

Group LLLL

(Records Released  
In Their Entirety)

**From:** [Lawrence.BURKHART@oecd.org](mailto:Lawrence.BURKHART@oecd.org)  
**To:** [Leeds, Eric](#); [Regan, Christopher](#); [Sheron, Brian](#); [Sangimino, Donna-Marie](#); [Doane, Margaret](#); [Cullingford, Michael](#); [Johnson, Michael](#); [Uhle, Jennifer](#); [Schwartzman, Jennifer](#)  
**Cc:** [Holahan, Gary](#); [Williams, Donna](#); [John.NAKOSKI@oecd.org](mailto:John.NAKOSKI@oecd.org); [Diane.JACKSON@oecd.org](mailto:Diane.JACKSON@oecd.org)  
**Subject:** FW: [Yama] Situation now - Japan NPPs - ECCS mode  
**Date:** Friday, March 11, 2011 5:50:35 AM

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Dear all,

Greetings from Paris. Im sure you've heard about the earthquake in Japan and Im sure you may have your own information sources. But just wanted to pass on this is an email from a colleague (who used to work at NEA but recently returned to Japan).

Apparently all of the 15 Japanese Nuclear Power Plants shutdown successfully but there are some issues with Diesel Generators operating properly at the plants listed below.

I will send more info if it is relevant and if you would like.

Very Best Regards. Larry

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**From:** Akihiro YAMAMOTO [<mailto:a-yamamoto@houshasen.tsuruga.fukui.jp>]  
**Sent:** Friday, March 11, 2011 11:30  
**To:** GAUVAIN Jean, NEA/SURN  
**Cc:** REIG Javier, NEA/SURN; ECHAVARRI Luis, NEA; YOSHIMURA Uichiro, NEA/SURN; GUYOT Lydie, NEA; PEYRAT Marie-Laure, NEA/SURN; GAS Serge, NEA/RE; BREEST Axel, NEA/SURN; MAUNY Elisabeth, NEA/SURN; LAMARRE Greg, NEA/SURN; REHACEK Radomir, NEA/SURN; HUERTA Alejandro, NEA/SURN; JACKSON Diane, NEA/SURN; GAUVAIN Jean, NEA/SURN; NAKOSKI John, NEA/SURN; GRESS Philippe, NEA/SURN; BURKHART Lawrence, NEA/SURN; IANNOLO Nicolina, NEA/SURN; CHAUHAN Roopa, DAF/COMP; [christele.tephanympania@oecd.org](mailto:christele.tephanympania@oecd.org); LITTLE Aileen, NEA/ADMI; 'Carlo Vitanza'; AMRI Abdallah, NEA/SURN  
**Subject:** [Yama] Situation now - ECCS mode

Dear all,

TEPCO (Tokyo Electric Power Company) declared the state of emergency of following NPPs:

Fukushima 1-1  
Fukushima 1-2  
Fukushima 1-3  
Fukushima 2-1 (ECCS mode now)

I am trying to get information why DG can't start up (problem of intake sea water for the cooling DG system?)

There is a fire from turbine building (B1 floor) at Onagawa NPP unit 1 but the fire fighting was completely succeeded.

<http://www.yomiuri.co.jp/dy/national/20110311dy01.htm>

A while ago, Fukui (my office located) had also earthquake (M4.1). We have 15 NPPs but no damage to the NPPs.

LLLL / 1



Yama

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**Akihiro YAMAMOTO**

Ageing Management Specialist

Nuclear Safety Measurement Division

Fukui Prefectural Government

Telephone: +81 (0) 776 20 0314

E-mail: [a-yamamoto@houshasen.tsuruga.fukui.jp](mailto:a-yamamoto@houshasen.tsuruga.fukui.jp)

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**From:** [Lawrence.BURKHART@oecd.org](mailto:Lawrence.BURKHART@oecd.org)  
**To:** [Leeds, Eric](#)  
**Subject:** FW: [Yama] Evacuation order to residents  
**Date:** Friday, March 11, 2011 7:54:41 AM

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Dear Eric,

Im sure you all are very busy there following the situation. Here is the latest from Yama – Im not sure exactly what their State of Emergency means but they are evacuating people as below (but only within 2 km).

Regards. Larry

**From:** Akihiro YAMAMOTO [mailto:[a-yamamoto@houshasen.tsuruga.fukui.jp](mailto:a-yamamoto@houshasen.tsuruga.fukui.jp)]  
**Sent:** Friday, March 11, 2011 13:41  
**To:** 'Akihiro YAMAMOTO'; GAUVAIN Jean, NEA/SURN  
**Cc:** REIG Javier, NEA/SURN; ECHAVARRI Luis, NEA; YOSHIMURA Uichiro, NEA/SURN; GAS Serge, NEA/RE; BREEST Axel, NEA/SURN; MAUNY Elisabeth, NEA/SURN; LAMARRE Greg, NEA/SURN; REHACEK Radomir, NEA/SURN; HUERTA Alejandro, NEA/SURN; JACKSON Diane, NEA/SURN; GAUVAIN Jean, NEA/SURN; NAKOSKI John, NEA/SURN; GRESS Philippe, NEA/SURN; BURKHART Lawrence, NEA/SURN; 'Carlo Vitanza'; AMRI Abdallah, NEA/SURN  
**Subject:** [Yama] Evacuation order to residents

The people of a town near Fukushima Daiichi Units (Within 2 km) were ordered to evacuate their homes.

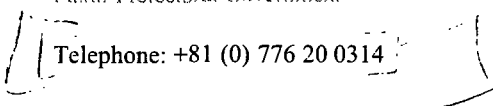
I was mentioned previous emails with regard to ECCS but I think this is very strange that ECCS are really being driven even diesel generators has failed to start.

Please correct that following plants are just in the emergency mode and not in the ECCS mode.

- Fukushima 1-1 - State of emergency
- Fukushima 1-2 - Call off the emergency
- Fukushima 1-3 - State of emergency
- Fukushima 2-1 - State of emergency
- Fukushima 2-2 - State of emergency
- Fukushima 2-4 - State of emergency

-  
Yama

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**Akihiro YAMAMOTO**  
Ageing Management Specialist  
Nuclear Safety Measurement Division  
Fukui Prefectural Government

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E-mail: [a-yamamoto@houshasen.tsuruga.fukui.jp](mailto:a-yamamoto@houshasen.tsuruga.fukui.jp)  
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**From:** Akihiro YAMAMOTO [mailto:[a-yamamoto@houshasen.tsuruga.fukui.jp](mailto:a-yamamoto@houshasen.tsuruga.fukui.jp)]  
**Sent:** Friday, March 11, 2011 8:00 PM  
**To:** 'Akihiro YAMAMOTO'; Jean.GAUVAIN@oecd.org  
**Cc:** Javier.REIG@oecd.org; Luis.ECHAVARRI@oecd.org; Uichiro.YOSHIMURA@oecd.org;

LLLL/2

Serge.GAS@oecd.org; Axel.BREEST@oecd.org; Elisabeth.MAUNY@oecd.org; Greg.LAMARRE@oecd.org;  
Radomir.REHACEK@oecd.org; Alejandro.HUERTA@oecd.org; Diane.JACKSON@oecd.org;  
Jean.GAUVAIN@oecd.org; John.NAKOSKI@oecd.org; Philippe.GRESS@oecd.org;  
Lawrence.BURKHART@oecd.org; 'Carlo Vitanza'; Abdallah.amri@oecd.org  
**Subject:** [Yama] Situation update (19:45 Japan time)

NISA is now holding a press conference.

Fukushima 1-1 (ECCS mode)  
Fukushima 1-2 (ECCS mode) - Call off the emergency  
Fukushima 1-3 (ECCS mode)  
Fukushima 2-1 (ECCS mode)

The problem is that they can't monitor water injection (ECCS).  
It might be a problem of the monitoring system.

In fact, TEPCO called off the emergency of unit 1-2 a while ago because they are able to monitoring the water level in the reactor now.

Yama

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**From:** Akihiro YAMAMOTO [mailto:[a-yamamoto@houshasen.tsuruga.fukui.jp](mailto:a-yamamoto@houshasen.tsuruga.fukui.jp)]

**Sent:** Friday, March 11, 2011 7:30 PM

**To:** 'Jean.GAUVAIN@oecd.org'

**Cc:** 'Javier.REIG@oecd.org'; 'Luis.ECHAVARRI@oecd.org'; 'Uichiro.YOSHIMURA@oecd.org';  
'Lydie.GUYOT@oecd.org'; 'Marie-Laure.PEYRAT@oecd.org'; 'Serge.GAS@oecd.org';  
'Axel.BREEST@oecd.org'; 'Elisabeth.MAUNY@oecd.org'; 'Greg.LAMARRE@oecd.org';  
'Radomir.REHACEK@oecd.org'; 'Alejandro.HUERTA@oecd.org'; 'Diane.JACKSON@oecd.org';  
'Jean.GAUVAIN@oecd.org'; 'John.NAKOSKI@oecd.org'; 'Philippe.GRESS@oecd.org';  
'Lawrence.BURKHART@oecd.org'; 'Nicolina.IANNOLO@oecd.org'; 'Roopa.CHAUHAN@oecd.org';  
'christele.tephanymania@oecd.org'; 'Aileen.LITTLE@oecd.org'; 'Carlo Vitanza'; 'Abdallah.amri@oecd.org'

**Subject:** [Yama] Situation now - ECCS mode

Dear all,

TEPCO (Tokyo Electric Power Company) declared the state of emergency of following NPPs:

Fukushima 1-1  
Fukushima 1-2  
Fukushima 1-3  
Fukushima 2-1 (**ECCS mode now**)

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<http://www.yomiuri.co.jp/dy/national/20110311dy01.htm>

A while ago, Fukui (my office located) had also earthquake (M4.1). We have 15 NPPs but no damage to the NPPs.

Yama

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**Akihiro YAMAMOTO**

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**From:** [Cullingford, Michael](#)  
**To:** [Regan, Christopher](#); [Hopkins, Jon](#); [Astwood, Heather](#); [Quinones, Lauren](#)  
**Cc:** [Leeds, Eric](#); [McGinty, Tim](#); [Boger, Bruce](#); [Grobe, Jack](#); [Foggie, Kirk](#)  
**Subject:** FW: Seismic information  
**Date:** Friday, March 11, 2011 4:29:59 PM  
**Attachments:** [News Releases No5.pdf](#)

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Fyi: Latest info.....mc

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**From:** Aono, Kenjiro [<mailto:aono-kenjiro@jnes-usa.org>]  
**Sent:** Friday, March 11, 2011 4:20 PM  
**To:** Cullingford, Michael  
**Cc:** [yamachika-hidehiko@jnes-usa.org](mailto:yamachika-hidehiko@jnes-usa.org); Aono Kenjiro  
**Subject:** Seismic information

Dear Michael-san,

Thank you for taking time for our meeting. The meeting is very helpful for us.

Attached file is the Seismic information Mr. Nakagawa explained to you today.  
I will e-mail you the latest information continuously.

Best Regards;  
Kenjiro

LLLL/3

March 11, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information (the 5th Release)  
(As of 20:00 March 11, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Higashidori and Onagawa NPSs, Tohoku Electric Power Co., Inc

Higashidori, Fukushima Dai-ichi, and Fukushima Dai-ni NPSs, Tokyo Electric Power Co., Inc. and works at the Japan Nuclear Fuel, and electricity, gas, heat supply and complex as follows:

1. Summary of Damage

(1) Time of Occurrence: 14:46 (UTC 5:46) March 11, 2011, Friday

(2) Epicenter: Off-Coast of Sanriku (North Latitude: 38; East Longitude: 142.9), 10km deep, M8.8

(3) Seismic Intensity in Japanese Scale

<Area of Seismic Intensity Larger Than and Including 4>

7: Northern Miyagi Prefecture

6+: Northern and southern Ibaraki Prefecture

5+: Sanpachi-Kamikita Aomori Prefecture

5-: Chuetsu, Niigata Prefecture

<Municipality of Seismic Intensity Larger than and Including 4>

6+: Naraha Machi, Tomioka Machi, Ookuma-machi, and Futaba-machi, Fukushima Prefecture

6-: Ishinomaki-city and, Onagawa town (by Seismograph of NPP)of , Miyagi Prefecture and Tokaimura, Ibaraki Pref.

5-: Kariwa-village, Niigata Prefecture

4: Rokkasho-village, Higashidori-village, Aomori Prefecture, Kashiwazaki-city, Niigata Prefecture and Yokosuka-city, Kanagawa Prefecture

1: Tomari-village, Hokkaido

2. The status of operation at Power Stations(Number of automatic shutdown(units): 10 (as of 18:45)

a. Onagawa Nuclear Power Station (Onagawa-machi and Ishinomaki-shi, Miyagi Prefecture)

(1) The status of operation

Unit 1 (524MWe): automatic shutdown

Unit 2 (825MWe): automatic shutdown

Unit 3 (825MWe): automatic shutdown

(2) Readings of monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitor readings: No

(3) Report concerning other malfunction

Report of fire: CO2 extinguishment started at 17:15

b. Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co.,Inc.(TEPCO)

(Okuma-machi and Futaba-machi, Futaba-gun, Fukushima Prefecture )

(1) The status of operation

Unit 1 (460MWe): automatic shutdown

Unit 2 (784MWe): automatic shutdown

Unit 3 (784MWe): automatic shutdown

Unit 4(784MW): in periodic inspection outage

Unit 5(784MW): in periodic inspection outage

Unit 6(1,100MW): in periodic inspection outage

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Report concerning other malfunction

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi, Unit 3)

(\*A heightened alert condition)

Article 15\*\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi, Units 1 and 2)

(\*\* Nuclear emergency situation)

c. Fukushima-Daini Nuclear Power Station(TEPCO)

(Naraha-cho/Tomioka-cho, Futaba-gun, Fukushima pref.)

(1) The status of operation

Unit1(1,100MW): automatic shutdown

Unit2(1,100MW): automatic shutdown

Unit3(1,100MW): automatic shutdown

Unit4(1,100MW): automatic shutdown

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Report concerning other malfunction

Report of fire: No

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Units 1,2 and 4)

3. Action taken by NISA

14:46 Set up of the NISA Emergency Preparedness Headquarters (Tokyo)  
immediately after the earthquake

15:42: TEPCO reported to NISA in accordance with Article 10 of the Act on  
Special Measures Concerning Nuclear Emergency Preparedness regarding  
Fukushima Dai-ichi, Units 1,2 and 3.

16:36: TEPCO judged the event in accordance with Article 15 of the Act for  
Special Measures Concerning Nuclear Emergency Preparedness regarding  
Fukushima Dai-ichi, Units 1 and 2.(notified to NISA at 16:45)

18:08: Unit 1 of Fukushima Dai-ni notified NISA of the situation of the  
Article 10 of Act on Special Measures Concerning Nuclear Emergency  
Preparedness.

18:33: Units 1,2 and 4 of Fukushima Dai-ni notified NISA of the situation of  
the Article 10 of Act on Special Measures Concerning Nuclear Emergency  
Preparedness.

19:03 Government declared the state of nuclear emergency

Facilities which have confirmed safety will be eliminated from the next press  
release.



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(Contact Person)

Mr. Masaomi Koyama

Deputy Director, International Affairs

Office, NISA/METI

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

**Bensi, Michelle**

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**From:** Kammerer, Annie  
**Sent:** Tuesday, March 22, 2011 7:36 AM  
**To:** Schmidt, Rebecca; Sheron, Brian  
**Cc:** Powell, Amy; Dricks, Victor; Uselding, Lara; Bensi, Michelle  
**Subject:** RE: Earthquake info  
**Attachments:** Diablo Canyon Q&As.docx

Rebecca,

Attached, please see a Diablo Canyon-specific Q&A sheet that I pulled together out of information from the daily Seismic Q&A document.

I hope it helps with Boxer's visit.

Annie

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**From:** Schmidt, Rebecca  
**Sent:** Monday, March 21, 2011 9:09 PM  
**To:** Kammerer, Annie; Sheron, Brian  
**Cc:** Powell, Amy  
**Subject:** Fw: Earthquake info

So this what I sent and Sen Boxer's staff came back with three questions. First, they asked if all others plants fall in the low category. (I assume so but I thought I would check). Second, what is the definition of seismicity? Third, what are the definitions of high, moderate and low? Are there some scientific parameters? The Senator is touring Diablo Canyon tomorrow so I need an answer tomorrow morning.

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**From:** Schmidt, Rebecca  
**To:** Dedrick, Kathy (EPW) <[Kathy\\_Dedrick@epw.senate.gov](mailto:Kathy_Dedrick@epw.senate.gov)>; [Bettina\\_poirier@epw.senate.gov](mailto:Bettina_poirier@epw.senate.gov)  
<[Bettina\\_poirier@epw.senate.gov](mailto:Bettina_poirier@epw.senate.gov)>  
**Cc:** Powell, Amy; Batkin, Joshua  
**Sent:** Mon Mar 21 17:43:07 2011  
**Subject:** Earthquake info

Press info – I talked to our Director of Public Affairs and will follow up with a call to you.

Earthquake info –

Although we often think of the US as having “active” and non-active” earthquake zones, earthquakes can actually happen almost anywhere. Seismologists typically separate the US into low, moderate and high seismicity zones. The NRC requires that every nuclear plant be designed for site specific ground motions that are appropriate for their locations. In addition, the NRC has specified a minimum ground motion level to which nuclear plants must be designed. The designation of type of zone is open to interpretation but a conservative interpretation – meaning a larger zone—would include the following preliminary estimates:

High Seismicity—Diablo Canyon, SONGS

Moderate Seismicity – Brunswick, Robinson, Summer, Vogtle, Hatch, Clinton, Watts Bar, Sequoya, North Anna

I do not have a definition of High or Moderate but I wanted to get this to you now

## **What does the Japanese Earthquake Mean to Diablo Canyon?**

### **1) Could an earthquake and tsunami the size of the one in Japan happen at Diablo Canyon?**

No. This earthquake occurred on a "subduction zone", which is the type of tectonic region that produces the largest magnitude earthquake. A subduction zone is a tectonic plate boundary where one tectonic plate is pushed under another plate. Subduction zone earthquakes are also required to produce the kind of massive tsunami seen in Japan. In the continental US, the only subduction zone is the Cascadia subduction zone which lies off the coast of far northern California, Oregon and Washington. So, a continental earthquake and tsunami as large as in Japan could only happen there. Outside of the Cascadia subduction zone, earthquakes are not expected to exceed a magnitude of approximately 8.25; and that would only occur on the largest fault lines, such as the San Andreas fault, which is 50 miles away onshore.

### **2) What magnitude earthquake are currently operating US nuclear plants such as Diablo Canyon designed to?**

Each reactor is designed for a different ground motion that is determined on a site-specific basis. Ground motion is a function of both the magnitude of an earthquake and the distance from the fault to the site; and it is ground motion that causes damage. So, Nuclear plants, and in fact all engineered structures, are actually designed based on ground motion levels, not earthquake magnitudes. The existing nuclear plants were designed based on a "deterministic" or "scenario earthquake" basis that accounted for the largest earthquakes expected in the area around the plant. The scenario earthquake at Diablo is a magnitude 7.5 on the Hosgri Fault 3 miles from the main plant. This earthquake results in a ground motion that has a peak ground acceleration of 0.75g, that is 75% of the acceleration of gravity.

### **3) Could the newly discovered Shoreline Fault produce a larger "Scenario Earthquake"?**

The NRC's preliminary analyses indicate that the ground motions from the largest earthquakes expected on the smaller Shoreline Fault do not exceed the ground motions from the Hosgri Fault, for which the plant has already been analyzed and been found to be safe. NRC is currently reviewing the Final Report on the Shoreline Fault that was submitted to the NRC earlier this year. The NRC is performing an independent analysis of potential ground motions based the data contained in the report and other information. Much of the data on the Shoreline Fault comes from the USGS in Menlo Park.

### **4) Could Diablo Canyon withstand an earthquake of the magnitude of the Japanese earthquake?**

It could withstand the ground shaking experienced by the Japanese nuclear plants. As discussed above, it is actually ground motions that structures, systems, and components "feel". We do not have direct recordings of ground motion at the Japanese reactors. However, we do have estimates of shaking that come from a ShakeMap produced by the the K-NET system. The ground motion at the Japanese nuclear reactors is believed to be somewhat smaller than the 0.75g peak ground acceleration that Diablo Canyon has been analyzed to. Do, Diablo Canyon could withstand the ground shaking experienced by the Fukushima plant.

In fact, the Fukushima plant also withstood the earthquake. In the hour or so after the earthquake the Fukushima plant's safety systems, including the diesel generators, performed as expected and effectively shut down the reactor. The cause of the problems at the plant stemmed from the loss of emergency power that appears to be the direct result of the subsequent tsunami, which far exceeded the design basis tsunami for the Fukushima plant.

**5) Is Diablo Canyon's equipment vulnerable to tsunami?**

Nuclear plants are designed to withstand protection against natural phenomena such as tsunami, earthquakes. Diablo Canyon's main plant is located above the flood level associated with tsunami. The intake structures and Auxiliary Sea Water System at Diablo canyon are designed for combination of tsunami and storm wave activity.

**6) How do we know that the emergency diesel generators in Diablo Canyon and SONGS will not fail to operate like in Japan?**

Emergency Diesel Generators (EDGs) are installed in a seismically qualified structure. Even if these EDGs did fail, plants can safely shutdown using station blackout power source law 10 CFR 50.63. In 1988 the NRC concluded that additional regulatory requirements were justified in order to provide further assurance that a loss of both offsite and onsite emergency ac power systems would not adversely affect public health and safety and the station blackout rule was enacted. Studies conducted by the NRC since this rule has been in effect confirms that the hardware and procedures that have been implemented to meet the station blackout requirements have resulted in significant risk reduction and have further enhanced defense-in-depth. However, we plan to carefully evaluate the lessons learned from the events in Japan to determine if enhancements to the station blackout rule are warranted.

**7) Was there any damage to Diablo Canyon from either the earthquake or the resulting tsunami?**

A small tsunami did hit the region around Diablo Canyon. There was no damage at the nuclear plant.

**8) How do we know the evacuation routes in the region around Diablo Canyon are realistic?**

FEMA reviews off-site evacuation plans formally every 2-years during a biennial emergency preparedness exercise. NRC evaluates on-site evacuation plans during the same exercise. Population studies are formally done every 10 years, and evacuation time estimates are re-evaluated at that time. FEMA reviews these evacuation plans, and will conclude their acceptability through a finding of "reasonable assurance" that the off-site facilities and infrastructure is capable of protecting public health and safety in the event of an emergency at DCNPP.

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**From:** OST01 HOC  
**Sent:** Friday, April 22, 2011 2:07 PM  
**To:** Kokajko, Lawrence  
**Subject:** FW: NRC Report on Fukushima  
**Attachments:** image001.jpg

Good afternoon Lawrence,

Would you be able to provide any input on the inquiry below?

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**From:** Franovich, Mike  
**Sent:** Friday, April 22, 2011 1:52 PM  
**To:** OST01 HOC  
**Cc:** Orders, William; Castleman, Patrick; Snodderly, Michael; Hipschman, Thomas; Bowman, Gregory  
**Subject:** NRC Report on Fukushima

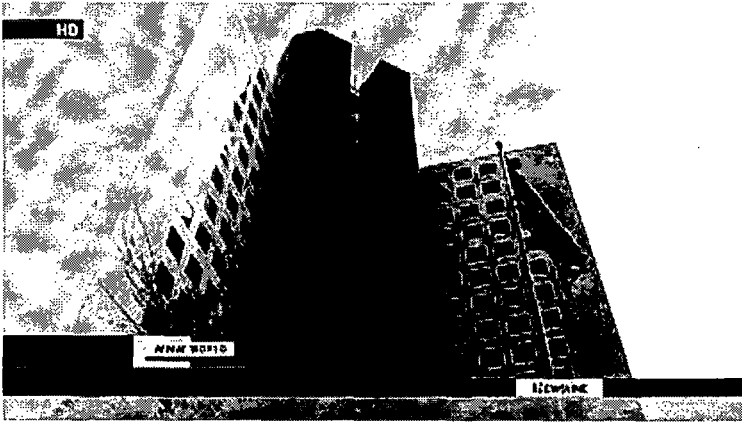
Good afternoon,

Does the staff know which NRC report is being referred to in this NHK report? I believe it might be the OUO interim comprehensive assessment slides from Chuck that were used to brief NISA/GOJ representatives for the event, but would like confirmation.

Thanks,

Mike

*Mike Franovich  
Technical Assistant for Reactors  
Office of Commissioner Ostendorff  
301-415-1784*



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## US NRC: Fukushima plant "static but fragile"

The US Nuclear Regulatory Commission says conditions at the Fukushima Daiichi nuclear plant are "static but fragile" in its latest assessment of the nuclear emergency.

The Commission compiled the report as of April 15th, along with the US Energy Department and other nuclear organizations.

The report suggests that ongoing operations to feed the reactors with water could be affected by the occurrence of more aftershocks.

It recommends a more diversified and redundant feeding system, along with the automation of operations involving large cranes and other equipment to douse the reactors with water.

The report estimates that 67 percent of nuclear fuel has been damaged at reactor No.1, 44 percent at reactor No.2 and 30 percent at reactor No.3.

It says these estimates do not differ greatly from those provided by the plant operator, Tokyo Electric Power Company.

TEPCO has estimated the rate of damage at 70 percent at reactor No.1, 30 percent at No.2, and 25 percent at No.3.

The US Nuclear Regulatory Commission is due to brief the Senate on the latest conditions at the plant on April 28th.

Friday, April 22, 2011 17:42 +0900 (JST)

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**From:** OST01 HOC  
**Sent:** Saturday, March 26, 2011 12:44 PM  
**To:** PMT02 Hoc; PMT11 Hoc; Hoc, PMT12; PMT01 Hoc  
**Subject:** FW: 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 032611 0430EDT.docx

Please check whether this has been communicated/tracked. If yes, whether it has been closed. Please let LIA07 and OST01 know for closeout.

Thanks

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**From:** LIA07 Hoc  
**Sent:** Saturday, March 26, 2011 12:41 PM  
**To:** OST01 HOC  
**Subject:** RE: 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

Attached.

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**From:** OST01 HOC  
**Sent:** Saturday, March 26, 2011 12:38 PM  
**To:** LIA07 Hoc  
**Subject:** RE: 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

Can you please forward the Attachment, per below?

Thanks

Tonya

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**From:** LIA07 Hoc  
**Sent:** Saturday, March 26, 2011 12:36 PM  
**To:** OST01 HOC  
**Subject:** FW: 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

Please check whether this is in the tracking. If yes, whether it has been closed. Let me know so I can include it in the updates. Thanks.

---

**From:** Zimmerman, Roy  
**Sent:** Saturday, March 26, 2011 12:07 PM  
**To:** LIA07 Hoc  
**Cc:** Jones, Cynthia; Virgilio, Martin  
**Subject:** RE: 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

Good Afternoon, page 5 of the status update indicates reentry guide provided to in-country team for their review. last night around 10:00pm I requested the PMT also sent the draft reentry guide to DOE and OSTP for their review. This was a commitment from a SVTC earlier in the week. If that has been done, suggest the status update reflect that action, thx, Roy

**From:** LIA07 Hoc  
**Sent:** Saturday, March 26, 2011 4:43 AM  
**To:** LIA07 Hoc  
**Subject:** 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT (March 26, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

Jim Anderson  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)  
[James.anderson@nrc.gov](mailto:James.anderson@nrc.gov)



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**From:** OST01 HOC  
**Sent:** Monday, March 28, 2011 7:59 AM  
**To:** Coe, Doug  
**Subject:** RE: PMT Director Position

Doug,

Yes, we need a PMT Director today from 3:00 pm to 11:00 pm, as well as tomorrow and Wednesday, from 3:00pm to 11:00 pm. Can you pick up any of these shifts? Sorry for the late notification but Vince Holahan was on these shifts and he was sent to Hawaii late Friday to support these events.

Tony McMurtray  
EST Coordinator

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**From:** Coe, Doug  
**Sent:** Monday, March 28, 2011 7:22 AM  
**To:** PMT03 Hoc  
**Cc:** OST01 HOC; OST02 HOC  
**Subject:** RE: PMT Director Position

Lou,  
Just received your email below. Was in Portland OR on a family matter over the weekend. Do you still need PMT coverage Mon/Tues/Wed this week?  
Doug

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**From:** PMT03 Hoc  
**Sent:** Saturday, March 26, 2011 1:10 AM  
**To:** Coe, Doug  
**Cc:** OST01 HOC; OST02 HOC  
**Subject:** PMT Director Position

Doug,

We're almost complete on the PMT Director roster for next week, but Vince Holahan was sent to Hawaii. We have three slots that you can assist with if you're available. The slots are Monday, Tuesday, and Wednesday, from 3pm-11pm. If you can fill these slots, please respond by copying OST01 and OST02, to be placed on the roster.

Hope to see you then.

Thanks.

Lou

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**From:** OST01 HOC  
**Sent:** Monday, March 28, 2011 9:43 AM  
**To:** Coe, Doug; PMT03 Hoc  
**Cc:** OST02 HOC  
**Subject:** RE: PMT Director Position

Doug,

Thanks you very much!!!

Tony McMurtray  
EST Coordinator

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**From:** Coe, Doug  
**Sent:** Monday, March 28, 2011 9:32 AM  
**To:** PMT03 Hoc  
**Cc:** OST01 HOC; OST02 HOC  
**Subject:** RE: PMT Director Position

I will be available to support PMT per the watchbill below.

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**From:** PMT03 Hoc  
**Sent:** Monday, March 28, 2011 8:13 AM  
**To:** Coe, Doug  
**Cc:** OST01 HOC; OST02 HOC  
**Subject:** RE: PMT Director Position

Doug:

There is an online watch bill in WEBEOC now. The below is what that watch bill reflects for PMT Director this week.

Regards,

Duane Hardesty

| PMTR Director |           |            |                |
|---------------|-----------|------------|----------------|
| Sat-Sun       | 3/26-3/27 | 11pm - 7am | Randy Sullivan |
| Sun           | 27-Mar    | 7am - 3pm  | Don Cool       |
| Sun           | 27-Mar    | 3pm-11pm   | Christiana Lui |
| Sun-Mon       | 3/27-3/28 | 11pm - 7am | John Tappert   |
| Mon           | 28-Mar    | 7am - 3pm  | Don Cool       |
| Mon           | 28-Mar    | 3pm-11pm   | Doug Coe       |
| Mon-Tue       | 3/28-3/29 | 11pm - 7am | John Tappert   |
| Tue           | 29-Mar    | 7am - 3pm  | Terry Reis     |
| Tue           | 29-Mar    | 3pm-11pm   | Doug Coe       |
| Tue-Wed       | 3/29-3/30 | 11pm - 7am | Aby Mohseni    |
| Wed           | 30-Mar    | 7am - 3pm  | Terry Reis     |
| Wed           | 30-Mar    | 3pm-11pm   | Doug Coe       |

|          |           |            |                |
|----------|-----------|------------|----------------|
| Wed-Thur | 3/30-3/31 | 11pm - 7am | Aby Mohseni    |
| Thur     | 31-Mar    | 7am - 3pm  | Randy Sullivan |
| Thur     | 31-Mar    | 3pm-11pm   | Terry Reis     |
| Thur-Fri | 3/31-4/1  | 11pm - 7am | Christiana Lui |
| Fri      | 1-Apr     | 7am - 3pm  | Randy Sullivan |
| Fri      | 1-Apr     | 3pm-11pm   | Don Cool       |
| Fri-Sat  | 4/1-4/2   | 11pm-7am   | Christiana Lui |
| Sat      | 2-Apr     | 7am - 3pm  | Randy Sullivan |
| Sat      | 2-Apr     | 3pm-11pm   | Don Cool       |
| Sat-Sun  | 4/2-4/3   | 11pm - 7am | Christiana Lui |

**From:** Coe, Doug  
**Sent:** Monday, March 28, 2011 7:22 AM  
**To:** PMT03 Hoc  
**Cc:** OST01 HOC; OST02 HOC  
**Subject:** RE: PMT Director Position

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 Doug

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**To:** Coe, Doug  
**Cc:** OST01 HOC; OST02 HOC  
**Subject:** PMT Director Position

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 Hope to see you then.  
  
 Thanks.  
  
 Lou

**From:** Salley, MarkHenry  
**To:** Dehn, Jeff; Tinkler, Charles  
**Cc:** Correia, Richard; Sangimino, Donna-Marie  
**Subject:** RE: Fukushima NPP incident research proposal  
**Date:** Tuesday, March 29, 2011 1:56:10 PM  
**Attachments:** Fukushima NPP incident research proposal.msg

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Jeff,

Thanx, so it is a "doable" option. I'd like to get a second opinion on their proposal from RES's Hydrogen expert to see if this joint work would be worth talking to them about.

Charlie, could you please look at what RSE (Italy) is proposing (Attached) on joint H2 research and let me know your thoughts.

Thanx

MHS

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**From:** Dehn, Jeff  
**Sent:** Tuesday, March 29, 2011 11:20 AM  
**To:** Salley, MarkHenry  
**Cc:** Correia, Richard; Sangimino, Donna-Marie  
**Subject:** RE: Fukushima NPP incident research proposal

Mark,

With Italy, yes we do:

<http://portal.nrc.gov/OCM/ip/agreements/Country%20Arrangements%20in%20Force/Italy%20Arrangement%202010.pdf>

With RSE, no, not specifically, but we aren't restricted from working with them. We could exchange information under the auspices of the OIP Umbrella Arrangement above, but would need another implementing document if we were going to enter into a new research program, exchange money or classified/proprietary information. Which agreement/document is appropriate would depend on the scope of exchange.

From the information I can find on RSE, it seems to be a publicly owned company (fully owned by a public electric utility), and is a non-nuclear specific technical support organization (something like an IRSN or GRS). They are involved in a few different EU networks that NRC participates in, or tracks, including ASAMPSA2 and SARNET2.

With this in mind, I think work with them is possible. If you'd like, we could discuss who would reply and with what message.

Thanks,  
Jeff

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**From:** Salley, MarkHenry  
**Sent:** Tuesday, March 29, 2011 10:12 AM  
**To:** Sangimino, Donna-Marie; Dehn, Jeff  
**Cc:** Correia, Richard  
**Subject:** FW: Fukushima NPP incident research proposal

Donna-Marie, Jeff

Please see the following email. I received this from Italy unsolicited. Question: Do we have any MOU type agreements with Italy, specifically RSE ? I believe we would need that before we could even consider any collaborative research (That was going to be my response to Manzini).

Any other advice?

2222/9

MHS

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**From:** Manzini Giovanni (RSE) [mailto:Giovanni.Manzini@rse-web.it]  
**Sent:** Tuesday, March 29, 2011 4:51 AM  
**To:** Salley, MarkHenry  
**Cc:** Parozzi Flavio (RSE)  
**Subject:** Fukushima NPP incident research proposal

Dear Mr. Salley,

I'm mailing you, following advice of prof. J. Quintiere (Univ. of Maryland), about the tragic event related to recent Japan earthquake: Fukushima nuclear power plant incident.  
In particular, I work in a research team focused on "Nuclear power plants and Safety" of a public research center in Italy and we are very interested in a research activity focused on accidental combustion phenomena (both slow phenomena and explosions) that happened in Fukushima Daiichi reactors.  
In order to give you a better description of this initiative, please read the attached letter.

Sincerely,  
Giovanni Manzini



RSE S.p.A.

