are a variety of things that are taken into consideration.

1327 |       I think the point that is to be made is there are faults  
1328 | throughout the United States, and we need to take that into  
1329 | account, because we do not want to have a situation where we  
1330 | are surprised by a seismic event that causes damage to a  
1331 | plant. And that is the same design philosophy that we employ  
1332 | for flooding, for tsunamis, for tornadoes, for hurricanes.

1333 |       Mr. DENHAM. Thank you. And do you want to do a third

1359 clarify a couple things. I still do not think that Ms.  
1360 Norton's question has been answered sufficiently. So let me  
1361 pull out this map here.

1362 Realize that your standard answer is that we have got  
1363 faults everywhere. I get that, but we have red areas here.  
1364 Highest risk areas along the coast of California, Oregon, and  
1365 Washington: are we planning on building any new nuclear  
1366 plants there?

1367 Mr. WEBER. At this point we do not have any applications  
1368 for new nuclear power plants in those locations.

1369 Mr. DENHAM. How about the Madrid area, the red area  
1370 there?

1371 Mr. WEBER. No.

1372 Mr. DENHAM. Okay. So any of the high risk areas, do we  
1373 have any plans?

1374 Mr. WEBER. Most of the construction that is going on now  
1375 or as planned is in the southeastern United States, and with  
1376 some in the mid-Atlantic.

1377 Mr. DENHAM. Thank you.

1378 And as far as the current facilities that we have up and  
1379 running today, I went to school real close to Diablo Canyon.  
1380 I mean that facility must be 40 years old, 50 years old.  
1381 Here we had in Japan a state of the art facility. You know,  
1382 I believe that that was probably the most modern--

1383 Mr. WEBER. No, sir, I am sorry. Those plants are about



1384 40 years old. Fukushima Daiichi Unit 1 is approaching its  
1385 40th anniversary.

1386 Mr. DENHAM. So similar technology?

1387 Mr. WEBER. Similar technology.

1388 Mr. DENHAM. Similar precautions?

1389 Mr. WEBER. Yes.

1390 Mr. DENHAM. Are there things that we would do now to  
1391 upgrade San Onofre or Diablo Canyon or others after seeing  
1392 what has happened in Japan? Are there new construction, new  
1393 architecture that we would want to go in and update those  
1394 facilities?

1395 Mr. WEBER. It is difficult to compare what our  
1396 regulatory program has required over the years and how it is  
1397 implemented versus what has been done in Japan. I will say  
1398 that one of the reasons why we have been involved in our  
1399 response is to insure that we learn from the Japanese  
1400 experience, and we are constantly asking ourselves how would  
1401 we cope with this situation in the United States.

1402 We have identified a number of features that are present  
1403 in the nuclear power plants in the United States that we are  
1404 not aware of were implemented in Japan, and those are the  
1405 items that would be relied on to insure that should such a  
1406 catastrophe occur in the United States, that the nuclear  
1407 power plants remain safe.

1408 These are things like supplemental emergency power that

1409 we have in the United States. We have diesel driven pumps.  
1410 So we have required our licensees that operate the nuclear  
1411 power plants to take additional measures, particularly since  
1412 9/11, so that regardless of what event may occur, that they  
1413 are in a more safe configuration, and they could cope with  
1414 these kind of catastrophes.

1415 Mr. DENHAM. And I assume there is some type of risk  
1416 assessment being done in light of what has happened in Japan.

1417 Mr. WEBER. Yes, sir.

1418 Mr. DENHAM. And you would be able to provide this  
1419 committee with that risk assessment and the recommendations  
1420 you would have for each of those facilities?

1421 Mr. WEBER. Absolutely.

1422 Mr. DENHAM. Thank you.

1423 And just to follow up, Mr. Hubbard, I want to make sure  
1424 I understood your answer correctly. We have in actual  
1425 disaster, we have a forest fire that takes out the entire  
1426 fuel on the ground floor, leaves behind all of these trees  
1427 that now are in the dying process. Before we see a second  
1428 disaster, before we see a second forest fire, my  
1429 understanding from your answer, what I heard from you was  
1430 that the environmental review process would not be sped up.  
1431 There would not be anything to provide local loggers the  
1432 opportunity to come in and log those trees quickly and maybe  
1433 actually get some economic impact to the local community and

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If a subcommittee member requests information to be provided for the hearing record during the hearing, the information should be inserted at the proper place following the request. One additional copy should be furnished to the subcommittee staff.

All inserts should be original copy, whenever possible, free from punched holes, contain no staples, and if two sided, two copies must be furnished.

Inserts should be inserted following the appropriate pages in the hearing record. The transcript page number where the material should be inserted, together with an identifying letter, encircled in pencil, should be arrowed in between the lines of the transcript, as

"Insert 23A follows". The insert should then be inserted behind the page referred to with the notation "23A" in the top right corner.

Be certain to spell out acronyms the first time used.

Spell out "million" instead of using M to indicate amount. Show dollar figures as decimal to one place as follows: "\$7.8 million"; or full numerical figure when rounding to one decimal is not appropriate: "\$7,845,000". "Thousands" should be written in full figures (e.g. \$25,000, not "\$25 thousand").

Any charts used in oral testimony should be numbered (1, 2, etc.) and should be placed in appropriate place of the transcript.

A Senator's remarks should be corrected only for typographical errors. If there is a misstatement of fact or some other reasons which you believe justifies making a change, do not make the change, but attach a note with the suggested change on the page where you believe the change should be made.

Any photographs or graphs to be reproduced in hearing record must be clear and legible. If a PowerPoint file or other data file is available please e-mail to the Editorial and Printing Office.

### **SUBMITTED RECORD QUESTIONS**

Submitted questions will be given to the appropriate budget officer after each hearing. Record questions must be returned to the Committee 3 weeks after date of receipt.

An original and one copy of submitted questions and answers should be provided to the Committee. The copy is for transmittal to the Senator submitting questions.

In order to obtain conformity in style in typing submitted questions and answers, please observe the following:

Answers to written questions submitted by the presiding Senator or subcommittee staff shall carry the heading centered:

#### **"QUESTIONS SUBMITTED BY SENATOR \_\_\_\_\_"**

Each question submitted should be retyped in full prior to respondent's answer. Questions should be prefaced by the word "Question.", and the answer prefaced by the word "Answer." (each followed by a period)

Center headings should be typed in all capitals in space provided with only one blank line above and below heading

Each question and answer should be typed single-spaced. You may answer more than one question on a page. Double space between the answer and the next question. Indent each paragraph five spaces.

Do not number questions.

Avoid personal or individual references. It is the Department or Agency responding, not individuals.

In a series of submitted questions relating to the same subject matter, answer each question separately. In other words, do not type all the questions and then all the answers. There may be a few exceptions where one or two questions may best be combined in a single answer. Check with the Committee staff to determine whether this is appropriate.

Any charts, tables, etc. in an answer should follow as soon thereafter as possible any written explanation. In other words, do not identify a table as Table A, and then insert the table after an entire series of questions and answers. Insert the pertinent chart or table following reference to it.

Indicate in charts and tables whether figures are in thousands, millions, etc. All tables should have totals. (For example, a listing and description of R&D contracts should include a total at the end.)

If similar questions are submitted which require identical answers, refer the questions and answers to the attention of the Committee staff, so they may determine whether it is appropriate to modify or delete one of the questions.

### **PROOFS**

Proofs must be returned to the Committee by date requested.

Check proofs of all material submitted to see that they have been inserted in the appropriate places in the proofs.

All corrections on proofs should be made with colored pen or pencil, preferably red, in the main. Make corrections easy to find and read.

Make note of, and supply, any missing inserts as indicated by the printer.

Corrected pages can be faxed or e-mail a PDF file.

ATTACHMENT: Sample sheet for preparation of record questions

## INSTRUCTIONS FOR PREPARING QUESTIONS AND ANSWERS

More than one question and answer may appear on a page. In fact, it is preferable to fill the page. Group questions and answers by Senator.

Any questions, please call 224-7265, 7266, 7217, or 7267

### SAMPLE AS TYPED BY AGENCY

#### QUESTIONS SUBMITTED BY SENATOR HATFIELD

##### PROGRAM PARTICIPATION

**Question.** In all the Child Nutrition Programs, there is an anticipated increase in the number of free and reduced price meals served. To what do you attribute this increase?

**Answer.** The anticipated increase in the number of free, reduced price and paid meals served is based on increased school enrollments and higher.

##### STATE ADMINISTRATIVE EXPENSES

**Question.** Within the Child Nutrition account, there is a line item called "State Administrative Expenses," (SEA), which provides matching funds to the States for administering Child Nutrition Programs.

**Answer.** There has been continuing concern with the fact that almost one-half the amount allocated for State administrative expenses remains unused. SAE funds which remain unobligated by a State on September 30, 1986.

OFFICE	FY 1993	FY 1994	FY 1995
Policy & Direction	\$26,600	\$25,500	\$25,500
Aviation Safety	11,000	11,000	11,000
Surface Transportation	5,500	8,000	8,000
Research & Engineering	5,500	8,000	8,000
Administration	5,500	5,500	5,500
TOTAL	54,100	58,000	58,000

### DO NOT TYPE QUESTIONS AND ANSWERS AS FOLLOWS

**Question:** In all the Child Nutrition Programs, there is an anticipated increase in the number of free and reduced price meals served. To what do you attribute this increase?

**Answer.** The anticipated increase in the number of free, reduced price and paid meals served is based on increased school enrollments and higher.



1     A REVIEW OF NUCLEAR SAFETY IN LIGHT OF THE IMPACT OF NATURAL  
2             DISASTERS ON JAPANESE NUCLEAR FACILITIES

3

4                     WEDNESDAY, MARCH 30, 2011

5

6                                     U.S. Senate,  
7             Subcommittee on Energy and Water Development,  
8                             Committee on Appropriations,  
9                                     Washington, DC.

10

11             The subcommittee met at 10:02 a.m., in room SD-138,  
12     Dirksen Senate Office Building, Hon. Dianne Feinstein  
13     (chairman) presiding.

14             Present: Senators Feinstein, Lautenberg, Durbin,  
15     Alexander and Graham.

16                     OPENING STATEMENT OF SENATOR DIANNE FEINSTEIN

17             Senator Feinstein: Good morning ladies and gentlemen.

18     And welcome to the Energy and Water Appropriations  
19     Subcommittee's Oversight Hearing of U.S. Nuclear Power Safety  
20     in the aftermath of the Japanese nuclear disaster.

21             First, you know, let me say, on behalf of the  
22     subcommittee, that our thoughts are with the people of Japan  
23     who continue to suffer. I spoke to Ambassador Fujisaki  
24     Saturday and conveyed my really deep sympathy. I think for

1 all of us that have been watching this on television, day  
2 after day and through the horrors of both the earthquake and  
3 the tsunami that we want to extend our very best to the people  
4 of Japan and our deepest sympathy for what is an enormous  
5 loss.

6       The 9.0 earthquake and resulting tsunami occurred 19 days  
7 ago. As we speak, workers at the Daiichi nuclear site  
8 continue their work to contain the situation with the reactors  
9 and spent fuel pools. And they have been caught -- they have  
10 been called national heroes and so they should be.

11       It will be months before we know what happened and why.  
12 So it is too early to call this a hearing about lessons  
13 learned from the disaster in Japan. But we do know enough to  
14 start asking some critical questions about nuclear energy  
15 policy in our own country.

16       Last I visited California's two nuclear power plants with  
17 representatives from the United States Geological Survey and  
18 the Nuclear Regulatory Commission. The Diablo Canyon Nuclear  
19 Power Plant is near the city of San Luis Obispo, it is its  
20 larger employer in the county. Four hundred and twenty-four  
21 thousand people live within 50 miles. It employs 1,200.  
22 Further south, nearly 7.4 million live within 50 miles of the  
23 San Onofre Nuclear Generating Station near San Clemente.

24       I came away from those visits with some good news. I

1 feel much better about the safety precautions that are in  
2 place at these nuclear plants. I was very impressed with the  
3 dedication, the confidence and the professionalism of the  
4 large staffs that run these facilities and the regulatory  
5 agents who guard against risk.

6 But we need to reconfirm that these facilities are  
7 designed to endure the threats we can foresee and prepare to  
8 respond to scenarios we never imagined, that's why redundant  
9 systems, back up systems and plans are so important.

10 Most significantly, I truly believe we must begin to  
11 rethink how we manage spent fuel. Spent fuel must remain in  
12 pools for at least 5 to 7 years, and those are the pools that  
13 the firemen are pouring water into in Japan, at which time  
14 these rods can be moved to safer, dry cask storage. However,  
15 these pools often become de facto long term storage, with fuel  
16 assemblies re-racked, thus increasing the heat load of the  
17 pools. In California, for instance, fuel removed from  
18 reactors in 1984 is still cooling in wet, spent fuel pools.

19 This process may have regulatory approval, but I have a  
20 hard time understanding why the Nuclear Regulatory Commission  
21 has not mandated a more rapid transfer of spent fuel to dry  
22 casks. Reports out of Japan indicate there were no problems  
23 with the dry casks at Daiichi. To me, that suggests that we  
24 should at least consider a policy that would encourage quicker

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1 movement of spent fuel to dry cask storage, if that is true.

2 We must also consider what broader regulatory reforms may  
3 be necessary, beginning with the review of the United States  
4 power plant safety. I am very pleased that the Nuclear  
5 Regulatory Commission will undertake both short term and long  
6 term reviews of nuclear plant safety. And Mr. Chair, I thank  
7 you very much for that.

8 This kind of self reassessment is really appropriate. Today I  
9 hope we will get a more complete picture of what the NRC  
10 intends to do with these reviews and how quickly you are  
11 likely to act on any new safety regulations.

12 In addition to NRC's self assessment, I think we should  
13 take a look at some independent analysis of our nuclear power  
14 plant safety, with specific attention to threat assessment and  
15 the design parameters of our plants.

16 Japan has now suffered two earthquakes in the past 4  
17 years that were larger than the Japanese thought possible and  
18 each devastated a nuclear power plant that was not designed to  
19 endure a quake of that size. The lesson is that we need to  
20 think carefully about whether our country has properly  
21 estimated the threats to our nuclear facilities and designed  
22 the facilities to endure them. An independent review of the  
23 design basis for all United States plants, I believe, should  
24 be a priority.

1       The nuclear R&D program currently funds work related to  
2 existing plants, future reactor designs and waste issues. The  
3 question becomes, do we have the right focus and balance to  
4 promote increased safety.

5       The spent fuel at Daiichi posed a significant problem,  
6 contributing to at least one of the hydrogen explosions. So,  
7 what can our R&D programs do to address issues of remaining  
8 spent fuel energy and hydrogen?

9       Funding constraints are already requiring programs to re-  
10 rank R&D priorities. Perhaps the events at Daiichi will also  
11 contribute to that re-think.

12       It is clear that we lack a comprehensive national policy  
13 to address the nuclear fuel cycle, including management of  
14 nuclear waste. Creating more waste without a plan increases  
15 our risk and exposes taxpayers to more payments from  
16 utilities.

17       This hearing is not focused on nuclear waste, but I think  
18 it is hard to look at the other aspect of nuclear power and  
19 not recognize our lack of appropriate, permanent, retrievable  
20 storage.

21       So, we will be exploring these issues today. Our first  
22 panel, we will hear from Greg Jaczko, the Chairman of the  
23 Nuclear Regulatory Commission. I have had the pleasure of  
24 meeting with him and look forward to his testimony and from

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1 Pete Lyons, the Acting Assistant Secretary for Nuclear Energy  
2 at the Department of Energy.

3 Our second panel will include Dr. Ernie Moniz from MIT  
4 who has a long history in this area and is currently serving  
5 on the Blue Ribbon Commission developing a long term plan for  
6 nuclear waste. We will also hear from William Levis, the  
7 president and chief operating officer at PSEG Power. PSEG  
8 operates the same reactor model as those at the Daiichi site.  
9 Our third witness on the panel is Dave Lochbaum from the Union  
10 of Concerned Scientists. Mr. Lochbaum has a long history  
11 inside and outside the nuclear power industry. So we look  
12 forward to your testimony.

13 Let me now turn to my distinguished ranking member, with  
14 whom it's a great pleasure to work. We have actually worked  
15 together in the prior session on the Interior Committee. And  
16 I think this is one of our very first hearings on this  
17 subcommittee.

18 So, I want you to know I very much look forward to  
19 working with you in the same way we did on Interior.

20 OPENING STATEMENT OF SENATOR LAMAR ALEXANDER

21 Senator Alexander: Thank you, Madam Chairman. Thank you  
22 for that and thank you for your -- for hosting this hearing in  
23 a timely way and having the witnesses here whom we ought to be  
24 hearing from, people who know what they are talking about and

1 are in charge of the safety and usefulness of our nuclear  
2 program.

3 Those of us who support nuclear power as a part of the  
4 mix of electricity generation in the United States, and for  
5 the world, ought to be one of the first to ask questions about  
6 what can we learn from what happened in Japan, about the  
7 safety of our own reactors, both of the 104 commercial  
8 reactors that we have in the United States, those that are on  
9 the drawing board at the Nuclear Regulatory Commission and of  
10 course we have a large number of nuclear reactors in our  
11 nuclear Navy which has been operating since the 1950s.

12 So, the questions I will be looking forward to hearing  
13 more about are many of the same ones that Senator Feinstein  
14 spoke of. What kind of safety enhancements have been made at  
15 our nuclear plants since they have been in operation, I mean  
16 our current plants? How will the next generation of reactors  
17 have improved safety capabilities over reactors that were in  
18 service not just in the United States but around the world  
19 today? What about new technologies? One of the most  
20 important things that the Federal Government can do about  
21 clean energy is research. We have the capacity for that.

22 I was in Great Britain, Madam Chairman, for 3 days last  
23 week and they reminded me that we are the ones with the  
24 national labs; we are the ones with the great research

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1 universities. And if any country is going to have advanced  
2 research in clean energy, it ought to be the United States.  
3 We could do that for ourselves and for the world. And nuclear  
4 power is one area where we could have that.

5       The chairman has mentioned one, better ways of recycling  
6 used nuclear fuel. Another would be the small modular  
7 reactor. Can we build 125 megawatt reactors or smaller  
8 reactors as a part of our future? And there may be other  
9 areas. So those are the kind of questions that I will be  
10 looking for.

11       I thank the chairman for reminding us of the scope of the  
12 Japan tragedy. It is important to put the entire event in  
13 perspective in several ways. One is the size of the quake and  
14 the size of the tsunami and the size of the tragedy, there are  
15 hundreds of thousands of people, for example, still homeless  
16 in Japan. And just as California, by its proximity to the --  
17 being on the Pacific Ocean -- Tennessee has an unusual  
18 relationship with the people of Japan because over the years  
19 we have become the state most Japanese manufacturing, we have  
20 many Japanese families and friends in our State and so we have  
21 felt this tragedy even more than we might otherwise have.

22       Another way to put it into perspective is to be aware of  
23 the record of safety in the United States nuclear industry.  
24 And I want to confirm this with our witnesses, but my



1 understanding is the only deaths we have ever had in  
2 connection with reactors in the United States happened in 1961  
3 at a research reactor and that that kind of reactor isn't  
4 currently used anymore in our country. So the 104 civilian  
5 reactors we have in the United States, my understanding is,  
6 have never produced a fatality. The Navy ships that are --  
7 that have reactors and have had since the 1950s have never  
8 resulted in a fatality from a reactor accident.

9       And while we have heard a lot about Three Mile Island,  
10 the worst nuclear accident we have had in our country, I  
11 suppose, in the last 30 years anyway, no one was hurt at Three  
12 Mile Island, which many people don't believe when I say it,  
13 but I want to confirm that with our witnesses as well, no one  
14 was hurt at Three Mile Island.

15       So the nuclear industry, the nuclear plants has a safety  
16 record in the United States that is not surpassed by any other  
17 form of energy production. We unfortunately we have coal  
18 mines that blow up, we have gas plants that blow up, we have  
19 oil rigs that spill, all of that is a tragedy and we hope that  
20 we continue a good safety record in our nuclear plants.

21       One or two other things, I think it is important to keep  
22 in perspective what our alternatives are. Every form of  
23 energy we have carries with it some risk. Again, in listening  
24 to those talking in Great Britain this past week, Madam

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1 Chairman, they are going through the same sort of analysis.  
2 But here are the alternatives, 45 percent of their electricity  
3 comes from natural gas, it costs twice as much as ours does  
4 and one-half of it comes from Russia, and they are not sure  
5 that they want to go up to 80 percent of their natural gas  
6 from Russia. They are closing their coal plants because of  
7 their climate change rules. And they know that renewables can  
8 only provide a few percent of electricity and is intermittent  
9 as well and it takes up a lot of space for an island that  
10 doesn't have very much space. So their only option is to  
11 build more nuclear power plants which is what Great Britain is  
12 planning to do.

13 And as we look around the world we see that nuclear power  
14 provides 15 percent of the world's electricity, 30 percent of  
15 Japan's electricity. There are 65 reactors currently under  
16 construction worldwide, from Russia and China, to Brazil and  
17 Korea; 20 percent of our electricity in the United States  
18 comes from nuclear power; 70 percent of our clean electricity,  
19 that is no sulfur, nitrogen, mercury or carbon comes from  
20 nuclear power. So it is hard for me to imagine how we have a  
21 future in the United States without substantial expansion of  
22 nuclear power, especially since some coal plants are going to  
23 close and some nuclear power plants are going to close because  
24 they are old.

1       So that makes this hearing on what we can learn about  
2 safety even more important. I thank the chairman for holding  
3 the hearing and I look forward to the testimony of the  
4 witnesses.

5       Senator Feinstein: Thank you very much, Senator, for  
6 those excellent comments.

7       Senator Lautenberg, welcome. Would you like to make a  
8 brief statement?

9               STATEMENT OF SENATOR FRANK R. LAUTENBERG

10       Senator Lautenberg: Yes. I'd like to make a longer one,  
11 but I will make this brief, I think. Just to say, Madam  
12 Chairman, this not only obviously is timely, but we are  
13 pleased to have Mr. Jaczko here. I had the chance to meet  
14 with him yesterday and I think we -- the review we had was  
15 very productive and I was -- I will also attest to Mr.  
16 Jaczko's durability, not only his engineering skill, because  
17 he came in from Japan and I was -- had to speak coming from  
18 New Jersey, so we welcome you here again, to both witnesses.  
19 And I look forward to hearing from them. And I thank you,  
20 Madam Chairman for having the hearing.