SSG - Power Generation Systems Department  
Nuclear Power Plants and Safety team  
via Rubattino, 54  
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Ph. +39 02 39925643  
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e-mail [giovanni.manzini@rse-web.it](mailto:giovanni.manzini@rse-web.it)  
web-site [www.rse-web.it](http://www.rse-web.it)

*RSE SpA ha adottato il Modello Organizzativo ai sensi del D.Lgs.231/2001, in forza del quale l'assunzione di obbligazioni da parte della Società avviene con firma di un procuratore, munito di idonei poteri. RSE adopts a Compliance Programme under the Italian Law (D.Lgs.231/2001). According to this RSE Compliance Programme, any commitment of RSE is taken by the signature of one Representative granted by a proper Power of Attorney.*

*Le informazioni contenute in questo messaggio di posta elettronica sono riservate e confidenziali e ne e' vietata la diffusione in qualsiasi modo o forma. Qualora Lei non fosse la persona destinataria del presente messaggio, La invitiamo a non diffonderlo e ad eliminarlo, dandone gentilmente comunicazione al mittente. The information included in this e-mail and any attachments are confidential and may also be privileged. If you are not the correct recipient, you are kindly requested to notify the sender immediately, to cancel it and not to disclose the contents to any other person.*

Attachment Fukushima NPP incident research proposal.msg (2560 Bytes) cannot be converted to PDF format.

**From:** [Salley, MarkHenry](#)  
**To:** [Sangimino, Donna-Marie](#); [Dehn, Jeff](#)  
**Cc:** [Correia, Richard](#)  
**Subject:** FW: Fukushima NPP incident research proposal  
**Date:** Tuesday, March 29, 2011 10:12:08 AM  
**Attachments:** [Fukushima research proposal letter - Salley - NRC.pdf](#)  
[Manzini Main publications-new mar 2011.pdf](#)

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Donna-Marie, Jeff

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Any other advice?

MHS

---

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**Sent:** Tuesday, March 29, 2011 4:51 AM  
**To:** Salley, MarkHenry  
**Cc:** Parozzi Flavio (RSE)  
**Subject:** Fukushima NPP incident research proposal

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In particular, I work in a research team focused on "Nuclear power plants and Safety" of a public research center in Italy and we are very interested in a research activity focused on accidental combustion phenomena (both slow phenomena and explosions) that happened in Fukushima Daiichi reactors.

In order to give you a better description of this initiative, please read the attached letter.

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web-site [www.rse-web.it](http://www.rse-web.it)

*RSE SpA ha adottato il Modello Organizzativo ai sensi del D.Lgs.231/2001, in forza del*

LLLL/10

*quale l'assunzione di obbligazioni da parte della Società avviene con firma di un procuratore, munito di idonei poteri. RSE adopts a Compliance Programme under the Italian Law (D.Lgs.231/2001). According to this RSE Compliance Programme, any commitment of RSE is taken by the signature of one Representative granted by a proper Power of Attorney.*

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To Mark Henry Salley, U.S. Nuclear Regulatory Commission (NRC), Office of Nuclear Regulatory Research - Division of Risk Analysis - Fire Research Branch Chief, [MarkHenry.Salley@nrc.gov](mailto:MarkHenry.Salley@nrc.gov)

Subject: Fukushima nuclear power plant incident.

Dear Mr. Salley,

I'm mailing you, following advice of prof. J. Quintiere (Univ. of Maryland), about a new and tragic event related to recent Japan earthquake: Fukushima nuclear power plant incident.

In particular, I work in a research team focused on "Nuclear power plants and Safety" of a public research center in Italy (RSE) and we are very interested in the accidental combustion phenomena (both slow phenomena and explosions) that happened in Fukushima Daiichi reactors.

We are collecting data, mainly from IAEA web site (International Atomic Energy Association, [www.iaea.org](http://www.iaea.org)) and other official authorities, to have a more complete knowledge of event (H<sub>2</sub> generation from zirconium - steam reaction in reactor pressure vessels and spent fuel pools, electric cables / panels fires maybe because of operation of electrical power restoration) and to assess if a research program on the combustion aspects of that incident will be possible and to be ready to start asap.

We have competence on both experimental and modeling - numerical topics and we have also developed, validated and used our numerical codes (ECART - ref. Parozzi, Paci, 2006 - OECD, NEA, 2009; Corium-2D - ref. Parozzi et al., 2010) and experimental activity focused on traditional and nuclear plants accidental events. Presently, we are participating in some nuclear safety research projects of European Union (e.g. severe accidents, sodium fast reactors, aerosol releases), as CP-ESFR and SARNET2.

We are programming an activity on Fukushima nuclear plant accidental combustion. This activity represents an extension of other studies on containment problems during severe accidents, such as sodium leakages, water sprays injection for cooling and hydrogen destratification (ref. Manzini, Parozzi, 2011; Malet, Manzini et al., 2011).

So, if you have some indications about data resources inherent Fukushima incident (focused on accidental combustion phenomena), or research teams that are interested to do some work on that event, we will really appreciate your contribute.

Besides, if you have, eventually, some interest to discuss on some kind of collaboration focused on that theme with us, we will be very pleased to do that.

I attach my current main publications list (for many of my papers I was author as Energy - Energetic Department of Polytechnic of Milan because I have worked in the FSE - Fire Safety Engineering team of Applied Thermal Engineering group of that Dept. for many years).

Sincerely,  
Giovanni Manzini



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web-site [www.rse-web.it](http://www.rse-web.it)

## References

- Malet J., Manzini G. et al., *Spray model validation on single droplet heat and mass transfers for containment applications - Sarnet-2 benchmark*, Full paper, 14th International Topical Meeting on Nuclear Reactor Thermalhydraulics - NURETH-14, Toronto, Ontario, Canada, Sept. 2011;
- Manzini G., Parozzi F., *Sodium Pool Heating and Fire - Experiments and Modeling*, poster, IAFSS 10th int. symposium, Univ. of Maryland, June 2011;
- OECD – NEA, *State-of-the-Art Report on Nuclear Aerosols*, Report NEA/CSNI/R(2009)5, Dec. 2009;
- Parozzi F., Paci S., *Development and Validation of the ECART Code for the Safety Analysis of Nuclear Installations*, Full paper, Proceedings of ICON14, 14th International Conference on Nuclear Engineering, July 17-20, 2006, Miami, Florida USA, July 2006;
- Parozzi F., Polidoro F., Naviglio A., Zardo G., *Fast Running Models of Molten Corium Coolability for Safety Analysis of Nuclear Reactors*, Full paper, 65° ATI (Italian Association of Thermotecnics) National Congress, Domus de Maria (CA), Italy, Sept. 2010.

## Main publications

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- [1] Manzini G., Il Manuale dell'ingegnere meccanico (*The mechanical engineer handbook*), a cura di P.Andreini, cap: 32, Sistemi antincendio (*Fire safety systems*), Hoepli Ed., 2005;

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- [1] Manzini G., Il collasso di tensione nelle moderne reti elettriche (*The voltage collapse in the modern electrical grids*), L'Omar nuovo (*id.*), Mar. 1999;
- [2] Manzini G., Il rischio scariche atmosferiche – La valutazione ai fini progettuali (*Lightning risk – The assessment focused on design*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Nov. 15, 2001;
- [3] Manzini G., Il rischio scariche atmosferiche – Gli LPS e le misure aggiuntive (*Lightning risk – The LPS and additional systems*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Nov. 30, 2001;
- [4] Manzini G., La progettazione dei sistemi di protezione contro le scariche atmosferiche (*Lightning protection systems design*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Jan. 31, 2002;
- [5] Manzini G., La tecnologia dei sistemi di protezione contro le scariche atmosferiche (*Lightning protection systems technology*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Feb. 15, 2002;
- [6] Manzini G., Risk management (*id.*), L'Omar nuovo (*id.*), Apr. 2002;
- [7] Manzini G., Il rischio di esplosione (*The risk of explosion*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Apr. 15, 2002;
- [8] Manzini G., Il rischio puro e la sua gestione (*The pure risk and his management*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Oct. 15, 2002;
- [9] Manzini G., Il rischio di esplosione, versione ampliata (*The risk of explosion, amplified version*), Elettrificazione (*Electrification*), Feb. 2003;
- [10] Andreini P., Manzini G., Parolini P., La tecnologia water mist per il controllo e l'estinzione degli incendi (*Water mist technology dedicated to fire control and extinction*), La Termotecnica (*Thermotechnics*)<sup>1</sup>, with referees, Feb. 2005;
- [11] Andreini P., Manzini G., Parolini P., Galli E., Efficienza dell'erogazione water mist in scenari d'incendio di una linea metropolitana (*Water mist effectiveness in metro line fire scenarios*), La Termotecnica (*Thermotechnics*), with referees, May 2005;
- [12] Manzini G., Le barriere water mist per la protezione attiva contro gli incendi (*Indirect water mist injections for fire protection*), La Termotecnica (*Thermotechnics*), with referees, Dec. 2005;
- [13] Manzini G., Rischi di esplosione nei luoghi di lavoro. In vigore le nuove regole (*Working places explosion risks. The new codes*), La Termotecnica (*Thermotechnics*), with referees, June 2006;
- [14] Manzini G., Il rischio di esplosione negli ambienti di lavoro – I capisaldi della legislazione comunitaria (*The risk of explosion in the working places – The cornerstones of european legislation*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), Nov. 25, 2006;
- [15] Manzini G., Iannantuoni L., Whirling flames – Formazione, sviluppo e mantenimento (*Whirling flames – formation, development and sustainment*), La Termotecnica (*Thermotechnics*), with referees, Nov. 2006;
- [16] Manzini G., Iannantuoni L., Whirling flames – Principali riscontri di una fase sperimentale in ambiente confinato (*Whirling flames – Main results of experimental activity in confined space*), La Termotecnica (*Thermotechnics*), with referees, June 2007;

<sup>1</sup> Official review of ATI (Italian Association of Thermotechnics).

- [17] Manzini G., Il rischio di esplosione negli ambienti di lavoro – Un documento di guida per la certificazione dei prodotti da utilizzare nelle atmosfere potenzialmente esplosive (*The risk of explosion in the working places – A guidance document for the certification of products to use in potentially explosive atmospheres*), Il giornale dell'installatore elettrico (*The journal of electrical installer*), June 15, 2007;
- [18] Manzini G., Iannantuoni L., Andreini P., Analisi delle fasi di formazione, sviluppo e mantenimento delle "Whirling flames", con l'ausilio della sperimentazione e della termo fluidodinamica computazionale (*Whirling flames formation, development and sustainment analysis in fire scenarios, by experimental activities and CFD*), Full paper, Proceedings of 62° ATI National Congress, Salerno – Italy, with referees, Sept. 11 – 14, 2007;
- [19] Manzini G., La definizione degli scenari – Analisi probabilistica e modellazione degli eventi più rappresentativi (*Scenarios definition – Probabilistic analysis and modelling of most representative events*), Full paper, Proceedings of A.I.I.A. (SFPE Italian chapter) 10° national congress "The Fire engineering numerical models", Milan, Oct. 22, 2007;
- [20] Manzini G., I sistemi water mist - Valutazione dell'efficacia delle erogazioni di tipo diretto e indiretto su incendi di classe B (*Water mist systems – Direct and indirect effectiveness assessment in class B fire scenarios*), Full paper, Proceedings of A.I.I.A. (SFPE Italian chapter) congress "Water mist technology – State of the art and perspectives", Milan, Feb. 12, 2008;
- [21] Manzini G., Sicurezza nei trasporti – Protezione antincendio nelle gallerie stradali (*Transport safety – Road tunnels fire protection*), La Termotecnica (*Thermotechnics*), with referees, Mar. 2008;
- [22] Manzini G., Iannantuoni L., Whirling Flames Formation, Development and Sustainment Analysis in Fire Scenarios, FS World (Fire&Safety Group review), Spring '08;
- [23] Manzini G., Iannantuoni L., Andreini P., Considerazioni riguardanti la stabilità delle "whirling flames" di origine incidentale, con il supporto della sperimentazione e della termofluidodinamica computazionale (*Fire scenarios whirling flames stability analysis considerations by modelling, experimental activity and CFD*), Full paper, Proceedings of 63° ATI National Congress, Palermo – Italy, with referees, Sept. 23 – 26, 2008;
- [24] Manzini G., Smirnov N., Fire protection of road and metro tunnels by water mist systems, Extended abstract, Proceedings of Security Research Conference 2008, CNIT - Paris La Defense, Sept. 29 – 30, 2008;
- [25] Manzini G., Parozzi F., Nigro L., Ferrari A., Multifloor building fire scenarios - Assessment of smoke control strategies effectiveness by correlations, fast running tools and CFD code, Extended abstract, Proceedings of SFPE annual meeting 2008, Charlotte (NC-USA), with referees, Oct. 12 – 17, 2008;
- [26] Manzini G., Iannantuoni L., Andreini P., Stabilità delle Whirling flames – Sperimentazioni e termo fluidodinamica computazionale (*Whirling flames stability – Experiments and computational thermo-fluid-dynamics*), La Termotecnica (*Thermotechnics*), with referees, Nov. 2008;
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- [28] Coghe A., Manzini G., Araneo L., Iannantuoni L., Non-linear effects of pulverized inert fluid on pool burning, Poster session, Proceedings of Workshop on Measurement and Computation of Turbulent Spray Combustion, Ercoftac, with referees, Porticcio - Ajaccio, Corsica, France, June 7, 2009;
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- [30] Manzini G., Iannantuoni L., A unified graphic environment dedicated to SES code for optimization of fire ventilation strategies in subway networks, Full paper, Proceedings of Advanced Problems in Mechanics – International Summer School-Conference (APM 2009), with referees, St. Petersburg, Russia, June 30 – July 5, 2009;
- [31] Manzini G., Iannantuoni L., Effectiveness assessment of road tunnel fire-fighting strategies by ventilation and water mist systems, Full paper, Proceedings of Advanced Research Workshop "Fire Protection and Life

Safety in Buildings and Transportation Systems", with referees, Cantabria University, Santander, Spain, Oct. 15 – 17, 2009;

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- [33] Manzini G., Iannantuoni L., *Water mist fire protection – Research on a numerical toolbox for systems effectiveness assessment*, Full paper, Proceedings of Suppression, Detection and Signaling Research and Applications – A Technical Working Conference (SUPDET 2010), with referees, Orlando, FL (USA), Feb. 16 - 19, 2010;
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- [35] Manzini G., Iannantuoni L., *Water mist modeling and smoke transport in tunnel fire scenarios*, Full paper, Proceedings of 6<sup>th</sup> International Seminar on Fire and Explosion Hazards (6FEH), with referees, Leeds, UK, Apr. 11 - 16, 2010;
- [36] Manzini G., Parozzi F., Polidoro F., *Fast reactor nuclear power plants – Sodium releases fire safety*, Full paper, Proceedings of 6<sup>th</sup> International Seminar on Fire and Explosion Hazards (6FEH), with referees, Leeds, UK, Apr. 11 - 16, 2010;
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<sup>2</sup> Journal of the Fire Protection Association and the Institution of Fire Engineers.

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- [10] Manzini G., Energia nucleare, la Francia guida la ripresa (*Nuclear energy, France leading the arise*), il Giornale dell'Ingegnere (*the Journal of Engineer*), n. 10 - June 01, 2007;
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<sup>3</sup> CESI (Italian Experimental Electrotechnical Centre) is a Research Centre dedicated to energy conversion systems.

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- [28] Manzini G., La tragedia di Viareggio - Fuga ed esplosione del gpl (*Viareggio tragedy - Leak and explosion of lpg*), il Giornale dell'Ingegnere (*the Journal of Engineer*), n. 14 - Sept. 01, 2009;
- [29] Manzini G., Energia nucleare - SFR, i reattori veloci raffreddati con sodio liquido (*Nuclear energy -SFR, fast reactors cooled by liquid sodium*), La Termotecnica (*Thermotechnics*), n. 6 - July - Agoust, 2010.

**Greenwood, Carol**

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**From:** Gibson, Kathy  
**Sent:** Tuesday, March 29, 2011 6:29 AM  
**To:** Sheron, Brian; Uhle, Jennifer; Tinkler, Charles; Lee, Richard  
**Subject:** Fw: JAEA/NRC collaboration  
**Attachments:** image001.jpg

Some plant info - you may already know...

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

**From:** Kazuhiko KUNITOMI <kunitomi.kazuhiko@jaea.go.jp>  
**To:** Gibson, Kathy; Scott, Michael  
**Cc:** Uhle, Jennifer; Valentin, Andrea; Zaki, Tarek; Rubin, Stuart; Sangimino, Donna-Marie; Carlson, Donald; 'Ogawa Masuro' <ogawa.masuro@jaea.go.jp>; 'Ohashi Hirofumii' <ohashi.hirofumi@jaea.go.jp>; 'Tachibana Yukio' <tachibana.yukio@jaea.go.jp>; 'iyoku.tatsuo' <iyoku.tatsuo@jaea.go.jp>  
**Sent:** Tue Mar 29 05:48:52 2011  
**Subject:** RE: JAEA/NRC collaboration

Kathy

Thank you very much for your support. Also, we appreciate very much the USNRC delegation came to Fukushima and works very hard to keep the reactor safe condition. Yesterday it was found that puddles of radioactive water remain in the reactor building and some of them leaked into the trenches outside the buildings. If the water overflows and goes into the sea, contamination will expand very badly. And the large amount of the high radiation level water points to the RPV failure. If so, it take a long time to fix the RPV and CV or add a shielding wall outside the buildings.

Regarding the HTGR collaboration, I will wait for Mike's response.

Best regards,

Kazu

**From:** Gibson, Kathy [mailto:Kathy.Gibson@nrc.gov]  
**Sent:** Friday, March 25, 2011 9:48 PM  
**To:** Kazuhiko KUNITOMI; Scott, Michael  
**Cc:** Uhle, Jennifer; Valentin, Andrea; Zaki, Tarek; Rubin, Stuart; Sangimino, Donna-Marie; Carlson, Donald; Ogawa Masuro; Ohashi Hirofumii; Tachibana Yukio; 'iyoku.tatsuo'  
**Subject:** RE: JAEA/NRC collaboration

Kazu,

It is good to hear from you. We are so sad about the situation in Japan and doing our best to support your efforts. Mike Scott is in Japan presently with our NRC delegation at the embassy. We would be happy to have you come to Washington in April, however it is likely

LLLL/11



that Mike will be going to the NGNP meeting in Albuquerque so it may be more convenient for you to meet with him there. Mike will be in touch with you next week after we finalize travel approvals for the Albuquerque meeting. Either way, we look forward to the HTTR cooperation and we are happy that, despite the tragedy in your country, this project can still proceed.

My very best wishes to you, your colleagues and families,

Kathy

From: Kazuhiko KUNITOMI [mailto:kunitomi.kazuhiko@jaea.go.jp]  
Sent: Friday, March 25, 2011 12:15 AM  
To: Scott, Michael  
Cc: Uhle, Jennifer; Valentin, Andrea; Zaki, Tarek; Rubin, Stuart; Sangimino, Donna-Marie; Gibson, Kathy; Carlson, Donald; Ogawa Masuro; Ohashi Hirofumii; Tachibana Yukio; 'iyoku.tatsuo'  
Subject: JAEA/NRC collaboration

Dear Dr. Scott,

CC Dr. Jennifer, Kathy, Stu, Don

We still have big aftershocks with the magnitude of 5 to 6. But electricity and water returned to normal. Now gasoline shortage is the biggest problem around here. Also, roads and train rails were damaged so badly that we have trouble commuting and going to Tokyo.

In Oarai, about 4 meter high tsunami hit the downtown. Some trucks and containers parked in the Oarai port were flown to the inland side. Fortunately, residents in the downtown managed to escape from the seaside to a hill or buildings and no casualties are reported so far because the tsunami hit Oarai about half an hour later than the tsunami in Tohoku area. The left lane of the route 51 along the sea coast (the road to JAEA) was collapsed and has been closed since the earthquake. Can you imagine this size of earthquake and tsunami? We Japanese get used to the earthquake. But nobody has experienced this magnitude. It was really scary.

Regarding the Fukushima LWRs, the situation is becoming better. However, it is still difficult to measure reactor internal condition. There are still the possibility that things will turn for the worse. The day before yesterday, after the electricity was restored into the No. 1 unit, some of the instruments showed the RPV temperatures were more than 400C that is in the creep range. Sea water was immediately pumped into the core to cool the RPV, and the temperature was stabilized under 370C. But the sea water injection would make the inside



pressure of the RPV and CV higher than the limit. So it is very difficult to keep the LWRs a stable condition. Meanwhile, many engineers are working very hard to fix the cooling pumps, electricity equipments once drenched with the tsunami. If they finished repairing and restart the cooling system, cooling condition will be much better.

The radiation tainted milk and spinach in Fukushima, and Iodine contaminated water in Tokyo area made average people very nervous. All TV broadcasted this level of contamination will not pose a threat to health. On the other hand, they reported that many people rushed to denude bottled waters in all supermarkets and convenience stores, and now no bottled waters are left in there. I am afraid very much that this kind of bad rumors will make normal people much more nervous, and panic buying will happen. Actually, after this kinds of information, famers in Fukushima and Ibaraki got in a big trouble and are forced to dispose of all dairy products and vegetables. It's too bad.

It is not a good timing to sell the advantage of the HTGR. Yet, I think we should prepare for questions on the safety of the HTGR. I plan to attend the NGNP conference to be held at Albuquerque in April 26-29. Before that week, if possible April 22, I and my colleague Dr. Ohashi will visit to NRC to discuss on the HTGR safety. Of course we will discuss how to run the OECD/NEA LOFC project and how to use this project for not only V&V of safety codes but also examination of the safety standard of the HTGR.

I would appreciate very much if you could accept our visit proposal.

Best regards,  
Kazu KUNITOMI

\*\*\*\*\*

Kazuhiko KUNITOMI Ph.D  
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Small-sized HTGR Reseach and Development Division  
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TEL +81-29-266-7897  
FAX +81-29-266-7608  
E-mail : kunitomi.kazuhiko@jaea.go.jp



\*\*\*\*\*

**From:** Nelson, Robert  
**To:** Gerke, Laura; Leeds, Eric  
**Subject:** RE: Diversity and your email==Japanese Event Response and Available Resources  
**Date:** Tuesday, March 22, 2011 10:00:21 AM

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I understand the sensitivity

NELSON

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**From:** Gerke, Laura  
**Sent:** Tuesday, March 22, 2011 9:59 AM  
**To:** Leeds, Eric; Nelson, Robert  
**Subject:** Diversity and your email==Japanese Event Response and Available Resources

I'm sure the optics of this message were unintended, but it comes across that no women are qualified to serve on the External Communications Team. Important to keep an eye out for diversity, even, or maybe particularly, during a crisis.  
Laura

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**From:** Schwarz, Sherry **On Behalf Of** Leeds, Eric  
**Sent:** Monday, March 21, 2011 6:03 PM  
**To:** NRR Distribution  
**Subject:** Japanese Event Response and Available Resources

I want to echo the Commission and Bill Borchardt's words of appreciation and admiration spoken of the staff during the Commission Meeting this morning. NRR has provided tremendous support over the last week, and we will continue our efforts in the weeks, months, and years to come.

In our continued efforts to assist with responding and centralizing information related to events in Japan, we've added a new feature to the homepage of the NRR internal SharePoint site, "[Japan Event Information](#)." All of the information under this title has been publicly released or has been approved to be used publicly in our responses to related questions that might arise. Included in the list is a link to the NRC public web site, "[NRC Actions on Japan's Emergency](#)," where you may find information related to NRC actions, including news releases, NRC Blog posts, Frequently Asked Questions (FAQs), and other related information and sources. Please be sure to check these resources frequently, as information is being updated daily.

In addition, I've assigned Bob Nelson, Deputy Director, Division of Operating Reactor Licensing (DORL), as the NRR Coordinator for External Communications related to NRR's response to the recent events in Japan. Assisting Nelson will be Sean Meighan and Quynh Nguyen from the NRR front office, Eric Thomas from Division of Inspection and Regional Support, Eric Oesterle from the Office of New Reactors and a communications "tiger team" formulated in DORL headed by Mike Markley. Harold Chernoff will also provide assistance as needed. Nelson and his team will be responsible for coordinating the development and review of related Qs & As and coordinating the response to related controlled correspondence tasked to NRR, including related 2.206 petitions.

LLL/12

Please forward all of your requests for support in this area, to Nelson, 301-415-1453.

Thank you all for your continued support!

*Eric*

- NRR SharePoint Site: <http://portal.nrc.gov/edo/nrr/default.aspx>
- NRC Public Website: NRC Actions on Japan's Emergency:  
<http://www.nrc.gov/japan/japan-info.html>

**From:** Leeds, Eric  
**To:** Boger, Bruce; Grobe, Jack; Brown, Frederick; McGinty, Tim; Hiland, Patrick; Skeen, David; Ruland, William; Giitter, Joseph; Thorp, John; Virgilio, Martin; Wittick, Brian  
**Subject:** RE: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT  
**Date:** Friday, March 11, 2011 7:42:59 AM

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Great idea Bruce – thank you. And thanks for taking the call!!!!

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

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**From:** Boger, Bruce  
**Sent:** Friday, March 11, 2011 5:52 AM  
**To:** Leeds, Eric; Grobe, Jack; Brown, Frederick; McGinty, Tim; Hiland, Patrick; Skeen, David; Ruland, William; Giitter, Joseph; Thorp, John; Virgilio, Martin; Wittick, Brian  
**Subject:** Fw: HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

West coast landfall estimated to be around 11:00 am EST. An update call will take place at 8:00 am EST. NRR should call into the Ops Center at that time, perhaps as group from O-13D20?

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**From:** HOO Hoc  
**To:** HOO Hoc  
**Sent:** Fri Mar 11 05:09:33 2011  
**Subject:** HOO HIGHLIGHT - DIABLO CANYON UNUSUAL EVENT

Diablo Canyon declared a Notice of Unusual Event at 0123 PST due to a Tsunami Warning for the coastal areas of California as a result of a 8.9 magnitude earthquake off the coast of Japan. The Agency remains in the NORMAL response mode as of 0452 EST.

Joe O'Hara  
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.sgov.gov](mailto:hoo1@nrc.sgov.gov)



LLLL/13

**From:** Breskovic, Clarence  
**To:** Breskovic, Clarence  
**Subject:** Japan Update: Water levels at Fukushima; Onagawa fire extinguished  
**Date:** Friday, March 11, 2011 12:25:52 PM

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### **Update9: 3,000 Ordered To Evacuate Near Quake-hit Fukushima Nuclear Plant**

Tokyo, March 12 Kyodo -- (EDS: ADDING FIRE EXTINGUISHED AT ONAGAWA PLANT) Japan declared a state of atomic power emergency Friday after the country, which has about 50 nuclear power reactors, was hit by a magnitude 8.8 earthquake, instructing around 3,000 residents near the Fukushima No. 1 plant to evacuate.

Top government spokesman Yukio Edano told an evening press conference, "We have a situation where one of the reactors (of the plant) cannot be cooled down." But the chief Cabinet secretary said the evacuation instruction was only precautionary.

Edano said, "No radiation has leaked outside the reactor. The incident poses no danger to the environment at the moment." He also said early Saturday in Tokyo the incident was under control.

The post-quake situation prompted the Vienna-based International Atomic Energy Agency to scramble for details from contacts in Japan's industry ministry, while saying in a statement that at least four nuclear power plants "closest to the quake have been safely shut down" after the 2:46 p.m. quake.

Tokyo Electric Power Co., the operator of the Fukushima plant, reported that the water level around fuel rods was falling in the reactor. Radioactive materials could be emitted if part of a fuel rod is exposed to the air.

But officials of the prefectural government dismissed the view that the plant is in a critical situation, saying the top of the water is 3.4 meters above the fuel rods at the troubled No. 2 reactor.

The evacuation advisory was issued for people living within a 3-kilometer radius of the plant, while those living within a 10-kilometer radius were asked to stay home, Edano said.

Prime Minister Naoto Kan declared the emergency, the first in the quake-prone country, so that authorities can easily implement emergency relief measures, Edano said. Defense Minister Toshimi Kitazawa ordered the Self-Defense Forces to act in response to the declaration.

The Defense Ministry dispatched a chemical corps of the Ground Self-Defense Force to the plant and Motohisa Ikeda, senior vice industry minister, also left for Fukushima by an SDF helicopter.

According to the industry ministry, a total of 11 nuclear reactors automatically shut down at the Onagawa plant, the Fukushima No. 1 and No. 2 plants and the Tokai No. 2 plant after the strongest recorded earthquake in the country's history.

A fire started at a building housing the turbine of the Onagawa plant in Miyagi at 3:30 p.m. but was put out before 11 p.m., the operator, Tohoku Electric Power Co., said, denying it had detected any signs of radiation leaks.

Water spilled from pools containing fuel rods at the Kashiwazaki-Kariwa plant on the Sea of Japan coast in Niigata Prefecture and the Onagawa plant, the operators said, saying they saw no signs suggesting radiation leaks.

LLLL/14

March 12, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information(the 10<sup>th</sup> Release)  
(As of 4:30 March 12, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Higashidori and Onagawa NPSs, Tohoku Electric Power Co., Inc

Higashidori, Fukushima Dai-ichi, Fukushima Dai-ni and Kashiwazaki-Kariwa NPSs, Tokyo Electric Power Co., Inc. and electricity, gas, heat supply and complex as follows:

1. Summary of Damage(Earthquake at Sanriku-Oki)

(1) Time of Occurrence: 14:46 (UTC 5:46) March 11, 2011, Friday

(2) Epicenter: Off-Coast of Sanriku (North Latitude: 38; East Longitude: 142.9), 10km deep, M8.8

(3) Seismic Intensity in Japanese Scale

<Area of Seismic Intensity Larger Than and Including 4>

7: Northern Miyagi Prefecture

6+: Northern and southern Ibaraki Prefecture

5+: Sanpachi-Kamikita Aomori Prefecture

5-: Chuetsu, Niigata Prefecture

<Municipality of Seismic Intensity Larger than and Including 4>

6+: Naraha Machi, Tomioka Machi, Ookuma-machi, and Futaba-machi, Fukushima Prefecture

6-: Ishinomaki-city and, Onagawa town (by Seismograph of NPP)of , Miyagi Prefecture and Tokaimura, Ibaraki Pref.

5-: Kariwa-village, Niigata Prefecture

4: Rokkasho-village, Higashidori-village, Aomori Prefecture, Kashiwazaki-city, Niigata Prefecture and Yokosuka-city, Kanagawa Prefecture



1: Tomari-village, Hokkaido

1. The status of operation at Power Stations(Number of automatic shutdown(units): 10 (as of 03:30, March12)

a. Onagawa Nuclear Power Station (Onagawa-machi and Ishinomaki-shi, Miyagi Prefecture)

(1) The status of operation

Unit 1 (524MWe): automatic shutdown

Unit 2 (825MWe): automatic shutdown

Unit 3 (825MWe): automatic shutdown

(2) Readings of monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitor readings: No

(3) Report concerning other malfunction

Report of fire: CO2 extinguishment started at 17:15

b. Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co.,Inc.(TEPCO)

(Okuma-machi and Futaba-machi, Futaba-gun, Fukushima Prefecture )

(1) The status of operation

Unit 1 (460MWe): automatic shutdown

Unit 2 (784MWe): automatic shutdown

Unit 3 (784MWe): automatic shutdown

Unit 4(784MW): in periodic inspection outage

Unit 5(784MW): in periodic inspection outage

Unit 6(1,100MW): in periodic inspection outage

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Report concerning other malfunction

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi, Unit 3)

(\*A heightened alert condition)

Article 15\*\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi, Units 1 and 2)

(\*\* Nuclear emergency situation)

Situation of power source to recover water injection function at the Station.  
-Cable from electric power source cars are under connecting work(as of 04:00,  
March 12)

Pressure in the Confinement Vessel has arisen. The pressure could have  
arisen to 840kPa as compared to the design pressure of 400kPa.

c. Fukushima-Daini Nuclear Power Station(TEPCO)

(Naraha-cho/Tomioka-cho, Futaba-gun, Fukushima pref.)

(1) The status of operation

Unit1(1,100MW): automatic shutdown

Unit2(1,100MW): automatic shutdown

Unit3(1,100MW): automatic shutdown

Unit4(1,100MW): automatic shutdown

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Report concerning other malfunction

Report of fire: No

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Units 1,2 and 4)

(\*A heightened alert condition)

### 3. Industrial Safety

#### ○Electricity

\* Tokyo Electric Power Co. (as of 04:19, March 12, 2011)

Scale of loss of electrical power: 1,540 thousand houses

Power loss area:

Gunma Pref.: Oizumi-machi, Tatebayashi-cho

Ibaraki Pref.: Whole area,

Tochigi Pref.: Whole area of eastern part, Utsunomiya-shi, Ashikaga-shi,  
Sano-shi,

Chiba Pref.: Katori-shi, Yachimata-shi, Yamatake-shi

Saitama Pref.: Konosu-shi, Gyoda-shi

Yamanashi Pref.: Hokuto-shi, Fuji Yoshida-shi

\* Tohoku Electric Power Co. (as of 22:00, March 11, 2011)

Scale of loss of electrical power: approx.4,400 thousand houses

Power loss area:

Aomori Pref.: Whole area

Iwate Pref.: Whole area,

Akita Pref: Whole area

Miyagi Pref: whole area

Yamagata Pref: Almost whole area

Fukushima Pref: Some area

\* Hokkaido Electric Power Co. (as of 20:00, March 11, 2011)

Scale of loss of electrical power:560 houses, maximum number:  
approx:3,000 as of 19:00

\*Chubu Electric Power Co. (as of 22:50, March 11, 2011)

Scale of loss of electrical power: 30 houses(Nagano prefecture),

○General Gas(as of 03:00, March 12)

The Japan Gas Association is preparing to dispatch an advance unit to Sendai-shi upon request from Sendai-shi.

Sendai-city municipal Gas, Kesennuma-city municipal Gas, Ishimaki Gas have trouble contacting.The Japan Gas Association

confirmed that there are no supply disruption in the supply area of city gas in Hokkaido, Aomori, Yamagata, and Akita prefecture.

\* Tokyo Gas Co.

Hitachi branch: 30,008 houses are in supply disruption. There is no damage in equipment, however, equipment in inoperable due to loss of power. Walkdown unit of eight person departed at 18:30, March11. Time of recovery is not certain.

Inspection teams were dispatched to this area.

-time of restoration(not certain)

Eastern part of Joso: 453 houses were in supply disruption in Ushiku (supply restarted at 17:10, March11)

471 houses were in supply disruption in Ushiku-kariya cho(supply restarted at 22:36

March 11)

77 houses are in supply disruption in

Ryuugasaki (supply restarted at 16:20, March 11)

40 houses are in supply disruption in Nishi-ku,

Yokohama-shi (supply restarted at 17:29, March 11)

Gas leaked from a Nozzle of an LNG tank at Sodegaura but no ignition (supply restarted at 17:29, March 11)

Gas Bureau of Sendai-shi: whole supply disruption (approx. 360 thousand houses)

\*Shiogama Gas Co.: 12,000 houses are in supply disruption

\*Kamaishi Gas Co.: 10,000 houses are in supply disruption. First floor of this Gas facility sank.

\*Hatano Gas Co.: 330 houses are in supply disruption

\*Keiyo Gas Co.: Leakage occurred at 5 locations of middle pressure conduit

Leakage occurred at many parts of Low pressure conduits

2,377 houses are in supply disruption.

Supply is disrupted in Yachio-shi

\*Kuju Kurityo Gas Co.: Approx 258 houses are in supply disruption.