21       Senator Feinstein: Thank you very much, Senator.

22       Chairman Jaczko and Dr. Lyons, thank you both for being  
23 here today, you have both been intimately involved with the  
24 crisis and as Senator Lautenberg said, I understand you just

1 returned, Mr. Chairman, from Japan, so we would be most  
2 interested in your observations and update on that situation.  
3 But, I also want you to be looking forward and talk a little  
4 bit about the issues the United States should consider in  
5 learning from this event.

6 Your formal statements, gentlemen, will be made part of  
7 the record, so please summarize, in your oral statement.

8 Mr. Chairman, we will begin with you.

9 STATEMENT OF HON. GREGORY B. JACZKO, CHAIRMAN, NUCLEAR  
10 REGULATORY COMMISSION

11 Mr. Jaczko: Thank you, Chairman Feinstein, Ranking  
12 Member Alexander and Senator Lautenberg.

13 I appreciate the opportunity to appear before your  
14 subcommittee today to address the response of the Nuclear  
15 Regulatory Commission to these tragic events that you have  
16 discussed, in Japan. And as you have mentioned, I traveled to  
17 Japan over the past weekend and just returned yesterday. And  
18 I went to be able to directly convey a message of support to  
19 our Japanese counterparts. And I had an opportunity to meet  
20 with senior Japanese Government and TECPO officials and I  
21 consulted with the NRC team of experts who are in Japan as  
22 part of our effort to assist the Japanese response to dealing  
23 with the nuclear reactors. And I would note that that is one  
24 small part of a broader U.S. effort to provide assistance to

1 the Japanese with regard to all of the challenges they are  
2 facing as a result of this hurricane and tsunami.

3 And as many of you have mentioned, I too would like to  
4 reiterate my condolences and sympathy to all of those who have  
5 been affected by the earthquake and the tsunami in Japan. Our  
6 hearts go out to all of those who have been dealing with the  
7 aftermath of these natural disasters and we are mindful of the  
8 long and difficult road they will face in recovering.

9 Since Friday, March 11, when the earthquake and tsunami  
10 struck, the NRC's headquarters operation center has been  
11 operating on a 24 hour basis to monitor and analyze events at  
12 nuclear power plants in Japan. Despite the very high level of  
13 support being provided by our agency in response to those  
14 events, we do continue to remain focused on our domestic  
15 responsibilities and ultimately ensuring the safety and  
16 security of the U.S. nuclear reactors.

17 In spite of the evolving situation, the long hours and  
18 the intensity of efforts, the NRC staff has approached their  
19 responsibilities with dedication, determination and  
20 professionalism and I am very proud of the work that they have  
21 done and the work that they have done as part of a larger U.S.  
22 Government effort.

23 On March 11, as you have mentioned, an earthquake hit  
24 Japan resulting in the shutdown of more than 10 reactors in

1 Japan. The tsunami that followed appears to have caused the  
2 loss of normal and emergency electric power to six units at  
3 the Fukushima Daiichi site. After this event we began  
4 interacting our Japanese regulatory counterparts and by the  
5 following Monday we had dispatched a total of 11 NRC staff to  
6 Japan.

7 Now, as our discussion and understanding of the events  
8 continued to unfold, at a certain point we gained a limited  
9 amount of information that led us to believe that there was a  
10 possibility of a further degradation in the conditions at the  
11 reactor. Based on the information that we had, we looked at  
12 that situation, relative to what we would do here in the  
13 United States and we determined that if a similar situation  
14 were to happen in the United States, we would be recommending  
15 a larger evacuation out to approximately 50 miles. And I  
16 would stress that that was based on limited information and  
17 was a conservative and prudent decision that was made. So  
18 based on that information we provided a recommendation to the  
19 U.S. Government and the ambassador in Japan issued a notice to  
20 American citizens in Japan to be advised to evacuate or to  
21 relocate to 50 miles beyond the plant.

22 Here, domestically, we continue to support efforts to  
23 monitor at nuclear power plants and through the Environmental  
24 Protection Agency's system, we continue to monitor radiation

1 levels that would be seen in the United States. And I want to  
2 stress and repeat that we do not believe that there is any  
3 likelihood of levels of radiation in the United States that  
4 could cause any kind of public health and safety concern.

5 Now I want to focus a little bit, with the remainder of  
6 my opening remarks, on the reasons we believe we have a strong  
7 regulatory program here in the United States. Since the  
8 beginning of our regulatory program we have emphasized the  
9 philosophy of defense and depth which recognizes that nuclear  
10 reactors require the highest standards of design,  
11 construction, oversight and operation. And it really does not  
12 rely on any one single layer of protection for public health  
13 and safety. Designs for every reactor in this country take  
14 into account site specific factors and include a detailed  
15 evaluation for natural events, such as earthquakes, tornados,  
16 hurricanes, floods and tsunamis. There are multiple physical  
17 barriers to radiation being released to the public in every  
18 reactor design. And additionally, there are diverse and  
19 redundant safety systems that are required to be maintained in  
20 operable condition and frequently tested to ensure that the  
21 plant is always in a high condition of readiness.

22 We are, however, a learning organization and we continue  
23 to take advantage of the best available information that we  
24 have to refine and improve our system. And one of the most

1 significant changes that we made, after Three Mile Island in  
2 1979, was an expansion of our resident inspector program,  
3 which now has at least two full time NRC inspectors at each  
4 site where we have the ability to have unfettered access to  
5 the site at any time.

6 We have also developed requirements for severe accident  
7 management to ensure that in the event, all of the things that  
8 we think are possible to happen, if the event -- if something  
9 like -- if something additionally were to happen, we have  
10 these severe accident management guidelines in place to ensure  
11 that we can deal promptly and in a systematic and methodical  
12 way with the unique safety challenges that may be presented.

13 In addition, as a result of the events of September 11,  
14 we identified important pieces of equipment that we require  
15 licensees to have available and in place, as well as new  
16 procedures and policies to help deal with the very severe type  
17 of situation that you are seeing in Japan right now. And our  
18 program of continuous improvement will also include lessons  
19 learned from the events in Japan.

20 We have already begun enhancing inspection activities  
21 through temporary instructions to our inspection staff,  
22 including the resident inspectors and the inspectors in all of  
23 our four regional offices. We have also issued an information  
24 notice to licensees to make them aware of activities they

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1 should undertake to verify that their capabilities to mitigate  
2 conditions due to these severe types of accidents, including  
3 the loss of significant operational and safety systems, are in  
4 effect and operations.

5       Now although we are confident about the safety of U.S.  
6 nuclear power plants, our agency has a responsibility to the  
7 American people to undertake a systematic and methodical  
8 review in light of the events in Japan. On March 21 the  
9 commission established a senior level task force to conduct a  
10 comprehensive review of our processes and regulations to  
11 determine whether improvements to our regulatory system are  
12 needed and to make recommendations to the commission for its  
13 policy direction. This will -- review will basically  
14 encompass two pieces, there will be a short and then  
15 ultimately a longer term review that will incorporate the best  
16 available information that we have from Japan. And both of  
17 these reports will ultimately be made available to the public.

18       So in summary, I believe we have a strong regulatory  
19 program in place that looks at a wide variety of severe  
20 physical and natural phenomenon. In addition to that, we have  
21 a program in place to account for the things that we may not  
22 know today. And ultimately we have required all our plants to  
23 have equipment and procedures in place to deal with these very  
24 severe types of accident scenarios, in the very unlikely event

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1 that we were to see something like this develop here in the  
2 United States.

3 PREPARED STATEMENT

4 So I thank you for the opportunity to appear before you  
5 and I would be happy to answer any questions you may have.

6 Thank you.

7 [The statement follows:]

8 INSERT 18A FOLLOWS

9

1           Senator Feinstein: Thanks very much, Mr. Chairman.

2           Secretary Lyons?

3       STATEMENT OF DR. PETER LYONS, ACTING ASSISTANT SECRETARY FOR  
4           NUCLEAR ENERGY, DEPARTMENT OF ENERGY

5           Mr. Lyons: Thank you. Chairman Feinstein, Ranking  
6       Member Alexander and Senator Lautenberg, thank you for the  
7       opportunity to appear before you today to discuss the nuclear  
8       accident situation in Japan, the Department of Energy's  
9       response and our research, development and deployment programs  
10      relevant to nuclear safety.

11          I will leave discussion of the accident itself to my  
12      written testimony and focus now on the DOE's response and our  
13      ongoing RD&D programs.

14          To assist in the country's response, the National Nuclear  
15      Security Administration's Nuclear Incident Team Operations  
16      Center was promptly activated and has been continuously  
17      staffed by both NNSA and Office of Nuclear Energy personnel  
18      since the accident. The focus of all DOE activities has been  
19      to understand the accident progression and offer advice and  
20      assistance to Japanese officials who have the direct  
21      responsibility to manage the accident recovery.

22          The DOE has deployed about 40 people and more than 1,700  
23      pounds of equipment, including NNSA's aerial measuring system,  
24      or AMS, and a number of consequent management response teams.

1 The AMS measures radiological contamination on the ground  
2 deposited from transit of any released plumes. The AMS data,  
3 taken now over a number of days, are consistent with reduced  
4 levels of radiation compared to earlier measurements and show  
5 no evidence of significant new releases, between March 19 and  
6 March 29. In addition, NNSA has been modeling potential  
7 transport of radioactive materials released from the plant,  
8 utilizing the national atmospheric release advisory capability  
9 at the Lawrence Livermore National Laboratory.

10 As Chairman Jaczko has also stated, we do not believe  
11 that the radiation released by the plant poses a public health  
12 danger in the United States, although certainly low levels,  
13 trace levels of radioactivity attributable to the accident  
14 have been observed here. The Office of Nuclear Energy has  
15 established a nuclear energy response team to utilize the  
16 capabilities of the DOE National Laboratories in a wide range  
17 of analyses. We are also working at the U.S. Embassy in  
18 Tokyo, with NRC staff in Japan and in Rockville, Maryland and  
19 with Japanese agencies and industry.

20 DOE and the NRC worked directly with the Institute for  
21 Nuclear Power Operations, or INPO, and the Nuclear Energy  
22 Institute to encourage formation of an industry-led assistance  
23 team. INPO is now leading this industry team deployed both in  
24 Japan and at INPO headquarters in Atlanta. And in addition,

1 Secretary Chu and White House Science and Technology Advisor  
2 Holdren have reached out to laboratory directors and other  
3 eminent scientists for technical advice. They are in touch  
4 with them on a daily basis, as well as with an internal team  
5 of scientists and engineers to analyze the situation, suggest  
6 new approaches and evaluate potential solutions.

7       Now beyond our response to the accident, the research  
8 development and deployment programs of my office are highly  
9 relevant to future decisions about potential options for  
10 nuclear power in the United States. Our proposed small  
11 modular reactor program will explore designs that offer safety  
12 advantages through extensive use of passive systems. We are  
13 also conducting research and development into high temperature  
14 gas reactor designs that offer inherent design safety  
15 features. Our light water reactor sustainability program is  
16 exploring whether the lifetime of operating reactors can be  
17 extended with no compromise in safety. Researching fuel  
18 cycles is also within my office.

19       While we await guidance from the Blue Ribbon Commission  
20 on America's nuclear future, we are conducting research and  
21 development into a broad range of options for the Nation's  
22 fuel cycle, with careful attention to safety, environmental  
23 protection and nonproliferation.

24       Safety of future systems is really the key to all of our

1 programs. Selected research areas like fuel claddings that  
2 cannot generate hydrogen in an accident or fuels that are  
3 virtually impossible to melt have very obvious relevance. And  
4 the new modeling and simulation hub which is based at Oak  
5 Ridge National Laboratory will provide important new  
6 capabilities to the nuclear industry, capabilities that can be  
7 used to assess and improve the safety of existing reactors.

8 Deputy Secretary Dan Poneman recently stated that we view  
9 nuclear energy as a very important compliment to the overall  
10 portfolio we are trying to build for a clean energy future.  
11 The programs of the Office of Nuclear Energy are focused on  
12 assuring that the option for safe nuclear power remains open  
13 to the Nation.

14 PREPARED STATEMENT

15 In conclusion, the earthquake and the resulting tsunami  
16 brought tremendous devastation on Japan. At the Department of  
17 Energy we are making every effort to assist the Japanese  
18 people in their time of need.

19 Thank you and I look forward to your questions.

20 [The Statement follows:]

21 INSERT 22A FOLLOWS

22

1           Senator Feinstein: Thank you very much. And we will  
2 proceed to the questions.

3           Mr. Chairman, if I might begin with you. The ranking  
4 member mentioned there are 104 operating nuclear power  
5 reactors at 65 sites in our country. I understand there are  
6 48 dry cask storage facilities in the United States. If my  
7 numbers are accurate, does this mean that there are 17 reactor  
8 sites with no dry cask storage option?

9           Mr. Jaczko: If your numbers are correct there are some  
10 sites that have not yet gone to dry cask storage. We  
11 anticipate, in time, that most sites will eventually move in  
12 that direction. The --

13          Senator Feinstein: So the fuel rods just remain in the  
14 spent fuel pools?

15          Mr. Jaczko: Correct. And for those sites that have not  
16 gone to dry cask storage, they remain in the pools. And these  
17 pools are very robust structures that are designed to deal  
18 with the kinds of natural phenomenon that we designed the  
19 entire reactor site to. It is very thick, reinforced concrete  
20 structures, generally about 4 to 5 feet thick walls with very  
21 thick floors, so they provide, we think, a very robust  
22 protection for the fuel.

23          Senator Feinstein: Let me ask this. What are the  
24 regulatory requirements relative to spent fuel? They can just

1 sit forever in spent fuel ponds?

2 Mr. Jaczko: The way our requirements are based is we  
3 have requirements about the minimum amount of time that the  
4 fuel would need to be in the pool. So generally we think  
5 about 5 years or so is a reasonable timeframe for the fuel to  
6 need to be in the pool, simply because it is very physically  
7 hot, so it -- that heat needs to dissipate and that needs to  
8 happen in the pool itself.

9 Senator Feinstein: Do you have a maximum time?

10 Mr. Jaczko: We don't have a maximum time, but we do  
11 analyze the fuel that is in the pool. And if, as new fuel  
12 were to be added to the pool, that goes through a very  
13 rigorous analysis to ensure that that can be done safely and  
14 security.

15 Senator Feinstein: So one shouldn't be surprised, in  
16 these plants, to see fuel in those spent fuel ponds for  
17 decades?

18 Mr. Jaczko: That is possible, certainly. Many sites  
19 have begun to move, as you indicated, their fuel out of the  
20 pools into dry cask storage. Generally what the utilities  
21 like to do is reserve some amount of space in the pool to be  
22 able to take the fuel that is in the reactor at any time and  
23 move that into a pool. So that tends to be the condition at  
24 which if they lose that ability to have that extra space, then



1 they will usually move to dry cask storage to store the fuel.

2 Senator Feinstein: Well, in the two plants I looked at,  
3 with respect to the dry casks, the casks at one plant were  
4 standing outside and the casks at the other plant were in a  
5 water resistant building. Are there any standards for the  
6 storage in dry cask?

7 Mr. Jaczko: We -- the dry cask storage systems are  
8 required to be certified by the Nuclear Regulatory Commission  
9 to, again, meet very rigorous standards for dealing with  
10 natural phenomenon and as well as ensuring the safety of the  
11 fuel itself. So there are basically two types of systems that  
12 are generally used, and I think you saw examples of those two  
13 types at Diablo Canyon and San Onofre. So we have approved  
14 those and again, they meet our high standards for natural  
15 phenomenon, for ensuring that the fuel will stay sufficiently  
16 cool and that we won't have any type of nuclear reaction in  
17 the fuel itself.

18 Senator Feinstein: Why are there no better standards for  
19 spent fuel pools? You have good standards for the reactor  
20 but, it seems to me, not much for the spent fuel.

21 Mr. Jaczko: Well, the spent fuel pools are considered  
22 safety significant systems. So they meet a lot of the same  
23 standards that the reactor itself would have to meet. For  
24 instance, the spent fuel pools themselves are required to

1 withstand the natural phenomenon like earthquakes and tsunamis  
2 that could impact the reactor itself. They are required --  
3 the spent fuel is required to be able to deal with these  
4 severe accidents. It is also required to be able to deal with  
5 the possibility of any type of nuclear reaction happening in  
6 the pool itself. So there are very high standards and they're  
7 very comparable to the reactors themselves.

8       Senator Feinstein: Well, didn't Japan have similar  
9 standards and yet the spent fuel pools could not withstand the  
10 tsunami and the earthquake?

11       Mr. Jaczko: At this point we don't know exactly what  
12 contributed to the situation with the spent fuel pools in  
13 Japan. It's unclear whether that was a direct result of the  
14 earthquake itself or whether there was subsequent actions,  
15 such as the hydrogen explosions that occurred, that created a  
16 more difficult situation with the spent fuel pools. But, I  
17 would add, from what we do know right now, there are six spent  
18 fuel pools in Japan and we believe with a good level of  
19 confidence that certainly in the spent fuel pools for unit one  
20 is operated normally without any particular challenge, the  
21 unit pool -- the unit two pool as well has operated fine. The  
22 challenges we're seeing are really with units 3 and 4. But  
23 units 5 and 6 also were operating in a stable way at this  
24 time. So we haven't seen challenges with all the pools in

1 Japan, just a small subset.

2 Senator Feinstein: Is the result of the two that failed,  
3 was it cracks in the superstructure of the pond itself -- the  
4 pool itself?

5 Mr. Jaczko: Right now we don't know for sure what the  
6 situation is. We believe it is possible that there was  
7 perhaps a leak in the unit 3 pool and that perhaps there were  
8 some other challenges with the unit 4 pool. But again, we  
9 don't know at this point whether that was the result of the  
10 earthquake and the tsunami or some of the subsequent events  
11 that happened. So those are the kinds of things we will be  
12 looking at as we embark on our short term and our longer term  
13 to analyze that.

14 Senator Feinstein: Thank you very much.

15 Senator Alexander.

16 Senator Alexander: Thank you, Madam Chair. Mr. Jaczko,  
17 continuing the chairman's comments, most of the problems we  
18 read and hear about in Japan from the reactors comes basically  
19 from the inability to cool some of the rods of used nuclear  
20 fuel. Is that right?

21 Mr. Jaczko: Well, I think it is -- there are really two  
22 issues that we are looking at. One is ensuring the continued  
23 cooling of the reactors themselves and then maintaining the  
24 cooling in the pool, so both of those issues are important.

1           Senator Lautenberg: Cooling -- it is a cooling issue?

2           Mr. Jaczko: It is a cooling issue for us.

3           Senator Alexander: Basically? Now to -- when we talk  
4 about used nuclear fuel or spent fuel, by my mathematics,  
5 roughly speaking, in the United States the amount of such  
6 stuff that we would have in the United States could be put on  
7 a single football field 20 feet deep, if we took everything we  
8 have produced over the last 35 years. Is that right?

9           Mr. Jaczko: I believe I have seen estimates like that. I  
10 think that is approximately correct.

11          Senator Alexander: So that is -- how long and -- and  
12 right now that used nuclear fuel is stored on site -- on the  
13 site where the nuclear reactor is, according to your rules and  
14 regulations. How long can that be safely stored there?

15          Mr. Jaczko: Well, right now the commission recently  
16 affirmed a decision we have made over the years that we call  
17 our waste competence decision. And in that decision we look  
18 at what the long term impacts, ultimately the long term  
19 environmental impacts are from that spent fuel. And right now  
20 we believe that for at least a hundred years that fuel can be  
21 stored with very little impacts to health and safety or to the  
22 environment.

23          In addition, as part of that decision the commission  
24 asked the staff at the agency to go out and take a look to

1 really see if you are to go out 2 or 3 or 400 years if there  
2 are any safety issues that could arise that would present a  
3 challenge to the kind of approach we have right now for  
4 dealing with spent fuel.

5       So right now we believe that this is material that can be  
6 stored safely and securely in either the spent fuel pools  
7 themselves or in dry cask storage.

8       Senator Alexander: So what you are saying is that most  
9 of what we have been reading about in Japan in terms of the  
10 reactor problems has to do with the cooling of used nuclear  
11 fuel or spent fuel, that in the United States the amount of  
12 that fuel, that stuff that we produced over the last 35 years  
13 would only fill a football field 20 feet deep, that it is  
14 stored at 104 -- well, however many sites there are, there are  
15 104 reactors.

16       Mr. Jaczko: Sixty-five sites.

17       Senator Alexander: Sixty-five different sites around our  
18 country, either in pools or in dry casks. And it is your  
19 estimate or the commission's estimate that it can be safely  
20 stored there for up to a hundred years?

21       Mr. Jaczko: That is our assessment right now. Yes.

22       Senator Alexander: Now, I want to compliment the  
23 President, when he started his administration I was afraid he  
24 was going to lead us on a national windmill policy instead of

1 a national energy policy. But his attitude toward nuclear  
2 power, in my opinion, has been thoughtful and balanced,  
3 including through this crisis. He has appointed excellent  
4 people to your commission. Dr. Chu has been a strong  
5 appointment. He has recommended loan guarantees for the first  
6 new nuclear plants and more important, or equally important,  
7 he has a distinguished panel looking at the future of used  
8 nuclear fuel.

9 And I want to ask you to comment on that, you or Mr.  
10 Lyons.

11 As I understand it, while we can safely store used nuclear  
12 fuel on site for 100 years, what the President and others are  
13 suggesting is that we research a better way to store it. That  
14 way might include reducing its mass by 70 or 80 or 90 or --  
15 percent, making it that much smaller, finding ways that  
16 plutonium wasn't separated from it, recycling it or using it  
17 over and over again. So the bottom line would be that we are  
18 comfortable with being able to store it as it is for up to 100  
19 years, but over the next 10 to 20 years we are looking for a  
20 better way to recycle used nuclear fuel and that is what we're  
21 hoping to find from the recommendation of the President's  
22 commission.