\*Atsugi Gas Co.: leakage occurred at 1 location of middle pressure conduit.

\*Fukushima Gas Co.: Approx 2,726 houses are in supply disruption (which are equal to a quarter of whole customer in this region)

\*Tohoku Gas (part of Shirakawa-shi): 300 houses are in supply disruption

\*Tokiwa Kyodo Gas (Iwaki-shi): 15,000 houses are in supply disruption

\*Tobu Gas (Tsuchiura-shi): 7,500 houses are in supply disruption

\*Tosai Gas (Kasukabe-shi) Gas leakage occurred from conduit. 150 houses in apartment are in supply disruption

\*Odawara Gas (Odawara-shi)

leakage occurred at 1 location of low pressure branch conduit and 3 locations of ex-core inner conduit and has restored at 21:30 11 March. Other areas are under investigation.

○Community Gas (as of 03:00, March 12)

Severe damage has not been reported to Japan Community Gas Association so far. No information is available about the damage in North part of Ibaraki prefecture.

\*Tokyo Gas energy(North part of Ibaraki): Factory stopped supply to 943 houses in Nakago-New Town due to the leakage from pipe.

\*Sato Kosan (based in Iwatsuki-ku, Saitama City) Iwatsuki-housing complex: Gas leakage occurred from conduit. Factory stopped the supply. Currently gas is temporarily supplied by gas cylinder to 451 sites.

\*Syutoken Gas(based in Sakura-City) Chitose-housing complex:1,320 houses are in supply disruption

\*Kashima Marui Gas(Kamisu-shi): 527 houses are in supply disruption. time of recovery is not certain.

\*Imaichi Gas: Gas leakage occurred from conduit at the simple gas complex in Nikko-shi: 240 houses were in gas supply disruption.

\*Nihon Gas: Gas leakage occurred from conduit at simple gas complex in the jurisdiction: 76 houses in Nasu-karasuyama-shi, 97 houses in Inashiki-shi, 594 houses in Tokai-mura, Natsu-gun,370 houses in Yita-shi, and 3299 houses in Itako-shi were in gas supply disruption.

These areas othan than Itako-shi will be restored on March 12. It will take long before restoration in Hinode housing complex in Itako-shi due to soil liquefaction. 212 houses in Noda-shi were in gas supply disruption. This area was restored in March 11.

○Gas conduit Operators(as of 03:00, March12)

\*JX Nikko Nisseki Energy: Hachinohe LNG Station

Premise, electric room and in-house electricity generator equipment, were flooded by the 2<sup>nd</sup> wave of tsunami and the gas supply was stopped.

○Heat supply(as of 00:00)

\*Yamagata Netsu Kyokyu(Yamagata-shi): Stopped heat supply

\*"HITACHI NETSU ENERGY"(Hitachi City): stopped heat supply due to the electrical outage at 15:19, March11.

\*"CHIBA NETSU KYOKYU"(Chiba-city): stopped freezer, etc. at 16:19, March 11. Supply was stopped and walkdown is conducted at 16:19, March 11.

\*"NISHI-IKEBUKURO NETSU KYOKYU": stopped freezer and boiler at 15:45, March 11.

\*"TOKYO NETSU KYOKYU";

-stopped boiler in Takeshiba and Yurakutyo areas at 15:20, March 11

-stopped supply to one of the building complex at Hikarigaoka for approx. 3 hours due to the leakage of pipe at 21:35, March 11

\*"Yokohama Business Park NETSU KYOKYU (Hodogaya-ku, Yokohama city)

15:50 Stopped steam and cold water supply to PREZZO building

16:20 recovered by temporary repair

○Complex

\*Cosmo Oil factory Chiba branch

A column of Butane Butylene storage was broken. Fire occurred due to gas leakage. One person suffered serious-injury, 2 persons suffered minor injury.

\*JX Nippon Oil&Energy Corporation Sendai oil factory(sendai-city, Miyagi prefecture)

-Fire occurred from explosion of low temperature LPG tank(as of 22:40, March 11)

4. Action taken by NISA

14:46 Set up of the NISA Emergency Preparedness Headquarters (Tokyo) immediately after the earthquake

15:42: TEPCO reported to NISA in accordance with Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi, Units 1,2 and 3.

16:36: TEPCO judged the event in accordance with Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi, Units 1 and 2.(notified to NISA at 16:45)

18:08: Unit 1 of Fukushima Dai-ichi notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

18:33: Units 1,2 and 4 of Fukushima Dai-ichi notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency

Preparedness.

19:03 : Government declared the state of nuclear emergency

20:50: Fukushima prefecture's emergency preparedness headquarters - issued a directive regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO that the residents living in the area of 2km radius from Unit 1 of the Nuclear Power Station must be evacuate.

21:23: Directives from Prime Minister to Governor of Fukushima, Mayor of Ookuma and Mayor of Futaba were issued regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO, pursuant to Paragraph 3, Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness as follows:

- Residents living in the area of 3km radius from Unit 1 of the Nuclear Power Station must evacuate.
- Residents living in the area of 10km radius from the Unit 1 must take sheltering.

## 2. Summary of Damage(Earthquake at Nagano prefecture)

- (1) Time of Occurrence: 3:59 (UTC 18:59) March 12, 2011, Friday
- (2) Epicenter: North part of Nagano Prefecture(North Latitude: 37; East Longitude: 138.6), 10km deep, M6.6

### (3) Seismic Intensity in Japanese Scale

<Area of Seismic Intensity>

5-: Kashiwazaki-shi, Niigata prefecture and Kariha-villege, Niigata prefecture.

1. Status of operation at Power Stations(NumNumber of automatic shutdown(units):10 (as of 3:30, March 12)

a. Kashiwazaki-Kariha Nuclear Power Station, Tokyo Electric Power Co., Inc.(TEPCO)

#### (1) The status of operation

Unit1(1,100MW): Keep operation

Unit2(1,100MW): in periodic inspection outage

Unit3(1,100MW): in periodic inspection outage

Unit4(1,100MW): in periodic inspection outage

Unit5(1,356MW): Keep operation

Unit6(1,356MW): Keep operation

#### (2) Readings of monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitor readings:No

#### (3) Report concerning other malfunction

Report of fire: No



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Facilities which have confirmed safety will be eliminated from the next press release.

(Contact Person)

Mr. Masaomi Koyama

Deputy Director, International Affairs

Office, NISA/METI

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

March 12, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information(the 12<sup>th</sup> Release)  
(As of 09:30 March 12, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Higashidori and Onagawa NPSs, Tohoku Electric Power Co., Inc

Higashidori, Fukushima Dai-ichi, Fukushima Dai-ni and Kashiwazaki-Kariwa NPSs, Tokyo Electric Power Co., Inc. and electricity, gas, heat supply and complex as follows:

1. Summary of Damage(Earthquake at Sanriku-Oki)

- (1) Time of Occurrence: 14:46 (UTC 5:46) March 11, 2011, Friday
- (2) Epicenter: Off-Coast of Sanriku (North Latitude: 38; East Longitude: 142.9), 10km deep, M8.8
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    - 5-: Kariwa-village, Niigata Prefecture
    - 4: Rokkasho-village, Higashidori-village, Aomori Prefecture, Kashiwazaki-city, Niigata Prefecture and Yokosuka-city, Kanagawa Prefecture

1: Tomari-village, Hokkaido

2. The status of operation at Power Stations(Number of automatic shutdown(units): 10 (as of 09:30, March12)

a. Onagawa Nuclear Power Station (Onagawa-machi and Ishinomaki-shi, Miyagi Prefecture)

(1) The status of operation

Unit 1 (524MWe): automatic shutdown

Unit 2 (825MWe): automatic shutdown

Unit 3 (825MWe): automatic shutdown

(2) Readings of monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitor readings: No

(3) Report concerning other malfunction

It is confirmed Smoke in the first basement of the Turbine Building was confirmed the extinguished at 22:55 on March 11th.

b. Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co.,Inc.(TEPCO)

(Okuma-machi and Futaba-machi, Futaba-gun, Fukushima Prefecture )

(1) The status of operation

Unit 1 (460MWe): automatic shutdown

Unit 2 (784MWe): automatic shutdown

Unit 3 (784MWe): automatic shutdown

Unit 4(784MW): in periodic inspection outage

Unit 5(784MW): in periodic inspection outage

Unit 6(1,100MW): in periodic inspection outage

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Report concerning other malfunction

Article 10\* of Act on Special Measures Concerning Nuclear Emergency Preparedness (Fukushima Dai-ichi, Unit 3)

(\*A heightened alert condition)

Article 15\*\* of Act on Special Measures Concerning Nuclear Emergency Preparedness (Fukushima Dai-ichi, Units 1 and 2)

(\*\* Nuclear emergency situation)

Situation of power source to recover water injection function at the Station.

-Cable from electric power generating cars are under connecting work(as of 04:00, March 12)

Pressure in the containment vessel has arisen. Steam release is undertaking in order to relieve pressure.

It was confirmed that radioactivity was increased compared to the one at 04:00, March 12.

From 04:00, March 12 by the measurement of radioactive materials in the surrounding area of the power station using monitoring cars. (As of 07:55, March 12)

MP6 (near the main gate) 0.07microSv/h -5.1 micro Sv/h  
(04:00, March 12->07:40, March 12)

MP8 (near the main gate) 0.07microSv/h ->2.5 micro Sv/h  
(04:00, March 12->07:30, March 12)

## c. Fukushima-Daini Nuclear Power Station(TEPCO)

(Naraha-cho/Tomioka-cho, Futaba-gun, Fukushima pref.)

### (1) The status of operation

Unit1(1,100MW): automatic shutdown

Unit2(1,100MW): automatic shutdown

Unit3(1,100MW): automatic shutdown

Unit4(1,100MW): automatic shutdown

### (2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

### (3) Report concerning other malfunction

Report of fire: No

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Units 1,2 and 4)

(\*A heightened alert condition)

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(March 11)

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18:33: Units 1,2 and 4 of Fukushima Dai-ni notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

19:03 : Government declared the state of nuclear emergency

20:50: Fukushima prefecture's emergency preparedness headquarters - issued a directive regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO that the residents living in the area of 2km radius from Unit 1 of the Nuclear Power Station must evacuate.(The population of this area is 1,864)

21:23: Directives from Prime Minister to Governor of Fukushima, Mayor of Ooka and Mayor of Futaba were issued regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO, pursuant to Paragraph 3, Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness as follows:

- Residents living in the area of 3km radius from Unit 1 of the Nuclear Power Station must evacuate.

- Residents living in the area of 10km radius from the Unit 1 must take sheltering.

(March12)

5:22 Unit 1 of Fukushima Dai-ni notified NISA of the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

5:32 Unit 2 of Fukushima Dai-ni notified NISA of the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

05:44 Residents living in the area of 10km radius from unit 1 of the Nuclear Power Station must evacuate by the Prime Minister Direction.

06:01 Regarding Units 1,2 and 4 of Fukushima Dai-ni NPS, TEPCO reported NISA in accordance with Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

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## Earthquake at Nagano Prefecture

### 1. Summary of Damage(Earthquake at north part of Nagano prefecture)

- (1) Time of Occurrence: 3:59 (UTC 18:59) March 12, 2011, Saturday
- (2) Epicenter: North part of Nagano Prefecture(North Latitude: 37; East Longitude: 138.6), 10km deep, M6.6
- (3) Seismic Intensity in Japanese Scale  
<Area of Seismic Intensity>  
5-: Kashiwazaki-city, Niigata prefecture and Kariwa-village, Niigata prefecture.

### 2. Status of operation at Power Stations

a. Kashiwazaki-Kariwa Nuclear Power Station, Tokyo Electric Power Co., Inc.(TEPCO)

#### (1) The status of operation

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Unit7(1,356MW): Keep operation

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Variation in the monitoring post readings: No  
Variation in the main stack monitor readings: No

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### 3 Industrial Safety

oGeneral Gas

Nagano municipal gas (Nagano city), Joetsu municipal gas, Myouko municipal gas, Ojiya municipal gas, Mitsuke municipal, Kashiwazaki municipal gas, Nagaoka of Hokuriku (Nagaoka city) gas are confirmed there are no supply disruption

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March 12, 2011  
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Report of fire: No

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(Contact Person)

Mr. Masaomi Koyama

Deputy Director, International Affairs  
Office, NISA/METI

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

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**From:** ET07 Hoc  
**Sent:** Sunday, March 13, 2011 8:35 PM  
**To:** Ash, Darren  
**Cc:** Borchardt, Bill; Virgilio, Martin; Weber, Michael; Ciani, Sandra; Taylor, Renee; Muessle, Mary; Andersen, James  
**Subject:** Coverage for Monday, March 14 Events Brief and Chairman's Morning Meeting

Darren,

This is Alan Frazier working with Bill this evening in the Ops Center. Bill asked that I send you an email asking that you please cover the 8am Events Brief and 8:30am Chairman's morning meeting tomorrow. Bill will be in tomorrow but probably not in time to cover these two meetings. Marty will be in the Ops Center and Mike will have just finished the night shift.

Regards,

Alan

2222/15



**From:** King, Mark  
**To:** HQO Hoc  
**Cc:** Operations Center Bulletin  
**Subject:** RE: Information from American Nuclear Society - ANS Nuclear Cafe on the nuclear energy facilities in Japan / various links - FYI  
**Date:** Saturday, March 12, 2011 1:30:15 AM  
**Attachments:** [image006.png](#)  
[image019.png](#)  
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## **ANS Nuclear Cafe**

### **Media updates on nuclear power stations in Japan**

Posted on [March 11, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

An 8.9 magnitude earthquake is affecting nuclear power stations in Japan. ANS Nuclear Cafe begins at | 0800 | 2011 03 11 | a media clip service on breaking news about the status of nuclear energy facilities in Japan. The news reports will be in descending order based on time/date stamps where available or when posted.

#### **Fixed Links**

- IAEA Tsunami & Earthquake updates  
[Alert Log](#) & [Twitter feed](#)
- Tokyo Electric Power - [press release updates](#)
- 
- WNN [World Nuclear News](#) – update 2011 03 11 1400 EST

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#### **Updated Links**

**CNN** – [Two Japanese plants struggling to cool cores](#) 2011 03 11 1730 EST

Tokyo (CNN) — Reactors at two Japanese power plants can no longer cool radioactive substances inside, a prominent electric company said Saturday, according to a news agency report that added that atomic material may have leaked out of one of the plants.

Citing the Tokyo Electric Power Co., Japan's Kyodo News Agency said that radioactive substances may have seeped out of the Fukushima Daiichi nuclear reactors, about 160 miles (260 kilometers) north of Tokyo.

Potentially dangerous problems in cooling radioactive material appear to have cropped up there, as well as at another of the Tokyo Electric Power Company's nuclear plants. Both plants are named Fukushima Daiichi and both have nuclear reactors, but they are separate facilities.

Kyodo reported Saturday that the power company alerted authorities that the cooling system at three of the four units of one Fukushima Daiichi plant in northeastern Japan's Fukushima prefecture

LLLL/16

had failed.

**LA Times – Japan nuclear plant conditions worsening 2011 03 11 1944 EST**

The Kyodo news agency says the cooling system has failed at three reactors at a nuclear power plant in Fukushima Prefecture in northeastern Japan and that the coolant water's temperature has reached boiling level.

Conditions appear to be worsening at a nuclear power plant in Fukushima Prefecture in northeastern Japan, according to local media.

The Kyodo news agency reported that the cooling system has failed at three reactors of Fukushima No. 2 nuclear power plant. The coolant water's temperature had reached boiling temperature, the agency reported, citing the power plant's operator, Tokyo Electric Power.

The cooling system failure at the No. 2 power plant came after officials were already troubled by the failure of the emergency cooling system at the Fukushima No. 1 plant, which officials feared could cause a meltdown.

**Associated Press State of Emergency declared for five reactors 2011 03 11 1815 EST**

TOKYO — Japan declared states of emergency for five nuclear reactors at two power plants after the units lost cooling ability in the aftermath of Friday's powerful earthquake. Thousands of residents were evacuated as workers struggled to get the reactors under control to prevent meltdowns.

A single reactor in northeastern Japan had been the focus of much of the concern in the initial hours after the 8.9 magnitude quake, but the government declared new states of emergency at four other reactors in the area Saturday morning.

The earthquake knocked out power at the Fukushima Daiichi plant, and because a backup generator failed, the cooling system was unable to supply water to cool the 460-megawatt No. 1 reactor. Although a backup cooling system is being used, Japan's nuclear safety agency said pressure inside the reactor had risen to 1.5 times the level considered normal.

Authorities said radiation levels had jumped 1,000 times normal inside Unit 1 and were measured at eight times normal outside the plant. They expanded an earlier evacuation zone more than threefold, from 3 to 10 kilometers (2 miles to 6.2 miles). Some 3,000 people had been urged to leave their homes in the first announcement.

The utility, which also operates reactors at the nearby Fukushima Daini plant, later confirmed that cooling ability had been lost at three of four reactors there, as well as a second Fukushima Daiichi unit. The government promptly declared a state of emergency there as well.

Japan Nuclear and Industrial Safety Agency official Ryohei Shiomi said radiation levels surged inside the control center at the Fukushima Daiichi No. 1 reactor, while a monitoring device at the front gate of the compound detected radiation that is eight times higher than normal.

The level outside the 40-year-old plant in Onahama city, about 170 miles (270 kilometers) northeast of Tokyo, is still considered very low compared to the annual exposure limit, Shiomi said. It would take 70 days of standing at the gate to reach the limit, he said.

Shiomi said radioactive vapor probably entered the control room because of lack of air flow control resulting from power outage. The control room is usually radiation free, protected by negative air pressure. If the condition persists or worsens, the plant is equipped with gas masks and other protective gear to protect workers from radiation exposure, he said.

Officials planned to release slightly radioactive vapor from the unit to lower the pressure in an effort to protect it from a possible meltdown, but the continuing power supply problem has delayed the process.

Chief Cabinet Secretary Yukio Edano said the amount of radioactive element in the vapor would be "very small" and would not affect the environment or human health. "With evacuation in place and the ocean-bound wind, we can ensure the safety," he said at a televised news conference early Saturday.

**USA Today – Japan declares emergency at 2nd nuclear plant** 2011 03 11 1836 EST

Update at 6:36 p.m. ET: The Japanese government has declared a nuclear emergency at the Fukushima No. 2 power plant. An emergency also exists at plant No. 1.

The cooling system has failed for three reactors at the Fukushima No. 2 nuclear plant, about seven miles from its quake-crippled companion, the Tokyo Electrical Power Co. now says.

The utility, which operates both Fukushima plants, notified the government Saturday morning that the failsafe system at the No. 2 plant stopped working as the coolant water topped the boiling point, the Kyodo news service reports.

Update at 6:25 p.m. ET: Japan's nuclear safety agency is preparing to issue what Kyodo News called "an unprecedented order" directing the Tokyo Electric Power Co. to open a valve at the earthquake-crippled Fukushima No. 1 nuclear power plant to release pressure from a reactor that is in danger of overheating.

Original post: Radiation 1,000 times normal has been detected inside a crippled nuclear plant in northeastern Japan where utility managers have released potentially radioactive steam to reduce mounting reactor pressure, the Kyodo News service is reporting, citing the government's safety agency.

That suggests radioactivity could spread around Tokyo Electric Power's Fukushima No. 1 plant, where thousands of residents within a 6-miles were ordered to leave before dawn Saturday.

**Mobile generator in service at Fukushima-Daiichi NPP;**

**Tepco Considers Controlled Venting**

12 Mar (NucNet): Tokyo Electric Power Company (Tepco) has installed a mobile power generation unit at its Fukushima-Daiichi nuclear power plant in an effort to ensure the function of essential pumps for cooling reactors that automatically shut down during an earthquake yesterday.

The back-up power is needed because the plant's cooling system failed when the earthquake caused a power outage and emergency diesel generators stopped working after less than an hour for an as yet unknown reason.

The utility said pressure in the containment of the oldest unit on the site, unit 1, which has been in commercial operation since 1970, has continued to increase.

At 00:00 local time, the pressure was 600 kilopascal (6 bar) and according to Japan's Nuclear and Industrial Safety Agency (NISA) it could have increased to 840 kilopascal (8.4 bar) in the meantime. NISA said the design pressure for the unit's containment is 400 kilopascal (4 bar).

At 04:00 local time Tepco said it had decided to implement measures to reduce the pressure in the reactor containment vessel "for those units that cannot confirm a certain level of water injection by the reactor core isolation cooling system".

Tepco is considering a controlled containment venting in order to avoid an uncontrolled rupture and damage to the containment itself.

Tepco said there has already been a leak of a small amount of radioactive substances.

Earlier, authorities in Fukushima prefecture evacuated residents living within three kilometres of the plant.

Japanese officials also told the International Atomic Energy Agency (IAEA) that pressure is increasing inside unit 1's containment and they have decided to vent the containment to lower the

pressure. The controlled release will be filtered to retain most radioactive substances within the containment, the IAEA said.

Three reactors at the plant were operating at the time of the earthquake, and the water level in each of the reactor vessels remains above the fuel elements, according to Japanese authorities. The Japan Atomic Industrial Forum (JAIF) said earlier today that unit 2 at the six-unit plant suffered a loss of feeding water for its cooling system, caused by the cut-off of power supply. JAIF said Tepco had earlier reported to NISA that two emergency diesel generators were out of order at Fukushima-Daiichi.

Eleven nuclear reactors in areas of Japan affected by today's earthquake have all shut down automatically and so far there have been no reports of radioactive release, the Ministry of Economic Trade and Industry (METI) has said.

The 11 nuclear units are in three northern prefectures: Miyagi, Fukushima and Ibaraki. The reactors that automatically shut down because of the quake are:

- All three units at the Onagawa plant;
- Units 1, 2 and 3 at the Fukushima-Daiichi plant (units 4, 5 and 6 were undergoing a scheduled inspection and already shut down);
- All four units at the Fukushima-Daini nuclear plant;
- Unit 1 at the single-unit Tokai plant.

Earlier, NISA said no damage to nuclear plants has been reported "at this stage" following the earthquake

The US Geological Survey said the quake struck at 14:46 local time and was magnitude 8.9 on the Richter scale. The epicentre was about 70 kilometres east of Honshu and the depth was about 24 km.

The epicentre was about 80 km east of the Onagawa nuclear site and about 150 km north-east of both Fukushima sites.

**New York Times – Japan expands evacuation area 2011 03 11 1805 EST**

Japanese officials early Saturday expanded the area around a crippled nuclear power plant subject to emergency evacuation, as radiation levels inside the facility were reported to have surged and operators struggled to keep the plant's cooling system operating on battery power.

A Japanese nuclear safety panel said radiation levels were 1,000 times above normal in a reactor control room after a huge quake damaged the plant's cooling system, and that some radiation — it was not clear how much — had seeped outside the plant. The elevated radiation reading was taken inside the control room of the No. 1 reactor of the Fukushima plant.

Prime Minister Naoto Kan said before boarding a helicopter to visit the plant that the government had expanded the evacuation area around the plant to a six-mile radius from a two-mile radius.

The nuclear plant, known formally as the Fukushima Daiichi Nuclear Power Station, was operating in an emergency, battery-powered cooling mode seventeen hours after the earthquake knocked out its two main sources of the electrical power needed for safe shutdown. But the International Atomic Energy Agency said that "mobile electricity supplies have arrived at the site" to keep the crisis at the crippled plant from worsening.

The Chief Cabinet Secretary of the Japanese government said the plant was releasing steam with a "very small" amount of radioactive material to relieve pressure in one reactor at the. The government had earlier declared an "atomic power emergency" to begin the evacuation, a difficult challenge in the midst of a natural catastrophe

With the steam-driven pump in operation, pressure valves on the reactor vessel would open

automatically as pressure rose too high, or could be opened by operators. "It's not like they have a breach, there's no broken pipe venting steam," said Margaret E. Harding, a nuclear safety consultant, who managed a team at General Electric, the reactor's designer, that analyzed pressure build-up in reactor containments. "You're getting pops of release valves, for minutes, not hours, that take pressure back down." Some of the radioactive steam would condense back to liquid in the containment building, she said.

**Bloomberg – damaged reactor may release radioactive steam** 2011 03 11 1745 EST

Tokyo Electric Power Co. may vent radioactive vapor to reduce pressure at its nuclear reactor in Fukushima, Japan, after the nation's strongest earthquake on record caused power failures, Chief Cabinet Secretary Yukio Edano said.

Radioactive elements in the vapor from the Dai-Ichi No. 1 reactor wouldn't pose a threat to public health, Edano said at a press conference today in Tokyo. The plant, 210 kilometers (130 miles) north of Tokyo, lost power after the earthquake yesterday and about 5,800 residents near the plant were ordered to evacuate.

**Wire services – San Onofre Officials Expect No Problems** 2011 03 11 1507 EST

Officials at the San Onofre Nuclear Generating Station south of San Clemente said they do not expect any issues.

"The waves that could reach the Southern California coastline shortly after 8 a.m. (Pacific) today due to the 8.9 magnitude earthquake that struck Japan would pose no danger to the San Onofre Nuclear Generating Station," spokesman Gil Alexander said in a statement. "The plant's protective measures include a reinforced tsunami wall 30 feet above sea level."

Power plants along the U.S. West Coast were preparing themselves in light of the tsunami alert on Friday, after a massive earthquake off Japan.

PG&E Corp (PCG.N: Quote) said its Diablo Canyon nuclear power plant was operating normally and the reactors were designed to deal with any big wave that might reach California later Friday.

Meanwhile, Southern California Edison, a unit of Edison International (EIX.N: Quote) said workers at its San Onofre plant would be monitoring "unusual small waves" that were likely to hit the coast and that the plant was designed with a 30-foot tsunami protective wall.

**Reuters – TEPCO's biggest nuke plant continue ops after quake** 2011 03 11 1431 EST

(Reuters) – Japan's Tokyo Electric Power Co said operations at its biggest Kashiwazaki-Kariwa nuclear plant were continuing after a strong quake hit northern Japan on Saturday.

A strong earthquake aftershock with a preliminary magnitude of 6.6 struck northwestern Japan on Saturday, about half a day after massive 8.9 magnitude quake hit northeastern Japan.

Four nuclear units at the plant continued to operate, while the three remaining units were kept shut, a company official at the plant said.

**New York Times – Emergency Declared at Japanese Nuclear Plant** 2011 03 11 1355 EST

The Japanese government declared an "atomic power emergency" and evacuated thousands of residents living close to a nuclear plant in northern Japan after a major earthquake, but officials said there had been no radiation leak from the facility and that problems with its cooling system were not critical.

The plant is designed to shut down safely after an earthquake, but its emergency diesel generators, needed to run water pumps, were not working. American experts on reactors of the Fukushima design said, though, that technicians at the plant would have several hours to restore power before any significant damage resulted.

Japan's nuclear safety agency said pressure inside one of six boiling water reactors at the

Fukushima Daiichi plant had risen to 1.5 times the level considered normal, according to The Associated Press. To reduce the pressure, slightly radioactive vapor would be released, the news agency said, but it was not immediately clear if it was going to be released into the containment building or the atmosphere. The agency said the radioactive element in the vapor would not affect human health.

At least two other Japanese nuclear plants also reported trouble, but there was no radiation leak at either of them, government officials said. A number of nuclear reactors around the hardest-hit area of the country were shut down, and Japanese news media said a fifth of the country's total nuclear generating capacity was offline because of the quake.

**Associated Press – Fukushima Daiichi reactor cooling system update**

Japan's nuclear safety agency said pressure inside one of six boiling water reactors at the Fukushima Daiichi plant had risen to 1.5 times the level considered normal. To reduce the pressure, slightly radioactive vapor may be released. The agency said the radioactive element in the vapor would not affect the environment or human health.

After the quake triggered a power outage, a backup generator also failed and the cooling system was unable to supply water to cool the 460-megawatt No. 1 reactor, though at least one backup cooling system is being used. The reactor core remains hot even after a shutdown.

The agency said plant workers are scrambling to restore cooling water supply at the plant but there is no prospect for immediate success.

Chief Cabinet Secretary Yukio Edano said the 40-year-old plant was not leaking radiation. The plant is in Onahama city, about 170 miles (270 kilometers) northeast of Tokyo.

If the outage in the cooling system persists, eventually radiation could leak out into the environment, and, in the worst case, could cause a reactor meltdown, a nuclear safety agency official said on condition of anonymity, citing sensitivity of the issue.

Another official at the nuclear safety agency, Yuji Kakizaki, said that plant workers were cooling the reactor with a secondary cooling system, which is not as effective as the regular cooling method. Kakizaki said officials have confirmed that the emergency cooling system — the last-ditch cooling measure to prevent the reactor from the meltdown — is intact and could kick in if needed.

"That's as a last resort, and we have not reached that stage yet," Kakizaki added.

**CNN – Japan struggling to 'cool down' nuclear plant, minister says** 2011 03 11 1327 EST

U.S. President Barack Obama said Friday that Japanese Prime Minister Naoto Kan told him there was no evidence so far of radiation leaks from nuclear reactors due to the earthquake and tsunami, an assertion also made by Edano earlier in the day.

Yet Edano said the Fukushima Daiichi reactor "remains at a high temperature," because it "cannot cool down." The Kyodo agency reported Friday that the radiation level was rising in a turbine building at the plant.

Cham Gallas, a professor of disaster management at the University of Georgia, said that it wouldn't be surprising if reactors get "both thermally hot and radioactively hot" after the reactors were shut down.

"When they shut down reactors, it takes a long time for them to go down," said Dallas. "It does not necessarily mean radioactive material got out of the reactor."

While authorities are "bracing for the scenario," the minister said, "At this moment, there is no danger to the environment."

Fire broke out at a second facility, the Onagawa plant, but crews were able to put that fire out, according to the International Atomic Energy Agency.

Using Air Force planes, the U.S. government has sent over coolant for the Fukushima plant, said Secretary of State Hillary Clinton on Friday.

**Wire services – Diablo Canyon nuclear plant shuts down as precaution 2011 03 11 1220 EST**

San Francisco, March 11, 2011 — In a move PG&E Corp. calls routine, the power producer shut down its Diablo Canyon nuclear power plant due to a tsunami warning in California.

Much of the West Coast is under a tsunami warning following the 8.9 magnitude earthquake in Japan that has sent tsunami waves across the Pacific Ocean.

The Nuclear Regulatory Commission said there is nothing wrong with the plant, but a tsunami warning requires the plant to shut down as a precaution. The NRC said the plants are located in an area that the expected waves should not impact, and furthermore that the plants are designed to deal with the sort of waves heading for the California coast.

Both reactors at Diablo Canyon were operating normally and at full capacity.

The NRC also said Edison International's San Onofre nuclear plant was monitoring the tsunami but was only under a tsunami watch.

Diablo is located in the middle of the Californian coast, about halfway between Los Angeles and San Francisco. San Onofre is on the Southern California coast between Los Angeles and San Diego.

**New York Times – Cooling system under control at Fukushima nuclear reactor 2011 03 11 1155 EST**

An analyst with the World Nuclear Association, a major international nuclear power group, said that he understood fresh cool water was now being pumped into the cooling system at Fukushima, reducing the threat of a meltdown.

"We understand this situation is under control," the analyst said. The analyst said he understood that a back-up battery power system had been brought online after about an hour, and begun pumping water back into the cooling system, where the water level had been falling.

**Reuters Cooling system under control at Japan's Fukushima nuclear reactor 2011 03 11 1058 EST**

(Reuters) – The World Nuclear Association, the main nuclear industry body, said Friday that it understood the situation at Japan's Fukushima plant after a massive earthquake was under control, and water was being pumped into its cooling system.

"We understand this situation is under control," an analyst at the association told Reuters.

The Japanese government had declared an emergency situation around the plant as a precaution and evacuated residents, saying a cooling system was not working.

The analyst said he understood that a back-up battery power system had been brought online after about an hour, and begun pumping water back into the cooling system, where the water level had been falling.

**Reuters – Calif nuclear plants operating normally, on Tsunami alert 2011 03 11 0817 EST**

*Precautions are routine, California nukes operating normally*

Reuters) – PG&E Corp declared an "unusual event" at the Diablo Canyon nuclear power plant in California due to a tsunami warning, which is a normal operating procedure, a spokesman at the NRC told Reuters Friday. The tsunami warning followed the massive earthquake and tsunami off the coast of Japan.

NRC spokesman Scott Burnell said there was nothing wrong with the plant, but a tsunami warning is something that requires the plant to issue an unusual event.

The same thing would happen if, for instance, there was a twister in the general area or an earthquake in Mexico. It merely puts plant workers on alert to prepare for the unusual.

Both reactors at Diablo Canyon were operating normally and at full capacity. Burnell said the reactors were designed to deal with the big wave expected to reach California later Friday.

The NRC also said Edison International's San Onofre nuclear plant was monitoring the tsunami but was only under a tsunami watch.

Diablo is located in the middle of the Californian coast, about halfway between Los Angeles and San Francisco. San Onofre is on the Southern California coast between Los Angeles and San Diego.

**Daily Mail UK** – Control rods in core, internal cooling expected at Fukushima No. 1 power plant run by the Tokyo Electric Power 2011 03 11 0853 EST

Professor Tim Abram, a nuclear fuel technology expert at Manchester University, said that as long as a reactor is shut down, it is considered 'benign' until bosses decide it is safe to be turned back on.

He said: 'All nuclear facilities are designed to withstand seismic events.

'The magnitude of the seismic event that they are designed to withstand varies from country to country.

'It's not done on a case of a particular point on the Richter scale, but instead on the basis of probability of earthquakes in particular countries. In somewhere like Japan, the probability will be much, much higher.'

The professor said although a failure in the cooling system of a nuclear power plant was 'unexpected', once a reactor is shut down, the heat levels plummet anyway.

He said: 'Reactors shut themselves down automatically when something called "ground acceleration" is registered at a certain point, which is usually quite small. It will instantly drop control rods into the core.'

At that stage, he said, the heat of a nuclear station drops dramatically in a matter of seconds, and within a couple of minutes, it is down to under five per cent of its normal temperature.

He added: 'That's a tiny, tiny percentage of the usual power output of the core.

'You still need to get rid of the decay heat, but the system is very capable of doing that.

**CNN** – Cooling system problems at Fukushima NPP 2011 03 11 0910 EST

(CNN) — Workers at a nuclear power plant in north-central Japan are having trouble cooling the reactor and authorities have asked nearby residents to evacuate, Chief Cabinet Secretary Yukio Edano said at a news conference Friday.

The Fukushima Nuclear Power Plant was shut down after the earthquake that hit the country.

"This is a precautionary instruction for people to evacuate. There is no radioactive leakage at this moment outside of the facility," he said. "At this moment there is no danger posed to the environment."

Japan declared a state of atomic power emergency after the earthquake, the Kyodo News agency reported. The government is sending senior officials and a defense force team to the power plant, it said.

Edano said plant workers were having trouble generating sufficient electricity to pump water into the cooling system. They were using all available backup electricity, he said.

"The emergency shutdown has been conducted but the process of cooling down the reaction is currently not going as planned," he said.

**NucNet** – 11 Reactors shut down in Japan 2011 03 11 0817 EST

TOKYO, March 11 (Xinhua) — Japanese Prime Minister Naoto Kan on Friday declared a state of atomic power emergency after an earthquake hit Japan's northeastern Honshu island, but he denied there are any radiation leaks.

Chief Cabinet Secretary Yukio Edano said some cooling functions were not working at the plant and one reactor cannot be cooled down.



Separately, a fire broke out at a nuclear power plant in Miyagi Prefecture following the massive quake. Tokyo Electric Power Co. said that the fire started detected at a building housing the turbine at its Onagawa plant but denied any radiation leaks.