23 Am I approximately right in that or what comments would  
24 you add?

1           Mr. Jaczko: Well I would defer to Secretary Lyons  
2 probably -- he can best answer that question, I think.

3           Mr. Lyons: Well Senator Alexander, as you note, the  
4 mission of the Blue Ribbon Commission is to explore a wide  
5 range of options for management -- managing -- management of  
6 used fuel, the backend the fuel cycle. And certainly at the  
7 Department of Energy we are eagerly awaiting their reports and  
8 their suggestions and guidance. The interim report of that  
9 group is due by July 29, final report by January of next year.  
10 And we anticipate that that will provide important guidance to  
11 the range of R&D programs that we have at the Department of  
12 Energy.

13           Now while we are awaiting that report, we do maintain a  
14 broad spectrum of research ranging from the once through cycle  
15 that the country has now and understanding how that could be  
16 improved or sustained, all the way to different options  
17 including the reprocessing that you're describing. And we  
18 view our goal as providing a set of options to the American  
19 people, certainly guided by the output of the Blue Ribbon  
20 Commission that can lead to a long term sustainable policy for  
21 used fuel management in the country.

22           Senator Alexander: Thank you, Madam Chair.

23           Senator Feinstein: Thank you very much, Senator.

24           Senator Lautenberg.

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1           Senator Lautenberg: Yes. Thank you, Madam Chairman.

2 Thank you both for your excellent testimony.

3           Dr. Jaczko, do we have a better regulatory system than  
4 Japan? Is there a difference in the two systems?

5           Mr. Jaczko: Well, I think every country that has nuclear  
6 power takes a different approach to dealing with the safety of  
7 the reactors in their country. I think we have a system that  
8 is well-suited to dealing with the safety of the reactors in  
9 this country. It is a system, as I said, that relies on  
10 multiple layers of protection and it incorporates a strong  
11 basis in technical information. And we have a very strong  
12 presence of inspectors at the reactor sites. So we think that  
13 this provides a very strong system to ensure the safety of  
14 plants in the United States.

15          Senator Lautenberg: We, in our conversation yesterday we  
16 discussed a total review of all plants in America and I think  
17 that your time target was 90 days. Is that correct?

18          Mr. Jaczko: We are looking at a short term review in 90  
19 days and that will be followed by a much longer term review as  
20 we get more detailed information from Japan.

21          Senator Lautenberg: So we can be assured that the  
22 problems that we saw in Japan will have a review of  
23 possibility here in our -- with our plants here in the  
24 country?



1       Mr. Jaczko: Absolutely. That is the focus of these  
2 reviews.

3       Senator Lautenberg: Well, the -- you know, we have the  
4 oldest plant, commercial plant in America, built in 1969. The  
5 Fukushima plants I think were built in 1971. Is that -- am I  
6 correct?

7       Mr. Jaczko: Yes.

8       Senator Lautenberg: Is there any question about age of  
9 facility that might have -- that contributed to the difficulty  
10 there?

11       Mr. Jaczko: At this point we don't know what the exact  
12 causes of the situation in Japan are. But again, if we look  
13 at the situation for the U.S. reactors, all the reactors that  
14 we have that are of a similar type have undergone  
15 modifications and improvements to deal with the kinds of  
16 situations that we are seeing in Japan.

17       For instance, it has been known, since the late 1980s and  
18 early 1990s that the accumulation of hydrogen presents a  
19 significant challenge. So the reactors of this type in  
20 particular were modified to ensure that they could better  
21 mitigate or reduce the likelihood of that type of hydrogen  
22 explosion. So we think we have a program, or we have a  
23 program that addresses these issues, but we will do these  
24 comprehensive reviews to ensure that there isn't any

1 information that we have missed and that can better enhance  
2 the safety.

3       Senator Lautenberg: Mr. Jaczko, can we say, without fear  
4 of contradiction that our plants in New Jersey are updated,  
5 able to deal with any malfunctioning of the operation there?  
6 Because in 2009, April, I am sure you recollection, April of  
7 2009 -- August of 2009 we had low level tritium leaks. Now  
8 tritium is a fairly dangerous material and what assurance can  
9 I give the people in the surrounding area that, (a) did we  
10 find any health consequences of the tritium leaks; were there  
11 examinations called for in the area and did we find anything  
12 that -- within the -- those families that there -- they have  
13 to be concerned about?

14       Mr. Jaczko: Well, with regard to the tritium leaks we  
15 believe that that is not an acceptable situation for any power  
16 reactor in the United States to have that kind of a leak.  
17 With regard to the Oyster Creek leak, we did not see any  
18 indication of any risk to public health and safety as a result  
19 of those particular leaks. And in fact, the facility has made  
20 significant modifications to dramatically reduce the  
21 likelihood of something like that happening in the future.

22       And I would add that those leaks were not in systems that  
23 directly affect the ability of the reactor to deal with  
24 accidents and errors or to ensure that the reactor itself or

1 the spent fuel pools continue to function safely and securely.

2 Senator Lautenberg: Thank you, Madam Chairman and thank  
3 you again --

4 Senator Feinstein: Thank you.

5 Senator Lautenberg: -- witnesses.

6 Senator Feinstein: Thank you, Senator.

7 Senator Lautenberg: I assume the record will remain  
8 open?

9 Senator Feinstein: It will remain open.

10 Senator Lautenberg: Thank you.

11 Senator Feinstein: Senator Durbin.

12 Senator Durbin: Thanks a lot. And it is an honor to be  
13 part of our subcommittee. Thank you, Madam Chair and Senator  
14 Alexander.

15 And so, if my memory serves me, it was -- Three Mile  
16 Island was 1979?

17 Mr. Jaczko: Correct.

18 Senator Durbin: Is that correct? And I would say, for  
19 32 years the nuclear power industry has really been stymied,  
20 frozen in place with virtually no major expansion across the  
21 United States in the heels -- on the heels of that  
22 controversy.

23 And I am wondering now if the same thing is going to  
24 happen as a result of Japan. Whether there will be serious

1 questions raised about operations and about design and about  
2 nuclear waste that will once again cause this industry to  
3 stop, reflect and probably slow down any plans to advance.

4 I also understand the economics of energies. I have been  
5 told that natural gas, electric power creation is a much  
6 cheaper alternative and obviously safer in many respects. So  
7 that seems to be the general view of the out -- what I see  
8 coming as an outgrowth of the Japanese tragedy.

9 We had a hearing last week in Illinois, because we are so  
10 nuclear power dependent, half of our electricity is generated  
11 by the nuclear power, 11 generators and 2 of them are exactly  
12 the same design as Fukushima. And representatives of your  
13 agency came, as did State and local and private sector and we  
14 had a long conversation about many things, including the  
15 nuclear waste on site, spent nuclear fuel rods on site in  
16 Illinois, 7,200 tons worth of those nuclear -- pardon me,  
17 spent nuclear fuel rods.

18 We talked about many different things and we talked about  
19 Yucca Mountain. And I recall from my college, the Myth of  
20 Sisyphus pushing that boulder up the hill and barely getting  
21 to the top and it rolls back to the bottom. And now we  
22 realize that the name of that hill is Yucca Mountain. It  
23 appears that we keep rolling this boulder up close to the top  
24 and never quite reach it.

1           And I don't know ultimately whether this, I think it is  
2   \$90 billion current estimate of investment in Yucca Mountain  
3   will ever take place, and if it does it is probably 10 years  
4   over the horizon when the decision is made. And I have to ask  
5   and bring up a question which came up at our hearing. What  
6   about the situation with reprocessing? There was a time when  
7   we took a national position on it to try and be an example to  
8   the world, not to reprocess and create an opportunity to use  
9   plutonium for the development of weapons. But I think what is  
10   happening or what I see today is that two of our major allies  
11   in the world, Britain and France, France in particular, have  
12   decided that reprocessing is not only okay, it is a great  
13   commercial investment and they are receiving the waste from  
14   other countries and reprocessing it, dramatically reducing the  
15   size of the remaining radioactive challenge.

16           Is that thinking from the Carter administration really  
17   appropriate today? Are we not in a world that has accepted  
18   reprocessing? Shouldn't we be looking at it ourselves as an  
19   alternative to a \$90 billion Yucca Mountain investment that  
20   might come online 10 years from now?

21           Mr. Jaczko: Well I, Senator I will briefly answer from  
22   the NRC's perspective and Dr. Lyons probably can give you a  
23   better answer to that question. We are currently doing work  
24   to develop an infrastructure to support a reprocessing

1 facility in this country. That activity is at a probably a  
2 medium to low level priority in the agency, because of what we  
3 see from the commercial sector about interest in the immediate  
4 development or deployment of a reprocessing facility, but  
5 there certainly is discussion right now and perhaps Dr. Lyons  
6 can provide more information on that.

7 Senator Durbin: Before you go any further, let me stop  
8 you. You said there is a lack of interest in the commercial  
9 sector? Wouldn't this be our Government responsibility?

10 Mr. Jaczko: It is certainly possible that it could be a  
11 Government responsibility, but it could also be a private  
12 sector development of a private reprocessing facility to do  
13 that.

14 Senator Durbin: But is it your belief that the private  
15 sector in nuclear power believes that maintaining these pools  
16 across the United States is a viable alternative?

17 Mr. Jaczko: Well, certainly from the agency's  
18 perspective we think that that can be done safely and  
19 securely. The ultimate decisions about how to manage that  
20 spent fuel are really decisions for the Federal Government and  
21 the private sector itself about how long term they want to  
22 maintain that.

23 For instance, some utilities move more fuel more quickly  
24 into dry cask storage; others leave it in pools --

1           Senator Durbin: If I remember the debate on this, the  
2 push for Yucca Mountain came from the private sector. And the  
3 argument was, "We don't want to be responsible any longer for  
4 the spent nuclear fuel rods and the danger associated with  
5 them. We want the Federal Government to accept the  
6 responsibility, we believe it is theirs, and build Yucca  
7 Mountain." So you are saying when it comes to reprocessing  
8 though, they are not interested in that development?

9           Mr. Jaczko: Well, I think there is some interest right  
10 now. I would say it is -- as with any type of fuel, there is  
11 an industry that provides fuel for the reactors; there are  
12 economic considerations that go into whether or not  
13 reprocessing is the most effective way to provide that fuel.  
14 And I think in many ways that is what is driving the  
15 commercial side, in terms of their interest in reprocessing or  
16 no reprocessing. It is a cost issue in many ways right now.

17          Senator Durbin: I am over time, but Dr. Lyons, if you  
18 would like to respond.

19          Mr. Lyons: Well, my response would be very lengthy. You  
20 asked many, many questions, sir and maybe I can come back to  
21 it in subsequent rounds. But, just to answer a few of your  
22 questions. You started with will the incidents in Japan  
23 impact growth here on nuclear power. Personally, I think that  
24 the review that the NRC will be conducting, the IAEA has

1 announced there will be international reviews where the  
2 international community will compare lessons learned, I think  
3 all of those factors will come together to help understand,  
4 and certainly for the NRC, to decide whether any regulatory  
5 changes are required that may impact the progression of  
6 nuclear power in the country.

7       You alluded to, and I certainly agree, that the very low  
8 price of natural gas, the absence of any value placed on  
9 carbon certainly tends to favor approaches to new power like  
10 natural gas. And I think that impacts any of the clean energy  
11 solutions.

12       I can launch into a discussion on reprocessing and I'd  
13 like to do that, but we are way over the time, so I will leave  
14 it up to you folks as to whether I should proceed.

15       Senator Durbin: This is my first hearing in the  
16 subcommittee and I don't want to abuse the privilege.

17       Senator Feinstein: Thank you very much, Senator. This  
18 has been very interesting. I want to thank you.

19       I do want to move on, but I just want to say something.  
20 Mr. Chairman, you said that spent fuel could be stored safely  
21 and securely for 100 years either in spent fuel pods -- pools  
22 or dry casks. I am amazed that storing it in these pools for  
23 that period of time, these pools are being racked and re-  
24 racked now, more and more of them in it. How -- you know when



1 the design basis of these plants was put into effect a lot of  
2 the threats weren't present. You know, we didn't worry about  
3 a terrorist bomb at our nuclear power plants, we do today.  
4 And you have got all these spent fuel rods, very hot against  
5 some of them that have cooled off somewhat.

6 And it -- I always thought that dry casks were the best  
7 kind of long term storage. And to me 100 years is long term  
8 storage.

9 Mr. Jaczko: Well there is -- I think this is very much  
10 an issue that the commission is going to take a look at again,  
11 I think without a doubt, as part of this short term and long  
12 term review. But the information we have right now shows that  
13 both of these methodologies are equally safe for a very long  
14 period of time. What -- obviously if you are getting to 60,  
15 70 years of spent fuel pool storage, that likely would not  
16 happen because that long period of time the reactor has likely  
17 been shut down and undergoing a period of decommissioning.  
18 And that would involve taking the fuel out of the pools and  
19 putting it in dry cask storage. So, in that longer term  
20 scenario you would likely see most of the fuel being moved  
21 into dry cask at that point.

22 And as the fuel does get cooler the likelihood of the  
23 very severe type of accident from a spent fuel gets reduced  
24 significantly. The concern is that you have a fire

1 essentially and it releases a lot of radioactive material from  
2 the spent fuel pools. As the fuel ages the likelihood of that  
3 fire reduces dramatically. And I would just add, as a final  
4 point that --

5 Senator Feinstein: But you are adding new rods all the  
6 time.

7 Mr. Jaczko: As part of the process we have required the  
8 licensees, when they add new fuel that they add it in such a  
9 way that they balance the various -- the -- kind of they  
10 distribute the hot fuel in such a way that it really reduces  
11 the likelihood of this type of fire. So you -- they move and  
12 shuffle all of the fuel each time so that you always have hot  
13 fuel that is surrounded by much cooler fuel to reduce the  
14 likelihood of these kinds of challenges.

15 But again, as you really play out the much longer term,  
16 60, 70, 80 years, we would envision that at that point most  
17 fuel begins to move out of the pools and into dry cask  
18 storage. It is -- of course the hot fuel will always have to  
19 spend some amount of time in the pools, just to cool off to  
20 the point where it can be moved. But again, I -- this is  
21 something that I am very confident we will be looking at as  
22 part of both the short term and the long term review.

23 Senator Feinstein: Thank you. Thank you.

24 Mr. Jaczko: Sure.

1           Senator Feinstein: Did you have anything you want to say  
2 or a question?

3           Senator Alexander: No, ma'am. The only -- I wonder if  
4 Dr. Lyons agrees, from the point of view of the Department of  
5 Energy, that used nuclear fuel can be safely stored on site  
6 for up to 100 years.

7           Mr. Lyons: I was on the NRC when that question was  
8 reviewed and I was part of the decision that evaluated that  
9 information. This was before my current job. Yes, I do  
10 agree.

11           However, just as additional information, through the R&D  
12 program at the Department of Energy, we also will be pursuing  
13 a program designed to understand what may be the lifetime  
14 limiting -- or the life limiting aspects of how long dry casks  
15 can be safely used. So that will be another contribution to  
16 this overall discussion of the longevity of dry cask storage.

17           Senator Feinstein: Thank you very much gentlemen. This  
18 was very helpful and we appreciate it. Thank you for being  
19 here.

20           Oh, I'm sorry. Senator Durbin.

21           Senator Durbin: I -- if I can just do one follow up  
22 question, because when I raised the issue of reprocessing I  
23 thought the chairman's allusion was to the economics of it.  
24 And can any -- can either of you speak to the economics of

1 reprocessing and deriving some sort of fuel source from that  
2 and dramatically reducing the waste that is left behind, as  
3 opposed to the current cost of cooling pools, casks and  
4 ultimate national repository?

5       Mr. Lyons: Senator Durbin, if I may. I indicated that  
6 we do have research programs that span the gamut of different  
7 options for the backend of the fuel cycle and that certainly  
8 includes the reprocessing that you are addressing. In  
9 addition, the Blue Ribbon Commission will be providing  
10 guidance on this.

11       As far as the economics, I have never seen a study that  
12 claimed that it was less expensive to use reprocessing. There  
13 may be other reasons why one would want to reprocess, but I am  
14 certainly not aware of any study which says that reprocessing  
15 would be a lower cost option, nor am I aware of any utility in  
16 this country that is pushing to move toward reprocessing.  
17 There certainly are companies for whom that is their product  
18 that would be very interested.

19       Yes, also you mentioned the situation in France and  
20 Japan. Let me just note that part of our research is designed  
21 to understand some of the limitations on particularly the  
22 approach that is used in Japan, the PUREX approach, which we  
23 would not utilize in this country from a number of different  
24 perspectives, including a nonproliferation concern and

1 including environmental concerns.

2 Senator Durbin: So, if I can for a second, but correct  
3 me if I'm wrong, I understood, during the debate on Yucca  
4 Mountain that it was agreed that the ultimately responsibility  
5 for storing this nuclear waste was to be borne by the  
6 government taxpayers.

7 Mr. Lyons: That is correct. That is the Nuclear Waste  
8 Policy Act and the Amendments Act.

9 Senator Durbin: And so when you say that the commercial  
10 private sector does not support reprocessing, it would seem to  
11 me that we ought to be asking, from the taxpayer's viewpoint,  
12 whether that is an economic alternative if we are ever to  
13 build Yucca Mountain and transport the -- all the waste in  
14 America to that site.

15 Mr. Lyons: Well, the Nuclear Waste Policy Act also  
16 requires that there be a fee levied on all nuclear power use  
17 that is intended to cover the costs of whatever backend,  
18 whatever disposition system is to be used. So whatever the  
19 costs of that will be, and currently there is a one mil per  
20 kilowatt hour assessment on nuclear power, that is intended to  
21 cover the backend. To the extent perhaps additional would be  
22 required for other backend systems that would be passed along.

23 Senator Durbin: My last question, I am sorry Madam  
24 Chair, but taking the current French approach on reprocessing,

1 are you saying that we have done an economic model to compare  
2 the cost of reprocessing against the cost of a national  
3 repository?

4 Mr. Lyons: There have been a number of such models. I  
5 certainly can't characterize all of them quickly, but I am  
6 quite sure that the majority, if not all of them would say  
7 that a repository, I am not saying economic, but a repository  
8 approach probably is a lower cost. But there may be other  
9 reasons, and this is part of the Blue Ribbon Commission  
10 review, there may be other reasons that would drive one toward  
11 some form of reprocessing. I believe it would be different  
12 than what is used in France.

13 Senator Durbin: Thank you.

14 Mr. Jaczko: Senator, if I could perhaps clarify my  
15 reference to the economics. The economic comparison that I am  
16 referring to is the cost of fuel that would come directly from  
17 uranium that is mined in the ground as opposed to the cost of  
18 fuel that would come from reprocessed uranium. That is the  
19 economic comparison that I was referring to. And in that case  
20 right now the price of uranium generally favors the naturally  
21 mined uranium as a source of fuel. So that was the economic  
22 comparison I was referring to.

23 Senator Feinstein: Thank you very much.

24 Senator Lautenberg: I just -- Madam Chairman, your

1 indulgence please for a question that I have that has puzzled  
2 me since you testified at an earlier hearing, Dr. Jaczko.

3       The NRC requires evacuation plans only for areas within  
4 10 miles of a plant, but the United States Government has  
5 warned Americans in Japan to stay at least 50 miles away from  
6 the damaged reactors there and the ships were turned around, I  
7 think it was at 60 miles. When I asked you at the previous  
8 hearing what you thought was a safe distance, I think that the  
9 response that you gave me was 20 miles. Can we clear this up?  
10 And why not require the same kind of evacuation plan to  
11 address the same distance here at home?

12       Mr. Jaczko: Well, Senator this is likely an issue we  
13 will be looking at as part of our short term and long term  
14 reviews, but the 10 mile distance in the United States is the  
15 distance at which we develop preplanned and prepared  
16 evacuation plans. So it is based on an event that would  
17 happen in a very short period of time for which you would not  
18 have the ability to develop additional planning for  
19 evacuations beyond a certain distance. There is always the  
20 possibility that if an event were to develop like it has in  
21 Japan, that additional protective actions could be required  
22 beyond 10 miles. But the requirements we have in place are  
23 for those -- the preplanning that needs to be done so that if  
24 you got an event that happened and developed very quickly, you

1 wouldn't have to take the time then to develop the evacuation  
2 plans, they are already developed and ready to go as soon as  
3 that event happens.

4 But of course as the events in Japan show, that it was  
5 something that happened over a course of many, many days  
6 before we got to the point at which we looked at information  
7 that indicated you could have to go to a great distance. So  
8 far the data coming out of the plant continues to show that  
9 the safe distance there is approximately 20 miles.

10 So there is the work that we do to preplan, which right  
11 now we believe 10 miles is sufficient. But that is not  
12 necessarily the end of any protective action. You could take  
13 additional action beyond that if necessary.

14 Mr. Lautenberg: We look forward to hearing from you on a  
15 kind of a continuing basis to find out what a good conclusion  
16 is that you come to. Thank you.

17 Senator Feinstein: Thank you very much, Senator.

18 We've been joined by Senator Graham. Please, if you'd  
19 like to --

20 Senator Graham: Thank you.

21 Senator Feinstein: -- make a statement or ask questions.

22 Senator Graham: Just ask questions would be great.

23 Senator Feinstein: Go right ahead.

24 Senator Graham: Thank you. I am honored to be on the



1 subcommittee.

2 Mr. Chairman, do you believe the nuclear power industry  
3 and the United States is well regulated and generally safe?

4 Mr. Jaczko: I certainly, as the Chairman of the NRC,  
5 believe it is well regulated.

6 Senator Graham: Okay.

7 Mr. Jaczko: And we do believe we have a strong program  
8 to ensure protection of public health and safety.

9 Senator Graham: Would you advise the Congress to  
10 continue to pursue nuclear power as part of energy production  
11 in this country?

12 Mr. Jaczko: Well, decisions ultimately about what to do with  
13 nuclear power really are beyond our, really our  
14 responsibility.

15 Senator Graham: Just as a citizen, would you like to see  
16 America have more nuclear power in the future?

17 Mr. Jaczko: I, as a citizen, would like to see nuclear  
18 power that is safe and secure and that is fundamentally my job  
19 as Chairman of the Nuclear Regulatory Commission.

20 Senator Graham: And do you believe that the nuclear  
21 power plants that we are talking about constructing in the  
22 future are more modern and safer?

23 Mr. Jaczko: Certainly the plants that are under  
24 consideration have enhanced designed and enhanced safety

1 features that at least on -- at the design stage and on paper  
2 seem to indicate that they would have an inherent safety  
3 advantage over the existing plants.

4 Senator Graham: One of the benefits --

5 Mr. Jaczko: But I want to stress, if I could, that we  
6 believe the plants that are in existence today do meet our  
7 requirements for safety and security and the new plants could  
8 potentially have some additional enhancements over that.

9 Senator Graham: It is like new cars have things that old  
10 cars don't have, but we still drive older cars. I have an  
11 older car and I feel safe in it. I will buy a newer car and  
12 maybe even be safer, I guess.

13 At the end of the day, one of the big impediments -- the  
14 benefit of nuclear power is it creates good jobs, in my view,  
15 and it doesn't emit pollutants in the air. Is that your  
16 understanding? I wonder if it is --

17 Mr. Jaczko: Well, again we -- you know, the focus for  
18 the agency is really to make sure that the nuclear power that  
19 is in this country is safe and secure. And we continue to  
20 have a program, we think, that ensures that.

21 Senator Graham: If I called it "clean energy" would you  
22 agree?

23 Mr. Jaczko: You know, I tend to not like to get into --

24 Senator Graham: I see.

1           Mr. Jaczko:  -- discussions about those kind of things.

2           Senator Graham:  Let's talk about spent fuel.  Can we  
3 talk about that?

4           Mr. Jaczko:  Sure.

5           Senator Graham:  Because I think -- I didn't hear his  
6 question, but Senator Durbin is making a point about what  
7 should we do with spent fuel.  I have always been a fan of the  
8 French reprocessing system, but quite frankly Secretary Chu  
9 has convinced me, and I think he is one of the best Secretary  
10 of Energy that we have ever had since I have been in Congress.  
11 I like him a lot, incredibly smart.  He has convinced me that  
12 if we will be patient, maybe in the next decade plus there  
13 will be new technologies developed on the spent fuel  
14 reprocessing front that would be worth waiting on.  Do you  
15 agree with that?

16          Mr. Jaczko:  Well, I think again from the NRC perspective  
17 --

18          Senator Graham:  Mr. Lyons.

19          Mr. Jaczko:  -- we would just want to make sure that  
20 spent fuel can be stored safely and securely --

21          Senator Graham:  Okay.

22          Mr. Jaczko:  -- until then.  And we think that is the  
23 case right now.

24          Senator Graham:  Okay.  Mr. Lyons.

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1           Mr. Lyons: Let me start, Senator Graham, by heartily  
2 agreeing with my boss, Secretary Chu.

3           Senator Graham: Both of you all are very smart. I like  
4 it.

5           Mr. Lyons: But we -- yes, we are very interested in  
6 exploring a wide range of options on the backend of the fuel  
7 cycle and put it --

8           Senator Graham: So you think it would be beneficial for  
9 the country not to duplicate the French system right now?

10          Mr. Lyons: The French system uses the so-called PUREX  
11 process. They have certainly made some improvements in it  
12 over the years, but we do have some issues related to possible  
13 proliferation from that cycle as well as environmental issues.  
14 We think that with research we can do substantially better and  
15 that is the research that Secretary Chu is leading, through my  
16 office.

17          Senator Graham: Is shutting Yucca Mountain down helpful  
18 to our nuclear waste problem or harmful?

19          Mr. Lyons: Let me answer in this way, Senator. I came  
20 to the Department after the decision had been made and I  
21 heartily agreed with the Secretary that Yucca Mountain is not  
22 a workable solution, because I believe that the equation needs  
23 both a technical and a local support. As a resident of Nevada  
24 for many years I saw the lack of local support. I do think it

1 is possible, and certainly the Blue Ribbon Commission is  
2 working toward approaches that may not only provide  
3 interesting technical options, but I hope can be done in ways,  
4 like it has been done in many international venues, of having  
5 strong, local support.

6 Senator Graham: Okay. Thank you. I think that is the  
7 key to this is probably local political support more than  
8 anything else.

9 But we will just move on right quickly to MOX fuel. Can  
10 you tell us what MOX -- did MOX fuel in any way contribute to  
11 the disaster in Japan?

12 Mr. Lyons: No.

13 Senator Graham: We have a program to create MOX fuel in  
14 America that would take plutonium weapons and convert them  
15 into plowshares; it is called The MOX Program at Savannah  
16 River, South Carolina. Do you support that?

17 Mr. Lyons: Yes, sir. That is not through my program,  
18 however, yes, I am well aware of the program. And that is  
19 through NNSA, the defense --

20 Senator Graham: If I could just indulge my colleagues a  
21 moment. There is 34 metric tons of weapons grade plutonium  
22 that are in excess of our defense needs here and the  
23 equivalent amount in Russia. And these are literally nuclear  
24 weapons. And there is a process called MOX where you can take

1 the weapon and dilute it down and create commercial fuel. You  
2 are literally taking a sword and turning it into a plowshare.  
3 And that program is going on in South Carolina at the Savannah  
4 River site.

5 And I just want to thank the administration for being  
6 supportive of the program. And there are some things being  
7 said in the House about the MOX program I would like to get  
8 straight. Again, do you believe that producing MOX fuel here  
9 in America makes sense, it is overall safe and do you  
10 recommend we continue to do so?

11 Mr. Lyons: Well again sir, when we cross to safety I  
12 need to pass it back to Greg. I certainly understand the  
13 nonproliferation aspects of this. And --

14 Senator Graham: It is huge, isn't it?

15 Mr. Lyons: Yes, sir.

16 Senator Graham: It is huge. I mean you are literally  
17 taking weapons grade plutonium off the market and doing  
18 something constructive with it.

19 Mr. Chairman, do you support the MOX program?

20 Mr. Jaczko: Well, we have done very thorough analyses of  
21 the use of MOX fuel and right now we -- all the information we  
22 have indicates that it can be used safely.

23 Senator Graham: Thank you very much for your testimony.

24 Senator Feinstein: Thank you very much, Senator Graham.

1           Gentlemen, thank you so much. We will proceed to the  
2 next panel.

3           I would ask the witnesses to come forward as quickly as  
4 you can and staff to change the name cards.

5           Senator Feinstein: We will begin with Dr. Moniz of MIT.  
6 Thank you, sir, for being here. And I am going to put -- the  
7 clock will run five minute allocations. We review your  
8 written statements so if you could summarize and we can have a  
9 more informal discussion I think that would be most useful.

10          You have heard the prior panel. We would be interested  
11 on your reactions and reflections.

12       STATEMENT OF DR. ERNEST J. MONIZ, PROFESSOR OF PHYSICS,  
13       MASSACHUSETTS INSTITUTE OF TECHNOLOGY

14       Dr. Moniz: Madam Chairman, Ranking Member Alexander,  
15 thanks again -- thanks for the opportunity to present and  
16 discuss some views on the development of nuclear power in the  
17 United States in the wake of the Fukushima events.

18       I must start by emphasizing that my testimony is purely  
19 my personal view, not the view of PCAST, the Blue Ribbon  
20 Commission or MIT.

21       Fukushima has reopened the global discussion about the  
22 future of nuclear power but we clearly don't know how this  
23 debate will end. However, I think some outcomes are a very  
24 good bet. The cost of doing business at nuclear reactors will

---

1 go up; the expected relicensing of 40 year old nuclear plants  
2 for another 20 years will face additional scrutiny. These  
3 plants, like those at Fukushima, rely to a large extent on  
4 active safety systems rather than the passive safety systems  
5 built into the new designs. And the third, the options for  
6 the entire spent fuel management system I expect will be  
7 reevaluated.

8 Let me selectively address a few of these issues. First  
9 cost. Currently operating plants would certainly face a very  
10 expensive proposition to retrofit if design threats are  
11 elevated substantially. This calls for a plant-by-plant  
12 review, of course including specific circumstances, like  
13 seismic. In many cases however, perhaps most, I expect the  
14 design basis threats are likely to be deemed sufficiently  
15 conservative and remain unchanged.

16 The regulatory decisions about safety requirements can be  
17 assisted by application of new capabilities, among them the  
18 kind of advanced modeling and simulation tools being developed  
19 at DOE's first innovation hub at Oak Ridge, and I might say,  
20 with major MIT engagement. Other types of retrofits could be  
21 more easily absorbed into normal operations such as  
22 transitioning the silicon-carbide fuel cladding to get higher  
23 safety margins. I believe that the slow pace of this  
24 indicates, historically, an R&D program poorly aligned with



1 strategic priorities but the DOE current roadmap I think is a  
2 big step in the right direction.

3 Now new nuclear power plants are already challenged,  
4 let's face it, by high capital costs and increased costs,  
5 capital or operating, could tip the balance for many projects,  
6 depending on many financing and cost recovery factors. Now  
7 reducing the financial risk premium for nuclear power is a  
8 major objective of government support for first mover plants,  
9 principally through the loan guarantee program. Fukushima  
10 clearly does not help in this regard.

11 An entirely different approach to new plants lies with  
12 small modular reactors and these could be a powerful way to  
13 address the cost issue by moving us from economies of scale to  
14 economies of manufacturing. But I do want to say, and I am  
15 very enthusiastic about these, but I do want to say there is a  
16 catch-22 that these economies of manufacture can only be  
17 realized, presumably, if we have a sufficient stream of orders  
18 for a greatly winnowed down set of technology options and that  
19 will be a complex interplay of government and the many  
20 proponents of and customers for the currently contending  
21 numerous SMR designs.

22 Prior to Fukushima the administration submitted a budget for  
23 2012 that would have greatly enhanced the level of activity  
24 for bringing SMRs to market. I believe that program is modest

1 but sensible and deserves support.

2       Second, relicensing, relicensing decisions of the NRC  
3 will almost certainly experience some delay. If the  
4 anticipated life extensions are not realized at any  
5 appreciable degree, we have to face the issue of replacing  
6 potentially tens of thousands of megawatts of non-emitting  
7 generation. It is not an immediate problem, because of our  
8 natural gas situation, but if we want to have those zero  
9 emission options for 2020, it is an immediate challenge to  
10 develop them. And I do want to emphasize, among those options  
11 we must retain next generation nuclear plants with advanced  
12 safety systems, including SMRs.

13       Third, spent fuel management, the Fukushima problems with  
14 spent fuel pools co-located with reactors will undoubtedly  
15 lead to a reevaluation of spent fuel management strategy. Our  
16 reports at MIT have advocated, well before this, we should be  
17 moving, in any case, to consolidated spent fuel storage. This  
18 has many drives, among them resolution of the Federal  
19 liability issues for not moving spent fuel away from reactors.  
20 And I believe that Congress should allow use of the waste fund  
21 for development of consolidated storage.

22                               PREPARED STATEMENT

23       But eventually the spent fuel must go to a repository.

24 My view is -- my recommendation in the end is that

1 consolidated spent fuel dry cask storage be established be  
2 established as soon as possible, as I discussed, and that a  
3 geological repository be established as soon as possible for  
4 defense high level waste and spent fuel. That is, I would  
5 argue going back, reevaluating the 1980's decision of  
6 comingling defense and civilian waste, separate them. Because  
7 I believe, for many reasons, we can move much faster toward a  
8 defense waste repository which would in turn develop  
9 tremendous amounts of knowledge and experience for an ensuing  
10 civilian waste repository.

11 Thank you and I look forward to the discussion.

12 [The statement follows:]

13 INSERT 59A FOLLOWS

14

1           Senator Feinstein: Thank you very much, Dr. Moniz.

2           Mr. Levis?

3       STATEMENT OF MR. WILLIAM LEVIS, PRESIDENT AND CHIEF OPERATING  
4       OFFICER, PSEG POWER

5           Mr. Levis: Chairman Feinstein, Ranking Member Alexander,  
6       thank you for the opportunity to appear before you today.

7           My name is William Levis; I am the president and chief  
8       operating officer of PSEG Power which is a subsidiary of  
9       Public Service Enterprise Group headquartered in Newark, New  
10      Jersey. PSEG Power is a merchant generating company and owns  
11      approximately 14,000 megawatts of electric generating  
12      capacity. We own 100 percent of the Hope Creek Nuclear  
13      Station, 57 percent of the Salem Nuclear Station and 50  
14      percent of the Peach Bottom Station.

15          I appreciate your invitation to testify at today's  
16      hearing to discuss the status of U.S. nuclear energy industry  
17      and the implications of the Fukushima nuclear accident on  
18      nuclear energy in the United States. I am testifying today on  
19      behalf of the Nuclear Energy Institute, the nuclear energy  
20      industry's Washington based policy organization.

21          My remarks today will cover four points. First, U.S.  
22      nuclear power plants are safe. Second, safety is the U.S.  
23      nuclear energy industry's top priority. Third, the U.S.  
24      nuclear energy industry has a long history of continuous

1 learning from operational events; we will do the same as a  
2 result of the Fukushima event. And fourth, the U.S. nuclear  
3 energy industry has already taken proactive steps to verify  
4 and validate our readiness to manage extreme events. We took  
5 these steps early without waiting for clarity on the sequence  
6 of failures of Fukushima.

7       Regarding the first point, U.S. nuclear power plants are  
8 safe. They are designed and operated conservatively to manage  
9 the maximum credible challenges appropriate to each nuclear  
10 plant site. U.S. nuclear power plants have also demonstrated  
11 their ability to maintain safety through extreme conditions,  
12 including floods, hurricanes and other natural disasters.

13       U.S. nuclear reactors are designed to withstand  
14 earthquakes, tsunamis, hurricanes, floods, tornados and other  
15 natural events equal to the most significant historical event  
16 or maximum projected event, plus added margin for conservatism  
17 without any breach of safety systems.

18       Regarding the second point, safety is the nuclear  
19 energy's industry's top priority and complacency about safety  
20 performance is not tolerated. We know we operate in an  
21 unforgiving environment where the penalties for mistakes are  
22 high and where credibility and public confidence, once lost  
23 are difficult to recover. All the safety related metrics  
24 tracked by industry and the Nuclear Regulatory Commission

1 demonstrate high levels of excellence. Forced outage rates,  
2 unplanned safety system actuations, worker radiation  
3 exposures, events with safety implications and lost time  
4 accident rates have all trended down year over year for a  
5 number of years.

6       Regarding the third point, the U.S. nuclear industry  
7 routinely incorporates lessons learned from operating  
8 experience into its reactor designs and operations. I could  
9 point to many, many examples of improvements made to the U.S.  
10 nuclear power plants over the years in response to lessons  
11 learned from operational events over the last 40 years. Let  
12 me just list a few.

13       In the 1970s concerns were raised about the ability of  
14 Boiling Water Mark 1 containments to maintain its design  
15 during an event where steam is vented to the torus.  
16 Subsequently, every United States operator with a Mark 1  
17 containment implemented modifications to dissipate energy  
18 released to the suppression pool and installed stringent  
19 supports to accommodate loads that could be generated.

20       In 1988 the Nuclear Regulatory Commission concluded that  
21 additional Station Black Out, SBO regulatory requirements were  
22 justified and issued the Station Blackout Rule to provide  
23 further assurance that a loss of both off site and on site  
24 emergency AC power systems would not adversely impact public

1 health and safety. The SBO Rule was based on several planned,  
2 specific probabilistic safety studies, operating experience  
3 and reliability, accident sequence and consequent analysis  
4 completed between 1975 and 1988.

5       And third, since the terrorist events of September 11,  
6 2001, U.S. nuclear plant operators identified other beyond  
7 design basis vulnerabilities. As a result, U.S. nuclear plant  
8 designs and operating practices since 9/11 are designed to  
9 mitigate severe accident scenarios such as aircraft impact,  
10 which includes the complete loss of off site power and all on  
11 site emergency power sources and loss of large areas of plant.  
12 The industry developed additional methods and procedures to  
13 provide cooling to the reactor and the used fuel pool and  
14 staged additional equipment at all U.S. nuclear power plant  
15 sites to ensure that the plants were equipped to deal with  
16 extreme events and nuclear plant operation staffs are trained  
17 to manage them.

18       Regarding the final point, the U.S. nuclear industry has  
19 already started an assessment of events in Japan and is taking  
20 steps to ensure that U.S. reactors could respond to events  
21 that may challenge safe operation of the facilities. These  
22 actions include, verifying each plant's capability to manage  
23 severe accident scenarios developed after 9/11 that I  
24 previously described; verifying each plant's capability to

1 manage a total loss of off site power; verifying the  
2 capability to mitigate flooding and the impact of floods on  
3 systems inside and outside the plant and performing walk downs  
4 and inspections of important equipment needed to respond  
5 successfully to extreme events like fires and floods.

6 PREPARED STATEMENT

7 In conclusion, Madam Chairman, it will be some time  
8 before we understand the precise sequence of what happened at  
9 Fukushima, before we have a complete analysis of how the  
10 reactors performed, how equipment and fuel performed, how the  
11 operators performed. As we learn from this tragic event,  
12 however, you can rest assured that we will internalize those  
13 lessons and incorporate them into our designs and training and  
14 operating procedures.

15 This concludes my oral testimony, Madam Chairman, and I  
16 look forward to answering questions that the committee may  
17 have.

18 [The statement follows:]

19 INSERT 64A FOLLOWS

20



1           Senator Feinstein: Thank you very much, Mr. Levis.

2           Mr. Lochbaum?

3       STATEMENT OF MR. DAVID LOCHBAUM, DIRECTOR, NUCLEAR SAFETY

4           PROJECT UNION OF CONCERNED SCIENTISTS

5           Mr. Lochbaum: Good morning, Madam Chairman and Ranking  
6 Member Alexander. I appreciate this opportunity to travel up  
7 here from Chattanooga, Tennessee to provide my testimony  
8 today.

9           Among the many challenges workers faced at Fukushima  
10 Daiichi Nuclear Plant was a need to provide cooling for  
11 radiated fuel in seven onsite spent fuel pools. Irradiated  
12 fuel is curious material. When inside the core of an  
13 operating reactor irradiated fuel is so hazardous that the  
14 plant has an array of emergency systems whose sole purpose is  
15 to protect the fuel from damage by overheating.

16          Some of these emergency systems feature motor-driven  
17 pumps, while some feature steam-driven pumps. These  
18 emergency core cooling systems can be powered by the  
19 electrical grid, by the emergency diesel generators and in  
20 some cases by on site batteries. The diversity and redundancy  
21 of these emergency core cooling systems provides high, but not  
22 absolute, assurance that the irradiated fuel will be  
23 adequately cooled. If the highly reliable emergency core  
24 cooling systems fail, the irradiated fuel in the reactor core

1 is encased within strong concrete walls, four to five feet  
2 thick. This structure provides additional assurance that the  
3 public is protected.

4 After being discharged from the reactor core the  
5 irradiated fuel awaits transfer to a Federal repository which  
6 does not exist. The United States has spent more than \$10  
7 million -- \$10 billion on a proposed repository at Yucca  
8 Mountain in Nevada. The Department of Energy faces an immense  
9 engineering challenge siting a repository because that  
10 location must isolate the irradiated fuel from the environment  
11 for at least 10,000 years into the future or merely 42 times  
12 longer than we have been in the United States of America.

13 Between these two dangerous endpoints irradiated fuel  
14 sits in temporary spent fuel pools with almost no protection.  
15 For unfathomable reasons, irradiated fuel is considered benign  
16 after it is taken out of the reactor but before it is placed  
17 in a repository. Today tens of thousands of irradiated fuel  
18 sits in spent fuel pools across America. At many sites near -  
19 - there is nearly 10 times as much irradiated fuel in a spent  
20 fuel pool as in reactor core. These pools are not cooled by  
21 an array of highly reliable emergency systems, not powered by  
22 the grid, diesel generators or batteries. Instead the pools  
23 are cooled by one regular system, sometimes backed up by one  
24 alternate make up system.

1       The spent fuel pools are not housed within robust  
2 concrete containment structures designed to protect the public  
3 from the radioactivity they contain. Instead the pools are  
4 often houses in buildings with sheet metal siding like that in  
5 a Sears storage shed. I have nothing against the quality of  
6 Sears storage sheds, but they are not suitable for nuclear  
7 waste storage.

8       The irrefutable bottom line is that we have utterly  
9 failed to proper manage the risk from irradiated fuel stored  
10 at our Nation's nuclear power plants. We can and must do  
11 better.

12       There are two readily available measures to better manage  
13 that risk. First, accelerate the transfer of spent fuel from  
14 the pools to dry cask storage. And second upgrade the  
15 emergency procedures for spent fuel pool accidents. Currently  
16 we fill the pools to capacity and put the overflow into dry  
17 cask. This keeps the pools nearly filled with irradiated  
18 fuel, maintaining the risk about as high as you can achieve.  
19 A better strategy would be to reduce the inventory of  
20 irradiated fuel stored in spent fuel pools, to only that  
21 amount discharged from the reactor in the last 5 or 6 years.

22       Less irradiated fuels in the pools results in a lower  
23 heat load in the pools, the lower heat load gives workers more  
24 time to recover cooling or reestablish the water inventory

1 reducing the likelihood of fuel damage. And if fuel is  
2 damaged, for whatever reason, having less of it in the pools  
3 means the radioactive cloud emitted from that pool is much,  
4 much smaller, posing much less harm to people down wind.

5       Following the 1979 accident Three Mile Island, the  
6 reactor owner significantly upgraded emergency procedures.  
7 Prior to that accident the procedures and training relied on  
8 the operators diagnosing what had happened and taking steps to  
9 mitigate that accident. If the miss -- if the operators  
10 misdiagnosed the accident, those procedures could actually  
11 direct them to take the wrong steps for the accident they  
12 actually faced. The revamped Emergency Procedures Guide, the  
13 operators response to abnormally high pressure or an unusual  
14 low water level, without undue regard for what caused those  
15 abnormal conditions, this -- these upgraded emergency  
16 procedures and training are significant improvements over the  
17 pre-TMI days.

18                               PREPARED STATEMENT

19       But, no comparable procedures and training would help the  
20 operators respond to spent fuel pool accidents. It is  
21 imperative that comparable emergency procedures be provided  
22 for spent fuel pool accidents to derive the same safety  
23 benefits that we derive from improved procedures for reactor  
24 core accidents.