According to the ministry, 11 nuclear reactors were automatically shut down at the Onagawa plant, Fukushima No. 1 and No. 2 plants and Tokai No. 2 plant.

**Reuters – Japan working to fix reactor cooling systems 2011 03 11 0852 EST**

(Reuters) – A cooling system for a nuclear reactor was not working after a powerful earthquake in Japan, prompting the government to declare an emergency situation as a precaution although it said there was no radioactive leakage at present.

Residents that live within a 3 km radius of Tokyo Electric Power's Fukushima Daiichi nuclear plant have been told to evacuate, Japan's Chief Cabinet Secretary Yukio Edano told a news conference. The declaration of a state of emergency allows the government to mobilize people and equipment to respond to the earthquake.

TEPCO confirmed that water levels inside the reactors at its Fukushima-Daiichi nuclear plant were on a falling trend, but added it was working to maintain water levels to avert the exposure of nuclear fuel rods.

The company has been trying to restore power to its emergency power system so that it can add water to the inside of the reactors, a TEPCO spokesman said.

**NY Times – Japan orders evacuation near nuclear power plant 0800 EST**

TOKYO (AP) — Japan is issuing an evacuation order to thousands of residents near a nuclear power plant. Japan's nuclear safety agency says the evacuation order to more than 2,800 people followed the government's declaration at a nuclear power plant after its cooling system failed following a massive earthquake Friday. The agency says plant workers are currently scrambling to restore cooling water supply at the Fukushima No. 1 power plant. There was no prospect for an immediate success. The plant experienced a mechanical failure in the backup power generation system to supply water needed to cool the reactor.

Chief Cabinet Secretary Yukio Edano said that the plant was not in immediate danger of radiation leak.

**Los Angeles Times – size of earthquake surprises seismologists 2011 03 11 0800 EST**

The 8.9 magnitude earthquake is among the top 10 ever recorded and occurred on an irregular fault line where a smaller temblor would be expected.

The magnitude 8.9 earthquake that struck Friday off the coast of Japan "is going to be among the top 10 earthquakes recorded since we have had seismographs," said seismologist Susan Hough of the U.S. Geological Survey in Pasadena. "It's bigger than any known historic earthquake in Japan, and bigger than expectations for that area."

Geologists had expected the portion of the Ring of Fire that produced this quake to yield a temblor on the order of magnitude 8 or perhaps 8.5, she said. "Something as big as an 8.9 is a bit of a surprise."

A quake that big usually requires a long, relatively straight fault line that can rupture, such as those found in Peru and along the eastern coast of South America. Thursday's quake occurred in the Japan Trench, where the Pacific tectonic plate slides under the Japan plate.

**Reuters – IAEA says no radiation leaks at affect Japan NPP 2011 03 11 0758 EST**

(Reuters) – Japan has told the U.N. nuclear watchdog that a heightened state of alert has been declared at the Fukushima Daiichi nuclear power plant after Friday's major earthquake, the Vienna-based agency said.

The International Atomic Energy Agency (IAEA) said it had also been informed that the plant had been shut down and that no release of radiation had been detected.

**Wall Street Journal: Japan issues emergency at nuclear plant** 2011 03 11 0716 EST

TOKYO—The Japanese government issued an official emergency at one of the country's nuclear plants Friday after a massive earthquake automatically shut down its reactors and caused problems with its cooling system, but said there are currently no reports of radiation leakage.

**Kyodo News – Japan declares nuclear emergency** 2011 03 11 0800 EST

Japan declared a state of atomic power emergency after the country was hit by its largest-ever magnitude earthquake, while saying no radiation leaks have been detected at or near any nuclear power plants as of Friday evening.

The International Atomic Energy Agency is scrambling for details from contacts with Japan's industry ministry, while saying in a statement that at least four nuclear power plants "closest to the quake have been safely shut down" after the 2:46 p.m. quake with a magnitude 8.8.

According to the ministry, a total of 11 nuclear reactors were automatically shut down at the Onagawa plant, Fukushima No. 1 and No. 2 plants and Tokai No. 2 plant after the biggest-magnitude quake in the country's modern history.

**Xinhua News Service – 11 reactors offline in Japan** 2011 03 11 0740

TOKYO, March 11 (Xinhua) — Japanese Prime Minister Naoto Kan on Friday declared a state of atomic power emergency after an earthquake hit Japan's northeastern Honshu island, but he denied there are any radiation leaks.

Chief Cabinet Secretary Yukio Edano said some cooling functions were not working at the plant and one reactor cannot be cooled down.

Separately, a fire broke out at a nuclear power plant in Miyagi Prefecture following the massive quake. Tokyo Electric Power Co. said that the fire started detected at a building housing the turbine at its Onagawa plant but denied any radiation leaks.

According to the ministry, 11 nuclear reactors were automatically shut down at the Onagawa plant, Fukushima No. 1 and No. 2 plants and Tokai No. 2 plant.

**Nuclear Engineering News (UK) – Japan mobilizes emergency response** 2011 03 11 0800 EST

Onagawa, Fukushima Daiichi, Fukushima Daini and Tokai nuclear power stations have automatically shut down following a magnitude 8.8 earthquake off the northeast coast of the largest island of Japan, Honshu.

All four operating plants on that coast have automatically shut down, or SCRAMmed, according to Japan Atomic Information Forum (JAIF). Higashidori 1, which is also located on Honshu's northeast coast, was shut down for a periodic inspection.

The earthquake struck at 2:45pm local time. A 6:45 pm local time report from the Japan Nuclear and Industrial Safety Agency contained more information of damage and other problems in a site-by-site report.

-A CO2 fire has broken out at Onagawa nuclear power station.

-Utility TEPCO has requested the establishment of a nuclear emergency response programme for Fukushima Daiichi 1&3 and Fukushima Daini 1.

JAIF reported that Fukushima Daiichi 1, 2 and 3 automatically shut down; units 4, 5 and 6 were in maintenance outages. Fukushima Daini 1, 2, 3 and 4 automatically shut down.

JAIF has reported that TEPCO sent the emergency report because emergency diesel generators at the two sites are out of order. It also said that there have been no reports of radiation detected outside of the site.

Nuclear power stations at Hamaoka, Kashiwazaki-Kariwa and Tomari are continuing normal operation, according to JAIF.

**World Nuclear News** (London UK) – [Plant by plant status report](#) following 8.9 magnitude earthquake in Japan (see URL for individual NPP) 2011 03 11 0800 EST

Nuclear reactors appear to have shut down normally during today's massive earthquake in Japan. Official sources have no reports of radioactive release.

Tokyo Electric Power Company (Tepco) alerted safety regulators to a technical emergency in relation to Fukushima Daiichi nuclear power plant, at which some emergency diesel generators failed to start automatically. Nisa noted that emissions from the exhaust stack of the showed no increase in radioactivity.

Tohoku Electric Power Company has reported a fire in the non-nuclear turbine building of Onagawa 1. A minor fire burned in a non-nuclear service building of Tepco's Fukushima Daini 1 but this was extinguished within two hours.

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## **NRC renews Vermont Yankee license**

Posted on [March 10, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

The Nuclear Regulatory Commission [voted 4-0 to renew](#) the operating license for the Vermont Yankee Nuclear Power Station near Brattleboro, Vt., for an additional 20 years. [[NRC web page on Vermont Yankee license renewal](#)]

[http://lh4.ggpht.com/\\_Nr2GsVklxac/TXIN9YBJIbl/AAAAAAAAAwzO/53GwMd05CWO/s1600-h/jaczko%5B4%5D.gif](http://lh4.ggpht.com/_Nr2GsVklxac/TXIN9YBJIbl/AAAAAAAAAwzO/53GwMd05CWO/s1600-h/jaczko%5B4%5D.gif)

[http://lh4.ggpht.com/\\_Nr2GsVklxac/TXIN9YBJIbl/AAAAAAAAAwzO/53GwMd05CWO/s1600-h/jaczko%5B4%5D.gif](http://lh4.ggpht.com/_Nr2GsVklxac/TXIN9YBJIbl/AAAAAAAAAwzO/53GwMd05CWO/s1600-h/jaczko%5B4%5D.gif) Even more significantly, NRC Chairman Gregory Jaczko, who was criticized by some plant supporters for [the appearance of playing to the anti-nuclear crowd](#) in a controversial visit to the reactor last July, now stepped up to the plate to explain the NRC's decision.

"This is the final step in the NRC's detailed technical and legal process of examining whether it's appropriate to issue a renewed license," said [NRC Chairman Gregory B. Jaczko](#). (left)

"Since there are other approval processes outside the NRC, we'll continue to ensure Vermont Yankee is meeting the appropriate public health and safety standards regardless of the reactor's ultimate status."

In a conference call with the news media, Jaczko said, ""We believe Entergy, through the exhaustive review that we've done for license renewal, meets all of our requirements and standards needed to be able to operate for another 20 years."

**Vermont supporters of reactor "elated."**

Howard Shaffer and Meredith Angwin, two pro-nuclear activists, told this blog they are elated over the NRC decision. Angwin, who publishes the blog [Yes Vermont Yankee](#) said the NRC decision "vindicates the fact that the plant is safe."

As recently as last week, Angwin was on the stump at the University of Vermont [debating the future of the reactor](#) with Arnie Gundersen, a special consultant hired by the legislature to provide technical information on the plant.

Angwin says she is still amazed by "Gundersen's fish stories," but said the news that the reactor has

been relicensed is a strong vote for reason.”

Angwin and Shaffer were supported in some of their work by the American Nuclear Society as part of its Vermont Pilot Project. See the February 2011 issue of [ANS Nuclear News](#) for a profile of their activities.

#### Links to news and blog coverage

- Full text of [NRC press statement](#) on license renewal decision for Vermont Yankee
- Bloomberg wire service – [report on NRC conference call](#) to explain the agency’s decision
- New York Times – [Vermont nuclear plant will keep running](#)
- Washington Post / AP – [Feds clear Vt nuke plant for license](#)
- Breaking news from [Idaho Samizdat](#) with reactions from anti-and-pro nuclear groups
- Nuclear energy blog [Yes Vermont Yankee](#) – NRC will renew license

New press links and blog post URLs will be added as they become available.

###

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Posted in [News](#)

## Waste not, want not

Posted on [March 10, 2011](#) by [ansnuclearcafe](#) | [1 Comment](#)

***The time has come for the U.S. to recycle its spent nuclear fuel***

By Dale Klein, Ph.D.



<http://ansnuclearcafe.files.wordpress.com/2011/03/images3.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/images3.jpg> Stubborn resistance to the reprocessing of spent nuclear fuel, driven by some long-held myths, has caused the United States to fall behind other countries as the rest of the world moves toward a “closed fuel cycle” by recycling its nuclear fuel.

More than 30 years of inactivity in this area has diminished our technological capability and intellectual capital to compete internationally. Not surprisingly, little funding has been available for radio-chemistry in our universities during that time, to a point where we now are all but irrelevant on the world stage.



[http://ansnuclearcafe.files.wordpress.com/2011/03/clip\\_image0012.jpg](http://ansnuclearcafe.files.wordpress.com/2011/03/clip_image0012.jpg)

[http://ansnuclearcafe.files.wordpress.com/2011/03/clip\\_image0012.jpg](http://ansnuclearcafe.files.wordpress.com/2011/03/clip_image0012.jpg)

Areva's reprocessing center in La Hague, France

France, Japan, the United Kingdom, Russia, India, and China all have invested substantially in programs to reprocess spent fuel. They have moved forward for two reasons: first, reprocessing



recovers significant energy value from spent fuel that contributes to energy security. And, reprocessing substantially reduces the volume and radiotoxicity of high-level nuclear waste. The once-through nuclear fuel cycle, which is our practice here in the United States, is an enormous waste of potential energy.

Part of the problem is one of perception: For decades, spent nuclear fuel has inaccurately been referred to as waste. But it is not waste. In fact, compared with other fuels used in the production of electricity, the energy density of uranium is remarkable—fully 95 percent of the energy value in a bundle of spent nuclear fuel rods remains available for re-use.

The true waste is in our failure to capitalize on this valuable and abundant domestic source of clean energy. That's something we can ill afford to do, particularly in a carbon constrained environment.



<http://ansnuclearcafe.files.wordpress.com/2011/03/spent-fuel-pool.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/spent-fuel-pool.jpg>

#### Spent fuel pool

Utilities operating nuclear power plants continue to store spent nuclear fuel rods on site in pools of water, as they have for more 30 years, before eventually moving them to dry cask storage. And while there is some debate over whether the casks should be located in one central storage site, the practice is widely accepted as safe and secure.

That's the first myth—that we don't know how to safely store nuclear spent fuel.

Critics of reprocessing also cite the potential for nuclear weapons proliferation as the biggest reason to oppose recycling. That, too, has acquired mythical status. The truth is that such concerns are largely unfounded.

While it is true that the plutonium in recycled nuclear fuel is fissionable, no country in the world has ever made a nuclear weapon out of low-grade plutonium from recycled high burn-up nuclear fuel. It just doesn't work for a strategic or a tactical nuclear weapon.



<http://ansnuclearcafe.files.wordpress.com/2011/03/us-flag.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/us-flag.jpg>

If the United States is to get in the game and reverse decades of intransigence, it must establish an infrastructure for recycling nuclear fuel. The best way to do that, I believe, is by creating a public-private partnership that operates outside normal appropriations and has a charter to manage the fuel over a period of decades. The government's Blue Ribbon Commission, chartered by the Department of Energy, is charged with making recommendations for the safe, long-term management of spent fuel. The 15-member commission is to issue a draft report this summer, with a final report to be completed in January 2012.

Unless we act soon, within 10 years the United States will be the only major country in the world with nuclear power that lacks recycling capability. The time has come to get over our historic resistance to recycling nuclear fuel. After all, how can we tell other countries what they should or should not do with their nuclear waste when we refuse to take action ourselves?

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<http://ansnuclearcafe.files.wordpress.com/2011/03/dale-klein3.png>

<http://ansnuclearcafe.files.wordpress.com/2011/03/dale-klein3.png>

Klein

*Dale Klein, Ph.D., is associate vice chancellor for research at the University of Texas System and Associate Director of the Energy Institute at the University of Texas at Austin. He was a member of the Nuclear Regulatory Commission from 2006-2010 and served as its chairman from 2006-2009.*

**About the Energy Institute at the University of Texas at Austin:**

*The Energy Institute at the University of Texas at Austin initiates compelling research on some of the most pressing issues facing America today—issues vital to our nation’s energy security and economic vitality. Through a multi-disciplinary, collaborative approach with academia, government, and private industry, the Energy Institute seeks practical solutions to real-world challenges—good policy based on good science.*

*For more on the Energy Institute, visit [here](#).*

[→ 1 Comment](#)

Posted in [News](#), [Nuclear Fuel Cycle](#), [Spent nuclear fuel reprocessing](#)

## **Learning about energy from a sociological perspective**

Posted on [March 9, 2011](#) by [ansnuclearcafe](#) | [8 Comments](#)

By Suzy Hobbs

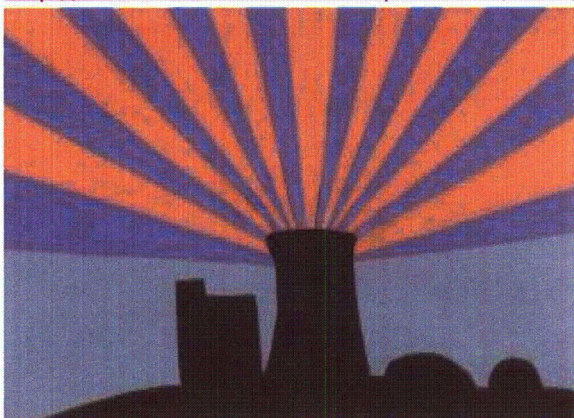
*Leigh Keever is a professor of sociology at Chattahoochee Technical College, in Marietta, Georgia.*

*Last year, she invited PopAtomic Studios to participate in the service learning program, which has evolved into an ongoing effort to learn about energy issues from a sociological perspective.*

*The questions **in bold** below were asked by this piece’s author, Suzy Hobbs. The responses are from Leigh Keever.*

**What is sociology and why is it important for communicators in the nuclear sector to understand?**

<http://ansnuclearcafe.files.wordpress.com/2011/03/flag-student-art.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/03/flag-student-art.jpg> Sociology is the study of



human societies. We look at broad social structures such as governments, population and environment, social stratification, religion, and urbanization. We also study culture, social interaction, deviance, and issues that are symbolic for individuals within groups.

The nuclear sector can benefit from our understanding of how people respond to mass media, the methods used to socialize groups, and human response to their environment. These issues manifest in policy and regulation based on the public perceptions of technology.

Or, in other words, the problems facing the nuclear sector are just as much social as they are scientific and technical.

**How is the service learning program preparing students to be critical thinkers about both scientific and social issues?**

Chattahoochee Technical College uses the definition of service learning as created by the American Association of Community Colleges:

Service learning combines community service with academic instruction, focusing on critical, reflective thinking, and personal and civic responsibility. Service-learning programs involve student activities that address community-identified needs, while developing their academic skills and commitment to their community.

When working with PopAtomic, students have the ability to combat the misinformation, which has stifled the progressive use of nuclear energy. There is a community need for awareness of accessible, and cleaner, energy resources. These students are now more aware of their social environment, media environment, and exposure to propaganda that may be rooted in bias and distortion. Our service to PopAtomic, as well as to future sociology students, is to spread fact-based knowledge and develop new images and themes to provide for the larger community with positive imagery involving nuclear energy.

As we acquire new technology and evolve as a society, it is essential to identify and respond to socially supported misinformation, which is rooted in belief, rather than fact. Younger generations, as well as non-traditional learners, deserve to know the truth about their environment, their fuel choices, and the future repercussions of their decisions.

<http://ansnuclearcafe.files.wordpress.com/2011/03/nuclearnight.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/03/nuclearnight.jpg>

Nuclear Night

**What inspired you to invite PopAtomic to be a part of your service learning curriculum?**

I've been working in academia for close to seven years and I see how departments feel segregated from one another, rarely realizing how closely linked every department is. The goal is to link this program to several other schools and create a community for active learning in which students can understand seemingly complex subject matter.

**This is something I think the nuclear sector can learn from as well; that the boundaries between different ways of thinking are falling away. How do you see this interdisciplinary approach playing into the future of academia, as well as future career possibilities for your students?**

<http://ansnuclearcafe.files.wordpress.com/2011/03/rainbowstudentart.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/03/rainbowstudentart.jpg> One of my main goals



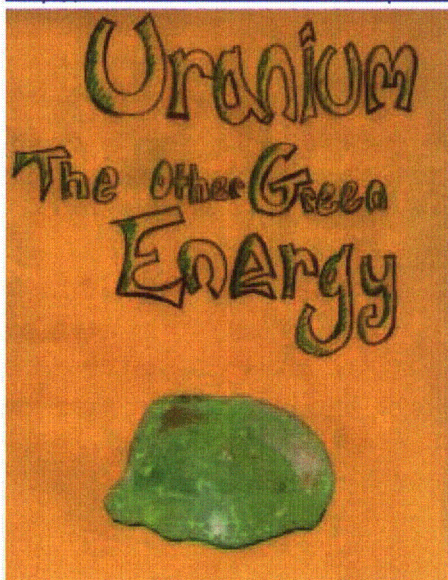
as an educator is to offer my students an opportunity to think analytically and develop the ability to be active, positive contributors to our society as a whole. As the world becomes more globalized and we have access to every corner of humanity, it is essential to think "outside of the box." The more that students are able to see the links of science, art, service, and application from a multidisciplinary perspective, the better off they will be when they enter the work force.

**What has been the student reaction to learning about science and nuclear energy in the classroom?**

Overall, it has been really positive. Many students understand the role of cross-disciplinary thinking and they respond with excitement. Some students are just beginning to use analytical thinking, and this can be tough for a student who has just entered an adult learning environment. Others realize how vital and applicable this information is months, even years, after participating in service learning. Reflection and learning cannot take place in a proximate time frame, but we are planting the seed of critical thinking.

**Can you share some specific examples of students who have responded positively to the program, as well as students who have struggled?**

<http://ansnuclearcafe.files.wordpress.com/2011/03/uraniumstudentart.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/03/uraniumstudentart.jpg> A student approached me last week to get contact information for PopAtomic Studios. She participated in service learning earlier last year and wanted to implement her knowledge into a persuasive speech she will be giving in a few weeks. Culture and sociology are alive, they are constantly evolving, and students who take part in service learning have the ability to actively participate in this growth.

On the other hand, a small group of students have commented that they absolutely believe that the Three Mile Island accident resulted in multiple fatalities. Another student commented on the "myth" of global warming and that climate change is not real, based on things she had heard in popular media. It was a good example of why it is important for students to develop good research habits and to be analytical of the constant flow of "information" that they are exposed to. As an educator, all I can do is provide facts, and support critical thinking, and accept that some personal belief systems will override the information that is being presented.

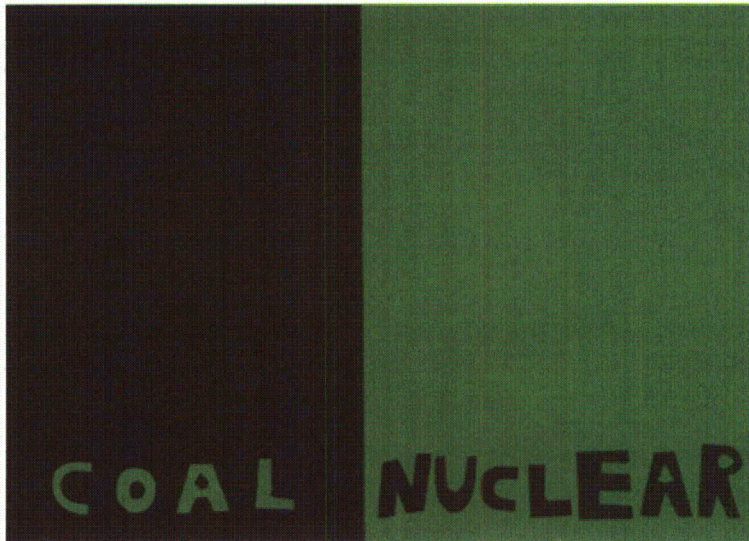
There does seem to be a generational issue at play. Students who experienced Three Mile Island and Chernobyl events as young adults tend to have a more skeptical view of the safety record of

the nuclear industry, and are less open to new information. Students who have no primary experience or knowledge of nuclear energy seem to be the most open to the information that PopAtomic is bringing to the classroom.

**We have really loved the artwork coming out of the program; will you share some of your favorite examples?**

My favorite image, so far, has been one of the more simplistic and most powerful that I have seen. One artist took the concepts of coal and nuclear and used a two-color palate to symbolically depict the dangers and benefits that are contrasting with these two resources.

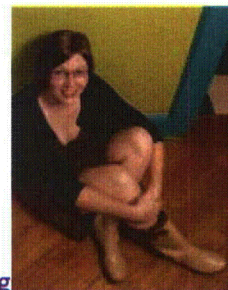
<http://ansnuclearcafe.files.wordpress.com/2011/03/coalvsnuclear.gif>



<http://ansnuclearcafe.files.wordpress.com/2011/03/coalvsnuclear.gif>

Coal vs. Nuclear

**Thank you so much, Leigh! I have really enjoyed working with your students and thinking about the issues facing nuclear growth from a sociological perspective.**



<http://ansnuclearcafe.files.wordpress.com/2011/03/artistsportrait-231x300.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/artistsportrait-231x300.jpg>

Hobbs

*Suzanne Hobbs is creative director and contributing artist at [PopAtomic Studios](#). She was born in Tokyo, Japan, and raised in Atlanta, Ga., by her nuclear engineer father and social worker mother, along with an older brother who is now an accomplished chemist. Her interest in art, science, and humanitarian issues started very young, fueled by frequent family travel and a sharp focus on education and community involvement. She attended Appalachian State University to study Fine Arts and since graduating has worked with several public arts organizations, always with the goal of using art to create positive change. She is a frequent contributor to the [ANS Nuclear Cafe](#).*

[→ 8 Comments](#)



Posted in [Education](#), [Environmental Benefits of Nuclear](#), [News](#), [PopAtomic](#)

## **How to win a debate: A chance to practice what I preached**

Posted on [March 8, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

By Meredith Angwin

In my previous post for the *ANS Nuclear Cafe*, I described [what I had learned](#) from debating nuclear opponents.



<http://ansnuclearcafe.files.wordpress.com/2011/03/view3.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/view3.jpg> Recently, I had a sudden and unwelcome opportunity to practice what I preached. On February 24, Howard Shaffer was due to debate Arnie Gundersen on the topic [Vermont Yankee: Keep It Running or Shut It Down?](#) This Janus Forum debate at the University of Vermont would have hundreds in attendance, press coverage, and so forth.

On the morning of the debate, however, Howard was rushed to the hospital with a life-threatening condition. (He had emergency surgery and is recovering well.) It was up to me to debate Gundersen. Time to practice what I preached!

### **What is *winning* a debate?**

At the end of a debate, nobody raises your hand and says “you won.” Nobody gives out a first place and second place ribbon. So I have to start by defining “winning the debate.”

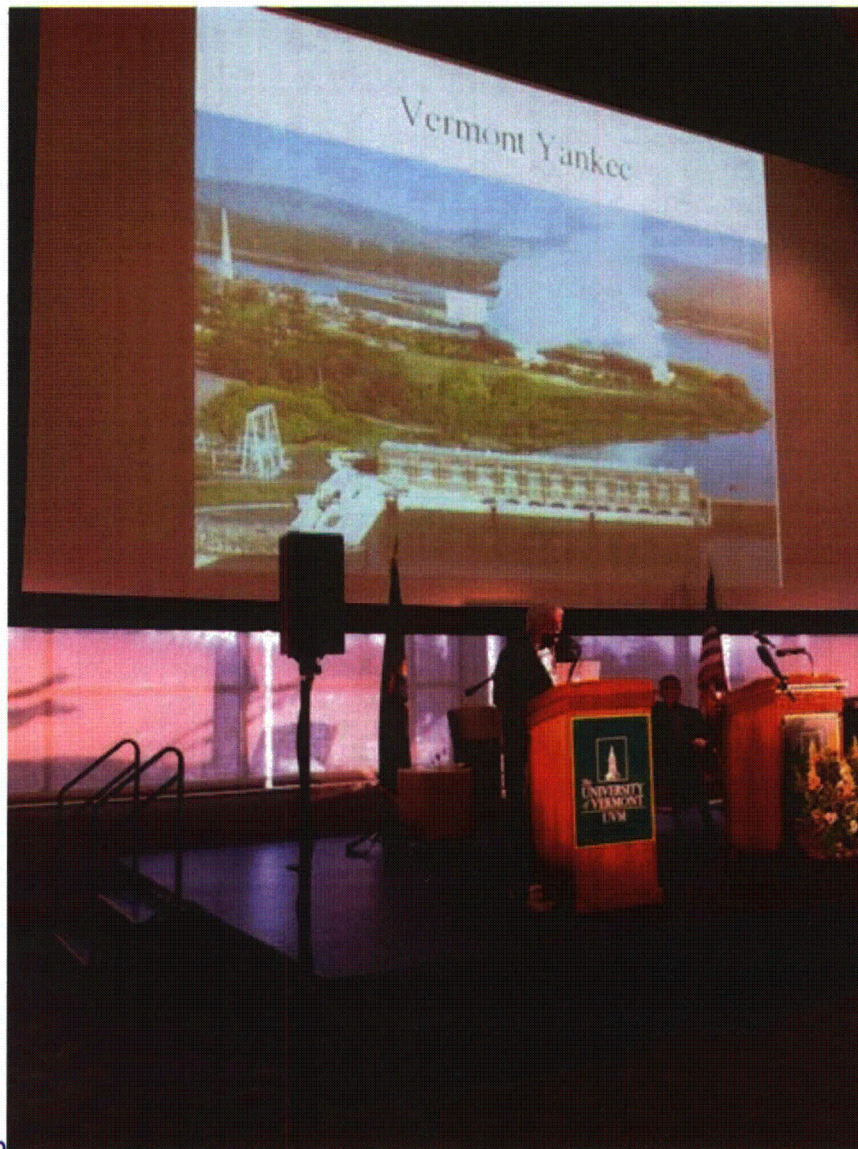
I have won if I have persuaded people in the audience to think more highly of my position. Since there are many people in the audience, some may be persuaded for one side, and others persuaded for the other side. In other words, both debaters can win. I realize that this is an unusual way to look at a debate—everybody wins? But a debate is not a boxing match or a court of law. It is a public forum, and the point is to persuade the audience.

In this case, there is no doubt that I won. An older woman came up to me after the debate and said, “I was convinced we had to shut down Vermont Yankee. After listening to you, I realized it is an important asset, and shutting it down isn’t so simple.” She now thought that we should probably keep the plant operating. Now, I would love to say that she had been *convinced* that we should keep it running, but I don’t think I can change someone’s mind completely by showing them a couple of slides in 45 minutes of airtime. I certainly influenced her opinion, however.

Another person I influenced was a man who asked a question. When I first saw him, his long-haired appearance seemed to announce his political persuasion. As a matter of fact, when he stepped up to the microphone in the question period, my internal reaction was “Brace yourself, Meredith, here it comes.”

Instead, this man addressed Arnie. He asked if it was correct that grinding up an exit sign and putting it in the ground and pouring water over it would lead to more tritium in the environment than Vermont Yankee had spilled? (This exchange begins at about the 1 hour, 24 minute mark on the [audio](#), right after Gundersen boasts of firing 47 percent of a group of managers when he was in the nuclear industry.)





<http://moby.to/g3iwfb>

<http://moby.to/g3iwfb>

The Janus forum debate (Posted using Mobypicture.com)

Arnie is a good debater, and he slid from the tritium question without answering it. Arnie started with a comment about not eating yellow snow and not drinking water that glowed. Then, he said that tritium is a marker, and really bad things like bone-seeking strontium follow the tritium into the environment. The man who asked the question was not particularly impressed with this answer, and responded "But the tritium itself isn't going to hurt us?" That man talked to me at the reception afterward, thanking me for putting tritium into perspective.

Several young women came up to me after the debate. They said that they were very happy to see a woman up on the platform, and they thought that both debaters had done well and they didn't know what to believe. Since they were students at University of Vermont, I suspect they started out with generic anti-Vermont Yankee beliefs and the debate modified their view. (Greenpeace engages in [major outreach activities](#) targeting the University of Vermont, specifically because of Vermont Yankee.)

At the reception, I was surrounded by people who had liked my talk. There were some men who

said they were engineers, some women, some students, some older people, especially several older women. I looked over at Arnie, and he was also surrounded by people, presumably people who had liked *his* talk. As far as I could tell, however, many of the people around Arnie were serious anti-nuclear people, a group that show up at so many meetings. I recognized several of them. Probably, however, Gundersen also “won” and persuaded some new people.

#### **So, how did I win?**

I feel that I won (persuaded people) by doing two things:

- Putting facts in perspective (where electricity comes from, the overstated dangers of tritium)
- Contradicting only some of the most egregious statements that Arnie made. Fighting him non-stop would have let him control the topics.

Mostly, I concentrated on my message, and found that Arnie couldn’t counter it directly. Oh, he could slide away into strontium, but open-minded questioners saw through that device.

#### **And it all means?**

It all may mean very little. My words changed a few minds. When the video of the debate is out, it may change a few more. Gundersen slid away from tritium questions, because my presentation had made it hard for him to answer them with the usual set of scare stories. And yet, it was just some people, in one room, at one time. Who knows?

At this point, I go back to what Howard Shaffer said about the pro-nuclear cause. This quote is from the [February interview](#) in [Nuclear News](#) magazine:

For energy solutions and environmental solutions, there is no silver bullet—it’s silver buckshot. .... We do everything we can all over the map in this big free-for-all called politics.

#### **Additional information: The debate itself**

If you want to know more about the debate, you can read about it on my [Yes Vermont Yankee](#) blog, and listen to it on Vermont Public Radio streaming or downloadable):

- [Janus Forum Debate](#)
- [Gundersen’s misstatements](#)
- [Debate on Vermont Public Radio](#)



<http://ansnuclearcafe.files.wordpress.com/2011/03/angwin.gif>

<http://ansnuclearcafe.files.wordpress.com/2011/03/angwin.gif>

Angwin

Meredith Angwin is the founder of [Carnot Communications](#), which helps firms to communicate technical matters. She specialized in mineral chemistry as a graduate student at the University of Chicago. Later, she became a project manager in the geothermal group at the Electric Power Research Institute (EPRI). Then she moved to nuclear energy, becoming a project manager in the EPRI nuclear division. She is an inventor on several patents. Angwin serves as a commissioner in the Hartford Energy Commission, Hartford, Vt.



Angwin is a long-time member of the American Nuclear Society and coordinator of the [Energy Education Project](#). She is a frequent contributor to the [ANS Nuclear Cafe](#).

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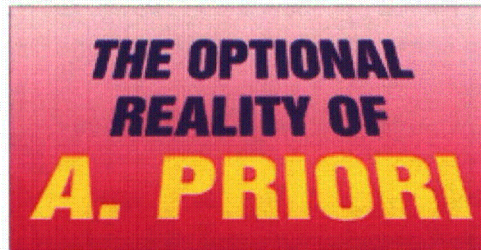
Posted in [Education](#), [Environmental Benefits of Nuclear](#), [lessons learned](#), [News](#), [Nuclear Energy Narrative](#), [View from Vermont](#)

## **The elephant census**

Posted on [March 7, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

By A. Priori

<http://ansnuclearcafe.files.wordpress.com/2011/03/apriori2.gif>



<http://ansnuclearcafe.files.wordpress.com/2011/03/apriori2.gif>Hello, my name is Auguste Priori, and I'm here to conduct a census. How many elephants are there in this room?

*Excuse me?*

This room is "Nuclear Power," am I right? It says so on the door.

*Yes, this is Nuclear Power, but what's this about elephants?*

It's important to keep track of elephants, don't you agree? Whenever an elephant turns up in a room where it doesn't belong, people have trouble talking about it, and if it stays around for a really long time, people can even forget that the elephant is still there. May I come in?

*I assure you, if we had any elephants around here, we'd know about it.*

You'd think so, wouldn't you? Just step aside, please, while I get out some peanuts.

*All right, but please be quick about it, we're very busy—*

Ahh, here's one. It's wearing a headdress labeled "Zero Tolerance." That's one elephant so far.

*Oh, that one. Well, it isn't very big, and it doesn't really bother us much—*

Not yet, perhaps, but just wait until you start building several new reactors. You'll need lots of skilled and experienced craft workers, and if you're really stringent about keeping out everyone with any history of recreational drug use, you may have a lot of trouble filling every position—Hey there, Z.T., I need enough peanuts for everyone. Maybe you should go to rehab—

*Are you finished yet?*

Not yet, here comes one called "Effluent Temperature." You can't be ignoring this one, can you?

*Believe me, we're aware of the dead fish smell. We're working very hard to get this one out of the room.*

Maybe you should first agree on what kind of work to do. From what I've heard, some of you are exploring opportunities to use up a little energy and money to reduce effluent temperature while limiting additional evaporation, while others are digging in and insisting on keeping the status quo. One of you paid only \$10 million for a reactor 11 years ago, but now wants to cut 10 years off of its renewed license rather than add more cooling.

*Shouldn't you be finding out if these elephants sleep wherever they want?*

Heavens no, that's only an issue with 500-pound gorillas. Somebody else is in charge of that census.

*We look forward to cooperating with that, and now if you'll excuse us—*

First let me jot down the name of that little one over in the corner. Is that "Foreign Ownership?"

*Almost nobody in here has anything to do with that one.*

Oh, even if it's only one of you, it can become a headache for all of you. Now then, I do have to move on. I'll just attach this elephant-webcam to the wall, so I can check on you again later, and see if there are any more that I've missed. By the way, have you seen an elephant named "Medical Isotope Production?"

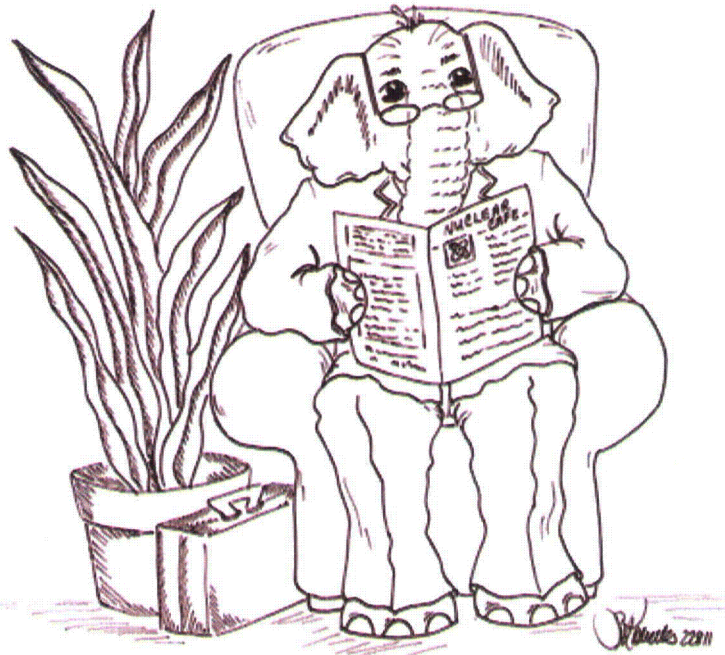
*That's next door. Nuclear Medicine. We're turning out cobalt-60 for them now.*

Very good. With your talent and initiative, you can even help get elephants out of other rooms. Just stay focused, and I'm sure that in no time you'll get rid of all of your elephants.

*What elephants?*

*\*Sigh.\**

<http://ansnuclearcafe.files.wordpress.com/2011/03/elephant.gif>



<http://ansnuclearcafe.files.wordpress.com/2011/03/elephant.gif>

Illustrated by [Susan Roberts](#)



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<http://ansnuclearcafe.files.wordpress.com/2011/03/a-priori3.gif> A. Priori sometimes occurs when E. Michael Blake, a Senior Editor of the ANS newsmagazine [Nuclear News](#), has a senior editorial



moment. The views expressed here are those of the author and do not represent stances or policies of Nuclear News or ANS.

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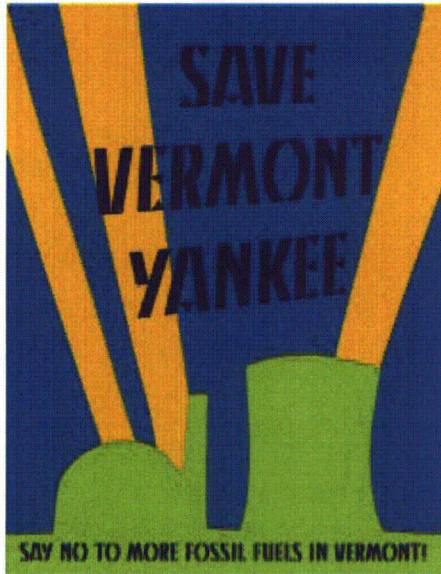
Posted in [A. Priori](#), [News](#)

## **42nd Carnival of Nuclear Energy Blogs**

Posted on [March 4, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

The [42 Carnival of Nuclear Energy Blogs](#) is now up at *Next Big Future*.

<http://ansnuclearcafe.files.wordpress.com/2011/03/savevermontyankee3-229x300.png>



<http://ansnuclearcafe.files.wordpress.com/2011/03/savevermontyankee3-229x300.png>

Save Vermont Yankee Poster ~ Graphic by PopAtomic Studios

If you want to hear the voice of the nuclear renaissance, the *Carnival of Nuclear Energy Blogs* is where to find it.

Past editions have been hosted at *NEI Nuclear Notes*, *Idaho Samizdat*, *Atomic Insights*, *ANS Nuclear Cafe*, *Canadian Energy Issues*, *Yes Vermont Yankee*, and several other popular nuclear energy blogs. If you have a pro-nuclear energy blog, and would like to host an edition of the carnival, please contact [Brian Wang](#) at [Next Big Future](#) to get on the rotation.

This is a great collaborative effort that deserves your support. Please post a Tweet, a Facebook entry, or a link on your Web site or blog to support the carnival.

###

[→ Leave a comment](#)

Posted in [Carnival of nuclear bloggers](#), [News](#)

## **What future for nuclear energy in Eastern Europe?**

Posted on [March 3, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

**Delays seen for new reactor projects in the Czech Republic and Romania**

By Dan Yurman

<http://ansnuclearcafe.files.wordpress.com/2011/03/prague.jpg>





<http://ansnuclearcafe.files.wordpress.com/2011/03/prague.jpg>

Prague, a city influenced by Mozart, beer, and nuclear energy

The \$25-billion five-reactor new build at Temelin by state-owned Czech utility CEZ has been pushed back by another five years, according to English language media reports in Prague.

In Bucharest, Romania, wire service reports indicate that the start of work on a \$5.5-billion two-reactor project could be delayed past 2017, but that first the government must find new investors willing to take on funding a 49-percent share of the project.

#### **Temelin delayed by another five years**

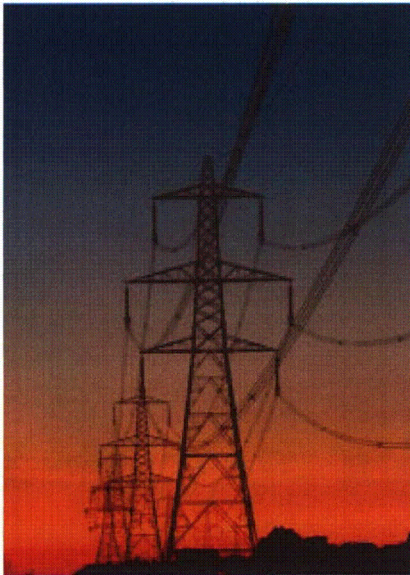
Last October, the Czech government said in an official announcement that detailed bid documents with technical specifications for up to five new reactors at two sites would not be released as planned in December 2010. On February 21, 2011, the government changed its mind saying now that the release of technical bid documents would be postponed to the end of this year. The three firms expected to submit bids would have most of 2012 to respond, with a winner announced sometime in 2013. The firms are Westinghouse (Toshiba/Japan), Areva (France), and Atomstroyexport (Russia).

Lower electricity demand in the Czech Republic—and Germany's decision to keep its 17 nuclear reactors operating instead of closing them down—are the key reasons for a delay to as late as 2025 for completion at Temelin and one other site.

U.S. interest in the project is indicated by a joint declaration signed last December by U.S. Secretary of Commerce Gary Locke and by Martin Kocourek, Czech Ministers of Industry & Trade. The declaration calls for opening up commercial opportunities for U.S. firms to sell nuclear components to the Temelin project. Locke estimated the potential value of the agreement at \$12.5 billion over five years, presumably after construction starts on the first two reactors.

#### **German electricity market changes**

<http://ansnuclearcafe.files.wordpress.com/2011/03/powerlines.png>



<http://ansnuclearcafe.files.wordpress.com/2011/03/powerlines.png>

CEZ's ambitions to be Germany's electricity supplier from Temelin are postponed as Chancellor Merkel decided to keep the nation's 17 reactors running for at least another decade.

CEZ claimed last October that the postponement in the proposal schedule is being made to accommodate the bidders. Martin Roman, CEZ chief executive officer, told a Czech legislative committee on February 23, 2011, however, that a severe drop in electricity demand is the real reason the utility is pushing back the start of construction and the date that the first two of five planned reactors will enter revenue service.

According to English language media reports in Prague, Bower said that power consumption in Germany, expected to be a key market for electricity from the Temelin reactors, has dropped precipitously to levels last seen in 1992. Also, Germany is keeping its 17 reactors, with some slated to remain in service for another 20 years. The Czech Republic had visions of capturing Germany's need for electricity if the latter country's delusional Green Party had succeeded in shutting down the reactors.

#### **Power lines and precision lathes in short supply**

Two other factors may play into CEZ's decision to delay the project. The first is the need for better transmission and distribution infrastructure to deliver electricity from the reactors to customers. For instance, a new 110 km (69 mile) line would be needed, which would require the state to buy out private land owners to provide for the right-of-way.

CEZ CEO Martin also said that the supply chain for manufacturing of components for the first two new reactors wasn't in place. This is sort of a chicken-and-egg issue, since suppliers will not invest in new production capacity until they see the near-term likelihood of orders for new plants.

A key provision in the tender for the new reactors is "localization," which means that the winner will commit to buying a significant percentage of reactor components from Czech firms. Russia is already wooing them with promises of orders for components for two new 1000-MW VVER reactors that Atomstroyexport is committed to build in Vietnam.

The Czech Republic currently has two operating nuclear reactors at Dukovany and Temelin, with a total of six Russian-built reactors supplying just under one-third of all the electricity used in the country.

#### **Managing high-level waste**

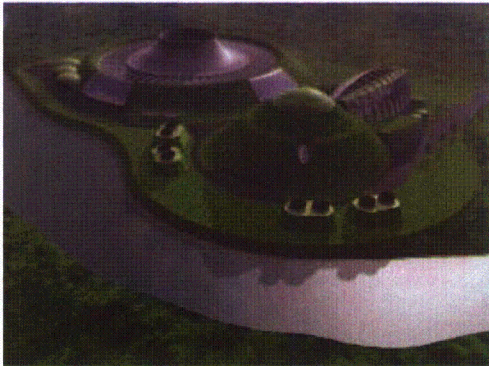


If Areva or Atomstroyexport win the bid for Temelin, they will likely ink deals that involve taking back used fuel for reprocessing. While this will reduce the burden of managing nuclear waste in the Czech Republic, it will still have to dispose of some highly radioactive material. Last December, the Czech Republic's Radioactive Waste Repository Authority formed a working group to start a site selection process for deep geologic disposal.

The group plans to take its time. It said that dry interim storage of high level waste would continue until mid-century, at which time construction of the repository could start. The first waste would be placed in it by 2065.

#### **Romania suffers setbacks at Cernavoda**

[http://www.world-nuclear-news.org/NN\\_A\\_look\\_at\\_the\\_future\\_of\\_nuclear\\_power\\_0311082.html](http://www.world-nuclear-news.org/NN_A_look_at_the_future_of_nuclear_power_0311082.html)



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[news.org/NN\\_A\\_look\\_at\\_the\\_future\\_of\\_nuclear\\_power\\_0311082.html](http://www.world-nuclear-news.org/NN_A_look_at_the_future_of_nuclear_power_0311082.html)

Aleš Buršić blends power plant features with the environment through the use of earth coverings. A hybrid cooling tower is sunken to reduce its visual impact and the 'green barrier' also helps in protection from external hazards. ~ Image source: World Nuclear News

Romania was until very recently thought to be the place where a really innovative new start on nuclear energy would take place. While not necessarily following a futuristic vision, the country has the advantage of having completed construction of a Candu 6 in 2007.

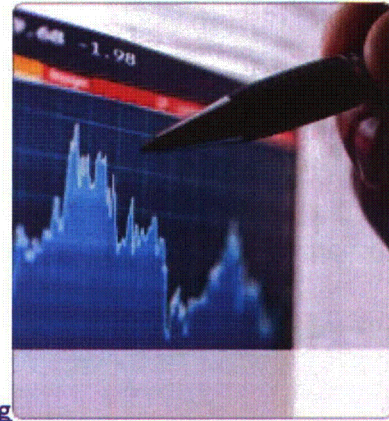
The start of construction of two planned new reactors (Cernavoda-3 & -4) at Romania's Black Sea site of Cernavoda could be delayed by at least six years. The reason is because three major European firms, slated to invest in building them, pulled out after Czech utility CEZ sold its nine percent stake in the project in December. Germany's RWE, Spain's Iberdrola, and French GDF Suez all withdrew from the project in January 2011.

The three firms said in a joint statement that economic and market uncertainties "related to the current economic crisis are not reconcilable with the capital requirements of a new nuclear project."

In other words, they could not lay off some of the risk of investing in it. Romania must now find new investors or take on a much larger share of the cost on its own. Romania has a 51 percent stake in the project. The new reactor power station is expected to cost \$5.5 billion.

Two other firms—Italy's Enel, and a Romanian company ArcelorMittal—have retained their position for the project. It isn't clear whether or not they would be interested in an option to increase their stake in it.

#### **Are other investors interested?**



<http://ansnuclearcafe.files.wordpress.com/2011/03/investor.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/investor.jpg> Other Romanian state-owned firms, such as a hydropower utility, may take a look at it. Romania is also in the odd position of having lost some of its investors, but still having letters of intent and qualification statements from engineering firms that want to build the two new reactors.

Romania currently has two Candu 6 reactors generating 655 MW each. The first one came online in 1996 and the second in 2007. Interestingly, one of the construction firms that wants to build the new units is Canadian-based SNC Lavalin, which is now the leading bidder to buy the commercial arm of AECL. The Romanian deal isn't critical to SNC Lavalin's plans for AECL. Mostly, SNC Lavalin wants AECL for its reactor refurbishment business.

From a competitive point of view, Romania has two Candu 6 reactors, one built in 1996 and the other completed in 2007. If AECL can emerge whole from the current efforts by the Canadian government to sell its commercial division to investors, it could be a strong competitor for the deal. This scenario assumes the Canadian government doesn't do something else that pulls the rug out from under AECL's capability to export reactor technology.

Also, AECL would be wise to offer another Candu 6 package to Romania rather than ask the financially strapped former Soviet-bloc country to build a first-of-a-kind ACR 1000.

Finally, it is worth noting that the three utilities that pulled out of the project as investors are keeping their options open. They said that their decision on financial grounds "was not a reflection of the technical quality of the project."

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*Dan Yurman publishes [Idaho Samizdat](#), a blog on nuclear energy. He is a contributing reporter for Fuel Cycle Week and a frequent contributor to [ANS Nuclear Cafe](#).*

###

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Posted in [Areva](#), [Atomstroyexport](#), [News](#), [reactor designs](#)

## **The evolution of my energy thinking**

Posted on [March 2, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

By Ajax Eastman

I am not a scientist although I have had a life long passion for the natural world. That is what led me to become an intervenor in a 1997 permit application before the Maryland Public Service Commission to build an industrial wind project on the Appalachian ridges of western Maryland. Those Appalachian ridges contain Maryland's greatest abundance of biological diversity because they represent the northern edge of the southern species and the southern edge of the northern



species producing a rich mixture of species. These mountain ridges also are mainly blanketed by unfragmented forests that are required by interior dwelling species and their habitats.

<http://ansnuclearcafe.files.wordpress.com/2011/02/mdblueridge.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/02/mdblueridge.jpg>

Dr. Chandler Robbins, the noted ornithologist who spent more than 50 years doing research on breeding birds in western Maryland, said that those ridges are a major migration corridor for neotropical birds. It was after I first became involved in opposing the proposed wind project that I learned a great deal more about the myth that the wind-turbine industry has perpetuated that has clouded the truth about its many drawbacks. I subsequently became an intervenor in two more projects in western Maryland, but unfortunately all three were granted permits and today those unfragmented forests have been deeply penetrated by wide roads to accommodate enormous turbines and their blades, turbine pad footprints, etc., all to the detriment of birds, bats, and terrestrial flora and fauna.



<http://ansnuclearcafe.files.wordpress.com/2011/03/skunks2.gif>

<http://ansnuclearcafe.files.wordpress.com/2011/03/skunks2.gif> Being against wind is like being an anadromous fish swimming upstream against a dam (another mistake we made without consideration of the precautionary principle) or a skunk at a garden party. Having been involved in conservation and environmental endeavors since 1970, I now find myself bucking all of the state and national environmental organizations that I used to belong to (with the exception of the [Maryland Conservation Council](#)) on the industrial wind issue. The "renewables band wagon" is like a train roaring down the tracks at breakneck speed and the media has chiefly ignored exposing its downsides.

I had been a strong opponent of nuclear energy for many years, especially after [Three Mile Island](#), where, like most people, I believed all the accounts of radiation spreading everywhere and was

especially fearful that it would reach Baltimore. Fortunately, within the Maryland Conservation Council, we have two retired Johns Hopkins University researchers who had worked with radiological materials. They have dispelled the myths of the adverse health impacts of TMI, explained why [Chernobyl](#) was such a catastrophe, and assured me that disposal of nuclear waste is not unsolvable. They have also convinced me of the merits of nuclear energy.



<http://ansnuclearcafe.files.wordpress.com/2011/03/calvert-cliffs.gif>

<http://ansnuclearcafe.files.wordpress.com/2011/03/calvert-cliffs.gif>

Calvert Cliffs nuclear power plant

I've had a tour of the Calvert Cliffs-1 and -2 nuclear plants and found that they are valuable facilities that have been producing electricity reliably for 40 years and have been re-permitted for many more.

This is the background of how I have come to oppose industrial wind and strongly support nuclear energy.



<http://ansnuclearcafe.files.wordpress.com/2011/03/eastman.gif>

<http://ansnuclearcafe.files.wordpress.com/2011/03/eastman.gif>

Eastman

*Ajax Eastman has been involved in environmental and conservation issues since 1970, having served on the board of the Maryland Environmental Trust, as past president of the Maryland Conservation Council, Co-chairman of the Maryland Wildlands Committee, and on numerous other state boards and advisory commissions. Her love of the natural world began at an early age when she attended a camp in Maine, where today she helps young campers develop a deep appreciation for the rich natural diversity surrounding them.*

Ajax Eastman's recent column—[Pulling back the curtain on Industrial Wind](#)—was distributed by the [Bay Journal News Service](#), which focuses on environmental issues affecting communities in the Chesapeake Bay Watershed and the Mid-Atlantic. She is a guest contributor to the [ANS Nuclear Cafe](#).

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Posted in [Environmental Benefits of Nuclear](#), [News](#), [wind power](#)

**[Next generation nuclear energy report now available via iTunes](#)**

Posted on [March 1, 2011](#) by [ansnuclearcafe](#) | [1 Comment](#)





<http://ansnuclearcafe.files.wordpress.com/2011/03/danrather.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/danrather.jpg>

Rather

*Dan Rather Reports* will be airing a segment on next generation nuclear energy on Tuesday evening, March 1. *Dan Rather Reports* appears on [HDNet](#) (please check with your local television provider for viewing information).

From the [Dan Rather Reports website](#):

**Premiere: Mar 1st 8:00 PM [ET] *Dan Rather Reports* – Power Play** A new generation of nuclear power generators is on the horizon.

**UPDATE: This episode is now available via iTunes—search *Dan Rather Reports*.**

A trailer for tonight's broadcast:

According to the *Dan Rather Reports* website, this program is scheduled to air again on Saturday, March 5, 12:00 pm (ET).

The segment will feature Eric Loewen, ANS president-elect, talking about the benefits of nuclear power. Footage may also be included of Loewen giving a presentation to a group of City College of New York nuclear engineering faculty and students about reactor physics, in conjunction with his role at ANS (see the [ANS Nuclear Cafe](#) for further information). Loewen's participation in *Dan Rather Reports*, however, was solely as representing his and his employer's interests.

[→ 1 Comment](#)

Posted in [American Nuclear Society](#), [Environmental Benefits of Nuclear](#), [integral fast reactor](#), [News](#)

## **Return on nuclear investments—What UCS's nuclear subsidy attack missed**

Posted on [March 1, 2011](#) by [ansnuclearcafe](#) | [3 Comments](#)

By Rod Adams

Last week, the Union of Concerned Scientists (UCS) published a report written by Doug Koplow, titled [Nuclear Power: Still Not Viable Without Subsidies](#), which generated a good deal of discussion and encouraged some [observers to parrot the conclusions](#) without reading the document very carefully.

Here is a discussion-provoking quote from the [UCS's own press release about the report](#) that I want you to read very carefully:

The key subsidies for nuclear power **do not involve cash payments**, the report found. They shift the risks of constructing and operating plants—including cost overruns, loan defaults, accidents, and waste management—from plant owners and investors to taxpayers and ratepayers. These hidden subsidies distort market choices that would otherwise favor less risky investments.

(Emphasis added)

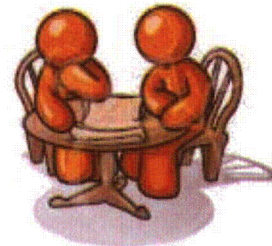
That first sentence sounds pretty attractive, especially in an era where fiscal austerity is the trendy

attitude in politics. If an industry does not require cash, but provides near-term value such as jobs and skills training, it sounds like it should be worth strong consideration.



<http://ansnuclearcafe.files.wordpress.com/2011/03/k2245324.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/k2245324.jpg> The concept of shifting risk is not so attractive, but the situation begs the questions, What is the risk that is being shifted? Is it real, or is it perceived? As an investor, I recognize that there are certain situations that look risky to some people, but if there is a way to get an inside look at the real risks, it is possible to recognize that accepting responsibility can lead to great rewards.



<http://ansnuclearcafe.files.wordpress.com/2011/03/images.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/images.jpg> If everyone at a table is overestimating a risk, the person that bets against the crowd can clean up. In the case of accident risks associated with nuclear energy, the real world will favor the entity that bets that the next 50 years will be as safe as the last 50 years. Not only is the excellent track record likely to continue, but detailed probabilistic risk assessments indicate that the next generation of plants will be even better than the ones that are operating today.



<http://ansnuclearcafe.files.wordpress.com/2011/03/images1.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/images1.jpg> The UCS report admits that a major investment risk associated with nuclear energy is the risk of excessive delay in completing the project. It says that the industry has gained a subsidy by shifting the costs associated with that risk to ratepayers and taxpayers. Interestingly enough, the organization that seeks at every step of the process to impose as much delay as legally possible does not look in the mirror and recognize that there are safe ways to reduce the magnitude of the cost associated with project delays. There is no need to **shift** cost when it can be **eliminated**.

Here is another quote that I found on page 14 of the report that should provide some comfort to people who are deciding whether or not it makes sense to provide the nuclear power plant construction industry with a hand up.

**Aside:** Though the UCS and its friends like to remind us all that nuclear energy facility operations is a mature industry that has a 50-year track record, they neglect the fact that the **nuclear plant construction** industry in the United States has been virtually dormant for 30 years. Component factories, material suppliers, and skilled craftsmen have all found other things to do; restarting the



industry is almost like starting from scratch. That effort, though valuable, will not be easy or cheap.  
**End Aside.**

Over the course of five decades, many of the policies have been modified or eliminated, and the facilities they helped to build have largely been depreciated. Although these subsidies may no longer affect the cost structure of existing reactors, understanding the scale of historical support is critical in evaluating the distortionary role of government support in shaping the current energy infrastructure.

The report's author is pointing out something that is quite important about nuclear energy—government policies that enabled plant construction during the first Atomic Age provided us with powerful machines that have been fully depreciated in a couple of decades. During those first few years of operation, the government eliminated all operating subsidies. The resulting legacy of enabling policies has given us mortgage-free machines that will operate reliably for several more decades. Their total operations and maintenance cost is lower than the cost of buying fuel for the other kinds of power plants that provide power on demand.

My final word on nuclear energy subsidies in the United States comes from my personal experience in attempting to attract capital for a company whose mission was to produce small modular reactors at a time when few people had ever heard of the concept. Despite more than a decade of searching, the only government programs associated with nuclear energy that my team and I could find were barriers that added to our computed costs and schedules. We never found any programs that were designed to help us gain access to the market, even though the country's leaders frequently talked about the need for clean, reliable, domestic energy sources.

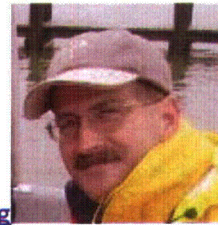


<http://ansnuclearcafe.files.wordpress.com/2011/03/index.jpg>

<http://ansnuclearcafe.files.wordpress.com/2011/03/index.jpg> We were told by the Nuclear Regulatory Commission that our initial application fee would be \$250,000 and that we would be required to pay \$257 for every hour that the regulators spent reviewing our application. We were informed that before NRC regulators could start the review process, we would have to pay them to attend training sessions so that they could understand more about our proposed non light water technology.

Not surprisingly, all potential investors shied away when informed that license applicants pay, but have no ability to control the review schedule. No investor is attracted by a financial model that cannot predict when cumulative costs stop growing and revenue begins arriving.

If organizations like the UCS are honestly concerned about reducing taxpayer subsidy costs for clean, reliable energy, there are things they can do to help eliminate expenses and risks. I do not expect they will take those actions, but that should not stop atomic advocates from pointing out the inconsistencies of an organization that is guilty of both adding financial and schedule risks and then complaining that they exist.



[http://ansnuclearcafe.files.wordpress.com/2011/01/rod\\_adams.jpg](http://ansnuclearcafe.files.wordpress.com/2011/01/rod_adams.jpg)

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Adams

Rod Adams is a pro-nuclear advocate with extensive small nuclear plant operating experience. Adams is a former engineer officer, USS Von Steuben. He is founder of Adams Atomic Engines, Inc., and host and producer of The Atomic Show Podcast. Adams has been an ANS member since 2005. He writes about nuclear technology at his own blog, [Atomic Insights](#).

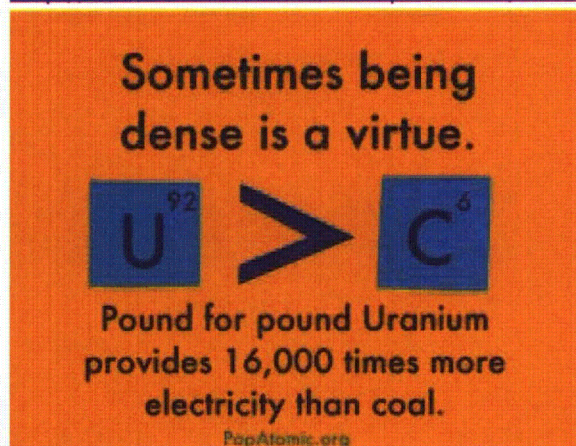
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Posted in [American Nuclear Society](#), [Economic benefits of nuclear](#), [Electricity generating capacity](#), [News](#), [Union of Concerned Scientists \(UCS\)](#), [workforce](#)

## [41st Carnival of Nuclear Energy Blogs](#)

Posted on [February 28, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

<http://ansnuclearcafe.files.wordpress.com/2011/02/densitycomparison.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/02/densitycomparison.jpg>

Energy density matters ~ graphic courtesy of Pop Atomic Studios

The [41st Carnival of Nuclear Energy Blogs](#) is up at [CoolHandNuke](#). The carnival is a weekly round-up of the best blog posts from the leading nuclear bloggers in the United States.

If you want to hear the voice of the nuclear renaissance, the *Carnival of Nuclear Energy Blogs* is where to find it.

Past editions have been hosted at *NEI Nuclear Notes*, *Next Big Future*, *Atomic Insights*, *Idaho Samizdat*, *ANS Nuclear Cafe*, *Canadian Energy Issues*, and *Yes Vermont Yankee*, in addition to several other popular nuclear energy blog sites.

If you have a pro-nuclear energy blog and would like to host an edition of the carnival, please contact [Brian Wang](#) at [Next Big Future](#) to get on the rotation.

This is a great collaborative effort that deserves your support. Please post a Tweet, a Facebook entry, or a link on your Web site or blog to support the carnival.

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[→ Leave a comment](#)

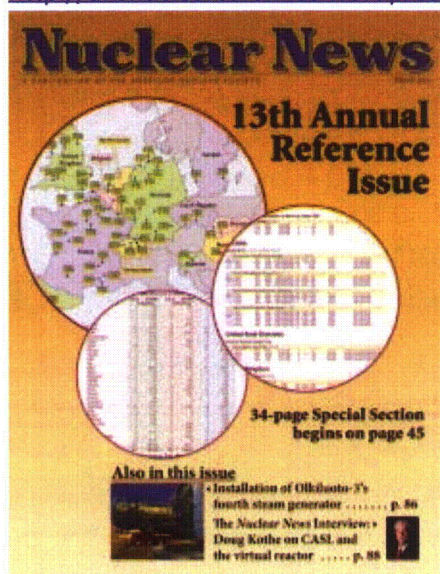


Posted in [Carnival of nuclear bloggers](#)

## **The NN World List of Nuclear Power Plants**

Posted on [February 28, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)

<http://ansnuclearcafe.files.wordpress.com/2011/02/mar11nn-cover.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/02/mar11nn-cover.jpg> The hard-copy March edition of *Nuclear News* will soon be in the hands of American Nuclear Society members. That edition will also be [available electronically](#) to members. The edition contains the 13th Annual Reference Issue, which includes a 34-page special section on the **World List of Nuclear Power Plants**. The special section includes:

- Notes on the 2011 World List of Nuclear Power Plants
- The World List of Nuclear Power Plants
- Power Reactors by Nation; Power Reactors by Type, Worldwide
- Abbreviations Used in the List
- Nuclear Power Plants No Longer in Service
- Maps of Commercial Nuclear Power Plants Worldwide
- U.S. Power Reactor License Renewal
- New Power Reactor Projects in the United States; U.S. Power Reactor Ownership/Operator Changes

In addition, the March issue features a Q&A article with Doug Kothe, director of the [Consortium for Advanced Simulation of Light Water Reactors \(CASL\)](#), a project announced by the Department of Energy in 2009 as part of its [Energy Innovation Hub initiative](#). CASL's mission is to create a virtual environment for predictive simulation of light-water reactors.



Dome removed from the Hector reactor

Other items of note in the March issue include news about GE Hitachi's ESBWR, Westinghouse's AP1000, and Toshiba's ABWR nearing design certification; the NRC's pressing of TVA on Watts Bar-2 fire protection; the final environmental impact statement for Calvert Cliffs-3, which awaits additional information from UniStar; Shaw's temporary halting of module prototype work at a fabrication facility; the denial of one petition and the proposing of others in the license renewal proceeding for Vermont Yankee; Holtec's creation of a subsidiary to develop a small modular reactor design; the NRC's easing of Oconee inspections and increasing oversight of Robinson-2; the GAO's review of guidelines for securing smart grid systems; the NNSA's work in West Africa on border security; Brazil's and Argentina's signing of an agreement to build research reactors; GE Hitachi signing of supply agreements with two Polish companies; the withdrawal of major investors from Romania's Cernavoda-3 and -4 project; news of the political turmoil that erupted in Egypt as a nuclear tender was planned; Canada's Bruce Power's plan

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[http://ansnuclearcafe.files.wordpress.com/2011/02/ncore\\_logo.jpg](http://ansnuclearcafe.files.wordpress.com/2011/02/ncore_logo.jpg)to ship decommissioned steam generators to a Swedish recycling facility; EDF's adding to its nuclear decommissioning fund; the NRC extending the time period for on-site storage of used nuclear fuel; a dome removed from a heavy-water test reactor at Savannah River Site; General Electric's closing on a \$3-billion deal to acquire Dresser Inc.; Westinghouse signing of an agreements on fuel fabrication, AP1000 deployment in China; high-energy collisions at Large Hadron Collider are delayed until 2014; USEC looks to continue operations at Paducah Gaseous Diffusion Plant; U.S., international partners establish the National Center for Radioecology; and the NRC issues notice to medical licensees on release of patients treated with iodine.

Past issues of *Nuclear News*, including the February issue, are available [here](#).



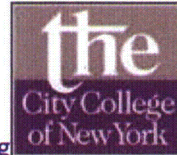
This post first appeared on the [ANS Nuclear Cafe](#).

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Posted in [American Nuclear Society](#), [News](#), [Nuclear News](#), [Nuclear power shipping](#), [reactor designs](#), [Small modular reactors](#)

## **ANS president-elect Eric Loewen visits City College of New York**

Posted on [February 26, 2011](#) by [ansnuclearcafe](#) | [Leave a comment](#)



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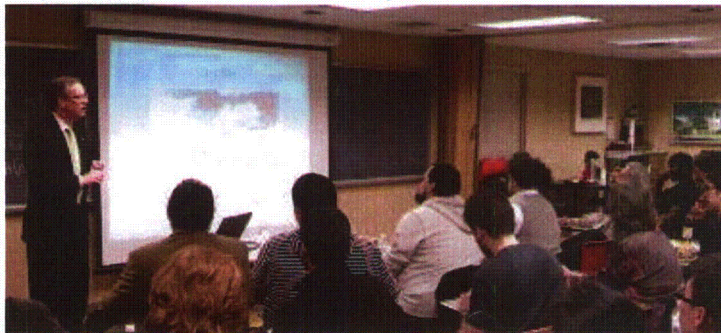
<http://ansnuclearcafe.files.wordpress.com/2011/02/ccny.jpeg> American Nuclear Society president-elect Eric Loewen on February 17 visited the City College of New York (CCNY). Loewen presented a talk during the noon hour on "[Nuclear Reactor Physics at Three Mile Island and Chernobyl](#)" to an audience of about 40 engineering faculty members and students. Most students were from CCNY's mechanical or chemical engineering programs and have taken, or are currently taking, at least one of the college's [nuclear engineering concentration courses](#):

- Reactor physics
- Thermal hydraulics
- Nuclear Power Plant Safety
- Nuclear power plant design/operation

Following the presentation, Loewen met with the students in the nuclear program, answered their questions, and gave them individualized advice on how to set a path for a career in the nuclear industry. Loewen's presentation was part of a lecture series that has included other speakers in the past and will include other speakers in the future.

"I've received nothing but praise about Eric's presentation," said Charles Sosa, a nuclear engineering student who invited Loewen to the college. "I've spoken to all nuclear engineering concentration students at CCNY, including other engineering students and faculty who are not involved in the nuclear program, and all were thoroughly impressed by the mixture of science and humor that Eric incorporated into his presentation."

<http://ansnuclearcafe.files.wordpress.com/2011/02/loewen-ccny2.jpg>



<http://ansnuclearcafe.files.wordpress.com/2011/02/loewen-ccny2.jpg>

Loewen speaks at CCNY

### **The concentration program**

In spring 2010, the CCNY Grove School of Engineering started the concentration in nuclear

engineering for its mechanical and chemical engineering students. The program is run by CCNY Professor Masahiro Kawaji. An ANS Student Club was formed in 2010 as a direct result of the enthusiasm expressed by students to expand education beyond the classroom by attending ANS conferences and hosting talks by scientists and engineers in the nuclear industry. CCNY is currently working to get the student club recognized as an official ANS Student Section.

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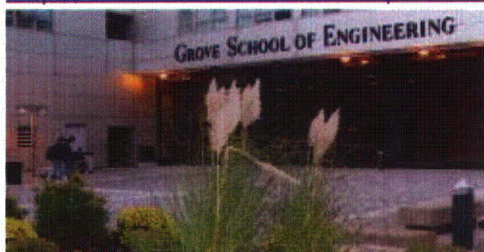
Loewen and CCNY engineering faculty and students (Sosa is standing furthest left)

The seeds for Loewen's visit were sown in 2010, when Loewen gave a talk at the NASA Goddard Institute for Space Studies (GISS) about his nuclear fuel cycle work for GE-Hitachi. Sosa was a student researcher at GISS under the NASA MUST (Motivating Undergraduate and Science and Technology) program and briefly met with Loewen before his fuel cycle presentation.