- 1 Thank you.
- 2 [The statement follows:]
- 3 INSERT 69A FOLLOWS
- 4

1           Senator Feinstein: Thank you much.

2           Gentlemen, I'm certainly not a nuclear expert, you are  
3 far more so. But, the first time I'd been in a nuclear plant  
4 was this past week and I had occasion to visit the two in  
5 California, spend the whole day doing it. But what jumps  
6 right out at you is the difference between the containment of  
7 the core, the spent fuel pool, the location of that pool and  
8 the dry cask situation.

9           Here's the question. There is a major study, apparently,  
10 by Bob Alvarez at the Nuclear Policy Institute for Policy  
11 Studies on the use of dry cask storage at nuclear power  
12 plants. And he contends that dry cask has the potential to  
13 reduce the overall risk associated with reactor storage of  
14 spent fuel. So let me ask each of you, from your viewpoint,  
15 why does industry practice appear to be to keep the spent fuel  
16 in pool much longer than the required 5 to 7 years? Why  
17 wouldn't they move it aggressively to dry cask?

18          Dr. Moniz.

19          Dr. Moniz: Thank you, Madam Chairman. First, I think at  
20 a very high level what I would say is that from the history of  
21 our nuclear power program I would say the storage, storage of  
22 spent fuel, between if you like the reactor and the presumed  
23 repository has been an afterthought. It has not really been  
24 part of our serious policy discussion about fuel cycle design.

1 As a result, I think what one sees are in some sense, what may  
2 be very logical to a plant operator, operational decisions.  
3 So as David said, the dry cask storage is viewed more as the  
4 overflow when the pool can't handle any more densification.  
5 So I think what we need to do is to stand back, really ask  
6 what is our whole integrated system about storage and  
7 disposal. And that is exactly what I would call for. In  
8 fact, I think the move to dry cask is essential, furthermore  
9 for a set of reasons, I believe we should really start  
10 thinking hard about consolidated storage, presumably at  
11 Federal reservations to solve a host of problems.

12 Senator Feinstein: Thank you. I agree with you.

13 Mr. Levis.

14 Mr. Levis: Thank you, Madam Chairman. And certainly the  
15 topic of used fuel and how we should dispose of it is I think  
16 one worthy of significant discussion. And I would not  
17 characterize the industry having a reluctance of putting used  
18 fuel bundles into cask storage; I would say one of the  
19 impactable items is really a lack of a national strategy and  
20 policy on what we are going to do with it.

21 And if I could just offer one thought in that particular  
22 area, we want to limit the number of times we have to handle  
23 used fuel and so we want to be able to take it out of the pool  
24 once, put it into cask and have it be able to go where it can

1 go. Not all casks are designed for transportation, for  
2 example. So if in fact our policy is going to be to store it  
3 on site there for a long period of time, we want to make sure  
4 we have casks that can do that. If our policy is to put it in  
5 a cask that can be transported, we want to make sure it can be  
6 in a cask that can do that.

7 So, you know, we were essentially planning for what we  
8 believe the direction of the country was headed. And it is  
9 not a reluctance to do this; we know how to do it. I would  
10 ask, if we want to speed that process up, that we consider  
11 things like supply chain availability and these sorts of  
12 things and making sure we have the, you know, the training and  
13 qualification for the people that need, you know, to do this  
14 sort of activity. But, I wouldn't characterize it as  
15 reluctance, you know, on our part to do it but rather lacking  
16 what the national plan is and how we can develop our plan to  
17 match up with that.

18 Senator Feinstein: Are you saying you believe, as an  
19 operator, we would be better off with a Federal policy that  
20 essentially set the handling of waste?

21 Mr. Levis: No, I --

22 Senator Feinstein: And have either regional repositories  
23 or a national repository?

24 Mr. Levis: Yes, what I was referring to, Madam Chairman,



1 is what is the ultimate disposition of the used fuel, where  
2 will it go and what the most efficient way to get it there is.

3 Senator Feinstein: Thank you.

4 Mr. Lochbaum.

5 Mr. Lochbaum: I would agree with the point that spent  
6 fuel storage onsite was an afterthought. And I as think I  
7 agree with the industry position that it has been a shifting  
8 thought. The Federal Government keeps saying that we will  
9 take spent fuel on such and such a date and then that date  
10 slips by quite a bit. So it is difficult to base a decision  
11 on how best to store spent fuel on site when the parameters  
12 keep shifting year to year. So I think I agree with Bill  
13 Levis that it has not been reluctance, it has been that  
14 shifting paradigm that keeps causing problems.

15 Senator Feinstein: Dr. Moniz.

16 Dr. Moniz: May I just add a point, because again I  
17 totally agree with Bill. It is again, it is the absence of a  
18 system that allows rational decisions. As Bill mentioned  
19 something that is very important, we don't have a consistent  
20 policy on these -- literally just on things of sizes of casks,  
21 which is quite important.

22 But if I may go back, you invited comments on the earlier  
23 panel, just to comment on the issue of the 100 year storage  
24 which Chairman Jaczko mentioned.

1           We think that there is a good case to be made for the  
2 integrity of 100 year storage, but the reality is it is based  
3 on extraordinarily skimpy database. And this is an example of  
4 the kind of R&D priority that we should have been having and I  
5 think now is being revived, pre-Fukushima, now it will be even  
6 more important.

7           And this gets to Bill's point about handling the fuel.  
8 While it may be that the fuel can be contained for 100 years,  
9 say in dry cask storage, but what about when you move it then?  
10 Will movement compromise integrity? These are the kinds of  
11 issues we need to have a system view of, No. 1. And No. 2, I  
12 would say this is one of the many reasons why I personally  
13 favor consolidated storage, because if you bring this fuel  
14 together and there aren't any issues you can have, at that  
15 site, the infrastructure to deal with those problems and the  
16 spent fuel, if there are any after 80 or 90 or 100 years.

17           Senator Feinstein: Thank you, Senator.

18           Senator Alexander: Dr. Moniz, if the Nation can't agree  
19 on a single repository, what makes you think it can agree on  
20 more than one for consolidated sites?

21           Dr. Moniz: Thank you, Senator Alexander. First of all,  
22 I want to stress that the consolidated storage sites I am  
23 talking about are not necessarily repositories.

24           Senator Alexander: Well, but they are places where you

1 would haul the spent fuel --

2 Dr. Moniz: That is correct, so --

3 Senator Alexander: -- to put it. So you would have the  
4 same issues of local support and -- would you not?

5 Dr. Moniz: Certainly and by the way, and I strong  
6 support the idea that we should -- we have to find public  
7 support in regions to move things. Now, I think having a dry  
8 cask storage facility is different from a repository. I don't  
9 claim it is easy; I am not Pollyannaish about it. It is  
10 tough.

11 Senator Alexander: Yes, I know.

12 Dr. Moniz: But also, I just inferred, for example, such  
13 a location would have, for example, a substantial research and  
14 testing infrastructure --

15 Senator Alexander: Yes.

16 Dr. Moniz: -- around the spent fuel, that is the kind of  
17 design that we need, I believe.

18 Senator Alexander: Yes. The -- would you agree that the  
19 -- Dr. Chu's plan and the attitude of others is that we could  
20 No. 1 safely store on site our used nuclear fuel, while for  
21 the next 10 or 20 years we develop aggressive R&D to try and  
22 find a better way to use, recycle nuclear fuel? Do you think  
23 that is both wise and safe to do?

24 Dr. Moniz: Yes, sir. First, I would say that we don't

1 see any large differentiator, technically, on safety or  
2 security or costs of distributed storage versus centralized  
3 storage. There are other system reasons why I prefer the  
4 centralized storage. Now --

5 Senator Alexander: But what my question really is, while  
6 we do the R&D to get to that point --

7 Dr. Moniz: Yes, now on the --

8 Senator Alexander: -- is it safe to store it on site?

9 Dr. Moniz: Yes, it is. And now on terms of the R&D  
10 program, in our report last year we put forward exactly that  
11 kind of a program. And I should add, it is based upon  
12 something that Secretary Lyons inferred, that we do not  
13 believe that current reprocessing approaches, frankly, have  
14 merit, but we need to develop, possibly, more advanced  
15 approaches.

16 Senator Alexander: May I ask you -- I want to ask you  
17 two questions in 2 minutes and 25 seconds. So one is about  
18 radiation, we see on television news that there -- a trace of  
19 radiation has been discovered in the United States as the  
20 result of the Japanese accident, yet testimony in the previous  
21 panel was we shouldn't worry about that. Why is that true?

22 Dr. Moniz: Well I will give a brief answer; maybe David  
23 will have more specifics on it. The information I have  
24 received is that the measurements in this country, including

1 in my home State, are orders of magnitude below what are  
2 considered to be levels of concern.

3 Senator Alexander: Well, is it true that every day we  
4 receive some radiation naturally from --

5 Dr. Moniz: Yes, sir. In the United States the average  
6 citizen received about 300 millirem per year, which is let's  
7 say one-half of a CAT scan.

8 Senator Alexander: And maybe another 300 from other --

9 Dr. Moniz: Yes, and --

10 Senator Alexander: -- from CAT scans and --

11 Dr. Moniz: On average, yes.

12 Senator Alexander: And that is -- that has no harm, is  
13 that to a person to receive 500 millirems --

14 Dr. Moniz: Well that is getting into an area which I am  
15 certainly not an expert. There is a lot of argument going on  
16 about so-called linear hypotheses and collective doses to the  
17 public. But my view is that it seems to be essentially no  
18 harm.

19 Senator Alexander: Let me conclude to a question that  
20 you are an expert on. You mentioned the work that MIT and Oak  
21 Ridge are doing in modeling nuclear power plants. As I  
22 understand it, that is based upon the supercomputing capacity  
23 there and the R&D capacity there that this subcommittee and  
24 this Congress and this President are asked to fund on a year

1 basis. How important is the United States ability to be among  
2 the leaders in the world in supercomputing to such programs as  
3 you are working on today to help us understand how to keep  
4 nuclear power plants safe?

5 Dr. Moniz: A large scale modeling and simulation applied  
6 to complex engineered systems is something the Department of  
7 Energy, first of all, has been a leader in for a long time.  
8 It is something the country really should lead for very  
9 important, I believe, impacts on our manufacturing capability,  
10 our regulatory capability, those are the things that we are  
11 trying to do with this initial hub focused on light water  
12 reactor simulation.

13 Senator Alexander: Thank you, Madam Chair.

14 Senator Feinstein: Thank you very much.

15 Just one thing, you heard me ask the Chairman about the  
16 option of an independent assessment of nuclear safety in our  
17 country. Do you believe such an assessment would be a good  
18 idea, say if the National Academy of Science put together a  
19 look in view of what has happened at Daiichi and Daini and you  
20 know, pressured water versus boiling water reactors, spent  
21 fuel pools stored at reactor sites right now forever, because  
22 there is no other plan and in some in dry casks?

23 So let me begin with you Mr. Lochbaum, what do you think  
24 of that idea?

1       Mr. Lochbaum: Well, an independent assessment is never a  
2 bad thing, but I think equally important or more important  
3 would be -- the NRC is going to undertake the 90 day review  
4 and then a longer term review. And they are going to come up  
5 with a lot of lessons learned that will be informed by what  
6 the work the IAE is doing and the work that the industry is  
7 doing and the work that the independent assessment would do.  
8 I think it is vitally important for the Senate or the Congress  
9 more broadly, to look at the results from the NRC's review,  
10 what they have identified and their schedule for implementing  
11 that.

12       If they need more budget in order to make some of those  
13 things happen on a timelier basis that needs to happen.  
14 Because the best plan in the world doesn't really help anybody  
15 until it is implemented. So I think the NRC will come up with  
16 a good list of things to do to make our plants less vulnerable  
17 to that kind of thing and it is important that they get to the  
18 end of that effort as quickly as possible. So I think the  
19 Congress can help the NRC set its priorities and get there as  
20 expeditiously as possible.

21       Senator Feinstein: Thank you.

22       Mr. Levis, any --

23       Mr. Levis: Madam Chairman, the industry will be looking  
24 at their own assessment of this event, you know, coordinated

1 through the Institute of Nuclear Power Operations in concert  
2 with the World Association of Nuclear Operators and obviously  
3 NRC will do its review independently. You know, we are  
4 committed to the absolute safety of our plants, we welcome any  
5 and all assessments and certainly an independent assessment  
6 would be fine, just to make sure we got it right.

7 Senator Feinstein: Thank you. Thank you.

8 Dr. Moniz?

9 Dr. Moniz: I would agree. I think it is -- it would be  
10 unrealistic to think that we could move forward, frankly,  
11 without some kind of major assessment and I believe an  
12 independent assessment will be called for. What that means  
13 exactly, independent and who would be the independent body, is  
14 not entirely clear, in my view.

15 Senator Feinstein: Well, would the National Academy of  
16 Science be able to put that kind of body together, which is  
17 what they generally do when they look at something.

18 Dr. Moniz: Yes, I think the National Academy is  
19 certainly an option. Sometimes they move more slowly than one  
20 would like, but I think if they -- in my view perhaps with a  
21 strong connection to an outstanding technical group, like INPO  
22 for example, could be a good way of putting together a review.

23 Senator Feinstein: Thank you, anything else, Senator?

24 Senator Alexander: No. I'd like to thank the witnesses



1 for very helpful statements that you made and thank the  
2 Chairman for looking into this. As I said at the beginning,  
3 it is very important that we talk about nuclear power. You  
4 know, nuclear power is such a complex mechanical operation  
5 that it makes sensational television news whenever there is a  
6 problem, even though hundreds of thousands of people in Japan  
7 are homeless and a thousand bodies washed up on a beach one  
8 day, the news most days was about what was happening at the  
9 nuclear reactors.

10 And I think it is important that as a country we simply  
11 learn how to honestly ask questions, continuously improve what  
12 we are doing. But at the same time, you know, lots of people  
13 die every year from pollution from coal plants that isn't  
14 collected in pollution control systems and from other forms of  
15 energy production. So I think it is important that we keep  
16 them all in perspective and we recognize that the safety  
17 record for the generation of nuclear power in the United  
18 States really couldn't be better, in terms of harm to people.  
19 It can always be improved. There are important lessons from  
20 Three Mile Island, but I have not heard anyone yet contradict  
21 my statement that no one was hurt at Three Mile Island.

22 So this is helpful testimony and I think, Madam Chairman,  
23 the most important thing we can do is advance the research on  
24 used nuclear fuel, on small modular reactors, on any other

1 safety enhancements that might be recommended that would  
2 continue to help us produce large amounts of reliable, low  
3 cost, clean electricity of which I think nuclear power is an  
4 important component.

5 Senator Feinstein: Well, thank you, Senator.

6 Of course, I come from a State that is in the ring of  
7 fire. And the ring of fire has had some very big earthquakes  
8 around it. One of the things I learned from the USGS was that  
9 the sea bottom, as large as the State of Maryland, moved in a  
10 subduction under the plate and that launched the tsunami which  
11 was just amazing for me to hear. So you know, I think no one  
12 ever though, in design basis, that that kind of thing would  
13 happen.

14 And well, let me just ask, do each of you have a last  
15 thought for us? Because -- anything you would like to say and  
16 then we will conclude rapidly.

17 Mr. Levis.

18 Mr. Levis: I think the point that you make about what is  
19 it that we don't know is obviously something we challenge  
20 ourselves with every day, which is really the reason why these  
21 -- some of these procedures that we refer to as severe  
22 accident management guides were developed, you know, a little  
23 over a decade ago, so that we could respond, you know, to the  
24 consequence of the event, versus trying to figure out what the

1 event is. That means if the heat sink is lost, what would you  
2 do? If you lost emergency AC power what would you do?

3 So you know, we think -- we ask ourselves continually  
4 those what if questions and what have we missed here. And I  
5 am sure there will be some significant learning out of here  
6 that we can apply to our plant designs and operating practices  
7 so we can improve the safety of our facilities.

8 Senator Feinstein: Thank you. Thank you. You said -- I  
9 was with the CEO of Southern California Edison and he said the  
10 same thing you did that, you know, what we know is what we  
11 know and we have to challenge people with what we don't know.  
12 And I very much agree with that, Dr. Moniz or Mr. Lochbaum.

13 Mr. Lochbaum: I would just say as the -- obviously  
14 the event in Japan was tragic. Even if there were no lives  
15 lost from the radiation that has been released from the  
16 damaged cores, that was a multi-billion asset that became a  
17 multi-billion liability very quickly. So we need to, both for  
18 the economic cost of that accident, but also any human cost,  
19 we need to learn as much as we have. If the industry is going  
20 to do it, the NRC is going to do it and we -- as tragic as the  
21 accident will be, it would be shame on us if we don't reap the  
22 full benefits of lessons learned from that.

23 Senator Feinstein: Thank you. Dr. Moniz.

24 Dr. Moniz: Thank you, Madam Chairman.

1        Perhaps I could make a few comments about R&D programs,  
2        that is obviously something under the direct purview of this  
3        subcommittee and you will be considered it. Just a note, that  
4        again last year we issued a report on the future of the  
5        nuclear fuel cycle. I just wanted to note some of the areas  
6        that we noted for R&D, viewing these as real gaps,  
7        historically, in the program.

8        Life extension for LWRs and technologies, some new  
9        technologies like fuel, cladding which we mentioned earlier,  
10       for safety margins, advanced fuel development for light water  
11       reactors. The modeling and simulation as part of the way of  
12       verifying and quantifying uncertainties, dry cask storage life  
13       extension, deep -- other concept include enhanced waste forms  
14       for storage and disposal. What I emphasize is that this is  
15       way before Fukushima, this was last year, that these kinds of  
16       technologies which are about the work horse of our nuclear  
17       fleet, light water reactors, has been neglected and I believe  
18       this should be a very strong priority for R&D.

19       We did have, in addition to this, something that Senator  
20       Alexander referred to, which was also a program for the future  
21       possible closed fuel cycles that might make sense for reasons  
22       of waste management or resource extension. But our view as  
23       the No. 1 priority, strategic view is if nuclear power is to  
24       play an important role in the next few decades it is these

---

1 things we need: the storage technologies, the new fuels, the  
2 new cladding with better safety margins, et cetera. So I  
3 would urge, in your consideration of the DOE budget, that  
4 these be given a lot of attention. Thank you.

5 Senator Feinstein: You make a lot of sense, Senator.

6 Senator Alexander: Madam Chair, may I ask permission to  
7 include in the record an article from The Guardian of Linden  
8 on Sunday by one of the leading environmentalists in the  
9 country who -- which is headlined, "Why Fukushima Made Me Stop  
10 Worrying and Love Nuclear Power." His comment was, "Atomic  
11 energy has just been subjected to one of the harshest possible  
12 tests and the impact on people and the planet has been small.  
13 The crisis at Fukushima has converted me to the cause of  
14 nuclear power."

15 [The information follows:]

16 INSERT 85A FOLLOWS

17

1 Senator Alexander: This is --

2 Senator Feinstein: Oh my goodness.

3 Senator Alexander: Well, the --

4 Senator Feinstein: The affect has been small?

5 Senator Alexander: Of the reactors.

6 Senator Feinstein: On the reactor.

7 Senator Alexander: Of the --

8 Senator Feinstein: But the affect on the country, on the  
9 people, on the economy, on the sea bed --

10 Senator Alexander: The effect of --

11 Senator Feinstein: -- I mean is enormous.

12 Senator Alexander: The effect of the reactors -- this is  
13 his comment, but he reviews, in his article, that the disaster  
14 would weigh more heavily, he said, if there were less harmful  
15 alternatives. He goes through all the other ways of producing  
16 energy and concludes atomic power has to be part of the mix.

17 And in any event, this is just one --

18 Senator Feinstein: We will put it in the record and --  
19 thank you.

20 Senator Alexander: -- this is one person who is an  
21 environmentalist who was -- who had that unusual reaction to  
22 the disaster.

23 Senator Feinstein: It is unusual.

24 Your thoughts have been very helpful. And I would just

1 like to ask if you have other thoughts, please communicate  
2 them to this subcommittee because Dr. Moniz is right, this R&D  
3 program is directly under our jurisdiction and we certainly  
4 need to consider the things that you mentioned and we will.

5 CONCLUSION OF HEARING

6 So thank you gentlemen, very much, for the testimony. It  
7 is very helpful. And the hearing is recessed.

8 [Whereupon, at 11:55 a.m., Wednesday, March 30, the  
9 hearing was concluded, and the subcommittee was recessed, to  
10 reconvene subject to the call of the Chair.]

11

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**From:** Brenner, Eliot  
**Sent:** Wednesday, April 13, 2011 9:03 AM  
**To:** Batkin, Joshua; Schmidt, Rebecca  
**Cc:** Loyd, Susan  
**Subject:** RE: Summary of Commission Update re: Japan Response

Thanks. he slipped me his copy last night I case I needed the numbers handy.

**From:** Batkin, Joshua  
**Sent:** Wednesday, April 13, 2011 9:02 AM  
**To:** Brenner, Eliot; Schmidt, Rebecca  
**Cc:** Loyd, Susan  
**Subject:** FW: Summary of Commission Update re: Japan Response

FYI for background – this is what he was talking from yesterday.

**From:** Pace, Patti  
**Sent:** Tuesday, April 12, 2011 1:02 PM  
**To:** Batkin, Joshua  
**Subject:** Summary of Commission Update re: Japan Response

Chairman Jaczko ensured he kept his colleagues informed of the NRC response to the events in Japan. These updates have taken the form of direct briefings from to his Commission colleagues, occurring once per day in the first week after the earthquake and an on ad hoc basis after March 18th. Commission staff have received and continue to receive briefings from the Executive Team in the NRC Operations center. Lastly, each office receives written status reports from our Operations center at regular intervals.

Since the earthquake and tsunami on Friday March 11<sup>th</sup>, Commission offices have participated in nearly sixty briefing calls and received about eighty written status updates.

**First 24 Hours of NRC Response:**

At 9:46AM on Friday March 11<sup>th</sup> the NRC Operations Center entered monitoring mode in response to the events in Japan.

At 10:09AM on 3/11/2011, twenty three minutes after entering monitoring mode, the NRC Operations Center sent an email to announce the change in status to monitoring mode. All Commission offices received this announcement.