Afterward, Sosa entered the nuclear engineering concentration program in conjunction with his CCNY mechanical engineering studies. Students in the concentration program are encouraged to bring industry experts to give lectures, and so Sosa reached out to Loewen, informed him about the newly formed nuclear program at CCNY, explained that the student body is enthusiastic about nuclear energy, and invited him to visit.

#### **Future activities**

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<http://ansnuclearcafe.files.wordpress.com/2011/02/grove-school-of-engineering1.jpg>

The Grove School of Engineering

The concentration program and the CCNY ANS students are planning to continue a guest lecturer series highlighting the nuclear industry. John Yoshinari, chief operating officer of GE-Hitachi Nuclear Energy, on February 24 presented "The Technical and Financial Aspects of the Nuclear Business." The nuclear concentration program is planning two nuclear energy plant visits—to the Indian Point and Salem facilities. A visit to Brookhaven National Laboratory is also being scheduled.

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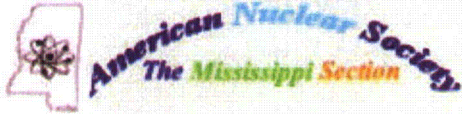
Posted in [ANS Student Sections](#), [News](#)

## **2011 nuclear technology scholarships**

Posted on [February 25, 2011](#) by [ansnuclearcafe](#) | [1 Comment](#)



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<http://ansnuclearcafe.files.wordpress.com/2011/02/logo88.png> The Mississippi Section of the American Nuclear Society is offering two \$1000 college scholarships to Mississippi high school graduates or college undergraduates. Scholarship winners are chosen from state-wide applications. The application deadline is May 1, 2011.

"Selection gets harder every year because of the high caliber of students applying," said Ryan Doerr, ANS Scholarship chair. Doerr is a senior engineer in procurement engineering at Entergy's national nuclear fleet headquarters in Jackson, Miss. This is the sixth year that the Mississippi section of ANS has offered scholarships that encourage student interest in nuclear science, technology, and related fields.

The ANS scholarships are awarded to Mississippi students who will be enrolled or are currently enrolled full-time in college courses in science, mathematics and/or technical areas. Recipients are chosen based on academic achievement, extracurricular activities, an essay, and letters of recommendation from counselors and teachers.

To apply for the scholarship and for more information, go [here](#).

The Mississippi Chapter of ANS is located at the Entergy Nuclear national fleet headquarters in Jackson, Miss., and at Entergy's Grand Gulf nuclear plant in Port Gibson, Miss., with membership from area health care and nuclear power professionals promoting the awareness and understanding of the application of nuclear science and technology. The chapter's website is [here](#).



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<http://ansnuclearcafe.files.wordpress.com/2011/02/anspic.png> Established in 1954, ANS is a professional organization of scientists and engineers devoted to the applications of nuclear science and technology. Its 11 500 members come from diverse technical disciplines ranging from physics and nuclear safety to operations and power, across the full spectrum of the national and international nuclear enterprise including government, academia, research laboratories, and private industry. The ANS website is [here](#).

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**From:** HOO Hoc  
**Sent:** Friday, March 11, 2011 10:09 AM  
**To:** HOO Hoc  
**Subject:** HOO HIGHLIGHT - NRC IN MONITORING MODE AT 0946

The NRC is in the Monitoring Response Mode as of 0946 on 3/11/11. Region IV will take the lead

for U.S. sites and HQ for international sites to provide assistance in response to the earthquake in Japan and any adverse affects from a tsunami. This response mode change is NOT associated with event number 46668.

Joe O'Hara  
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.sgov.gov](mailto:hoo1@nrc.sgov.gov)



. This email is UNCLASSIFIED.

March 12, 2011

Nuclear and Industrial Safety Agency

Seismic Damage Information(the 15<sup>th</sup> Release)  
(As of 16:30 March 12, 2011)

Nuclear and Industrial Safety Agency (NISA) confirmed the current situation of Higashidori and Onagawa NPSs, Tohoku Electric Power Co., Inc

Higashidori, Fukushima Dai-ichi, Fukushima Dai-ni and Kashiwazaki-Kariwa NPSs, Tokyo Electric Power Co., Inc. and electricity, gas, heat supply and complex as follows:

1. Summary of Damage(Earthquake at Sanriku-Oki)

- (1) Time of Occurrence: 14:46 (UTC 5:46) March 11, 2011, Friday
- (2) Epicenter: Off-Coast of Sanriku (North Latitude: 38; East Longitude: 142.9), 10km deep, M8.8
- (3) Seismic Intensity in Japanese Scale  
<Area of Seismic Intensity Larger Than and Including 4>  
7: Northern Miyagi Prefecture  
6+: Northern and southern Ibaraki Prefecture  
5+: Sanpachi-Kamikita Aomori Prefecture  
5-: Chuetsu, Niigata Prefecture  
<Municipality of Seismic Intensity Larger than and Including 4>  
6+: Naraha Machi, Tomioka Machi, Ookuma-machi, and Futaba-machi, Fukushima Prefecture  
6-: Ishinomaki-city and, Onagawa town (by Seismograph of NPP)of , Miyagi Prefecture and Tokaimura, Ibaraki Pref.  
5-: Kariwa-village, Niigata Prefecture  
4: Rokkasho-village, Higashidori-village, Aomori Prefecture, Kashiwazaki-city, Niigata Prefecture and Yokosuka-city, Kanagawa Prefecture

1: Tomari-village, Hokkaido

2. The status of operation at Power Stations(Number of automatic shutdown(units): 10 (as of 11:00, March12)

a. Onagawa Nuclear Power Station (Onagawa-machi and Ishinomaki-shi, Miyagi Prefecture)

(1) The status of operation

Unit 1 (524MWe): automatic shutdown, cold shut down at 0:58, March 12

Unit 2 (825MWe): automatic shutdown

Unit 3 (825MWe): automatic shutdown, cold shut down at 1:17, March 12

(2) Readings of monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitor readings: No

(3) Report concerning other malfunction

It is confirmed Smoke in the first basement of the Turbine Building was confirmed the extinguished at 22:55 on March 11th.

b. Fukushima Dai-ichi Nuclear Power Station, Tokyo Electric Power Co.,Inc.(TEPCO)

(Okuma-machi and Futaba-machi, Futaba-gun, Fukushima Prefecture )

(1) The status of operation

Unit 1 (460MWe): automatic shutdown

Unit 2 (784MWe): automatic shutdown

Unit 3 (784MWe): automatic shutdown

Unit 4(784MW): in periodic inspection outage

Unit 5(784MW): in periodic inspection outage

Unit 6(1,100MW): in periodic inspection outage

(2) Readings at monitoring post etc.

The measurement of radioactive materials in the environmental monitoring area near the site boundary by a monitoring car confirmed the increase in the radioactivity compared to the radioactivity at 04:00, March 12 now.

MP6 (near the main gate)    0.07microSv/h ->8.9 micro Sv/h  
(04:00, March12->14:40, March 12)

MP8 (observation platform)    0.07microSv/h ->3.8 micro Sv/h  
(04:00, March 12->14:40, March 12)

(3) Wind direction/wind speed(as of 13:12, March 12)

Wind direction:South East

Wind Speed: 1.8m/s

(4)Report concerning other malfunction

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi)

(\*A heightened alert condition)

Article 15\*\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ichi, Units 1 and 2)

(\*\* Nuclear emergency situation)

Situation of power source to recover water injection function at the Station.

-Cable from electric power generating cars are under connecting work(as of 11:00, March 12)

Pressure in the containment vessel has arisen. Steam release is undertaking in order to relieve pressure.

c. Fukushima-Daini Nuclear Power Station(TEPCO)

(Naraha-cho/Tomioka-cho, Futaba-gun, Fukushima pref.)

(1) The status of operation

Unit1(1,100MW): automatic shutdown

Unit2(1,100MW): automatic shutdown

Unit3(1,100MW): automatic shutdown

Unit4(1,100MW): automatic shutdown

(2) Readings at monitoring post etc.

Variation in the monitoring post readings: No

Variation in the main stack monitoring readings: No

(3) Direction and velocity of wind (As of 15:00 12 March)

Direction: Southsoutheast

Velocity: 8.0m/s

(4) Report concerning other malfunction

No Report of fire, etc.

Article 10\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Unit 1)

(\*A heightened alert condition)

Article 15\*\* of Act on Special Measures Concerning Nuclear Emergency

Preparedness (Fukushima Dai-ni, Units 1,2 and 4)

(\*\*Nuclear emergency situation)

### 3. Industrial Safety

#### ○Electricity

\* Tokyo Electric Power Co. (as of 15:54, March 12, 2011)

Scale of loss of electrical power: approx. 570 thousand houses

Power loss area:

Ibaraki Pref.: Whole area (approx. 522 thousand houses),

Tochigi Pref.: Utsunomiya-shi, Mogi-cho, etc. (approx 12 thousand houses)

Chiba Pref.: Katori-shi, Yamatake-shi, Asahi-shi, etc. approx 32 thousand houses)

Tokyo-to: Edogawa-ku

\* Tohoku Electric Power Co. (as of 15:00, March 12, 2011)

Scale of loss of electrical power: approx.3,850 thousand houses (under investigation)

Power loss area:

Aomori Pref.: Whole area (approx 658 thousand houses)

Iwate Pref.: Whole area, (approx 774 thousand houses)

Akita Pref: Whole area (approx 504 thousand houses)

Miyagi Pref: whole area (approx 1,358 thousand houses)

Yamagata Pref: Almost whole area (approx 375 thousand houses)

Fukushima Pref: Some parts of Naka-dori and Hama-dori (approx 175 thousand houses)

Niigata Pref.: Some parts of Toukamachi-shi and Tsunan-cho (approx 80 houses)

\* Hokkaido Electric Power Co. (as of 14:00, March 12, 2011)

All of the power loss area has been recovered.

\*Chubu Electric Power Co. (as of 11:30, March 12, 2011)

Scale of loss of electrical power: approx.140 houses (Sakae-mura),

○General Gas (as of 15:50, March 12)

The Japan Gas Association dispatched its six advance teams of thirty staff (five teams for Sendai and one team for Joban area) at 07:00, 12 March upon

request from Sendai-shi.

Sendai-city municipal Gas, Kesennuma-city municipal Gas, Ishinomaki Gas have trouble contacting at 1:00 12 March. The Japan Gas Association confirmed that there is no supply disruption in the supply area of city gas in Hokkaido, Yamagata, and Akita prefecture.

\* Tokyo Gas Co. (whole area of Hitachi-shi)

Hitachi branch: 30,008 houses are in supply disruption. There is no damage in equipment, however, equipment in inoperable due to loss of power. Walkdown unit of eight person departed at 18:45, March 11 and already arrived at 06:00, March 12. Recovery plan will be established by 12 afternoon. Time of recovery is not certain.

Eastern part of Joso: 453 houses were in supply disruption in Ushiku (supply restarted at 17:10, March 11)

471 houses were in supply disruption in Ushiku-shi  
Ushiku-cho(supply restarted at 22:36 March11)

77 houses are in supply disruption in  
Ryuugasaki(supply restarted at 16:20, March 11)

40 houses are in supply disruption in Nishi-ku,  
Yokohama-shi(supply restarted at 17:29, March 11)

Gas leaked from a Nozzle of an LNG tank at Sodegaura but no ignition (restored on 02:30, March 12)

\*Gas Bureau of Sendai-shi: whole supply disruption (approx.360 thousand houses)

\*Shiogama Gas Co.: approx.12,000 houses are in supply disruption (all of supply area is out of service due to no supply from Gas Bureau of Sendai)

\*Hachinohe Gas (Hachinohe-shi)

\*Kamaishi Gas Co. : approx.16,500 houses are in supply turned to be stopped after this noon. First floor of this Gas facility sank.

\*Hatano Gas Co.: 330 houses are in supply disruption

\*Keiyo Gas Co.: Leakage occurred at 5 locations of middle pressure conduit  
Leakage occurred at many parts of Low pressure conduits  
5,445 houses in Urayasu-shi are in supply disruption.  
Supply to Yachiyo Station stopped.



- \*Kujukuri choei Gas: Approx 258 houses are in supply disruption.
- \*Atsugi Gas Co: leakage occurred at 1 location of middle pressure conduit.
- \*Fukushima Gas Co.: (A part of Fukushima-shi) About 2,726 houses are in supply disruption
- \*Tohoku Gas (part of Shirakawa-shi): 300 houses are in supply disruption
- \*Joban kyodo Gas(Iwaki-shi): 14,000 houses (whole customer) are in supply disruption
- \*Tobu Gas Fukushima-shisya: 7,500 houses are in supply disruption (Koriyama-shi, Iwaki-shi) leakage occurred at 2 locations of middle pressure conduit, leakage occurred at 54 locations of low pressure conduits and another leakage occurred on 85 locations. 39 houses in supply disruption.
- \*Tobu Gas (a part of Tsuchiura-shi) 7,500 houses in supply disruption  
(a part of Mito-shi) 330 houses in supply disruption
- \*Joban Toshi Gas (Mito-shi) 60 houses in supply disruption
- \*Tosai Gas(Kasukabe-shi) Gas leakage occurred from conduit. 150 houses in apartment are in supply disruption. Supply restarted in the afternoon 12 March.
- \*Odawara Gas(Odawara-shi)  
leakage occurred at 1 locations of low pressure branch conduit and 3 locations of ex-core inner conduit and have restored at 21:30 11 March. Other areas are under investigation.
- Community Gas(as of 15:50, March 12)  
Severe damage has not been reported to Japan Community Gas Association so far. No information is available about the damage in North part of Ibaraki prefecture.
- \*Tokyo Gas Energy (North part of Ibaraki): Factory stopped supply to 943 houses in Nakago-New Town due to the leakage from pipe.
- \*Sato Kosan (based in Iwatsuki-ku, Saitama City) Iwatsuki-housing complex: Gas leakage occurred from conduit. 451 sites are in supply disruption.
- \*Syutoken Gas (based in Sakura-City) Chitose-housing complex:1,320 houses are in supply disruption
- \*Kashima Marui Gas (Kamisu-shi):Gas conduit was damaged. 527 houses are in supply disruption. Time of recovery is not certain.
- \*Nagashima Central Gas (Katori-shi) Tamatsukuri-housing complex, 222

houses are in supply disruption due to short circuit now under recovery works.

\*Taihei Sangyo (Takahagi-shi) Hagigaoka-housing complex 112 houses are in supply disruption due to short circuit. Recovery has completed at 21:00 11 March. (Takahagi-shi) Ishidaki-housing complex 648 houses and (Hitachi-shi) Hitachi-Densen Akasaka-housing complex 222 houses are in supply disruption. Under recovery works.

\*Imaichi Gas: Gas leakage occurred from conduit at the simple gas complex in Nikko-shi: 240 houses were in gas supply disruption.

\*Nihon Gas: Gas leakage occurred from conduit at simple gas complex in the jurisdiction: 76 houses in Nasu-karasuyama-shi, 97 houses in Inashiki-shi, 594 houses in Tokai-mura, Natsu-gun, 370 houses in Yaita-shi, and 3,299 houses in Itako-shi were in gas supply disruption.

These areas other than Itako-shi will be restored on March 12. Residents in 1876 houses of Hinode housing complex in Itako-shi evacuated from this region due to liquefaction of the ground. Time of recovery is not certain.

212 houses in Noda-shi were in gas supply disruption. This area has been restored in March 11.

\*Horikawa Industry (Bando city, Ibaraki Pref.) : Iwai Greenland Due to liquefaction of the ground, 566 houses are in supply disruption.

\*Tajima : 250 houses were in gas supply disruption at the simple gas complex in Hachioji-city. This area will be restored within March 12.

○Gas conduit Operators (as of 15:50, March 12)

\*JX Nikko Nisseki Energy: Hachinohe LNG Base

Premise, electric room and in-house electricity generator equipment, were flooded by the 2<sup>nd</sup> wave of tsunami and the gas supply was stopped.

According to Japan National Gas Association, there are no damage to pipelines of conduit-transport companies.(as of 23:00, March 11)

○Heat supply (as of 15:50, March 12)

\*Yamagata Netsu Kyokyu (Yamagata-shi): Stopped heat supply

\*Onahama Haiyu (Onahama, Iwaki-shi): stopped heat supply due to the breakage of pipe. Heat supply pipes underground might be affected. Time of recovery is not certain.

\*"HITACHI NETSU ENERGY"(Hitachi City): stopped heat supply due to the electrical outage at 15:19, March 11.

\*"CHIBA NETSU KYOKYU"(Chiba-city): stopped freezer, etc. at 16:19, March 11. Supply was stopped and walkdown is conducted at 16:19, March 11.

\*"NISHI-IKEBUKURO NETSU KYOKYU": stopped freezer and boiler at 15:45, March 11.

\*"TOKYO NETSU KYOKYU";

-stopped boiler in Takeshiba and Yurakucho areas at 15:20, March 11

-stopped supply to one of the building complex at Hikarigaoka for approx. 3 hours due to the leakage of pipe at 21:35, March 11(Restart supplying at 00:05, March 12)

\*"Yokohama Business Park NETSU KYOKYU (Hodogaya-ku, Yokohama city)

15:50 Stopped steam and cold water supply to PREZZO building

16:20 restored by temporary repair

oComplex (as of 11:00, March 12)

\*Cosmo Oil factory Chiba branch

A column of Butane Butylene storage tank was broken. Fire occurred due to gas leakage. One person suffered serious-injury, 4 persons suffered minor injury.

\*JX Nippon Oil&Energy Corporation Sendai oil factory (sendai-city, Miyagi prefecture)

-Fire occurred from an explosion of low temperature LPG tank

#### 4. Action taken by NISA

(March 11)

14:46 Set up of the NISA Emergency Preparedness Headquarters (Tokyo) immediately after the earthquake

15:42: TEPCO reported to NISA in accordance with Article 10 of the Act on Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi, Units 1,2 and 3.

16:36: TEPCO judged the event in accordance with Article 15 of the Act for

Special Measures Concerning Nuclear Emergency Preparedness regarding Fukushima Dai-ichi, Units 1 and 2.(notified to NISA at 16:45)

18:08: Unit 1 of Fukushima Dai-ni notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

18:33: Units 1,2 and 4 of Fukushima Dai-ni notified NISA of the situation of the Article 10 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

19:03 : Government declared the state of nuclear emergency

20:50: Fukushima prefecture's emergency preparedness headquarters - issued a directive regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO that the residents living in the area of 2km radius from Unit 1 of the Nuclear Power Station must evacuate.(The population of this area is 1,864)

21:23: Directives from Prime Minister to Governor of Fukushima, Mayor of Ooka and Mayor of Futaba were issued regarding the accident occurred at Fukushima-Dai-ichi Nuclear Power Station, TEPCO, pursuant to Paragraph 3, Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness as follows:

- Residents living in the area of 3km radius from Unit 1 of the Nuclear Power Station must evacuate.

- Residents living in the area of 10km radius from the Unit 1 must take sheltering.

(March12)

5:22 Unit 1 of Fukushima Dai-ni notified NISA of the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

5:32 Unit 2 of Fukushima Dai-ni notified NISA of the situation of the Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

05:44 Residents living in the area of 10km radius from unit 1 of the Nuclear Power Station must evacuate by the Prime Minister Direction.

06:07 Regarding Units 1,2 and 4 of Fukushima Dai-ni NPS, TEPCO reported NISA in accordance with Article 15 of Act on Special Measures Concerning Nuclear Emergency Preparedness.

- 
- 6:50 According to the article 64, 3 of nuclear regulation act, government order to control the internal pressure in Fukushima-daiichi unit No. 1 and 2
- 7:45 Directives from Prime Minister to Governor of Fukushima, Mayors of Hirono, Naraha, Tomioka, Ookuma and Futaba were issued regarding the accident occurred at Fukushima-Dai-ni Nuclear Power Station, TEPCO, pursuant to Paragraph 3, Article 15 of the Act for Special Measures Concerning Nuclear Emergency Preparedness as follows:
- Residents living in the area of 3km radius from Fukushima-Dai-ni Nuclear Power Station must evacuate.
  - Residents living in the area of 10km radius from Fukushima-Daini NPS must take sheltering

Status of Residents Evacuation  
(Information from the Resident Safety Team of OFC at 16:20 March 12 )

Resident Safety Team of ERC

Ookuma-cho    Approx 3,500 in grasped number approx 4,000 residents completed (refugee: Miyakoji junior high school)

Futaba-cho    Approx 1,800 in grasped number approx 2,000 residents completed (refugee: Kawamata elementary school)

Tomioka-cho   Approx 15,650 in grasped number approx 16,000 residents completed (refugee: Kawachi village office)

Namie-cho     Grasped number approx 17,000 residents completed (refugee: Tsushima Kasseika Center, Tsushima branch)

Naraha-cho    Grasped number approx 7,800 residents completed (refugee: Kusano junior high school, Taira Dairoku elementary school)

Among these towns, public announcement are implemented by wireless emergency preparedness radio waves and walk down is also done in these some area.

Residents live in 10km radius

| Vicinity of Fukushima Daiichi |        | Vicinity of Fukushima Daini |       |        |
|-------------------------------|--------|-----------------------------|-------|--------|
|                               | 0-10km |                             | 0-3km | 0-10km |
| Tomioka-cho                   | 14,808 | Tomioka-cho                 | 6,534 | 15,961 |
| Ookuma-cho                    | 11,363 | Ookuma-cho                  | -     | 7,127  |
| Futaba-cho                    | 7,243  | Futaba-cho                  | -     | 1,238  |
| Namie-cho                     | 17,793 | Namie-cho                   | 1,515 | 8,100  |
| Total                         | 51,207 | Total                       | 8,049 | 32,426 |

Some area of Fukushima-daiichi 10km area and Fukushima-daini 10 km area are overlapped that cause duplication of resident number.



(Contact Person)

Mr. Toshihiro Bannai

Director, International Affairs Office,  
NISA/METI

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

**From:** RMTPACTSU\_DMO  
**To:** ofdastsupport  
**Cc:** RMT\_PACTSU; Brown, Courtney; Stitt, Tony; Berger, William; Sink, Amy (BFS) [USAID]; Perks, Dewey(DCHA/OFDA) [USAID]; Potts, Sarah; Betz, Travis; Hughart, Joe; Brown, Courtney; Bock, Yonahton(DCHA/OFDA) [USAID]; Bock, Yoni; Trapp, James; Remick, Alan  
**Subject:** RE: establishing a DART e-mail list  
**Date:** Saturday, March 12, 2011 8:17:00 AM

---

A few corrections...

Please also include Sarah Potts' usaid.gov e-mail address. I also left out Erin Magee, Information Officer: emagee@ofda.gov.

---

**From:** RMTPACTSU\_DMO  
**Sent:** Saturday, March 12, 2011 7:58 AM  
**To:** ofdastsupport  
**Cc:** RMT\_PACTSU; Brown, Courtney; Stitt, Tony; Berger, William; Sink, Amy (BFS) [USAID]; Perks, Dewey(DCHA/OFDA) [USAID]; Potts, Sarah; Betz, Travis; Hughart, Joe; Brown, Courtney; Bock, Yonahton(DCHA/OFDA) [USAID]; Bock, Yoni; 'James.trapp@nrc.gov'; 'alan.remick@nnsa.doe.gov'  
**Subject:** establishing a DART e-mail list

Dear OFDA Support,

We need to establish a DART e-mail address. Please add the following members:

DART\_PACTSU@ofda.gov

1. wberger@ofda.gov – Bill Berger, Team Leader
2. tstitt@ofda.gov – Tony Stitt, Liaison in BKK
3. asink@usaid.gov – Amy Sink, Field Officer
4. dperks@usaid.gov – Dewey Perks, Operations Coordinator
5. spotts@ofda.gov – Sarah Potts, Admin Coordinator
6. tbetz@ofda.gov – Travis Betz, Logistics Coordinator
7. cobrown@ofda.gov – Courtney Brown, Deputy Team Leader  
cobrown@usaid.gov
8. jhughart@ofda.gov – Joe Hughart, Safety and Security/CBRNE Liaison
9. ybock@usaid.gov – Military Liaison Officer
10. James.trapp@nrc.gov - Jim Trapp – NRC Liaison – e-mail TBD
11. Anthony Patrick Ulises – NRC Liaison – e-mail TBD
12. Alan.remick@nnsa.doe.gov - Alan Lloyd Remick – DOE Liaison – e-mail TBD

Sarah or Dewey can get e-mail address for Anthony Patrick Ulises? He is on the flight with the Fairfax team.

DART – am I missing anyone? Also let me know if you have corrections to your e-mail addresses. Katie is working on the contact list, so please send her your cell number if it is missing from our list.

LLLL/17

Chris Leonardo  
Deputy Manager for Operations  
Pacific Tsunami Response Management Team  
[RMTPACTSU\\_DMO@ofda.gov](mailto:RMTPACTSU_DMO@ofda.gov)  
202-712-0039

USAID

**From:** Cotom, Mario  
**To:** RMTFACTSU\_DMO; OFDASUPPORT [USAID]  
**Cc:** RMT\_FACTSU; Brown, Courtney; Stitt, Tony; Berger, William; Sink, Amy (BFS) [USAID]; Perks, Dewey(DCHA/OFDA) [USAID]; Potts, Sarah; Betz, Travis; Hughart, Joe; Brown, Courtney; Bock, Yonahon(DCHA/OFDA) [USAID]; Bock, Yoni; Trapp, James; Remick, Alan  
**Subject:** RE: establishing a DART e-mail list  
**Date:** Saturday, March 12, 2011 8:13:45 AM  
**Attachments:** image001.png

This request has been completed

**DART\_FACTSU Properties** [?] [X]

Exchange General | E-mail Addresses | Exchange Advanced  
 General | Members | Member Of | Managed By | Object | Security

Members:

| Name             | Active Directory Folder                   |
|------------------|---|
| asink@usaid...   | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |
| Berger, William  | ofda.gov/OFDA USERS                       |
| Betz, Travis     | ofda.gov/OFDA USERS                       |
| Brown, Courtn... | ofda.gov/OFDA USERS                       |
| coBrown@us...    | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |
| dperks@usai...   | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |
| Hughart, Joe     | ofda.gov/OFDA USERS                       |
| Potts, Sarah     | ofda.gov/OFDA USERS                       |
| Remick, Alan     | ofda.gov/OFDA USERS/OFDA PARTNERS         |
| Stitt, Tony      | ofda.gov/OFDA USERS                       |
| Trapp, James     | ofda.gov/OFDA USERS/OFDA PARTNERS         |
| ybock@USAI...    | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |

Add Remove

OK Cancel Apply Help

**Mario S. Cotom**  
**LAN Support**  
**USAID/Office of U.S. Foreign Disaster Assistance**  
**1300 Pennsylvania Ave, Washington, DC 20523**  
**202-712-5646 RRB**  
**202-661-9318 NPB**

**From:** RMTFACTSU\_DMO  
**Sent:** Saturday, March 12, 2011 7:58 AM  
**To:** ofdasupport  
**Cc:** RMT\_FACTSU; Brown, Courtney; Stitt, Tony; Berger, William; Sink, Amy (BFS) [USAID]; Perks, Dewey(DCHA/OFDA) [USAID]; Potts, Sarah; Betz, Travis; Hughart, Joe; Brown, Courtney; Bock, Yonahon(DCHA/OFDA) [USAID]; Bock, Yoni; 'James.trapp@nrc.gov'; 'alan.remick@nnsa.doe.gov'  
**Subject:** establishing a DART e-mail list

LLLL/18

Dear OFDA Support,

We need to establish a DART e-mail address. Please add the following members:

DART\_PACTSU@ofda.gov

1. wberger@ofda.gov – Bill Berger, Team Leader
2. tstitt@ofda.gov – Tony Stitt, Liaison in BKK
3. asink@usaid.gov – Amy Sink, Field Officer
4. dperks@usaid.gov – Dewey Perks, Operations Coordinator
5. spotts@ofda.gov – Sarah Potts, Admin Coordinator
6. tbetz@ofda.gov – Travis Betz, Logistics Coordinator
7. cobrown@ofda.gov – Courtney Brown, Deputy Team Leader  
cobrown@usaid.gov
8. jhughart@ofda.gov – Joe Hughart, Safety and Security/CBRNE Liaison
9. ybock@usaid.gov – Military Liaison Officer
10. James.trapp@nrc.gov - Jim Trapp – NRC Liaison – e-mail TBD
11. Anthony Patrick Ulises – NRC Liaison – e-mail TBD
12. Alan.remick@nnsa.doe.gov - Alan Lloyd Remick – DOE Liaison – e-mail TBD

Sarah or Dewey can get e-mail address for Anthony Patrick Ulises? He is on the flight with the Fairfax team.

DART – am I missing anyone? Also let me know if you have corrections to your e-mail addresses. Katie is working on the contact list, so please send her your cell number if it is missing from our list.













Chris Leonardo  
Deputy Manager for Operations  
Pacific Tsunami Response Management Team  
RMTPACTSU\_DMO@ofda.gov  
202-712-0039

# DART\_PACTSU Properties



Exchange General | E-mail Addresses | Exchange Advanced |  
General | Members | Member Of | Managed By | Object | Security |

## Members:

| Name   | Active Directory Folder                   |
|--|---|
|  asink@usaid...   | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |
|  Berger, William  | ofda.gov/OFDA USERS                       |
|  Betz, Travis     | ofda.gov/OFDA USERS                       |
|  Brown, Courtn... | ofda.gov/OFDA USERS                       |
|  coBrown@us...    | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |
|  dperks@usai...   | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |
|  Hughart, Joe    | ofda.gov/OFDA USERS                       |
|  Potts, Sarah   | ofda.gov/OFDA USERS                       |
|  Remick, Alan   | ofda.gov/OFDA USERS/OFDA PARTNERS         |
|  Stitt, Tony    | ofda.gov/OFDA USERS                       |
|  Trapp, James   | ofda.gov/OFDA USERS/OFDA PARTNERS         |
|  ybock@USAI...  | ofda.gov/OFDA USERS/USAID/USAID GAL IM... |

Add...

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OK

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---

**From:** ET07 Hoc  
**Sent:** Sunday, March 13, 2011 8:54 PM  
**To:** Andersen, James  
**Cc:** Brock, Kathryn; Bowman, Gregory; Sanfilippo, Nathan; Muessele, Mary; Landau, Mindy  
**Subject:** ETA Coverage For Next Week

Jim,

This is Alan working in the Ops Center tonight till 11pm. At Bill's direction, the schedulers here are going to build a schedule for coverage all week. Here is what I know about the other ETAs and I at this point in time:

**Alan:** Sunday the 13<sup>th</sup>, 11am – 11pm shift in Ops Center. No other shifts scheduled. Will be in tomorrow but probably not first thing. Will go back to a normal schedule the rest of the week unless they can't fill my position later in the week.

**Kathryn:** Next shift in Ops Center Monday the 14<sup>th</sup>, 7am – 3pm. They will probably need her later in the week as well.

**Nathan:** Working now in Ops Center. Started at 7pm and will go to 7am on Monday. Also, Tuesday 3pm to 11pm. They will probably need him later in the week as well (probably another 3pm to 11pm on Wednesday). He is scheduled for annual leave on Thursday and Friday.

**Greg:** Greg is my relief tonight at 11pm working until 7am on Monday. Greg is not scheduled for another shift but they may need him later in the week as well.

And you know the **Jim Trapp** has been sent to Japan. He will deserve a medal when he gets back so you might as well order it now.

Alan

---

**From:** HOO Hoc  
**Sent:** Tuesday, March 15, 2011 6:42 PM  
**To:** ET07 Hoc; PMT01 Hoc; RST01 Hoc; LIA01 Hoc; LIA02 Hoc; LIA04 Hoc; LIA07 Hoc; LIA11 Hoc; LIA12 Hoc; Gott, William; Marshall, Jane; McDermott, Brian; Morris, Scott; Thorp, John  
**Subject:** FW: FYI - Industry Efforts

FYI

---

**From:** Weber, Michael  
**Sent:** Tuesday, March 15, 2011 6:35 PM  
**To:** RST01 Hoc  
**Cc:** HOO Hoc; Grobe, Jack  
**Subject:** FYI - Industry Efforts

Update on actions being taken by the industry in response to the evolving Japanese nuclear emergencies.

---

**From:** Leeds, Eric  
**Sent:** Tuesday, March 15, 2011 5:27 PM  
**To:** Borchardt, Bill; Virgilio, Martin  
**Cc:** Weber, Michael  
**Subject:** FYI: Industry Efforts

FYI – Please see Bruce’s email below. NRR is considering short term and longer term actions in response to the Japanese event. We’re considering a measured regulatory response to put an initial footprint on the issue. Its positive to see the industry get out ahead of it – whatever planning they did based on the BP experience seems to be in play. We will keep you in the loop.

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

---

**From:** Boger, Bruce  
**Sent:** Tuesday, March 15, 2011 5:04 PM  
**To:** Leeds, Eric; Grobe, Jack; Ruland, William  
**Cc:** Dean, Bill; Lew, David; McCree, Victor; Wert, Leonard; Satorius, Mark; Pederson, Cynthia; Collins, Elmo; Howell, Art; Virgilio, Martin; Thomas, Eric; Brown, Frederick  
**Subject:** Industry Efforts

I spoke with Randy Edington (CNO Palo Verde) and later with Steve Nichols (INPO) regarding industry actions as a result of the situation in Japan. The CNOs teleconferenced over the weekend and agreed to a series of near-term actions. INPO issued a Level 1 Event Report (highest level) to its members this afternoon. It identifies 4 actions, with due dates, and requires a written response. In general, the actions include walkdowns and verifications of aspects of facility capabilities to address B.5.b equipment and procedures, SAMGs, mitigation of SBO conditions, mitigation of internal and external flooding, and fire and flooding events that could be impacted by a concurrent seismic event. This should help shape the generic communication we’ve been discussing. INPO is figuring out how quickly they will be able to share the report with us. The report won’t be available to the public, but we can share it internally.

**From:** Howe, Allen  
**To:** Leeds, Eric  
**Cc:** Glitter, Joseph; Nelson, Robert  
**Subject:** Possible BWR experts  
**Date:** Monday, March 14, 2011 9:50:52 AM

---

Eric – here are some possible BWR systems experts:

| NAME                         | GRADE | ORGANIZATION        |
|------------------------------|-------|---------------------|
| <u>Hansell, Samuel L</u>     | 15    | R-I /DRS /OB        |
| <u>Norton, Charles H</u>     | 14    | NRR /DORL /LPL3-2   |
| <u>Spindler, David Irwin</u> | 14    | R-I /DRP /PB5 /VYRO |
| <u>Burritt, Arthur L</u>     | 15    | R-I /DRP /PB3       |
| <u>Mckinley, Raymond R.</u>  | 14    | R-I /DRS /PSB2      |
| Bonnett, Paul                | 14    | NRR/DIRS/IPAB       |

They either have an RO/SRO license on BWRs or are a qualified BWR examiner or both.

Thanks - Allen

LLLL/21

## **Zorn, Jason**

---

**From:** Zorn, Jason  
**Sent:** Tuesday, March 15, 2011 5:13 PM  
**To:** Kock, Andrea  
**Subject:** RE: Commission Action During the Chernobyl Accident

Certainly does.

**From:** Kock, Andrea  
**Sent:** Tuesday, March 15, 2011 5:12 PM  
**To:** Zorn, Jason  
**Subject:** RE: Commission Action During the Chernobyl Accident

Thanks Jason for this. This is really interesting and puts our current response into context a bit

Andrea Kock  
Technical Assistant for Materials  
Office of Commissioner Ostendorff  
301-415-2896

**From:** Zorn, Jason  
**Sent:** Tuesday, March 15, 2011 4:48 PM  
**To:** Ostendorff, William; Nieh, Ho; Franovich, Mike; Warnick, Greg; Kock, Andrea  
**Subject:** FW: Commission Action During the Chernobyl Accident

FYI. I provided most of this to the Commissioner earlier, but NRC Historian Tom Wellock sent me a couple of additional observations about comparing the current response to Japan to the response to Chernobyl. Tom's original email is at the bottom, with a follow-up question from me and then a few additional notes.

**From:** Wellock, Thomas  
**Sent:** Tuesday, March 15, 2011 4:24 PM  
**To:** Zorn, Jason  
**Subject:** RE: Commission Action During the Chernobyl Accident

I'm sure that is correct. By the time the world knew of Chernobyl, the accident was almost three days old. On this one, people can watch all three units explode over and over. But I'd add a couple other elements besides information technology:

- 1) The design connection to US reactors seems obvious. It isn't hard to imagine Daiichi 1 as Oyster Creek sitting on the ocean. In 1986, I think the public accepted quickly that our reactors were different from the Russians.
- 2) The regulatory connection seems obvious, too. Japan is an advanced economy with a mature regulatory system, and it still didn't work.
- 3) This accident goes right to the core of our DBA.
- 4) If the claims are correct that the Japanese regulators have not handled information sharing well, it reminds me all too much of the NRC's poor handling of TMI. Right now CNN's webpage headline says the accident is "nearing the severity of Chernobyl." Hysteria fills the void of uncertainty.

Tom

**From:** Zorn, Jason  
**Sent:** Tuesday, March 15, 2011 3:54 PM

**To:** Wellock, Thomas  
**Subject:** RE: Commission Action During the Chernobyl Accident

Tom

This is extremely helpful, and I can't thank you enough for doing the research and putting this together for me. Seems like the response to that incident was significantly different than our current response. [I can't help but wonder if the instantaneous availability of information had something to do with a more measured response in 1986.] I'll let you know if I have any follow up questions from the Commissioner.

Jason

**From:** Wellock, Thomas  
**Sent:** Tuesday, March 15, 2011 3:49 PM  
**To:** Zorn, Jason  
**Subject:** Commission Action During the Chernobyl Accident

Hi Jason,

I've scouted around and there is no narrative about what the Commission did right after the Chernobyl accident. But I have pieced it together from a number of documents. I chose to look at Chernobyl over 9/11 because of the similarity of the NRC having to respond to a nuclear event outside its borders, as we are doing in Japan. To summarize my findings, the NRC played a limited, supporting role in the federal response to the accident. Here is a timeline of agency actions over the first couple weeks following the accident on April 26, 1986.

April 26: Accident occurs.

April 28: First indications of airborne contamination outside the USSR found in Sweden.

April 29: Agency requests data from Swedish Nuclear Power Inspectorate. Congressman Edward Markey writes to NRC requesting the agency establish a task force to obtain information on the accident and evaluate implications for U.S. program. Markey also wrote a letter to Secretary of State George Schultz requesting that the U.S. provide technical and medical assistance when requested by the Soviets. He also called for an international scientific panel to assess the accident.

May 1: The White House announced the formation of an interagency task force to assess the accident's impact on the environment, including the DOE, EPA, NRC, and others. Harold Denton, Director of NRR, represented the NRC. Lee Thomas, Administrator of the EPA, headed the task force. On the same day, the NRC established an Incident Tracking Team to collect information and support the Interagency Task Force. The Soviets refused offers of aid.

May 2: The NRC contacts all licensees requesting that they report anomalous readings in their radiation monitoring to the NRC. Results were to be shared with the task force and INPO.

May 5: Chairman Nunzio Paladino requested the EDO establish another team to perform a longer range study of the accident to determine what reforms might be needed in the U.S. Regulatory program.

May 13: Staff held a briefing of the Commission on the accident. While this is the first mention that I see of Commissioner involvement, there may have been earlier discussion among the Commissioners on this topic. I have requested the transcripts of earlier meetings from the Federal Records Center. They will likely arrive on Thursday.

The NRC issued three reports on the accident over the next six years, NUREGs 1250, 1251, and 1422. From these reports and the earlier actions, I think there are a couple things that are noteworthy given Commissioner Ostendorff's interest in what the Commission did during the accident.

- 1) [Because of the delay in notification of the accident by the Soviets, the Soviet refusal of aid, Cold War relations, and the very different technology involved,] the NRC played a supporting role to the EPA in the accident and even the State Department for a time. The accident was seen as an environmental

threat to the United States, and so the EPA took a greater role. The early focus was on environmental monitoring. As a result, the NRC did not mobilize an emergency response as it is doing now.

2) NRC response was low key and largely reactive to requests by Markey and the White House.

3) What I find striking in the thrust of all of the reports and early responses is that they were mostly technical, focusing on differences in design, accident initiation, and implications for U.S. vendors, etc. No one seems to have asked the larger question the event raised of how the NRC should organize itself to respond to nuclear accidents outside US borders. This may have been discussed much later, but I think that the comparatively low-key non-controversial response of the federal government and the agency meant no flags were raised on this issue.

If you need me to look at 9/11 or have additional questions, let me know. I will also let you know what the Commission transcripts reveal when they arrive.

Tom

Thomas Wellock  
Historian  
U.S. Nuclear Regulatory Commission  
O16G4  
11555 Rockville Pike  
Rockville, MD 20852  
301-415-1965



**From:** Trapp, James  
**To:** LaVie, Steve  
**Subject:** FW: Secretary Chu receives positive response from METI Minister on monitoring  
**Date:** Tuesday, March 15, 2011 8:07:37 PM

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From: Cherry, Ronald C [CherryRC@state.gov]  
Sent: Tuesday, March 15, 2011 7:00 PM  
To: JapanEmbassy, TaskForce; Basalla, Suzanne I; Beed, John A; Berger, William (RDMA/OFDA); Forbes, James A  
Cc: Alan Remick; Aleshia Duncan; Duncan, Aleshia D; Trapp, James; James Trapp (BB); Mears, Jeremy M; Morales, Russell A; Nesheiwat, Julia; Tamada, Yoshimi; Ulses, Anthony; Uchida, Koichi  
Subject: FW: Secretary Chu receives positive response from METI Minister on monitoring

All -- Please note GOJ acceptance of our offer to conduct aerial/ground monitoring. Also GOJ request for iodine tablets.

Alan -- Please advise re: specs and numbers of AMS equipment.

Thank you.

Ron

This email is UNCLASSIFIED-----Original Message-----  
From: Aoki, Steven [<mailto:Steven.Aoki@nnsa.doe.gov>]  
Sent: Wednesday, March 16, 2011 12:04 AM  
To: 'jroos@state.gov'; Zumwalt, James P; Basalla, Suzanne I; Cherry, Ronald C; Duncan, Aleshia; Remick, Alan  
Cc: NITOPS; Connery, Joyce; Mustin, Tracy; Poneman, Daniel; DAgostino, Thomas; Hurlbut, Brandon  
Subject: Secretary Chu receives positive response from METI Minister on monitoring

Mr. Ambassador:

Energy Secretary Chu spoke by phone this morning to METI Minister Kaieda. Key points from the conversation:

Minister Kaieda thanked Sec. Chu for support, updated him on reactors

- \* FD #1 and #3 are regaining stability
- \* FD #2 may have damage to the separation chamber, attempting to stop it from escalating
- \* Outside of 20KM, radiation levels have dropped to a level that would have a small to negligible impact on health.

The Secretary offered equipment / people /expertise, and expressed support

Minister Kaieda:

- \* Thanked S1 for US Fire trucks
- \* Said METI will meet with USG experts tomorrow
- \* Accepted our offer to use aerial and vehicle/ground based measurement equipment
- \* Asked for specifications and numbers on what equipment was

LLLL/23

available

\* Asked if we could share iodine tablets with GOJ

S1 indicated he would provide that information.

NSC Deputies were informed of this conversation this morning, possibly after you had left the conference. We are working on meeting Kaieda's requests. You may want to confirm Japan's acceptance of our offer with the Cabinet Secretariat, as we will need Japanese points of contact at the operational level. Please note that our hope is to deploy DOE technical experts to take data and operate measuring equipment from helicopter and/or ground platforms, not simply to give instruments to the Japanese.

Please feel free to contact DOE through our Tokyo staff, directly to Deputy Secretary Poneman or through our Operations Center at 202 586-8100.

v/r

Steve Aoki

**From:** [Bulletin News](#)  
**To:** [NRC-editors@bulletinnews.com](mailto:NRC-editors@bulletinnews.com)  
**Subject:** NRC News Summary for Monday, April 11, 2011  
**Date:** Monday, April 11, 2011 7:15:07 AM  
**Attachments:** [NRCSummary110411.doc](#)  
[NRCSummary110411.pdf](#)  
[NRCClips110411.doc](#)  
[NRCClips110411.pdf](#)

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This morning's Nuclear Regulatory Commission News Summary and Clips are attached.

**Website:** You can also read today's briefing, including searchable archive of past editions, at <http://www.BulletinNews.com/nrc>.

**Full-text Links:** Clicking the hypertext links in our write-ups will take you to the newspapers' original full-text articles.

**Interactive Table of Contents:** Clicking a page number on the table of contents page will take you directly to that story.

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2 L L L / 25

**Taylor, Renee**

---

**From:** Borchardt, Bill  
**Sent:** Tuesday, March 15, 2011 11:59 AM  
**To:** Tinkler, Charles  
**Cc:** Leeds, Eric; Taylor, Renee  
**Subject:** Fw: DETAILS ABOUT CONGRESSIONAL MEETINGS TODAY AND TOMORROW

Bill Borchardt  
Via blackberry

---

**From:** Belmore, Nancy  
**To:** Taylor, Renee; Hudson, Sharon; Pulley, Deborah; Burns, Stephen; Borchardt, Bill; Brenner, Eliot; Akstulewicz, Brenda; Dyer, Jim; Virgilio, Martin; Cianci, Sandra; Weber, Michael  
**Cc:** Schmidt, Rebecca; Powell, Amy  
**Sent:** Tue Mar 15 11:52:51 2011  
**Subject:** DETAILS ABOUT CONGRESSIONAL MEETINGS TODAY AND TOMORROW

This is further follow-up re my previous message (re van) - - -

The Chairman is having his murderboard at the Hill office today at 5:00. The office is located on the 7<sup>th</sup> floor at 10 G St. Invitees include: Eliot Brenner, Jim Dyer, Trip Rothschild, Josh, EDO reactor person—either Marty or Mike Weber according to Bill.

The Energy and Commerce hearing is tomorrow at 9:30. The Chr would like Eliot, Bill, JIM, Steve Burns and a severe accident reactor guy (According to Bill) at the morning hearing. The hearing is in 2123 Rayburn

Tomorrow afternoon there will be a second hearing/round table for EPW. That will be at 3:30 in Dirksen. Room TBD. The Chairman would like the same lineup except Jim doesn't have to come.

*Nancy Belmore*  
*Office of Congressional Affairs*  
*U.S. Nuclear Regulatory Commission*  
[nancy.belmore@nrc.gov](mailto:nancy.belmore@nrc.gov)  
301-415-1776

LLLL/24

Attachment NRCSummary110411.doc (253952 Bytes) cannot be converted to PDF format.



# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

MONDAY, APRIL 11, 2011 7:00 AM EDT

[WWW.BULLETTINNEWS.COM/NRC](http://WWW.BULLETTINNEWS.COM/NRC)

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## **NRC NEWS:**

### **Markey Bill Would Halt Relicensing Until NRC Completes Fukushima Crisis Review.**

In a short item, the Staten Island Advance (4/8) reported, "Relicensing of nuclear plants such as the Indian Point plant would temporarily halt under legislation proposed by" Rep. Edward Markey (D-Mass.), who "wants relicensing of existing nuclear plants and licensing of new plants to stop until the Nuclear Regulatory Commission completes its review of the disaster at the Fukushima Dai-ichi plant in northern Japan, and implements safety upgrades." Indian Point officials say it "it's too early to stop the licensing-relicensing process."

The Westchester (NY) Journal News (4/11, Tumulty) reported that Indian Point spokesman Jerry Nappi said, "While there will undoubtedly be lessons learned for the US nuclear industry following an analysis of events in Japan, it would be imprudent to circumvent a proven regulatory process with 'snap-judgment legislation.'" Meantime, Rep. Markey "said the emphasis of the NRC should be on looking at existing plants because those are the facilities that pose a potential risk now." But Martin Virgilio, an NRC executive in charge of reactor and preparedness programs told a subcommittee last week "that no immediate safety changes are required at the nation's 104 nuclear power reactors."

**Indian Point Security Touted At State Hearing.** The Westchester (NY) Journal News (4/9 Clary) reported, "Indian Point was built to withstand various combinations of natural disasters, and improvements since the 9/11 terrorist attacks have strengthened the nuclear plant's defenses, security officials told state senators Friday." Calling nuclear power plants the "most hardened facilities in the United States," Indian Point security head Dan Gagnon told a Senate hearing on homeland security, each plant is "essentially an industrial setting inside a military installation during wartime activity."

**Studies Have Already Examined Seismic Threats To Indian Point.** In a letter to the editor of the Westchester (NY) Journal News (4/9), John J. Kelly, former head of licensing for Entergy Nuclear Northeast, which owns Indian Point, wrote of his work "funding and supporting a network of 10 micro seismometers in Rockland and Putnam counties under the direction of Columbia University's Lamont-Doherty Earth Observatory in the 1970s to evaluate concerns raised by New York state over possible seismic activity in the surroundings of Indian Point. This study, conducted over several years, concluded the seismic design of Indian Point is sound and the plants are safe." Kelly also cites a 2008 Independent Safety Evaluation which again concluded the plant is safe.

**Indian Point Unit 3 Reactor Returns To Service Following Refueling.** Mid-Hudson (NY) News (4/11) reported that wrapping up a 30-day shutdown for refueling,

"Indian Point's unit 3 nuclear power plant was returned to operation on Friday, sending electricity to the grid. ... 'The 16th refueling outage at Indian Point's unit 3 was one of our most successful outages in site history,' said Joe Pollock, site vice president and Entergy's top official at Indian Point." During the outage, "workers performed about 7,000 maintenance activities and inspections during the outage."

**NRC Criticized For Reaffirming 10-Mile Evacuation Zone.** In an editorial, the Middletown (NY) Times Herald-Record (4/10) wrote that after the NRC called for a 50-mile evacuation zone for Americans near the crippled nuclear plants in Japan, it is "difficult to understand why the Nuclear Regulatory Commission chose this time with this perilous situation so much in the front of every inquiring mind to resurrect the old and ridiculed reassurance that a 10-mile evacuation zone would be plenty big enough in the case of an emergency at Indian Point." NRC critics "have long claimed that it sees itself as a part of the nuclear industry, not as the buffer between the interests of that industry and the safety of the nation. At a time when people are skeptical with good reason...the NRC has become the boy who won't cry wolf even if the wolf is in the room."

**NRC Oversight Faulted As "Weak" And "Complacent."** The Stamford (CT) Advocate (4/9, Totten) ran a piece from the New England Center for Investigative Reporting, which reported, "Internal government watchdogs and outside experts alike say the US Nuclear Regulatory Commission is too lenient on the industry it is charged with regulating, often making decisions based on the industry's profit margins rather than public safety." The article likens the charges to those made about the Mine Health Safety Administration and the Minerals Management Service after disasters last year at the Upper Big Branch Mine and the Deepwater Horizon spill, and while the nuclear industry maintains the "NRC is a tough regulator that asks tough questions," critics "counter that the agency might ask tough questions, but is all too willing to accept easy answers."

ABC affiliate, WCVB-TV Boston (4/10, 11:13pm, EDT) broadcast another report from the New England Center for Investigative Reporting. "Concerns that the Nuclear Regulatory Commission is weak are nothing new, according to former nuclear engineer, David Lochbaum." In the wake of the Fukushima plant crisis questions about safety concerns are increasing. Lochbaum said, "The NRC is complacent. There hasn't been a meltdown in the US for more than 30 years so there is a thought that even if they don't meet the regulations, there is so much defense-in-depth and backup systems that it doesn't really matter."

**Group Says NRC May Not Have Learned From Davis Besse Experience.** NBC affiliate WPTZ-TV Burlington, VT (4/11, Mallet, 5:39 a.m. EDT) concludes a



Hearst Connecticut/New England Center for Investigative Reporting series on the NRC's relations with the industry it regulates, noting that the series "focuses less on New England plants and more on the NRC and what happened at a nuclear plant near Toledo, Ohio." There, the report says that government documents show that in 2002, the NRC allowed First Energy to keep the Davis Besse plant operating for 45 days beyond a required inspection date, during which time workers "found a pineapple-sized cavity in the reactor's vessel head caused by leaking boric acid. Shay Totten, a reporter from the station working with the broader investigative journalism team, terms that "fairly shocking" and says the Hearst Media/NECIR report "also raises questions about whether or not the regulatory agency built on the Ohio experience."

**NRC Says UniStar Needs US Partner For Calvert Cliffs New Reactor.** The Baltimore Sun (4/9, Walter) reported that NRC officials said "Friday that UniStar Nuclear Energy is not eligible to build a third reactor at Calvert Cliffs because it is not a US-owned company, but also said they would continue to process its application." The NRC said that while its review will continue, since federal law prohibits foreign ownership of a US nuclear plant, a combined operating license could not be issued until ownership requirements are met. A UniStar spokeswoman said the letter does not rule out its "plans to seek approval to own and operate the reactor." Kelly Sullivan added that while "While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application."

Reuters (4/9, Gardner, Rampton, Rascoe, Doggett) reported NRC spokesman, Eliot Brenner, said "We couldn't issue a license in their current corporate configuration." In a shorter item, Reuters (4/9) notes that UniStar is owned by EDF.

**NRC Disputes Assessment Of Peach Bottom Station's Accident Readiness.** The York (PA) Daily Record (4/11, Adkins) reports that the NRC disputes an assessment from at "least one federal analyst" who questioned "whether improvements made by nuclear plants after the Sept. 11, 2001 terrorist attacks would work to stave off a severe accident." The analyst's concern was voiced in a 2010 email in response to the NRC's State-of-the-Art Reactor Consequence Analyses project, "which found that Peach Bottom Atomic Power Station – thanks to those post-9/11 improvements – would avert reactor core damage after a hypothetical two-day blackout." But the email author said "that certain post 9/11 measures 'have really not been

reviewed to ensure that they will work to mitigate severe accidents." NRC spokesman Neil Sheehan said the Commission was satisfied that contingencies were in place to "deal with those kinds of (severe) scenarios such as fires and explosions at the site."

**UCS Suspects NRC Skewed SOARCA Results.** On the Union of Concerned Scientists' All Things Nuclear (4/9) blog, Ed Lyman wrote of the SOARCA project, and how "UCS has long been concerned that the NRC imposed constraints on the SOARCA program that would significantly skew its results to ensure an outcome suggesting the public has little to fear from severe nuclear plant accidents." In 2006, UCS requested that the NRC "publicly release its guidelines for the program, the constraints it imposed on it, and the assumptions underlying the program's assessment of accident scenarios," but the NRC "refused to release that information, despite the fact that the NRC plans to make SOARCA's results public and, earlier in 2006, NRC Commissioner Gregory Jaczko—now the agency's chairman—called for the agency to release the material UCS requested."

**Vermont AG Preparing Legal Strategy In Case Entergy Doesn't Close Yankee.** Drawing coverage from the Brattleboro Reformer, the AP (4/9) reported that according to Vermont Attorney General William Sorrell, the state "is preparing for a legal battle if the owner of the Vermont Yankee nuclear power plant tries to keep it running after its license expires," and Sorrell "said he and his staff are preparing their legal strategy" should Entergy ignore the state's refusal to allow it to operate after 2012, even though the NRC relicensed the plant for 20 years. When it bought the plant, Entergy had agreed to abide by the Vermont Public Service Board's decision on whether it could continue to operate beyond 2012. Then in 2006, the state legislature voted to give itself the "power to forbid the PSB from" relicensing Yankee.

WCAX-TV Burlington, Vermont (4/9) reported on its website Vermont Yankee "is scheduled to close for good in 2012, but Yankee officials remain adamant that the plant is safe and should stay open. However, Attorney General William Sorrell says he and his staff are preparing their legal strategy if plant owners ignore the state's demands to close."

CBS affiliate WCAX-TV Burlington, VT (4/11, 6:03 a.m. EDT) broadcast that Vermont officials are "preparing for a legal battle over the closure of the Vermont Yankee nuclear power plant. The plant is scheduled to close for good in 2012, but Yankee officials remain adamant that the plant is safe and should stay open. However, Attorney General William Sorrell says he and his staff are preparing their legal strategy if plant owners ignore the state's demands to close."

Last month the federal Nuclear Regulatory Commission extended the Vermont plant's license for 20 years."

NBC affiliate WPTZ-TV Burlington, VT (4/11, 5:41a.m. EDT) notes that Entergy Nuclear "could face a legal battle if the company plans to keep Vermont Yankee running after its license expires. Vermont's Attorney General Bill Sorrell says he and his staff are preparing their strategy in case Entergy ignores the state's refusal to authorize operation of the plant after 2012. Last month the federal government extended the plant's license for twenty years, but Entergy agreed to they'd seek permission from the state to run past 2012."

**Vermont Yankee Conducts Tests.** ABC affiliate KEZI-TV Eugene, OR (4/9, 6:35 p.m. PDT) reports that emergency officials "are conducting drills near a nuclear power facility in Vermont. Authorities have been working all week at the Yankee nuclear plant. They're testing in case of a leak there. The drill was actually planned months ago, before the disaster in Japan. A Vermont Yankee executive says "We do a federally-evaluated exercise every two years, with every six years doing the ingestion pathway." The account also notes that crews "are taking samples of soil, vegetation, milk, and other materials to determine any contamination. This drill was also announced in advance, so people who live nearby wouldn't panic."

### **Tritium Leaks Said To Be Increasing At Plants.**

The Asbury Park (NJ) Press (4/10, Bates) reported, "Millions of gallons of radioactive water have leaked from nuclear power plants throughout the US since the 1970s, threatening water supplies in New Jersey and other states, an Asbury Park Press investigation found." Even though some of the "massive leaks" have polluted groundwater, the NRC "has never fined a violator – even plant operators that repeatedly leaked tritium," of which there was an "average of one per year in the 1990s." That average increased to "five leaks or spills reported in 2010, five in 2009 and three in 2008, according to an NRC document." NRC spokesman, Neil A. Sheehan said new leak "in and of itself is generally not considered a violation," and he said the "NRC's mission is to ensure the public faces 'no undue risk.'"

### **New Analysis Shows Five US Plants In Earthquake Zones.**

USA Today (4/11, Sternberg) reports that according to a new analysis, at least five plants – Diablo Canyon, San Onofre, South Texas Project, Waterford, and Brunswick stations – "are located in earthquake-prone seismic zones, potentially exposing them to the forces that damaged the Fukushima plant in Japan." The analysis by the mapping and geographic data firm ESRI Inc., "includes US Geologic Survey (USGS) seismic information and earthquake history for every nuclear plant" in the country. NRC spokesman Victor Dricks, "said that NRC regulations require

companies that build nuclear plants to take into account local seismic history and fortify the plants against the largest quake that is likely to occur." Dricks added the NRC "has taken proper precautions to ensure the safety of its plants."

### **Energy NW Says Columbia Station Unusual Event Was Unnecessary.**

The AP (4/9) reported that Energy Northwest, operators of the nuclear energy plant on the Hanford nuclear reservation, said that "upon further review, it didn't need to make an 'unusual event' declaration when a puff of hydrogen gas ignited on Thursday." The agency said that "the decision to report the incident to the Nuclear Regulatory Commission was made in an abundance of caution." The AP adds that the "6-inch flame extinguished itself in less than a second, but Energy Northwest declared an unusual event and evacuated two dozen workers until a safety inspection could be completed."

The Tri-City (WA) Herald (4/9) reports, "Energy Northwest determined on Friday its declaration of an unusual event at Columbia Generating Station, submitted Thursday to the Nuclear Regulatory Commission, was unnecessary." Columbia station officials reconsidered the incident, which amounted to a "less than one-second 'puff,' in the turbine building" and determined it "posed no risk to the normal level of plant safety, according to a news release."

CBS affiliate KIRO-TV Seattle, WA (4/9, 5:03 p.m. PDT) reports on "perhaps a bit of an overreaction at the nuclear plant in Richland. Tonight the agency that operates that plant says upon further review, it didn't need to make a so-called unusual event declaration on Thursday. Energy Northwest was using an abundance of caution when it reported a puff of hydrogen gas had ignited. That accident happened when workers cut into a pipe in a non-nuclear part of the Columbia generating station."

**Hydrogen Flare Prompted Unusual Event At Columbia Station.** The AP (4/9) reported, "A spokesman for a Washington nuclear power plant says a small amount of hydrogen gas ignited in a six-inch flame Thursday when workers cut into the pipe. Columbia Generating Station declared an 'unusual event,' evacuated plant areas near the pipe for about 90 minutes, and notified" the NRC. According to Energy Northwest spokesman Mike Paoli, "no one was injured in the one second-long 'puff' of gas that had been trapped in the pipe in the plant's non-nuclear turbine building."

### **Emergency Plans Said Hampered By Vague Transfer Of Authority Rules.**

In a piece for ProPublica (4/8), Sasha Chavkin writes that if the "United States faced a nuclear disaster, local governments would automatically take charge, followed by federal authorities if the crisis grew too big for local responders to handle." But the nation's "emergency plans don't spell out when or how the

transfer of authority would be handled, even though small delays could put thousands of lives at risk." Chavkin says this bottom-up system sometimes "gives local authorities a staggering amount of responsibility," and says an emergency at Dresden station would require officials in Grundy County, Illinois to activate "the first steps in the government's response" to a crisis at a plant.

**FEMA To Test Emergency Preparedness At Three Mile Island.** The Harrisburg (PA) Patriot-News (4/9, Elias) reported, FEMA "is scheduled to evaluate how prepared emergency crews are in case of an accident at the Three Mile Island Nuclear Generating Station." FEMA will evaluate "state and local emergency response capabilities within the 10-mile emergency-planning zone of the nuclear facility starting on Monday." FEMA will send its evaluation to the NRC within 90 days, "for use in licensing decisions."

On its website, WHSV-TV Harrisonburg, Virginia (4/8) reported the Biennial Emergency Preparedness Exercise will "take place during the week of April 11 to test the ability of the Commonwealth of Pennsylvania to respond to an emergency at the nuclear facility." WPMT-TV York, Pennsylvania (4/11, Garland) also covered the upcoming exercise.

**NRC Conducting Special Inspections At Braidwood, Byron Stations.** Nuclear Street (4/8) reported the NRC "reported Thursday that it has sent additional inspectors to the Braidwood and Byron nuclear plants after an alarm and a backup pump were briefly inoperable. The NRC required Exelon to assess auxiliary feedwater pump systems at both Illinois plants in February after a routine inspection at Byron." Exelon's calculations showed the pump would not have been operated if the reactor "lost its primary core cooling system" and the NRC "is monitoring Exelon's solution to the problem at both plants because they share a similar design." The Kankakee (IL) Daily Journal (4/8, Byrns) also covered the special inspection.

**NRC, FEMA To Present Review Of San Onofre Emergency Preparedness Drill.** The Orange County (CA) Register (4/8, Levine) reported that FEMA and NRC will "present a review April 15 in San Juan Capistrano of an emergency-preparedness drill at the San Onofre Nuclear Generating Station." The officials will share "initial observations of what happens during the three-day drill, which starts Tuesday and also will involve Orange, Riverside, San Bernardino, San Diego and Los Angeles counties and the cities of Dana Point, San Clemente and San Juan Capistrano, according to a news release." The public is invited to the April 15 meeting scheduled for 4 pm at the Capistrano Unified School District headquarters, in San Juan.

The North County (CA) Times (4/11, Sisson) adds that the "exercise was planned long before last month's devastating earthquake and tsunami in northeast Japan that crippled that country's Fukushima Dai-ichi nuclear power plant, leading to a near meltdown that has leaked radiation into the atmosphere and renewed questions worldwide about the safety of nuclear energy." San Diego county spokeswoman Yvette Urrea Moe, "said the drill will involve monitoring a fictitious plume of radiation released into the air, adding that a radiological monitoring team from Oceanside will be dispatched to the plant."

Fox affiliate, KSWB-TV San Diego (4/10) reported the emergency drill will include "radiation experts and emergency workers from Los Angeles to the Mexican border" who "will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station next week." The "California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and concluding Thursday." SCE spokesman Gil Alexander said "workers will test emergency shut-down procedures, and practice securing radioactive fuel rods."

The La Jolla (CA) Light (4/11) adds that spokesman Alexander said, "There are a total of about 200 of us associated with the plant that will drill."

The Southwest Riverside (CA) News Network (4/10) and KNBC-TV Los Angeles (4/10) also report the story on their websites.

**Former San Onofre Employee Launches Wrongful Termination Suit Against Plant Owner.** The Dana Point (CA) Times (4/8, Galang) reported on Paul Diaz, the San Onofre Station employee fired in October who "filed a lawsuit last week against the plant's owner Southern California Edison, alleging his termination was retaliation for raising safety concerns." Attorney Maria Severson, said Diaz "was in his second stint at the power plant at the time, had filed a complaint with the Nuclear Regulatory Commission just weeks prior to his firing." Diaz "is seeking damages for lost wages, damage to his reputation and any other remedy under the law, Severson said."

**Japan's Nuclear Crisis Fuels Debate Over Diablo Plant Extension.** The Wall Street Journal (4/9, Casselman, Subscription Publication) reported that the nuclear crisis in Japan has fueled a debate over whether the Diablo Canyon nuclear power plant near San Luis Obispo, California, should be given a 20-year license extension. Some local politicians are against the extension and argue that it should be put on hold until PG&E concludes its study of the area's earthquake risk. However, PG&E says that the plant is safe and was built to withstand earthquakes. Those who oppose the relicensing may also have trouble with the NRC since the NRC is said to have consistently rebuffed efforts to

use the relicensing process in order to carry out broad reviews of a plant's operations.

**Lawmaker Will Call For More Seismic Testing At Diablo Canyon.** According to Santa Cruz Sentinel (4/11), Tuesday, "State Sen. Sam Blakeslee will testify this week before a US Senate hearing on nuclear safety after the Japanese tsunami triggered a crisis at a nuclear reactor there." Blakeslee, a seismologist "who lives eight miles from Diablo Canyon Power Plant, has pushed for a better analysis of the seismic risks at the plant. A Republican, Blakeslee will testify following a panel that includes Nuclear Regulatory Commission Chairman Gregory Jaczko."

The Pacific Coast Business Times (4/8, Nellis) reported Sen. Blakeslee "called on Diablo Canyon operator Pacific Gas & Electric to 'slow down' its efforts to extend the plant's life to 2045 until the fault lines near the coastal nuclear reactor near Avila Beach are better understood." Sen. Blakeslee, "told a San Luis Obispo Chamber of Commerce lunch gathering that the recent earthquake and tsunami that has devastated Japan has caused scientists to re-evaluate how well they understand undersea faults such as the Hosgri fault that is several miles away from Diablo Canyon." Sen. Blakeslee "emphasized that he neither opposes nor supports extending Diablo Canyon's life and that he is 'in the middle, with both sides mad at me,'" he said, adding he does "not want the debate to devolve into a dog fight between PG&E" and other economic interests.

The San Luis Obispo Tribune (4/9, Cuddy) reported Sen. Blakeslee, "a geophysicist by training, noted that there are two faults close to the [Diablo Canyon] reactors and there is 'tremendous uncertainty' about the relationship between them. He has criticized PG&E for not suspending its relicensing push until a seismic study is completed."

**Diablo Canyon Protest Set For Saturday.** The San Luis Obispo Tribune (4/11, Sneed) reports, "Organizers are hoping that activists from all over the state will protest the renewal of Diablo Canyon nuclear power plant's operating licenses at a rally at noon Saturday at the pier in Avila Beach. The peaceful protest, called 'No More Nuclear Victims,' is in response to the triple disaster in Japan on March 11 in which a powerful earthquake spawned tsunamis that crippled a nuclear power plant and caused radioactive contamination of air, land and food." Organizer Linda Seeley said "If there were a release of radioactivity from the plant, it would affect all of California — its health, agriculture and economy."

**County Expected To Ask PG&E To Stay Relicensing Efforts.** The San Luis Obispo Tribune (4/8, Sneed) reported that "county supervisors Tuesday will vote whether to send a letter to PG&E asking it to suspend the relicensing of Diablo Canyon nuclear power plant until seismic studies have been completed and verified." The Tribune says approval of the letter is "considered all but certain given that a majority of the

board has already expressed support for it." The letter asks PG&E President Chris Johns, to stay "license renewal" saying it "would be a good way for the utility to restore the trust of the community."

### **Palo Verde Uses Waste-Water To Cool Plant.**

On its website, KSAZ-TV Phoenix (4/10) profiled Arizona's Palo Verde Station, which has "three reactors at the facility, and inside, workers remove spent fuel and take it to a cooler. Everything at the plant occurs underwater, where the nuclear fuel can actually be seen glowing." KSAZ-TV adds Palo Verde is the only plant in the US that is "not located by a large body of water. Instead it uses 20 billion gallons of wastewater from nearby cities and towns for the water it needs to cool its nuclear fuel."

CBS affiliate KPHO-TV Phoenix, AZ (4/8, 10:15 p.m. MST) brings its cameras into the Palo Verde nuclear power plant. It reports that operator APS "gave us a tour of the Palo Verde nuclear generating station west of Phoenix. They let our camera go inside the reactor and get a close-up look at the equipment. Plant managers assure us it would be a different and safer situation than the plants in Japan." The tour guide explains that the "diesel itself is well protected. We are in a very robust building with thick concrete walls protected from all sorts of external events." The reporter adds that the plant "has what they call a 'Japan war room' where staffers monitor the situation in Japan and work on ideas to help prevent another problem."

KPHO-TV Phoenix (4/10) runs a slideshow on its website.

### **Palo Verde Workers Monitor Japan Nuclear Crisis.**

KNXV-TV Phoenix (4/8, Resendez) reported on its website, "Within hours after a nuclear crisis hit Japan's Fukushima Daiichi plant, workers at Palo Verde Nuclear Generating Station formed what they call a 'war' room." Experts gather there "from several different fields" to monitor developments in Japan. "The walls are lined with diagrams of Fukushima, along with crisis plans should a natural disaster or terrorist threat penetrate Palo Verde." Michael Powell, part of the crisis team, says, "In simple terms, we will learn how to do it better."

### **TVA Decision On Bellefonte Put On Hold.**

The Chattanooga Times Free Press (4/10, Sohn) reported, "The decision to complete a nuclear reactor at TVA's Bellefonte plant has been put on hold while officials continue considering the lessons learned from Japan in its recent nuclear accident." The paper said the matter "is on TVA's board of directors agenda for Thursday with the notation: 'Extension of Decision and Budget.'" TVA President and CEO Tom Kilgore "has told residents who live near Bellefonte in Northeast Alabama that the utility staff has decided not to ask the TVA

board to consider completion of the unit 1 reactor at this week's TVA board meeting in Chattanooga."