At 1:04PM on 3/11/2011, three hours and eighteen minutes after entering monitoring mode, the first briefing of the Commissioner's assistants was conducted by the Executive Team (ET) at the Operations center.

**In the first twenty four hours after entering monitoring mode, the Commissioner's Assistants were briefed by the ET four times.**

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**Discussions with Commission, Meetings and Hearings:**

Friday March 11<sup>th</sup>, Individual meeting with Commissioner Apostolakis  
Saturday March 12<sup>th</sup>, 3:00p, Non-Sunshine Act Discussion (NSAD) Briefing call with Commission  
Sunday March 13<sup>th</sup>, 4:00p, NSAD Briefing call with Commission  
Monday March 14<sup>th</sup>, 4:30p, NSAD Briefing call with Commission  
Tuesday March 15<sup>th</sup>, 7:30p, NSAD Briefing call with Commission  
Wednesday March 16<sup>th</sup>  
    Testimony before House Joint Subcommittees of Energy and Commerce Committee  
    Public Briefing of Senate Environment and Public Works Committee  
Thursday March 17<sup>th</sup>, 4:00p, NSAD Briefing call with Commission  
Friday March 18<sup>th</sup>, 10:00a, NSAD Briefing call with Commission  
Sunday March 20<sup>th</sup>, Phone call with Commissioner Ostendorff  
Monday March 21<sup>st</sup>  
    NRC Public Meeting on Japan Status  
    Closed Commission Meeting: Agenda Planning  
    Individual meeting with Commissioner Ostendorff  
Wednesday March 23, Individual meeting with Commissioner Svinicki  
Thursday March 24,  
    Individual meeting with Commissioner Apostolakis  
    Individual meeting with Commissioner Magwood  
Friday March 25<sup>th</sup>, Individual meeting with Commissioner Apostolakis  
Saturday March 26<sup>th</sup>, 6:40p, NSAD Briefing Call with Commission  
Wednesday March 30<sup>th</sup>  
    9:00AM NSAD Briefing Call with Commission (2 Commissioners participated)  
    Testimony before Senate Appropriations Energy and Water Subcommittee  
    Individual meeting with Commissioner Svinicki  
Thursday March 31<sup>st</sup>  
    9:00AM NSAD Briefing Call with Commission (1 Commissioner participated)  
    Testimony before House Appropriations Energy and Water Subcommittee  
    Closed Commission Meeting: Agenda Planning  
        (During which Commission decided to cancel previously agreed upon and announced April 14<sup>th</sup>  
        Public Meeting re: Japan Update)  
    Closed Commission Meeting: Adjudicatory Issues  
    Closed Commission Meeting: Management Issues  
    Individual meeting with Commissioner Ostendorff  
Thursday April 7<sup>th</sup> –  
    NSAD Briefing Call with Commission scheduled, Commission decided to cancel  
    Individual meeting with Commissioner Ostendorff

**Commissioner's Assistant Phone Calls:**

Starting on Saturday March 12<sup>th</sup>, a thrice daily schedule of CA briefings was established.

On Tuesday March 15<sup>th</sup>, CAs decided to move to twice daily briefings.

On Thursday March 31<sup>st</sup>, per the recommendation of CAs, the briefings became once daily.

**As of Tuesday April 12th, there have been nearly 60 briefings from the Executive Team to Commissioners Assistants.**

**Written Status Updates or "SitReps" from HOO:**

Date:	# of Reports Generated:
3/11	3
3/12	8
3/13	4
3/14	4
3/15	4
3/16	3
3/17	3

Starting on March 18<sup>th</sup>, decreased to twice daily production of written reports.

On Monday April 11<sup>th</sup>, decreased to once daily production of written reports.

**As of April 12th the Commission has received about 80 written status updates.**

Patti Pace  
Assistant to Chairman Gregory B. Jaczko  
U.S. Nuclear Regulatory Commission  
301-415-1820 (office)  
301-415-3504 (fax)

---

**From:** Droggitis, Spiros  
**Sent:** Friday, April 15, 2011 7:12 AM  
**To:** Quesenberry, Jeannette  
**Subject:** FW: Letter from Senator Webb  
**Attachments:** Senator Webb letter.pdf

**From:** Shane, Raeann  
**Sent:** Thursday, April 14, 2011 5:53 PM  
**To:** Champ, Billie; Mike, Linda; Batkin, Joshua  
**Cc:** Schmidt, Rebecca; Powell, Amy; Droggitis, Spiros  
**Subject:** Letter from Senator Webb

Billy/Josh:

We just got a new letter in from Senator Webb, see attached.

Raeann

Raeann Shane  
Sr. Intergovernmental and External Affairs Officer  
Office of Congressional Affairs  
U.S. NRC  
301-415-1699  
[rms2@nrc.gov](mailto:rms2@nrc.gov)

BA/131

April 15, 2011

The Honorable Gregory B. Jaczko  
Chairman  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001

Dear Chairman Jaczko:

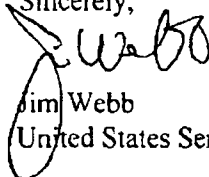
I write regarding the March 16, 2011 Nuclear Regulatory Commission (NRC) evacuation recommendation for U.S. residents within 50 miles of the Fukushima reactors. According to the NRC, this recommendation was issued under guidelines for public safety that would be used in the United States under similar circumstances.

As this recommendation could have important implications for U.S. energy security, public health, and environmental protection, I respectfully request that you disclose all assumptions that were used in reaching this conclusion. In addition to any other relevant information, please address the following points:

- 1) The assumed magnitudes of the total releases (in Curies) to the atmosphere of the radioisotopes dominating the inhalation, cloudshine, and 4-day groundshine effective whole body doses and the thyroid inhalation doses;
- 2) The assumed duration of the releases;
- 3) The assumed wind speed and deposition velocities;
- 4) Any assumption concerning wind wander;
- 5) The height of the assumed release including any height increase of the mid-line of the plume due to heat buoyancy effects; and
- 6) The dose conversion factor that the NRC uses for Iodine-131 for converting exposure to airborne I-131 measured in Ci-seconds/m<sup>3</sup> exposure to thyroid doses in rem for adults and children of different ages.

I appreciate your prompt attention to this matter.

Sincerely,



Jim Webb  
United States Senator

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**From:** Loyd, Susan  
**Sent:** Friday, April 15, 2011 3:04 PM  
**To:** Schmidt, Rebecca  
**Subject:** RE: Sen Mikulski Visit on Monday

You too, Becky. You've certainly earned it lately! Hope the "grades" discussion went well.

Susan K. Loyd  
Communications Director  
Office of the Chairman  
U.S. Nuclear Regulatory Commission  
Tele: 301-415-1838  
[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)

**From:** Schmidt, Rebecca  
**Sent:** Friday, April 15, 2011 3:03 PM  
**To:** Loyd, Susan  
**Subject:** RE: Sen Mikulski Visit on Monday

Have a good weekend!

**From:** Loyd, Susan  
**Sent:** Friday, April 15, 2011 3:00 PM  
**To:** Schmidt, Rebecca  
**Subject:** RE: Sen Mikulski Visit on Monday

Thanks, thanks, thanks

Susan K. Loyd  
Communications Director  
Office of the Chairman  
U.S. Nuclear Regulatory Commission  
Tele: 301-415-1838  
[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)

**From:** Schmidt, Rebecca  
**Sent:** Friday, April 15, 2011 2:52 PM  
**To:** Loyd, Susan  
**Subject:** RE: Sen Mikulski Visit on Monday

Yes – 5 minutes, yes, yes

**From:** Loyd, Susan  
**Sent:** Friday, April 15, 2011 2:48 PM  
**To:** Schmidt, Rebecca; Ellmers, Glenn; Batkin, Joshua; Monninger, John; Landau, Mindy  
**Subject:** RE: Sen Mikulski Visit on Monday

Yes. I'll do 2 on a page. At 10:00, the Chairman will greet Sen. Mikulski in his office and chat with her for how long? Then they will move to the conference room where the others will be waiting? The photographer will be in the Chairman's office right away for a photo?

BA/132

Susan K. Loyd  
Communications Director  
Office of the Chairman  
U.S. Nuclear Regulatory Commission  
Tele: 301-415-1838  
[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)

**From:** Schmidt, Rebecca  
**Sent:** Friday, April 15, 2011 2:41 PM  
**To:** Ellmers, Glenn; Loyd, Susan; Batkin, Joshua; Monninger, John; Landau, Mindy  
**Subject:** RE: Sen Mikulski Visit on Monday

I think we will need 15 copies of all the slides. Susan and Glenn-will you both do your 15 copies?

**From:** Ellmers, Glenn  
**Sent:** Friday, April 15, 2011 1:39 PM  
**To:** Schmidt, Rebecca; Loyd, Susan; Batkin, Joshua; Monninger, John; Landau, Mindy  
**Subject:** RE: Sen Mikulski Visit on Monday

Got it.

**From:** Schmidt, Rebecca  
**Sent:** Friday, April 15, 2011 1:33 PM  
**To:** Ellmers, Glenn; Loyd, Susan; Batkin, Joshua; Monninger, John; Landau, Mindy  
**Subject:** RE: Sen Mikulski Visit on Monday

Ok—but they each have to talk for 3-4 minutes about what they do

**From:** Ellmers, Glenn  
**Sent:** Friday, April 15, 2011 1:32 PM  
**To:** Loyd, Susan; Batkin, Joshua; Monninger, John; Schmidt, Rebecca; Landau, Mindy  
**Subject:** RE: Sen Mikulski Visit on Monday

Marty suggests that the DEDO's be there to support Bill (who will have 4-5 very high-level slides on what the NRC does), but not have formal presentations of their own.

**From:** Loyd, Susan  
**Sent:** Friday, April 15, 2011 1:24 PM  
**To:** Batkin, Joshua; Monninger, John; Schmidt, Rebecca; Landau, Mindy; Ellmers, Glenn  
**Subject:** FW: Sen Mikulski Visit on Monday

Any thoughts on the below? I need to get these revamped and ready, as soon as possible. Are the DEDOs going to use slides in explaining the NRC and how we are organized and how we keep plants safe?

Susan K. Loyd  
Communications Director  
Office of the Chairman  
U.S. Nuclear Regulatory Commission  
Tele: 301-415-1838  
[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)

**From:** Loyd, Susan  
**Sent:** Friday, April 15, 2011 11:28 AM

**To:** Batkin, Joshua; Monninger, John  
**Cc:** Landau, Mindy; Schmidt, Rebecca; Ellmers, Glenn  
**Subject:** Sen Mikulski Visit on Monday

Josh:

We have two small batches of slides we can draw from in putting together some PPTs for the Chairman to use on Monday when Sen Mikulski visits. I am attaching both here. I am thinking we could use the following (with a new title slide). This would provide visuals for a 10-min presentation on Japan, our response, and moving forward.

For Senator Mikulski Visit:

#1 – Title Slide (new)

**The Earthquake, Tsunami and Resulting Nuclear Situation**

(From the "Kukushima Presentation")

#2 - Slide 3 – Map of Japan and Earthquake

#3 - Slide 2 – Fukushima 1-4

#4 – Slide 4 – Earthquake and unit 1 Hydrogen Explosion

**NRC's Response**

(From "Monday Evening" Presentation)

#5 – Slide 1 – NRC Initial Response

#6 – Slide 2 – Map of US

#7 – Slide 3 – U.S. Govt Coordination

**Moving Forward**

#8 – Slide 4 – NRC Ongoing Activities

#9 – Slide 5 – NRC Planned Activities

#10 – Slide 6 – NRC Planned Activities

Susan K. Loyd  
Communications Director  
Office of the Chairman  
U.S. Nuclear Regulatory Commission  
Tele: 301-415-1838  
[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)



# NRC Initial Response

- Began 24-Hour Monitoring and Analysis



- Sent NRC Team to Offer Expert Advice







# NRC Initial Response



- Monitored for Impact of Tsunami on Reactor and Material Licensees in Western States and Pacific Territories



# US Government Coordination

- Coordinate Technical Advice to Japan
- Coordinate Technical Support to Japan
- Advise U.S. Ambassador

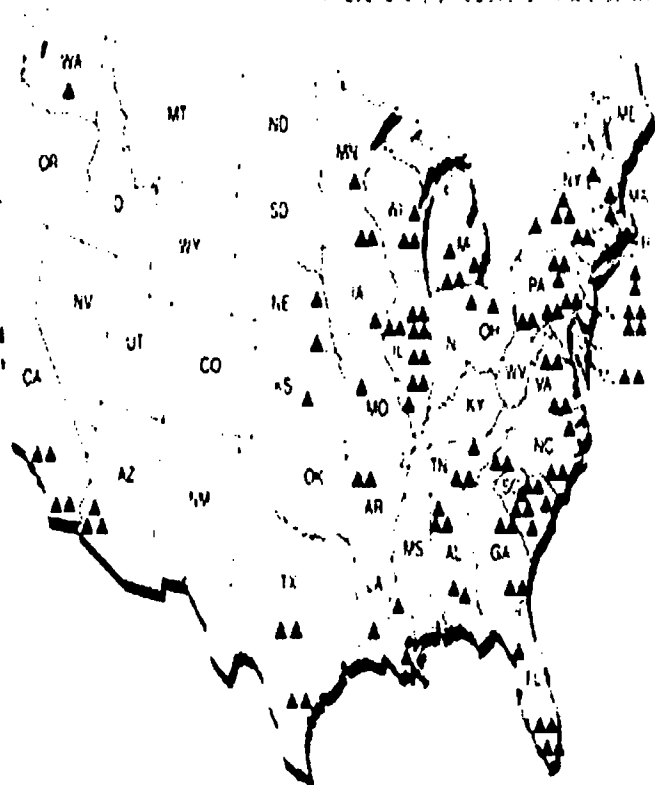


# NRC Ongoing Activities

- Informed NRC Reactor Licensees
  - Verify Capabilities to Mitigate Conditions Due to Severe Accidents

- Inspection of NRC Reactor Licensees Preparedness

Operating nuclear power plants in the United States  
There are no reactors in AK or HI.





# NRC Planned Activities

- 90-Day Near-Term Review
  - Evaluate currently available technical and operational information from the events
  - Identify potential or preliminary near term/immediate operational or regulatory issue
  - Develop recommendations, as appropriate, for potential changes



# NRC Planned Activities

- Long-Term Systematic and Methodical Review  
(6 Months After 90-Day Review)
  - Compile specific information on the sequence of events and the status of equipment during the duration of the event.
  - Evaluate all technical and policy issues related to the event to identify potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework



# **Events at Fukushima**

## **Units 1-4**

March 18, 2011

*Credit: Bill Dean and Rich Barkley, RI*

## Fukushima Units 1 - 4





CURIOUS MAP 3

Japan



Fukushima Daiichi

★ Tokyo





# 3/11 Earthquake & 3/12 Unit 1 Hydrogen Explosion

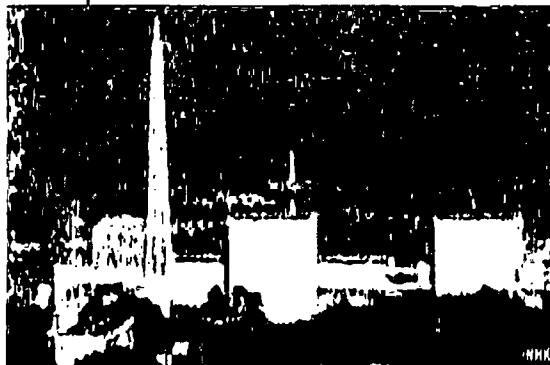
After earthquake 11 March



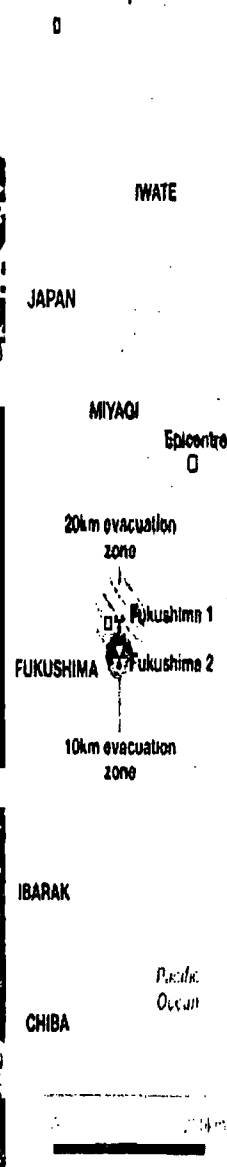
Explosion 0630 GMT 12 March



After explosion 0730 GMT



Fukushima plants





# BWR with Mark 1 Containment

Secondary containment:

Area of explosion at  
Fukushima Daiichi 1

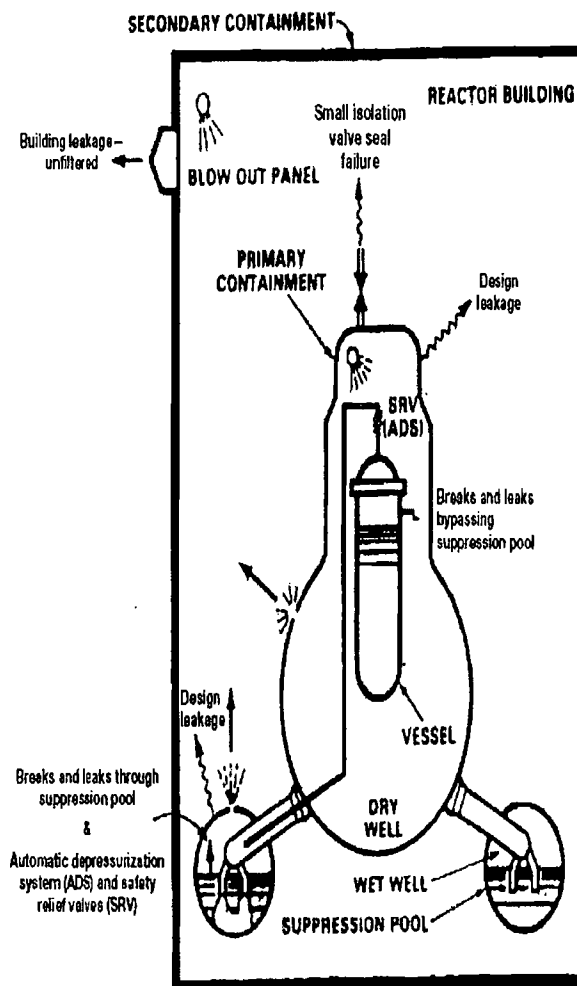
Primary containment:

Remains intact and safe



Boiling Water Reactor Design

## Mark I Containment Release Pathways Simplified





## Most Recent View of Units 3 & 4





## **Where to Learn More at This Time**

Check the NRC web site or blog for the latest information on NRC actions. Other sources of information include:

USAID -- [www.usaid.gov](http://www.usaid.gov)

U.S. Dept. of State -- [www.state.gov](http://www.state.gov)

FEMA -- [www.fema.gov](http://www.fema.gov)

White House -- [www.whitehouse.gov](http://www.whitehouse.gov)

Nuclear Energy Institute -- [www.nei.org](http://www.nei.org)

International Atomic Energy Agency -- [www.iaea.org/press/](http://www.iaea.org/press/)

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**From:** Docket, Hearing  
**Sent:** Tuesday, April 19, 2011 5:16 PM  
**To:** Ammon, Bernice; Belmore, Nancy; Brenner, Eliot; Bubar, Patrice; Bupp, Margaret; Burnell, Scott; Burns, Stephen; Campbell, Tison; Carson, Cecilia; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Crockett, Steven; Csontos, Aladar; Dacus, Eugene; Davis, Roger; Docket, Hearing; Dricks, Victor; Droggitis, Spiros; Frye, Roland; Giitter, Rebecca; Greathead, Nancy; Hannah, Roger; Harves, Carolyn; Hawkens, Roy; Hayden, Elizabeth; Itzkowitz, Marvin; Jones, Bradley; Julian, Emile; Krause, Emily; Ledford, Joey; Lepre, Janet; Lewis, Linda; Zobler, Marian; McIntyre, David; Monninger, John; Ngbea, Evangeline; Nieh, Ho; OCAAMAIL Resource; Orders, William; Pierpoint, Christine; Poole, Brooke; Powell, Amy; Reddick, Darani; Remsburg, Kristy; RidsAslbpMailCenter Resource; RidsEdoMailCenter Resource; RidsOgcMailCenter Resource; RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; Riley (OCA), Timothy; Rothschild, Trip; Schmidt, Rebecca; Scott, Catherine; Screnci, Diane; Sheehan, Neil; Spencer, Mary; Spicer, Susan; Uselding, Lara; Vietti-Cook, Annette; Vincent, Leslie; Warner, MaryAnn; Weil, Jenny; Williamson, Edward; Zorn, Jason; Adler, James; Hart, Ken; OPA Resource; Temp, WCO; Temp, WDM  
**Subject:** Seabrook Station 50-443-LR - Scheduling Order of the Secretary (re petitions to suspend adjudicatory, licensing and rulemaking activities)  
**Attachments:** 04-19-11 SECY Order re Suspension Petition.pdf

Attached is a copy of the **Scheduling Order of the Secretary (regarding petitions to suspend adjudicatory, licensing and rulemaking activities)**, served this date in the matter of the license renewal application for Seabrook Station Unit 1, Docket No. 50-443-LR.

Linda Lewis  
Rulemakings and Adjudications Staff  
Office of the Secretary  
U.S. Nuclear Regulatory Commission  
301-415-1675

BA/133

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
AMERENUE	)	
(Callaway Plant Unit 2)	)	Docket No. 52-037-COL
AP1000 DESIGN CERTIFICATION AMENDMENT	)	
(10 C.F.R. Part 52)	)	NRC-2010-0131
	)	RIN 3150-A18
CALVERT CLIFFS NUCLEAR PROJECT, L.L.C.	)	
(Calvert Cliffs Nuclear Power Plant, Unit 3)	)	Docket No. 52-016-COL
DETROIT EDISON CO.	)	
(Fermi Nuclear Power Plant, Unit 3)	)	Docket No. 52-033-COL
DUKE ENERGY CAROLINAS, L.L.C.	)	
(William States Lee III Nuclear Station, Units 1 and 2)	)	Docket Nos. 52-018-COL,
	)	52-019-COL
ENERGY NORTHWEST	)	
(Columbia Generating Station)	)	Docket No. 50-397-LR
ENTERGY NUCLEAR GENERATION CO. and	)	
ENTERGY NUCLEAR OPERATIONS, INC.	)	Docket No. 50-293-LR
(Pilgrim Nuclear Power Station)	)	
ENTERGY NUCLEAR OPERATIONS, INC.	)	
(Indian Point Nuclear Generating Station, Units 2 and 3)	)	Docket Nos. 50-247-LR,
	)	50-286-LR
ESBWR DESIGN CERTIFICATION AMENDMENT	)	
(10 C.F.R. Part 52)	)	NRC-2010-0135
	)	RIN-3150-A185
FIRSTENERGY NUCLEAR OPERATING CO.	)	
(Davis-Besse Nuclear Power Station, Unit 1)	)	Docket No. 50-346-LR
FLORIDA POWER AND LIGHT CO.	)	
(Turkey Point, Units 6 and 7)	)	Docket Nos. 52-040-COL,
	)	52-035-COL
LUMINANT GENERATION CO. L.L.C.	)	
(Comanche Peak Nuclear Power Plant, Units 3 and 4)	)	Docket Nos. 52-034-COL,
	)	52-035-COL
NEXTERA ENERGY SEABROOK, L.L.C.	)	
(Seabrook Station, Unit 1)	)	Docket No. 50-443-LR
PACIFIC GAS AND ELECTRIC CO.	)	
(Diablo Canyon Power Plant, Units 1 and 2)	)	Docket Nos. 50-275-LR,
	)	50-323-LR

PPL BELL BEND, L.L.C. (Bell Bend Nuclear Power Plant)	)	Docket No. 52-039-COL
	)	
PROGRESS ENERGY CAROLINAS, INC. (Shearon Harris Nuclear Power Plant, Units 2 and 3)	)	Docket Nos. 52-022-COL, 52-023-COL
	)	
PROGRESS ENERGY FLORIDA, INC. (Levy County Nuclear Power Plant, Units 1 and 2)	)	Docket Nos. 52-029-COL, 52-030-COL
	)	
SOUTH CAROLINA ELECTRIC AND GAS CO. and SOUTH CAROLINA PUBLIC SERVICE AUTHORITY (also referred to as SANTEE COOPER) (Virgil C. Summer Nuclear Station, Units 1 and 2)	)	Docket Nos. 52-027-COL, 52-028-COL
	)	
SOUTHERN NUCLEAR OPERATING CO. (Vogtle Electric Generating Plant, Units 3 and 4)	)	Docket Nos. 52-025-COL, 52-026-COL
	)	
SOUTH TEXAS PROJECT NUCLEAR OPERATING CO. (South Texas Project, Units 3 and 4)	)	Docket Nos. 52-012-COL, 52-013-COL
	)	
TENNESSEE VALLEY AUTHORITY (Bellefonte Nuclear Power Plant, Units 3 and 4)	)	Docket Nos. 52-014-COL, 52-015-COL
	)	
TENNESSEE VALLEY AUTHORITY (Watts Bar, Unit 2)	)	Docket No. 50-391-OL
	)	
VIRGINIA ELECTRIC AND POWER CO. d/b/a DOMINION VIRGINIA POWER and OLD DOMINION ELECTRIC COOPERATIVE (North Anna, Unit 3)	)	Docket No. 52-017-COL
	)	

### **ORDER**

The Commission is in receipt of a petition to suspend adjudicatory, licensing, and rulemaking activities, and requesting other relief, in the captioned matters.<sup>1</sup> This order is to set a schedule for further briefing. Any supplements to the petition may be filed no later than

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<sup>1</sup> See generally *Emergency Petition to Suspend All Pending Reactor Licensing Decisions and Related Rulemaking Decisions Pending Investigation of Lessons Learned from Fukushima Daiichi Nuclear Power Station Accident* (served in various dockets between April 14, and April 18, 2011) (Petition). The Commission received a corrected petition on April 18, 2011.



Thursday, April 21, 2011.<sup>2</sup> Any person may file an answer to the petition, or a brief *amicus curiae*, no later than Monday, May 2, 2011.

This order is issued pursuant to my authority under 10 C.F.R. §§ 2.346 (a) and (j).

IT IS SO ORDERED.

For the Commission

**(NRC SEAL)**

**/RA/**

---

Annette L. Vietti-Cook  
Secretary of the Commission

Dated at Rockville, Maryland,  
this 19th day of April, 2011

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<sup>2</sup> See, e.g., Petition at 4 n.2.

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	
	)	
NEXTERA ENERGY SEABROOK, LLC	)	DOCKET NO. 50-443-LR
(Seabrook Station, Unit 1)	)	
	)	
(License Renewal)	)	

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing **Scheduling Order of the Secretary (regarding petitions to suspend adjudicatory, licensing and rulemaking activities)**, dated April 19, 2011, have been served upon the following persons by Electronic Information Exchange.

U.S. Nuclear Regulatory Commission  
Atomic Safety and Licensing Board Panel  
Mail Stop: T-3F23  
Washington, DC 20555-0001

Administrative Judge  
Paul S. Ryerson, Chair  
[paul.ryerson@nrc.gov](mailto:paul.ryerson@nrc.gov)

Administrative Judge  
Michael F. Kennedy  
[michael.kennedy@nrc.gov](mailto:michael.kennedy@nrc.gov)

Administrative Judge  
Richard E. Wardwell  
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Anthony C. Eitreim, Esq.  
Chief Counsel  
[ace1@nrc.gov](mailto:ace1@nrc.gov)  
Hillary Cain, Law Clerk  
[hillary.cain@nrc.gov](mailto:hillary.cain@nrc.gov)

U.S. Nuclear Regulatory Commission  
Office of the Secretary of the Commission  
Mail Stop: O-16C1  
Washington, DC 20555-0001  
Hearing Docket  
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U.S. Nuclear Regulatory Commission  
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Washington, DC 20555-0001  
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Megan Wright, Esq.  
[megan.wright@nrc.gov](mailto:megan.wright@nrc.gov)  
OGC Mail Center  
[OGCMailCenter@nrc.gov](mailto:OGCMailCenter@nrc.gov)

U.S. Nuclear Regulatory Commission  
Office of Commission Appellate Adjudication  
Mail Stop: O-16C1  
Washington, DC 20555-0001  
[ocaamail@nrc.gov](mailto:ocaamail@nrc.gov)

**NEXTERA ENERGY SEABROOK, LLC (Seabrook Station Unit 1) – Docket No. 50-443-LR  
Scheduling Order of the Secretary (regarding petitions to suspend adjudicatory,  
licensing and rulemaking activities)**

NextEra Energy Seabrook, LLC  
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Washington, DC 20004  
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Kim Bartels, Paralegal  
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Mitchell S. Ross, Esq.  
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Counsel for the Applicant  
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Friends of the Coast and  
New England Coalition (NEC)  
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Edgecomb, ME 04556  
Raymond Shadis, Pro Se Representative  
[shadis@prexar.com](mailto:shadis@prexar.com)

Beyond Nuclear  
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Takoma Park, MD 20912  
Paul Gunter, Director, Reactor Oversight Project  
[paul@beyondnuclear.org](mailto:paul@beyondnuclear.org)

New Hampshire Sierra Club  
40 N. Main Street  
Concord, NH 03870  
Kurt Ehrenberg, Field Organizer  
[kurtehrenberg@gmail.com](mailto:kurtehrenberg@gmail.com)

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[Original signed by Linda D. Lewis]  
Office of the Secretary of the Commission

Dated at Rockville, Maryland  
this 19<sup>th</sup> day of April 2011

**From:** EUCI Events <events@eucievents.com>  
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As the events at the Fukushima Daiichi Nuclear Power Plant continue to unfold, this webinar will address:

- The design of the plant, including its safety systems
- Damage to the plant caused by the earthquake and tsunami
- What it means to safely shut down a nuclear reactor
- How hydrogen gas is generated and the resulting explosions
- A timeline of events that occurred at Fukushima
- How different countries and agencies have responded to these events, including the U.S. NRC
- How the Fukushima event will impact the nuclear power industry in the U.S. and worldwide

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- The water-steam relation inside the BWR reactor
- What it means when the heat sink is lost by a combination of tripping the turbine and the loss of both normal and emergency core cooling capability
- The steam-pressure build-up inside the reactor vessel, resulting in uncovering the nuclear fuel
- The subsequent oxidation of the zircalloy fuel cladding
- The attempts to relieve the pressure, which also released explosive hydrogen gas
- Release of volatile radioactive fission products
- The design of the spent fuel pool and why it became another challenge to maintain it within its design basis

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#### Instructed By

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**Subject:** FYI - NEI'S RESONSE TO QUESTIONS ON THE ACCIDENT AT FUKUSHIMA-DAIICHI  
**Attachments:** JapaneseNuclearSituation\_FAQs\_04\_05\_2011.pdf

You are probably already aware, but NEI has posted on the Institute's website the attached set of answers to questions about the nuclear emergency at Fukushima-Daiichi.

Mike

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NUCLEAR ENERGY INSTITUTE

## **Frequently Asked Questions: Japanese Nuclear Energy Situation**

*Updated 4.5.2011*

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1. *What is the nuclear industry doing in the short-term to respond to the accident at the Fukushima nuclear power plant?*

The nuclear energy industry's top priority remains providing Japan with the support necessary to achieve safe shutdown of the Fukushima reactors.

The accident at Fukushima Daiichi was caused, in part, by extraordinary natural forces that were outside the plant's required design parameters. Even though the full extent of damage to these reactors still is unknown, the combination of the earthquake and the tsunami challenged the structural integrity and safety of the plant. As more is learned about the Japanese events, more long-term corrective actions will be developed.

The U.S. nuclear energy industry has already started an assessment of the events in Japan and is taking steps to ensure that U.S. reactors could respond to events that may challenge safe operation of the facilities. These actions include:

- Verify each plant's capability to manage major challenges, such as aircraft impacts and losses of large areas of the plant due to natural events, fires or explosions. Specific actions include testing and inspecting equipment required to mitigate these events, and verifying that qualifications of operators and support staff required to implement them are current.
- Verify each plant's capability to manage a total loss of off-site power. This will require verification that all required materials are adequate and properly staged and that procedures are in place, and focusing operator training on these extreme events.
- Verify the capability to mitigate flooding and the impact of floods on systems inside and outside the plant. Specific actions include verifying required materials and equipment are properly located to protect them from flood.
- Perform walk-downs and inspection of important equipment needed to respond successfully to extreme events like fires and floods. This work will include analysis to identify any potential that equipment functions could be lost during seismic events appropriate for the site, and development of strategies to mitigate any potential vulnerabilities.

2. *Could an accident like the one at Japan's Fukushima Daiichi nuclear plant happen in the United States?*

It is difficult to answer this question until we have a better understanding of the precise problems and conditions that faced the operators at Fukushima Daiichi. We do know, however, that Fukushima Daiichi Units 1-4 lost all AC power (offsite power and emergency diesel generators). This situation is called "station blackout." U.S. nuclear power plants are designed to cope with a station blackout event that involves a loss of offsite power *and* onsite emergency power. The Nuclear Regulatory Commission's detailed regulations address this scenario. U.S. nuclear plants are required to conduct

a “coping” assessment and develop a strategy to demonstrate to the NRC that they could maintain the plant in a safe condition during a station blackout scenario. These assessments, proposed modifications and operating procedures were reviewed and approved by the NRC. Several plants added additional AC power sources to comply with this regulation.

In addition, U.S. nuclear plant designs and operating practices since the terrorist events of September 11, 2001, are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of offsite power and all on-site emergency power sources *and* loss of large areas of the plant. U.S. nuclear plants are equipped to deal with these extreme events (“beyond-design-basis events”) and nuclear plant operations staff are trained to manage them.

U.S. nuclear plant designs include consideration of seismic events and tsunamis. It is important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are very region- and location-specific, based on tectonic and geological fault line locations.

3. *How will the U.S. nuclear industry assess the impact of the Fukushima Daiichi accident?*

Until we understand clearly what has occurred at the Fukushima Daiichi nuclear power plants, and any consequences, it is difficult to speculate about the long-term impact on the U.S. nuclear energy program. The U.S. nuclear industry, the U.S. Nuclear Regulatory Commission, the Institute of Nuclear Power Operations, the World Association of Nuclear Operators and other expert organizations in the United States and around the world will conduct detailed reviews of the accident, identify lessons learned (both in terms of plant operation and design), and we will incorporate those lessons learned into the design and operation of U.S. nuclear power plants. When we fully understand the facts surrounding the event in Japan, we will use those insights to make nuclear energy even safer.

In the long-term, we believe that the U.S. nuclear energy enterprise is built on a strong foundation:

- reactor designs and operating practices that incorporate a defense-in-depth approach and multiple levels of redundant systems
- a strong, independent regulatory infrastructure
- a transparent regulatory process that provides for public participation in licensing decisions, and
- a continuing and systematic process to identify lessons learned from operating experience and to incorporate those lessons.

4. *How serious are the releases of radiation from Fukushima Daiichi? Do they represent a threat to human health? Will we see an increase in cancer rates in future years?*

As a result of fuel damage in at least four of the Fukushima reactors, significant releases of radioactive materials have been detected at the site. The implications of these releases on the health and safety of the public are not yet fully understood. The Japanese government implemented emergency planning procedures and evacuated residents within a 12.5-mile radius of the plant before the radiation releases were detected. Authorities are also distributing potassium iodide tablets to specifically protect against exposure from radioactive iodine that may be present in the releases and are monitoring the evacuees for potential exposure. Any speculation about possible health effects would be premature until more accurate and complete data becomes available.



5. *How many U.S. reactors use the Mark I containment design used at the Fukushima Daiichi Units?*

Twenty-three U.S. nuclear plants are boiling water reactors (either BWR-2, BWR-3 or BWR-4) and use the Mark I containment: Browns Ferry 1, 2 and 3; Brunswick 1 and 2; Cooper; Dresden 2 and 3; Duane Arnold; Hatch 1 and 2; Fermi; Hope Creek; Fitzpatrick; Monticello; Nine Mile Point 1; Oyster Creek; Peach Bottom 2 and 3; Pilgrim; Quad Cities 1 and 2; Vermont Yankee. Six U.S. nuclear reactors (Monticello in Minnesota, Pilgrim in Massachusetts, Dresden 2 and 3 and Quad Cities 1 and 2 in Illinois) are the same base design as the Fukushima Daiichi Unit 1 design (BWR-3 design with Mark I containment). Fifteen U.S. nuclear reactors (Browns Ferry 1, 2 and 3 in Alabama; Brunswick 1 and 2 in North Carolina; Cooper in Nebraska; Duane Arnold in Iowa; Hatch 1 and 2 in Georgia; Fermi in Michigan; Hope Creek in New Jersey; Fitzpatrick in New York; Peach Bottom 2 and 3 in Pennsylvania; Vermont Yankee in Vermont) have the same basic design as Fukushima Daiichi Units 2, 3 and 4 (BWR-4 design with Mark I containment). Although these are the same basic reactor design, specific elements of the safety systems will vary based on the requirements of the U.S. NRC.

6. *There have been questions raised in the past about the BWR Mark I containment like that at Fukushima Daiichi. Some critics have pointed to a comment by an NRC official in the early 1980s: "Mark I containment, especially being smaller with lower design pressure, in spite of the suppression pool, if you look at the WASH 1400 safety study, you'll find something like a 90% probability of that containment failing."*

The Mark I containment meets all Nuclear Regulatory Commission design and safety requirements necessary to protect public health and safety. The WASH-1400 safety study referenced was performed in 1975. The Nuclear Regulatory Commission has analyzed the Mark I containment design in great detail since then. The NRC analysis found that the BWR Mark I risk was dominated by two scenarios: station blackout and anticipated transient without scram. The NRC subsequently promulgated regulations for both of these sequences as well as other actions to reduce the probability of containment failure.

GE has made a number of design changes to the Mark I containment to address concerns raised in the past, including modifications to dissipate energy released to the suppression pool and supports to accommodate loads that could be generated. These retrofits were approved by the Nuclear Regulatory Commission and made to all U.S. plants with the Mark I containment.

7. *What happens when you have a complete loss of electrical power to operate pumps in a BWR-3 or 4 reactor with Mark I containment like Fukushima Daiichi Units 1-4?*

If plant operators cannot move water through the reactor core, the water in the reactor vessel begins to boil and turn to steam, increasing pressure inside the reactor vessel. In order to keep the reactor vessel pressure below design limits, this steam is then piped into what is called a "suppression pool" of water or "torus" – a large doughnut-shaped tank that sits beneath the reactor vessel.

Eventually, the water in the suppression pool reaches "saturation" – i.e., it cannot absorb any additional heat and it, too begins to boil, increasing pressure in containment. In order to stay within design limits for the primary containment, operators reduce pressure by venting steam through filters (to scrub out any radioactive particles) to the atmosphere through the vent stack.

If operators cannot pump additional water into the reactor vessel, the water level will begin to drop, uncovering the fuel rods. If the fuel remains uncovered for an extended period of time, fuel damage, possibly including melting of fuel, may occur. If there is fuel damage, and steam is being vented to the suppression pool, then to primary containment, then to secondary containment (in order to relieve

pressure build-up on plant systems), small quantities of radioactive materials will escape to the environment.

8. *Are U.S. emergency planning requirements and practices adequate to deal with a situation like that faced at Fukushima Daiichi?*

Yes. Federal law requires that energy companies develop and perform graded exercises of sophisticated emergency response plans to protect the public in the event of an accident at a nuclear power plant. The U.S. Nuclear Regulatory Commission reviews and approves these plans. In addition, the NRC coordinates approval of these plans with the Federal Emergency Management Agency (FEMA), which has the lead federal role in emergency planning beyond the nuclear plant site. An approved emergency plan is required for the plant to maintain its federal operating license. A nuclear plant's emergency response plan must provide protective measures, such as sheltering and evacuation of communities within a 10-mile radius of the facility. In 2001, the NRC issued new requirements and guidance that focus in part on emergency preparedness at plant sites in response to security threats. The industry has implemented these measures, which address such issues as on-site sheltering and evacuation, public communications, and emergency staffing in the specific context of a security breach. Several communities have used the structure of nuclear plant emergency plans to respond to other types of emergencies. For example, during the 2007 wildfires in California, county emergency officials drew on relationships and communications links they had established during their years of planning for nuclear-related events.

In addition, as part of the emergency plan, nuclear plant operators would also staff Emergency Centers within one hour to provide support to the plant staff during the event. This support would be in the form of:

- Technical expertise (engineering, operations, maintenance and radiological controls)
- Offsite communications and interfaces, (state, local and NRC)
- Security and logistics

9. *Is this accident likely to result in changes to regulatory requirements for U.S. nuclear plants in seismically active areas? Will those regulatory requirements be revisited and made more robust?*

The nuclear energy industry believes that existing seismic design criteria are adequate. Every U.S. nuclear power plant has an in-depth seismic analysis and is designed and constructed to withstand the maximum projected earthquake that could occur in its area without any breach of safety systems. Each reactor is built to withstand the maximum site-specific earthquake by utilizing reinforced concrete and other specialized materials. Each reactor would retain the ability to safely shut down the plant without a release of radiation. Given the seismic history in California, for example, plants in that state are built to withstand an even higher level of seismic activity than plants in many other parts of the country.

Engineers and scientists calculate the potential for earthquake-induced ground motion for a site using a wide range of data and review the impacts of historical earthquakes up to 200 miles away. Those earthquakes within 25 miles are studied in great detail. They use this research to determine the maximum potential earthquake that could affect the site. Each reactor is built to withstand the respective strongest earthquake. Experts identify the potential ground motion for a given site by studying various soil characteristics directly under the plant. For example, a site that features clay over bedrock will respond differently during an earthquake than a hard-rock site. Taking all of these factors into account, experts determine the maximum ground motion the plant must be designed to

withstand. As a result, the design requirements for resisting ground motion are greater than indicated by historical records for that site.

It is also important not to extrapolate earthquake and tsunami data from one location of the world to another when evaluating these natural hazards. These catastrophic natural events are very region- and location-specific, based on tectonic and geological fault line locations.

*10. What would happen to the used fuel in the storage pools if cooling was lost?*

We do not know the precise condition of the used fuel storage pools at Fukushima Units 1, 2, 3 and 4.

Used nuclear fuel at the Fukushima Daiichi plant is stored in seven pools (one at each of the six reactors, plus a shared pool) and in a dry container storage facility (containing nine casks). Sixty percent of the used fuel on site is stored in the shared pool, in a building separated from the reactor buildings; 34 percent of the used fuel is distributed between the six reactor fuel storage pools, and the remaining six percent is stored in the nine dry storage containers. The used fuel pools at the Fukushima Daiichi reactors are located at the top of the reactor buildings for ease of handling during refueling operations. There are no safety concerns regarding the used fuel in dry storage at Fukushima Daiichi.

Used fuel pools are robust concrete and steel structures. Pools are designed with systems to maintain the temperature and water levels sufficient to provide cooling and radiation shielding. The water level in a used fuel pool typically is 16 feet or more above the top of the fuel assemblies. The used fuel pools are designed so that the water in the pool cannot drain down as a result of damage to the piping or cooling systems. The only way to rapidly drain down the pool is if there is structural damage to the walls or the floor.

If the cooling systems are unable to function, the heat generated by the used fuel would result in a slow increase in the temperature of the spent fuel pool water. The operating temperature of the pools is typically around 40 degrees C or 100 degrees F (the boiling point for water is 100 C or 212 F). This slow increase in temperature would result in an increased evaporation rate. Rapid evaporation of the water will not occur.

Exact evaporation rates would depend on the amount of used fuel in the pool and how long it has cooled. The rate at which the pool water level would decrease (due to evaporation or mild boiling) in the absence of cooling system function would not be expected to lower water levels by more than a few percent per day. Given that there is approximately 16 feet or more of water above the used fuel assemblies, operators would have time to find another way to add water to the pools before the fuel would become exposed.

At the surface of the used fuel pool, the dose rate from gamma radiation emanating off the used fuel assemblies is typically less than 2 millirem per hour. If the water level decreases, gamma radiation levels would increase substantially. This increase would be noticed at the radiation monitors near the reactor buildings.

11. *Given that Fukushima Daiichi Unit 1 is a 1970s-vintage plant, do you anticipate increased regulatory requirements and scrutiny on U.S. plants of similar vintage? Do you think the accident will have an impact on license renewal of the older U.S. nuclear power plants?*

The U.S. nuclear energy industry and the Nuclear Regulatory Commission will analyze the events at Fukushima Daiichi, identify lessons learned and incorporate those lessons, as appropriate, into the design and operation of U.S. nuclear power plants.

The U.S. industry routinely incorporates lessons learned from operating experience into its reactor designs and operations. For example, as a result of the 1979 accident at Three Mile Island, the industry learned valuable lessons about hydrogen accumulation inside containment. As an example, after Three Mile Island, many boiling water reactors implemented a modification referred to as a hardened vent or direct vent. This allows the plant to vent primary containment via high pressure piping. This precludes over-pressurization of containment.

12. *Do the events indicate that iodine tablets should be made widely available during an emergency?*

The thyroid gland preferentially absorbs iodine. In doing so it does not differentiate between radioactive and nonradioactive forms of iodine. The ingestion of nonradioactive potassium iodide (KI), if taken within several hours of likely exposure to radioactive iodine, can protect the thyroid gland by blocking further uptake of radioactive forms of iodine. KI does not protect any other part of the body, nor does it protect against any other radioactive element.

The NRC has made available KI tablets to states that have requested it for the population within the 10-mile emergency planning zone (EPZ) of a nuclear reactor. If necessary, KI is to be used to supplement other measures, such as evacuation, sheltering in place, and control of the food supply, not to take the place of these actions. The Environmental Protection Agency and the Food and Drug Administration have published guidance for state emergency responders on the dosage and effectiveness of KI on different segments of the population. According to the EPA guidance, "KI provides optimal protection when administered immediately prior to or in conjunction with passage of a radioactive cloud."

Populations within the 10-mile emergency planning zone of a nuclear plant are at greatest risk of exposure to radiation and radioactive materials including radioactive iodine. Beyond 10 miles, the major risk of radioiodine exposure is from ingestion of contaminated foodstuffs, particularly milk products. Both the EPA and the FDA have published guidance to protect consumers from contaminated foods.

13. *What caused the explosions at Fukushima Daiichi Units 1-3?*

The explosions at Units 1, 2 and 3 appear to have been caused by a build-up of hydrogen.

The uranium fuel pellets are enclosed in metal tubes made of a zirconium alloy. When exposed to very high temperatures, the zirconium reacts with water to form zirconium oxide and hydrogen.

This appears to have happened at Fukushima Daiichi Units 1 and 3, when a portion of the uranium fuel was uncovered. It is assumed that the hydrogen found its way into the reactor building, accumulated there, and ignited.

The explosion in Unit 2 appears to have happened as a result of a similar phenomenon. The hydrogen appears to have ignited inside the reactor.

All units will be continuously monitored for signs of damage to the primary containments. Pressure readings from Units 2 and 3 suggest that a pathway for leakage from containment exists.

*14. Did the reactor cores melt at any of the Fukushima Daiichi reactors? Was there any fuel damage?*

Fukushima Daiichi Units 1, 2, and 3 have experienced some fuel damage, since the fuel rods or portions of the fuel rods were uncovered (not covered with water) for some period of time. There is no evidence of a complete core meltdown at any unit, however.

*15. Are there any additional concerns associated with the mixed oxide fuel in Unit 3?*

Unit 3 installed some mixed oxide (MOx) fuel assemblies during its last refueling outage in September, 2010. Mixed oxide fuel is a combination of uranium oxide and plutonium oxide, and is not used in the U.S. reactors, except for limited experimental testing. Failure to keep MOx fuel assemblies covered with water – and the resulting overheating and damage to the MOx fuel assemblies, and release of fission products – does not pose an additional threat when compared with the traditional uranium oxide fuel assemblies. The melting point of the MOx fuel assemblies is also similar to uranium oxide fuel assemblies, so the risk of damage due to overheating does not increase with the use of MOX fuel.

*16. Do the events indicate that evacuation zones around plants should be extended?*

The events at the Fukushima Daiichi plant should not impact the existing emergency planning requirements in the United States.

The basis for the 10-mile emergency planning zone around nuclear power plants as determined in 1978 by a multi-agency federal task force remains valid. In the United States, a nuclear plant's emergency response plan must provide pre-planned protective measures, such as sheltering and evacuation of the public within a 10-mile radius of the facility. Additional protective measures may be implemented as conditions warrant at the direction of state and local authorities with guidance from the plant site emergency director and the NRC. Japan uses a similar plan. The Japanese government initially issued evacuation orders for a 20-kilometre (12.5-mile) radius around Fukushima Daiichi, and a 3-kilometre radius around Fukushima Daini. The country's nuclear safety commission later recommended that families between 20 and 30 kilometers of the Fukushima Daiichi site voluntarily evacuate.

*17. What will be the impact of the Fukushima Daiichi accident on new nuclear plant construction in the United States?*

New nuclear power plant construction in the United States is in the early stages and proceeding in a deliberate fashion. There is ample time to incorporate lessons learned from these events during the construction period.

Nuclear energy has been and will continue to be a key element in meeting America's energy needs. The nuclear industry sets the highest standards for safety and, through our focus on continuous learning, we will incorporate lessons learned from the events in Japan into the ongoing process of designing, licensing and building new nuclear power plants.

Two companies have started site preparation and other construction-related activities for new nuclear power plants in Georgia and South Carolina, with the expectation that they will receive their combined construction-operating licenses from the Nuclear Regulatory Commission in late 2011 or

early 2012. We expect those new reactor projects to proceed. Both projects use a light water reactor design with advanced safety features – i.e., the reactors rely on natural forces like gravity (rather than engineered safety features like pumps) to deliver water to cool the reactor core.

In addition, a number of companies are moving forward with design, licensing and – at the appropriate time – construction of small modular reactors (SMRs), which also incorporate design features that provide additional safety margin.

Although America's 104 nuclear power plants are safe and meet all requirements necessary to protect public health and safety, these new designs are even safer.

*18. What is the Institute for Nuclear Power Operations (INPO)?*

INPO is an industry organization that was established in December, 1979, in response to the nuclear accident at Three Mile Island. INPO is a non-profit organization that is funded by the nuclear plant operators in the U.S. with a mission to promote the highest levels of safety and reliability of U.S. nuclear plants. They achieve this mission through independent plant evaluations, event analysis and information exchange, training and accreditation of plant training programs and assistance for plants that have operating challenges. INPO in conjunction with its sister organization, the World Association of Nuclear Operators (WANO), will lead the U.S. industry efforts to analyze the events in Japan and incorporate lessons learned into U.S. operations as necessary.

*19. Does the NRC rank U.S. nuclear plants by seismic risk?(answer from NRC website)*

"The NRC does not rank nuclear plants by seismic risk. The objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern U.S. (CEUS) are warranted, consistent with NRC directives. The results of the GI-199 safety risk assessment should not be interpreted as definitive estimates of plant-specific seismic risk because some analyses were very conservative making the calculated risk higher than in reality. The nature of the information used (both seismic hazard data and plant-level fragility information) make these estimates useful only as a screening tool."

*20. Can significant damage to a nuclear plant like we see in Japan happen in the U.S. due to an earthquake? Are the Japanese nuclear plants similar to U.S. nuclear plants?(answer from NRC website)*

"All U.S. nuclear plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those nuclear plants that are located within areas with low and moderate seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account even rare and extreme seismic and tsunami events. In addition to the design of the plants, significant effort goes into emergency response planning and accident management. This approach is called defense-in-depth.

The Japanese facilities are similar in design to some U.S. facilities. However, the NRC has required modifications to the plants since they were built, including design changes to control hydrogen and pressure in the containment. The NRC has also required plants to have additional equipment and measures to mitigate damage stemming from large fires and explosions from a beyond-design-basis event. The measures include providing core and spent fuel pool cooling and an additional means to power other equipment on site."

21. *How are decisions made at U.S. nuclear reactors in the event of an accident?*

When an abnormal operating condition occurs at U.S. nuclear plants, the control room shift manager has 15 minutes to classify the severity of the event using regulatory criteria. Once the classification is made, site personnel notify state and local officials within 15 minutes and the NRC within an hour. The control room shift manager then becomes the emergency director for the event and is empowered to make decisions at the site for mitigating actions that maintain safety of the reactor and therefore protect the health and safety of the public. Within about an hour, the full emergency response organization is assembled, including all technical disciplines and communications specialists to ensure state and local officials and the public are receiving information. The Nuclear Regulatory Commission's operations center, in addition to the presence of resident inspectors at the site, will provide independent oversight of the event and will monitor live plant data. If the severity of the event requires protective actions for the public (sheltering, evacuation, potassium iodide, etc.), state officials will make the decisions to implement these measures based on recommendations from the site emergency director and the NRC. Once a decision to recommend protective action is made, the state officials will notify the public within 15 minutes.

22. *What are the dangers of radioactive iodine?*

Iodine 131, or radioactive iodine, is a fission product produced in a commercial nuclear reactor and used in medical treatments. It forms a vapor that can be transported in the air. Iodine 131 is released at minute levels from nuclear power facilities during normal operation, but it has been detected in Japan at higher levels after the events at the Fukushima Daiichi plant. There is no health concern for U.S. residents from these releases in Japan.

Iodine 131 decays in about two months. When ingested, it is concentrated in the thyroid gland. In high concentrations, the primary health hazard is thyroid cancer, especially in children. Using potassium iodide can decrease the effects of radioactive iodine. Potassium iodide should be taken only after a recommendation from local health officials.

The accident at Three Mile Island is believed to have released 17 curies of iodine 131 from the core; however, no iodine was detected in cow or goat milk following the accident. The Chernobyl accident released approximately 7 million curies of iodine 131. Adult consumption of 1,000 picocuries (1 picocurie is one-trillionth of a curie) per liter concentration for 30 days will result in 24 millirem of radiation dose. For comparison, a typical dose from a chest x-ray is 10 millirem.

23. *What insurance coverage does the U. S. nuclear industry have for property damage, business interruption and liability?*

Insurance coverage for accidental property damage and extended outages resulting from an accident is provided by Nuclear Electric Insurance Limited (NEIL), the U.S. industry's mutual insurance company. For property damage and on-site decontamination, up to \$2.75 billion is available to each commercial reactor site. The policies provide coverage for direct physical damage to, or destruction of, the insured property as a result of an accident ["accident" is defined as a sudden and fortuitous event, an event of the moment, which happens by chance, is unexpected and unforeseeable. Accident does not include any condition which develops, progresses or changes over time, or which is inevitable]. The policies prioritize payment of expenses to stabilize the reactor to a safe condition and decontaminate the plant site.

NEIL's Accidental Outage program provides insurance (similar to commercial business interruption coverage) of up to \$490 million to cover a prolonged accidental outage at a reactor. Following a deductible period, a maximum weekly indemnity of \$4.5 million/week is available.

Third-party liability coverage is provided by American Nuclear Insurers (ANI), which is a joint underwriting association of major U. S. insurance and reinsurance companies. ANI's liability coverage satisfies the requirements of the federal Price-Anderson Act, which established a framework for handling public liability claims that could arise in the event of a nuclear energy incident. Under the Price-Anderson Act, power reactor licensees are required to maintain the maximum level of financial protection commercially available, and are also required to participate in a secondary financial protection (SFP) program managed by ANI. ANI's limit of liability for policies issued to operating power reactor sites is \$375 million. Should an accident at any participating power reactor result in personal injury or off-site damages in excess of \$375 million, all power reactor operators can be charged a retrospective premium of up to a maximum of \$117.495 million per reactor per incident, creating a combined level of protection of nearly \$12.6 billion.

For additional information from the Nuclear Regulatory Commission regarding seismic qualification of the U.S. nuclear plants:

<http://www.nrc.gov/japan/faqs-related-to-japan.pdf>

For additional information from the Food and Drug Administration regarding Japanese food products and potassium iodide supply:

<http://www.fda.gov/NewsEvents/PublicHealthFocus/ucm247403.htm>

For additional information from the Environmental Protection Agency on radiation monitoring in the United States:

<http://www.epa.gov/japan2011/japan-faqs.html>



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**From:** Schmidt, Rebecca  
**Sent:** Wednesday, March 23, 2011 12:00 PM  
**To:** Pederson, Cynthia; Riley (OCA), Timothy  
**Subject:** RE: Plant information spreadsheet  
**Attachments:** image001.jpg; image002.jpg

We are reworking it now—we will send it to you before it goes to the Commission. Please be aware the Commission will make changes to it. They always do.....

**From:** Pederson, Cynthia  
**Sent:** Wednesday, March 23, 2011 11:30 AM  
**To:** Schmidt, Rebecca; Riley (OCA), Timothy  
**Subject:** RE: Plant information spreadsheet

Ok with me. Therefore you will need to delete sentence in my written testimony that refers to it at the very end. Thanks.

**From:** Schmidt, Rebecca  
**Sent:** Wednesday, March 23, 2011 10:16 AM  
**To:** Pederson, Cynthia; Riley (OCA), Timothy  
**Subject:** RE: Plant information spreadsheet

You might want to keep this as info for you to refer to at the hearing. I don't think we should use in your testimony

**From:** Pederson, Cynthia  
**Sent:** Wednesday, March 23, 2011 10:59 AM  
**To:** Schmidt, Rebecca; Riley (OCA), Timothy  
**Subject:** FW: Plant information spreadsheet  
**Importance:** High

Here is the referenced table.

**From:** Lara, Julio  
**Sent:** Wednesday, March 23, 2011 9:58 AM  
**To:** Pederson, Cynthia  
**Cc:** West, Steven; Reynolds, Steven; Boland, Anne; Shear, Gary  
**Subject:** Plant information spreadsheet  
**Importance:** High

Attached is the IL plant data summary spreadsheet.



*Julio Lara, P.E.*

TSS Team Leader, DRP, RIII  
630.829.9731

BA 7/136



## Licensed Nuclear Power Plants in Illinois

	Braidwood Units 1 and 2	Byron Units 1 and 2	Clinton	Dresden Units 2 and 3	LaSalle Units 1 and 2	Quad Cities Units 1 and 2
Operating License Issued	U1: 07/02/1987 U2: 05/20/1988  Expire: U1: 10/17/2026 U2: 12/18/2027	U1: 02/14/1985 U2: 01/30/1987  Expire: U1: 10/31/2024 U2: 11/06/2026	04/17/1987  Expire: 09/29/2026	U2: 02/20/91* U3: 01/12/71  Expire: U2: 12/22/2029 U3: 01/12/2031  * Provisional Operating License: 12/22/1969	U1: 04/17/1982 U2: 12/16/1983  Expire: U1: 04/17/2022 U2: 12/16/2023	U1: 12/14/1972 U2: 12/14/1972  Expire: U1: 12/14/2032 U2: 12/14/2032
Licensed Reactor Power - MegaWatt-Thermal (MWe)	U1: 3586 (1242 MWe) U2: 3586 (1210 MWe)	U1/2: 3600.6 (1242 MWe)	3473 (1115 MWe)	U2: 2957 (930 MWe) U3: 2957 (914 MWe)	U1/2: 3546 (1207 MWe)	U1: 2957 (928 MWe) U2: 2957 (980 MWe)
Reactor Vendor and Containment Type	Westinghouse (W) Pressurized Water Reactor (PWR); Dry Containment	W PWR; Dry Containment	General Electric (GE) Boiling Water Reactor (BWR)-6 Mark III	GE BWR-3 Mark I	BWR-5 Mark II	GE BWR-3 Mark I
Storage of Spent Fuel (Pool / Dry Cask)	Pool	Pool Dry Casks	Pool	Pool Dry Casks	Pool Dry Casks	Pool Dry Casks
Safe Shutdown Earthquake * (g) Design Requirement	0.20	0.20	0.25	0.20	0.20	0.24

\* Safe Shutdown Earthquake (SSE) - the maximum earthquake potential for which certain SSCs are designed to sustain and remain functional.

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**From:** Shane, Raeann  
**Sent:** Tuesday, March 29, 2011 5:00 PM  
**To:** Schmidt, Rebecca  
**Attachments:** Testimony\_EPP\_March 30 2011 - for merge rms edit.docx

Nancy has not had a chance to .PDF it yet, but this should be the final word file.

Raeann Shane  
Sr. Intergovernmental and External Affairs Officer  
Office of Congressional Affairs  
U.S. NRC  
301-415-1699  
[rms2@nrc.gov](mailto:rms2@nrc.gov)

BA/137

**STATEMENT  
BY MICHAEL WEBER, DEPUTY EXECUTIVE DIRECTOR FOR  
MATERIALS, WASTE, RESEARCH, STATE, TRIBAL AND COMPLIANCE PROGRAMS  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
TO THE  
HOUSE COMMITTEE ON TRANSPORTATION AND INFRASTRUCTURE  
SUBCOMMITTEE ON ECONOMIC DEVELOPMENT, PUBLIC BUILDINGS, AND  
EMERGENCY MANAGEMENT**

**MARCH 30, 2011**

Good morning, Mr. Chairman and Members of the Subcommittee. I am pleased to appear before you on behalf of the United States Nuclear Regulatory Commission (NRC) to discuss our emergency planning and preparedness programs at nuclear power facilities in the United States, and to discuss the protective action guidance recently issued by the U.S. Ambassador to American citizens in Japan in response to the events at the Fukushima-Daiichi nuclear power plant site.

NRC's primary mission is to regulate nuclear reactors, materials, and waste facilities in a manner that protects the health and safety of the public and promotes the common defense and security. Emergency preparedness is a key element of the "defense in depth" safety philosophy we employ for nuclear power plants. This philosophy ensures high quality in design, construction, and operation of nuclear power plants; requires redundant safety systems that reduce the chances that malfunctions will lead to accidents; and recognizes that in spite of all these precautions, unforeseen events could occur. Through emergency planning and preparedness, mechanisms are in place to protect the public in the unlikely event that these measures fail.

The NRC emergency preparedness and planning regulations are extensive and require the licensee to develop and demonstrate an effective emergency plan as a condition of their

license. The nuclear power plant operator is required to provide extensive emergency response training to emergency plant workers. For example, they are required to provide severe accident management training to control room operators, and to demonstrate personnel response in a rigorous drill and exercise program. The NRC inspects licensees to ensure that they are meeting emergency preparedness requirements and monitors performance indicators related to emergency preparedness.

To form a coordinated system of emergency preparedness and response, the NRC works with licensees; Federal agencies; State, Tribal, and local officials; and first responders. This program includes an every-other-year full participation exercise that engages both the onsite and offsite response organizations as well as Federal Emergency Management Agency (FEMA). These exercises are evaluated by both FEMA (offsite) and NRC (onsite) staff. NRC resident inspectors also observe licensee on-site emergency drills and exercises. It is safe to say that over the 30-plus years of operating history and at 104 operating nuclear power plants, there have been thousands of drills and exercises designed to ensure optimum response to abnormal and emergency conditions.

For planning purposes, we define two emergency planning zones, or EPZs, around nuclear power plant sites. The first zone, called the Plume Exposure Pathway EPZ, is an area covering a 10-mile radius around a nuclear power plant. This is the area that would require the most immediate protective actions as it has the greatest potential for exposure from a release. Planning for this area is comprehensive and includes such protective actions as evacuation, sheltering, and administration of potassium iodide, as appropriate, for members of the public.

Consideration of these protective actions is prompted at very low projected dose levels. A second emergency planning zone, called the Ingestion Pathway EPZ, covering a 50-mile radius

around each plant is also established to deal with potential lower-level, long-term risks primarily due to exposure from ingestion of contaminated food, milk, and water. This comprehensive planning within the 10 and 50 mile EPZs provides a substantial basis for expansion of response efforts in the event that this is necessary.

Let me now address the NRC's recent protective action recommendation for U.S. citizens in Japan to evacuate out to 50 miles from the Fukushima-Daiichi site. That decision was based on the best information available during an evolving event. NRC began monitoring the event when the tsunami warning was issued for Hawaii and the west coast of the United States. The information flow from the Fukushima site was often confusing and conflicting. In order to provide timely information to the U.S. Ambassador to Japan, and to best protect the health and safety of U.S. citizens in Japan, we based our assessment on the conditions as we understood them at the time. This site has six nuclear power plants and 4 of the plants are facing extraordinary challenges. Units 1, 3 and 4 appeared to have suffered significant damage as a result of reported hydrogen explosions. We suspected that the concrete, secondary containment buildings were severely damaged by the explosions and may not be capable to perform their function of stopping the release of radiation. Unit 4 was in a refueling outage and its entire core had been transferred to the spent fuel pool a little more than 3 months earlier. This means that there was irradiated fuel that had been freshly loaded into the spent fuel pool that was in danger of overheating if the water level dropped, and there were indications that was happening. Additionally, radiation monitors were showing very high levels of radiation on the plant site, which would pose challenges to plant crew attempting to stabilize the reactors, and there were offsite readings indicating that fuel damage had occurred.

Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. In order to

determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's Protective Action Guidelines could be exceeded at a distance of 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. We understood that some of our assumptions were conservative, but believed that it was better to err on the side of protection, especially in the case of a seemingly rapidly deteriorating situation.

If this situation had occurred in the United States, the NRC has resident inspector staff at the plants that can report back to the Region and Headquarters on conditions as they are evolving. In addition, we are able to readily access "live-time" plant parameters and radiation monitors, as well as talk directly to our licensee and emergency management officials allowing us to refine our understanding and consequence assessments. The licensee would then make a recommendation to State or local officials on what protective actions to take. With the Fukushima event we had to make our best decision with what we had available. The Emergency Preparedness framework provides for the expansion of the emergency planning zones as conditions require. Acting in accordance with this framework and with the best information available at the time, the NRC determined that evacuation out to 50 miles for U.S. citizens was an appropriate course of action, and we made that recommendation to other U.S. Government agencies.

This concludes my testimony. Thank you for the opportunity to present this testimony. I would be happy to answer your questions.