CBS affiliate WHNT-TV Huntsville, AL (4/10, 10:18PM CDT) reports that the Tennessee Valley Authority "is delaying plans to build a new reactor at the Bellefonte nuclear plant in Jackson County. After what happened in Japan, TVA CEO Tom Kilgore says he wants to see exactly what plays out in Japan before asking the TVA board of directors to approve construction. The Bellefonte facility near Hollywood was constructed during the 1970s and 80s, but it was moth-balled before it ever produced any electricity. Kilgore says it's just a temporary delay and the 500 workers at the plant will continue their design work."

NBC affiliate, WAGT-TV Augusta, GA (4/10, 11:06pm, EDT) broadcast, "Georgia Power could be in the hot seat if the cost of building a nuclear power plant goes over budget. The Public Service Commission has proposed cutting Georgia Power's earning from the two new reactors it wants to build at Plant Vogtle if construction costs exceed \$6.4 billion dollars. The US Nuclear Regulatory Commission could decide later this year whether to allow Georgia Power to build the new reactors."

**Meigs Emergency Director Assured Of Watts Bar Safety.** Tennessee's Daily Post Athenian (4/8, Edwards) reported, "Meigs County Emergency Management Director Tony Finnell said a recent briefing left him with a favorable view toward the Tennessee Valley Authority's Watts Bar Nuclear Plant being able to withstand the kind of damage that occurred in Japan when a powerful earthquake struck."

**Tennessee Senate Kills Bill To Limit Radioactive Waste Dumping.** The Memphis (TN) Commercial Appeal (4/10, Locker) reported that the Tennessee "state Senate has killed a bill by a Sen. Beverly Marrero of Memphis that sought to halt or curtail the amount of low-level radioactive waste being dumped into Tennessee landfills, including two in Shelby County." The Commercial Appeal added, "The Shelby landfills are two of four across Tennessee authorized by the state to accept low-level radioactive waste under what's called the 'Bulk Survey for Release' program. ... Although other states accept low-level radioactive waste, the Tennessee Environmental Council says Tennessee has become the primary destination for it, largely because of a regulatory decision in the 1990s."

**Cancer-Causing Chemical Leaking From Colorado Uranium Mill.** The Denver Post (4/10, Finley) reported that trichloroethene, a cancer-causing chemical, has leached into groundwater from Cotter Corp.'s uranium mill in Colorado. According to the Post, Colorado regulators have directed Cotter to launch a probe of the

contamination, and the company has speeded up efforts to dismantle dated structures at the site and overhaul and reopen the mill.

**Public Concern Grows Over Spent Fuel Rods In Florida.** The Palm Beach Post (FL) (4/10, Salisbury) reported, "Once, the thousands of 12-foot-long rods now being stored in 40-foot-deep pools of water at Florida Power & Light Co.'s two South Florida nuclear plants helped power the state's electric grid" yet now, the "spent" rods are "still close to population centers on water and they're still radioactive." According to the Post, amid concerns over "issues of cooling fuel rods at Japan's Fukushima Daiichi nuclear facility," nuclear "officials plan to visit the St. Lucie plant Wednesday to hold a public meeting on last year's safety review, and Nuclear Regulatory Commission officials say they have found more public interest since the Japan crisis began."

**Radiation Detected In Drinking Water In 13 More US Cities, Cesium-137 In Vermont Milk.** In a posting on the Forbes (4/9) "Ingenuity of the Commons" blog, Jeff McMahon wrote that "Radiation from Japan has been detected in drinking water in 13 more American cities, and cesium-137 has been found in American milk – in Montpelier, Vermont – for the first time since the Japan nuclear disaster began," according to data released by the EPA. Forbes said "the EPA drinking-water data includes one outlier – an unusually, but not dangerously, high reading in a drinking water sample from Chattanooga, Tennessee." Notably, "the sample was collected at the Tennessee Valley Authority's Sequoyah nuclear plant."

**Hot Weather Creates Problems For Nuclear Power Plants.** The website Climate Central (4/10, Kenward) reported that "heatwaves reduce the power output of many nuclear power plants, including the Browns Ferry facility run the Tennessee Valley Authority." The article said that last year after weeks of "unrelenting heat," Browns Ferry was forced to run "at half its capacity, robbing the grid of power it desperately needed when electricity demand from air conditions and fans was at its peak." The report said: "the total cost of the lost power over that time? More than \$50 million dollars, all of which was paid for by TVA's customers in Tennessee."

**Head Of Rhode Island's Only Reactor Assures Its Safety.** The Providence Journal (4/9, Marcelo) reported Terry Tehan, director of the Rhode Island Nuclear Science Center which is home to the state's only nuclear reactor, "assured state lawmakers at a State House hearing Friday afternoon that the facility was safe, secure, and under no

threat of failure." Tehan said, "Are we a Japanese reactor? No. It's the difference between a pit bull and a Pekingese. We're a little trash can that runs a couple of hours a day." State Sen. James C. Sheehan inquired about the facility's inspection record on the heels of the ongoing nuclear crisis in Japan. During the hearing, former Providence state Rep. Ray Rickman "rejected Tehan's comparison of the reactor to a Pekingese. He noted that most nuclear reactors as old as Rhode Island's have since been decommissioned." Rickman said, "If this was a car, this would be the 450,000-mile car, and you would not take it far from home."

The AP (4/9), drawing coverage from the Providence Journal, explained that "the reactor, which doesn't produce electricity and is used only for research, is 2,000 times smaller than one at a typical nuclear power plant." It is located at the University of Rhode Island's Narragansett campus and "is used for training students in nuclear technology."

**Missouri Senate To Take Up Nuclear Rate Legislation Soon.** The AP (4/11) reports that legislation in Missouri that would allow the state's utilities to charge customers for the cost of an early site permit from the Nuclear Regulatory Commission could be headed for a full state Senate debate as soon as this week, according to Senate leaders. "Power companies and other supporters of the legislation contend the early site permit is needed to move forward with possibly expanding nuclear power in Missouri. However, consumers and industrial energy users are concerned about protections for ratepayers."

**Support For Nuclear Power In Iowa Remains Despite Japanese Crisis.** The AP (4/9) reported that while the nuclear crisis in Japan has caused support for nuclear projects to fall across the country, "in Iowa, where the state's largest utility is considering a new nuclear plant, some momentum has continued to the surprise of both critics and some supporters." Last week, legislative leaders "placed on a list of pending business a measure that would allow MidAmerican to begin billing customers in advance for the cost of the project," which prevents the measure from expiring for lack of action. Michele Boyd, with Physicians for Social Responsibility, said of the continued support Iowa, "For some reason it seems like the Fukushima accident really hasn't happened in Iowa," adding, "It has not affected the politics in Iowa, but everywhere else people are saying now is not the time to build a new reactor."

**Lawmakers Defend Nuclear Legislation.** Meanwhile, in an op-ed for the Des Moines Register (4/9), state Sens. Swati Dandekar and Jerry Behn and state Reps. Chuck Soderberg and Brian Quirk wrote that "the American Association of Retired Persons (AARP) is deliberately misleading Iowa's seniors" about the nuclear legislation.

They insist that "nothing in the proposal increases rates or authorizes construction of a nuclear facility, nor does it alter the traditional roles and responsibilities of the Iowa Utilities Board (IUB) and Consumer Advocate in deciding such matters." The lawmakers conclude that "Iowa needs to keep a nuclear power option in the mix to keep control of our electricity costs and continue to advance our economy."

**Pros, Cons Of Wisconsin Nuclear Power Moratorium Repeal Presented.** The Milwaukee Journal Sentinel (4/9) said in an editorial of Gov. Scott Walker's soon-to-be-released statewide energy plan, which is expected to include a proposal to lift the state's moratorium on new nuclear power plants, that "as Wisconsin moves forward into an energy future that needs to be less dependent on carbon-based fuels, nuclear power plants can be an important part of that future." The editorial discusses the use of natural gas, which it says still emits carbon emissions, and renewable sources, such as wind and solar which pose reliability problems. Meanwhile, "nuclear power can provide base load generation," and the plants emit zero carbon emissions. The editorial acknowledges safety concerns and the debate over nuclear waste storage, but concludes that no fuel source can be ignored. "Nor can [Walker] ignore the effects of climate change and the requirements that the federal government may impose on utilities."

Charlie Higley, executive director of the Citizens Utility Board of Wisconsin, wrote in an op-ed for the Milwaukee Journal Sentinel (4/9) that Wisconsin's nuclear power plant moratorium "protects Wisconsin consumers from nuclear's high cost and the radioactive waste it produces, nuclear power's two worst faults that make it a terrible choice for meeting our electricity needs." She concludes that "repealing the nuclear moratorium will do nothing for Wisconsin consumers other than expose them to the high costs and risks of new nuclear power plants and more radioactive waste."

The Wisconsin State Journal (4/11, Seely) reports, "Wisconsin legislators and energy officials who support a renewal of nuclear power in Wisconsin say they plan to continue their efforts despite the struggles in Japan to bring an earthquake-damaged nuclear power plant under control." State Rep. Mark Honadel has indicated that "he intends to introduce legislation this session that would lift a moratorium on construction of nuclear power plants in Wisconsin." The article noted, "Wisconsin has two operating nuclear plants - Point Beach 1 and 2 near Two Rivers in Manitowoc County, and the Kewaunee plant near the city of Kewaunee."

**Oconee Station's Tritium Discharges Within Safe Limits.** The Greenville News (4/11, Simon) reports, "The Oconee Nuclear Station routinely discharges water

contaminated by radioactive tritium into the Keowee River that flows into Lake Hartwell, a source of recreation and drinking water — discharges regulators say are within safe limits and critics say can increase cancer risk." According to Duke Energy's Sandra Magee "Oconee makes routine releases of diluted concentrations" that "are safe, well below the Environmental Protection Agency ceiling for drinking water, and are reported to the Nuclear Regulatory Commission."

### **Zion Decommissioning Discussed At Forum.**

The Chicago Sun-Times (4/10, Collins) reported that during a forum Saturday, Illinois state Sen. Susan Garrett and a group of citizens received an extensive briefing on the decommissioning the former Zion Nuclear Reactor site "now taking place at the plant since last September from Patrick Daly, general manager of Zion Solutions LLC, who heads up an estimated \$960 million, ten-year project to return the 257-acre site back to productive use." Daly explained, "We will do the work in three major stages. The site will be ready for beneficial reuse in 2020, 12 years earlier than previous plans." In addition to removing spent fuel rods and preparing them for shipment to Utah for permanent storage, "other work facing Zion Solutions will be demolishing and removal of various buildings and structures, and restoring the grounds to its natural environment."

### **Reactor Refueling Completed At Kewaunee Power Station.**

The Green Bay Press-Gazette (4/8) reported, "It took only 29 days for the Kewaunee Power Station to complete its reactor refueling, a process that traditionally has taken about 40 days." Dominion's Mark Kanz said, "It's lessons learned, not only what you've done, but what other people in our industry are doing. ... You find ways to do it better, smarter." The Press-Gazette noted, "The plant shut down for refueling on Feb. 25 and restarted on March 26."

### **West Virginia Lawmaker Wants Nuclear Power Moratorium Lifted.**

The Beckley (WV) Register-Herald (4/11, Porterfield) reports West Virginia state Sen. Brooks McCabe said that the state's nuclear power plant moratorium "is inconsistent and must change," but he does not believe that a plant will be built during his lifetime. Said McCabe, "My whole feeling on nuclear power is I just didn't feel we should exclude a possible, viable source of energy production." Regarding nuclear power safety, particularly in light of the situation in Japan, McCabe said, "There were some engineering design issues that they had already identified, and they were correcting the newer plants and had not corrected that plant." And while he "sees the nuclear industry shifting gears into smaller facilities that are cheaper, less

invasive and more readily able to gain permits," McCabe added, "Even with that, I don't expect to see nuclear power in West Virginia in my lifetime."

### **Dominion Continues To Oppose Proposed Connecticut Tax.**

The New London Day (4/9, Daddona) reports, "The owner of Millstone Power Station said Friday that the estimated profit margins used as a basis for a proposed tax on electricity are inflated, but the state's consumer advocate stands by the numbers." According to Dominion "the company will shut down one or both of its operating reactors in Waterford if lawmakers' proposed \$332 million tax is approved. The tax represents 2 cents per kilowatt hour on more than 16 million megawatts of generation a year. Lesser tax rates are also proposed for coal and oil generation in Connecticut." Dominion's Ken Holt said that if they tax is approved "we will be making little or no profit, or even losing money." He added, "And I don't think anybody wants a nuclear power plant operating on low margins. ... The owners before us did that, and I don't think anybody wants that because we are a safe operator."

The New London Day (4/10, Daddona) reports Dominion "will publicly discuss issues affecting the nuclear complex ranging from a proposed tax on power production to environmental monitoring. The meeting is scheduled for 7 p.m. at Waterford Town Hall" today. According to Dominion spokesman Ken Holt "the discussion of Senate Bill 1176 is only part of the presentation that will be made by Dominion officials at the meeting."

Columnist John Sheehan wrote on the Waterford Patch (4/9, Sheehan) website, "The shutdown of Millstone Power Station would have a significant impact on Waterford due to loss of tax revenue and the skilled jobs at the station but will also mean that Connecticut will lose two base load electrical generators which will drive the cost of electricity even higher."

### **Burton Loses Case In Connecticut Supreme Court.**

Legal Newsline (4/8) reports, "The Connecticut Supreme Court says a nuclear power plant can continue to implement an increase in its electric power generating capacity in one of its nuclear reactors. The plaintiff in the case, Nancy Burton, appealed a trial court judgment dismissing her complaint and denying her application for a temporary restraining order on the ground that the court lacked subject matter jurisdiction." Burton "sought to prevent the defendant, Dominion Nuclear Connecticut, Inc., which owns and operates the Millstone Nuclear Power Station in the town of Waterford, from implementing, or continuing to implement, a 7 percent increase in electric power generating capacity in its Unit 3 nuclear reactor."

### **New Poll Shows Few Americans Confident In US Nuclear Emergency Preparedness.**

The AP



(4/8, Daly) reported that according to a new Associated Press-GfK poll, "Most Americans doubt the US government is prepared to respond to a nuclear emergency like the one in Japan." However, the poll also shows that "few Americans believe such an emergency would occur." The poll also shows that 60% of Americans are against building more nuclear power plants even though the NRC continues to insist that the current plants are operating safely.

**Fears Over Spent Nuclear Fuel Increasing.** The Chattanooga (TN) Times Free Press (4/11, Sohn) reports, "At TVA's three operating nuclear plants near Chattanooga, more than 2,544 metric tons of highly radioactive spent fuel are being held in cooling pools — far more than what is in the reactors themselves." Edwin Lyman, a scientist for the Union of Concerned Scientists, a nonprofit group focused on safety issues, remarked, "That quantity of fuel [from TVA's reactors] represents, very roughly, about 100 reactor-years worth of discharges." Additionally, David Lochbaum, who once worked at TVA's Browns Ferry Nuclear Plant and for the Nuclear Regulatory Commission (NRC), noted that the spent fuel pools at the TVA plants and around the country are not "cooled by an array of highly reliable emergency systems that can be powered from the grid, diesel generators or batteries." Recently, both Lochbaum and Lyman have testified at congressional hearings, calling for improved regulation by the NRC.

**Friday's Budget Deal Erases Effort To Revitalize Yucca Mountain.** The Las Vegas Review-Journal (4/10, Tetreault) reported that Friday's budget deal erased Republican attempts to revive the Yucca Mountain Project. In February, Republicans passed a spending bill that prohibited the Nuclear Regulatory Commission from proceeding to close down the project. However, according to Zac Petkansas, a spokesman for Sen. Harry Reid, the attempt was removed from the deal by the senator.

**Waxman Suggests Subcommittee Cancel Yucca Trip.** Politico (4/8, Dixon) reported that at a time where the Federal government is trying to save money any way that it can, Rep. Henry Waxman of California "wants a House Energy and Commerce subcommittee to shelve a possible \$200,000 trip" to Yucca Mountain Project. According to the Energy Department, the cost of the congressional trip includes helicopters, ground transportation and safety inspections." In a letter to the chairman of the Environment and Economy Subcommittee, Rep. John Shimkus (R-Ill.), Waxman said that as "the government is facing a shutdown over funding, it seems completely inappropriate to incur these needless expenses." The Las Vegas Review-Journal (4/9) provided similar coverage.

**Nuclear Waste Disposal Options Discussed.** H. Sterling Burnett, senior fellow at the National Center for Policy Analysis, and David T. Stevenson, director of the Center for Energy Competitiveness, wrote in an op-ed for the Washington Times (4/9, Burnett, Stevenson) that three options for nuclear waste storage have been in existence for years, but politics have prevented their use. In addition to the heavily debated Yucca project, there is the Waste Isolation Pilot Plant (WIPP) located 25 miles east of Carlsbad, New Mexico, but "the main impediment to using WIPP to store spent nuclear fuel rods is the legal requirement that waste be retrievable for up to 50 years." The third option they support is the recycling of spent fuel. They conclude, "Congress should act now and embrace one or all of the available options for handling and storing the nation's nuclear waste. We can store it safely, so why should Congress allow it to sit around at 121 locations waiting for a crisis (however unlikely) to occur here?"

**LVSun Defends State's Position Against Yucca Project.** In an editorial, the Las Vegas Sun (4/9) questioned, "In this era of budget cutting, shouldn't Republicans be applauding [NRC Chairman Gregory Jaczko] for not spending millions of dollars of taxpayer money to review a plan that the administration isn't pursuing?" The Sun asserts that the state's opposition to Yucca "isn't just about the plan being bad for Nevada, but it's also bad for the country. ... The other states don't want the waste in their backyards, and for years they have thrown their weight around and gotten their way."

**Boston Globe Says Administration Needs Long-Term Waste Storage Strategy.** The Boston Globe (4/10) editorialized that "The Obama Administration's decision last year to cancel" the Yucca Mountain depository "has never seemed more irresponsible." The Boston Globe says that the "dangers of unsafely stored nuclear waste has been vividly illustrated in Japan" and currently the nation holds "71,862 tons of waste" which is "packed into pools that were never intended to hold so much." The Boston Globe concluded by saying that if "the Administration wants to build more nuclear power, it first has to produce a long-term strategy for handling the waste."

**EPA's Proposed Rules Fall Short Of Nuclear Industry's "Train Wreck" Expectations.** In a story that also appears on the New York Times website, Climatewire (4/8, Behr, Subscription Publication) reported that "the nuclear power industry has been warning of an impending 'train wreck' caused by the new regulations over air emissions, greenhouse gases and cooling water systems at existing reactor plants being prepared by US EPA." The agency issued the proposed regulations in unofficial form last week. According to the report — the EPA, contrary to what the agency's critics predicted — "has proposed a complex

case-by-case assessment of how each plant should achieve protection standards for fish, shellfish and the small aquatic organisms that make up the bottom layers of the marine food chain." The proposed rules, "which also affect large coal-fired power plants and factories covered by the rule, will be the subject of a 90-day public comment period before EPA's court-set deadline for final action, on July 27, 2012."

**EPA Would Continue Radiation Monitoring Had Government Shut Down.** Prior to the announcement that a government shutdown had been averted, the Wall Street Journal (4/9, Tracy, Subscription Publication) reported that the EPA would continue monitoring radiation coming from Japan to the US even in the event of a shutdown. The agency said that the work was crucial to protect the safety of human health.

**New Mexico Discovers Trace Amounts Of Japanese Radiation.** Meanwhile, the Alamogordo (NM) Daily News (4/11, Smith) reports that "local radio chemists have discovered minute traces of radiation from the Fukushima incident in Japan" after testing air samples from three Carlsbad locations. "Researchers at the Carlsbad Environment Monitoring & Research Center, located next to New Mexico State University-Carlsbad, primarily measure the soil, air, water, native plants and animals in the region around the Waste Isolation Pilot Plant, a nuclear waste repository some 26 miles south of Carlsbad. Air samples yielded extremely small amounts of iodine 131, tellurium 132 and caesium 137," which "can be attributed to Japan, but are also likely to be caused by events such as the radioactive fallout from global weapons testing in the 1960s."

**US Effort To Turn Plutonium Into Fuel Faces Obstacles.** The New York Times (4/11, A1, Becker, Broad, Subscription Publication), in a front-page article, reports, "On a tract of government land along the Savannah River in South Carolina, an army of workers is building one of the nation's most ambitious nuclear enterprises in decades: a plant that aims to safeguard at least 43 tons of weapons-grade plutonium by mixing it into fuel for commercial power reactors." However, "11 years after the government awarded a construction contract, the cost of the project has soared to nearly \$5 billion. The vast concrete and steel structure is a half-finished hulk...the government has yet to find a single customer, despite offers of lucrative subsidies," and "now, the nuclear crisis in Japan has intensified a long-running conflict over the project's rationale."

**LANL Plutonium Lab Retrofits Would Increase Project's Costs, Timeline.** The Albuquerque Journal (4/8, Fleck) reported that it would cost between \$40 million and \$80 million and take an estimated seven years to upgrade the ventilation systems at the Los Alamos National Laboratory's

Plutonium Facility to prevent radioactive plutonium from leaking from the building in a major earthquake, according to a preliminary estimate from the lab's federal managers. "The possible upgrade of the ventilation system is one of a number of steps being taken in response to a 2009 analysis by independent federal nuclear safety auditors who concluded that a worst-case earthquake followed by a fire could result in radiation exposures to the general public 100 times the limits set by federal regulations." But Defense Nuclear Facilities Safety Board member Joe Bader said in a telephone interview that LANL "is making good progress on implementing safety improvements at the Plutonium Facility."

In a separate story, the Albuquerque Journal (4/8, Fleck) provided a breakdown of the cost estimates for the project, supplied by the National Nuclear Security Administration.

**Michigan State Legislator Holds Forum On Nuclear Plant Decommissioning.** The Chicago Sun-Times (4/10, Collins) reported that State Sen. Susan Garrett, D-Lake held a forum on Saturday to discuss the decommissioning of the former Zion Nuclear Reactor site on the shores of Lake Michigan. The Sun-Times reports that "Garrett and a group of citizens received an extensive briefing on activities now taking place at the plant since last September from Patrick Daly, general manager of Zion Solutions LLC, who heads up an estimated \$960 million, ten-year project to return the 257-acre site back to productive use." The plant was built between 1968 and 1973 and the "formal decommissioning of the plant began with preparations in 2007." Daly said that the plant will be "ready for beneficial reuse in 2020, 12 years earlier than previous plans."

**Federal Appeals Court Rules In Favor Of DOE In Energy Northwest Case.** The New York Times (4/8, Northey, Subscription Publication) "Greenwire" reported that the US Circuit Court of Appeals for the District of Columbia ruled Thursday that "Energy Northwest did not make the case that the federal government's failure to take waste from its 1,150 megawatt Columbia Generating Station... forced the company to upgrade a \$60 million nuclear waste storage facility." However, the court did award Energy Northwest with "\$2.9 million in 'overhead costs' associated with the storage facility."

**NNSA Y-12 Complex Might Not Withstand A Major Earthquake** The Oak Ridger (4/9, Majors) reported that National Nuclear Security Administration's Y-12 Site Office spokesman Steve Wyatt said that the company's 9212 complex "could be compromised" if a major earthquake hit the area. Wyatt added, "If that happened, structural damage could cause process failure and could start a nuclear

chain reaction and release radiation" The 9212 Complex was build during the Manhattan Project, and even though it "has been added on to over years and has been modified," its structure still couldn't handle a major earthquake.

**PNNL To Assist With Ukraine Radiation Detection Program.** The Tri-City (WA) Herald (4/11) reports the Pacific Northwest National Laboratory "will be providing support as new radiation detection equipment is commissioned at the Kharkiv International Airport in the Ukraine," as announced this week by the National Nuclear Support Administration and the Administration of the State Border Guard Service of Ukraine. "The US has been working with Ukraine since 2005 to provide radiation detection at more than 80 international crossing points in the country. Ukraine is a potential transit country for illicit radioactive and nuclear materials moving between Europe and Asia."

The Ukraine's Kyiv Post (4/11) adds that "under a 2005 agreement between the US and Ukraine, NNSA's Second Line of Defense (SLD) Program has been working with ASBGS to provide radiation detection equipment at more than 80 international crossing points of all types throughout Ukraine."

**Celebration Planned To Mark Completion Of PNNL Project.** The Tri-City (WA) Herald (4/11) reports that a celebration of the completion of the Capability Replacement Laboratory project, PNNL's largest construction project, has been planned for April 19. The project "included the construction of several new building on PNNL's main campus in north Richland and work to extend the operating life of four buildings on the Hanford nuclear reservation just north of Richland. ... Speakers at the celebration will include officials from the Department of Energy, the National Nuclear Security Administration, Department of Homeland Security and PNNL."

**Hanford, PNNL Contractor Employees To Get "Step" Pay Increases.** The Tri-City (WA) Herald (4/11, Cary) reports that "some Hanford contractors and Pacific Northwest National Laboratory employees should be getting larger paychecks than expected this year, despite a declared pay freeze." While Energy Secretary Steven Chu said in December that federal contractor employees would be subject to the say pay freeze enacted for federal employees, "federal employees continue to get 'step' increases, which are described by DOE as percentage increases on a predetermined schedule tied to increased experience for employees with good performance." The DOE said last week Secretary Chu would allow the same increases for contractor employees. DOE Hanford spokesman Geoff Tyree said "DOE Hanford officials were talking with DOE officials in Washington, D.C., last week about how they would implement the new direction."

## **Alexander To Speak At Cyber Security Forum.**

The AP (4/10) reported NSA Director Gen. Keith Alexander "and members of Rhode Island's congressional delegation are set to discuss the impending threat of a cyber attack at a symposium in Warwick." The symposium, which is scheduled to take place Monday at the University of Rhode Island, "will address the need for partnerships between government, academia and industry in anticipating and preventing cyber attacks and other issues related to the growing threat of such attacks."

## **INTERNATIONAL NUCLEAR NEWS:**

**Officials Issue Another Tsunami Warning As Magnitude-7.1 Hits Japan.** The AP (4/11) reports, "A magnitude-7.1 aftershock has rattled Japan on the one-month anniversary of a massive earthquake that spawned a deadly tsunami." Officials have now issued a warning "for a 3-foot (1-meter) tsunami."

**Japanese Anti-Nuclear Movement Gains Strength.** NBC Nightly News (4/10, story 4, 2:00, Holt, 8.37M) reported, "If there's a measure of the unease over Japan's nuclear crisis, this was it. At least 5,000 turned out to demonstrate in front of Tepco today. The utility now responsible for bringing their stricken nuclear plant under control. It's not the first protest against nuclear power, but it is the largest."

The Washington Post (4/11, Chandler, 572K) reports from Japan: "Until now, anti-nuclear activists here have counted some local victories, preventing plants from moving in or quashing the use of plutonium-laced nuclear fuel in their neighborhoods," but "they say their national influence has been virtually nil." However, "In the past few weeks, former chiefs of key nuclear safety commissions and government agencies have apologized for overlooking important safety concerns. And aging activists, who got involved in local battles opposing reactors in the 1970s or were inspired after the 1986 Chernobyl accident, are getting re-inforcements." USA Today (4/11, Marcus, 1.83M) has an article on treating young Japanese quake survivors.

**Fukushima Radiation Danger Assessed.** David Brenner, director of the Center for Radiological Research at Columbia University Medical Center, in an op-ed for the Wall Street Journal (4/11, Subscription Publication, 2.02M), says that the radiation from the Fukushima nuclear crisis is a threat to only those within 20 kilometers of the plant, and that even those people are likely to escape major illness. Nevertheless, Brenner says that more study need to be done on the longterm effects of very low doses of radiation.

**Japanese Government Accused Of Fueling Public Mistrust.** George Bonanno, Newsweek (4/11, 1.55M), says, "The administration in Tokyo has consistently failed its people by providing confusing and often inaccurate information about the extent of the damage. They have also been frustratingly vague about the possible dangers of radiation contamination."

**Sunday: Japan Orders Reactor Operators To Locate More Emergency Generators.** The New York Times (4/10, A8, Pollack, Wald, Subscription Publication) reported that last week's aftershock caused radiation measurements to increase "sharply" in Reactor No. 1 of the Fukushima Daiichi nuclear plant, according to government data released about the incident. The Times says "that might indicate new damage" to the reactor, although Tokyo Electric Power Company "said the gauge used to measure radiation was most likely broken." A US Nuclear Regulatory Commission spokesman said Saturday that the NRC "agreed with the power company's assessment that the high reading...was most likely in error." Japan also "ordered reactor operators on Saturday to bring in additional emergency diesel generators, as the aftershock again demonstrated the potential for such events to shut down portions of the power grid."

**Government Orders Reduced Energy Consumption.** The Washington Post (4/10, Nakamura, Tanaka, 572K) reported that Japan also "ordered businesses and residents last week to cut their energy use...this summer to avoid power outages." The government wants big businesses to reduce consumption by 25 percent, smaller businesses by 20 percent, and households by 15 percent. The Post says there is now "a scramble in the industrial sector to figure out how businesses can comply," possibly with "flexible schedules, extended holidays and four-day workweeks, along with the installation of in-house power generators."

**US, Japan Will Conduct Full Search Sunday.** The AP (4/10) reported that Japanese and US troops "will search by land, air, and sea on Sunday" for the victims of the disaster in "another all-out search." The AP says they will "skip the evacuation zone" near the crippled plant. Japan believes as many as 25,000 people died in the disaster, although "only 13,000 deaths have been confirmed," and "many" likely "will never be found."

**Saturday: Clinton Plans To Visit Quake-Ravaged Region In Japan.** AFP (4/9) cited Japan's Jiji Press in another report that Secretary Clinton will go to northeastern Japan during a two-day visit, although the report puts her visit "on March 17." Japan's Foreign Ministry is not aware of Clinton's plans, according to the report, which notes that Clinton plans "to meet American troops helping with relief efforts" and will "be the first foreign dignitary to travel to northeastern Japan, where entire towns and villages were

destroyed." AFP adds that the US "has deployed thousands of troops to help with the relief effort."

**Aftershock Killed Four, Left Thousands Without Power.** NBC Nightly News (4/8, story 8, 2:20, Snow, 8.37M) reported that this week's aftershock means "nearly half a million homes have no power. ... Meanwhile, authorities continued today to retrieve bodies near the crippled Fukushima Nuclear Plant."

The CBS Evening News (4/8, story 10, 0:25, Smith, 6.1M) reported, "That magnitude 7.1 aftershock in Japan" on Thursday "was deadly. New reports say four people were killed and about 140 others were injured. Four weeks after the massive earthquake and tsunami, the Japanese government says the economy is in severe condition. Toyota confirmed today it will limit production at US plants because they can't get enough parts from Japan."

**CBP Screening Cargo From Japan For Radiation.** The New York Times (4/9, Kopytoff, Subscription Publication, 950K) reported, "Radiation detectors originally intended to thwart terrorists smuggling nuclear bombs into the country have been put to another use at this sprawling port across the bay from San Francisco. Three Customs and Border Protection officers used the equipment to screen Japanese cargo plucked by cranes as high as 24-story buildings from the NYK Aquarius, a massive cargo ship. Semi trucks hauling the containers passed slowly between two government trucks mounted with radiation detectors that resembled white cabinets. If the lights flashed, it would mean the equipment detected unusual levels of radioactivity in the cargo. A white light means gamma radiation was detected; a red light indicates neutron radiation. But on this day, like every day thus far, no dangerous cargo was found."

**NYTimes Says Radiation Risks Need To Be Monitored.** The New York Times (4/9, Subscription Publication) editorialized, "As of now, potential health risks appear to be limited in Japan and virtually nonexistent in the United States." But nuclear plant operators still have "not been able to restore emergency cooling systems for the reactor cores and spent fuel pools." The Times says there is still danger nuclear fuel could melt and release radioactive materials, so officials in "Japan and around the globe will need to keep monitoring the air and water and the fish supply for many months, if not longer."

**Iran Says Centrifuge Factory Is No Secret, Bushehr Restart Set For May.** The AP (4/10, Dareini) reported Iran's Foreign Minister Salehi "on Saturday confirmed claims by an exiled Iranian opposition group that a factory west of Tehran is manufacturing centrifuge parts, but said the facility was no secret and that many other factories in the country were making components for Iran's nuclear program." Salehi was responding to disclosures by "the

Mujahedeen-e Khalq," which "announced at a press conference in Washington that its spies identified the factory, called the TABA facility, saying workers there produced centrifuge casings, molecular pumps, tubes and bellows for the centrifuges."

AFP (4/10) reported that Salehi also said Iran's Bushehr nuclear power plant will restart in May. A Russian contractor said Friday that it was reloading fuel there, after it was removed "in late February due to an apparent technical fault." Salehi "said the fuel supplied by Moscow was 'removed from the reactor's core, was washed... and as of yesterday it was reloaded.'"

***Documents: Israel Ruled Out Iran Strike In 2005.***

AFP (4/10) reported Israeli defense officials "ruled out a strike on Iran's nuclear facilities as early as 2005, US diplomatic cables leaked" to WikiLeaks show, an Israeli newspaper said Sunday. The documents given to the Haaretz newspaper by WikiLeaks "detail conversations between US diplomats and Israeli defence officials, which suggested the Jewish state did not plan to target Iran's controversial nuclear programme." A cable dated December 2005 "said Israeli officials had indicated there was 'no chance of a military attack being carried out on Iran,' Haaretz reported."

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# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

MONDAY, APRIL 11, 2011 7:00 AM EDT

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## **NRC NEWS:**

### **A.M. News Links: Indian Point Relicensing Would Be Delayed Under Proposed House Bill And More (SIADV)**

Staten Island Advance, April 8, 2011

\*House bill would delay Indian Point relicensing pending Japan study (The Journal News)

Relicensing of nuclear plants such as the Indian Point plant would temporarily halt under legislation proposed by a Democratic congressman from Massachusetts.

Rep. Edward Markey wants relicensing of existing nuclear plants and licensing of new plants to stop until the Nuclear Regulatory Commission completes its review of the disaster at the Fukushima Dai-ichi plant in northern Japan, and implements safety upgrades.

Officials at the Buchanan nuclear plant said it's too early to stop the licensing-relicensing process.

### **House Bill Would Delay Indian Point Relicensing Pending Japan Study (WESTJN)**

By Brian Tumulty

Westchester Journal News, April 9, 2011

WASHINGTON — Relicensing of nuclear plants such as the Indian Point plant would temporarily halt under legislation proposed by a Democratic congressman from Massachusetts.

Rep. Edward Markey wants relicensing of existing nuclear plants and licensing of new plants to stop until the Nuclear Regulatory Commission completes its review of the disaster at the Fukushima Dai-ichi plant in northern Japan, and implements safety upgrades.

Officials at the Buchanan nuclear plant said it's too early to stop the licensing-relicensing process.

"While there will undoubtedly be lessons learned for the US nuclear industry following an analysis of events in Japan, it would be imprudent to circumvent a proven regulatory process with 'snap-judgment legislation,'" said plant spokesman Jerry Nappi.

In an interview, Markey said the emphasis of the NRC should be on looking at existing plants because those are the facilities that pose a potential risk now.

"And perhaps there's been too much emphasis lately focused on licensing the plants that may actually never get built," he said. "At least with regard to a new plant we have the opportunity to start from scratch and build in additional measures if we need to."

Markey's state is home to the Pilgrim Station nuclear power plant on Cape Cod Bay.

But a senior NRC official testified at a subcommittee hearing Wednesday that no immediate safety changes are required at the nation's 104 nuclear power reactors.

"There's nothing that we need immediately," Martin Virgilio, the agency's deputy executive director for reactor and preparedness programs, told members of the House Energy and Commerce Subcommittee on Oversight and Investigations.

Virgilio also said the NRC's plans in the wake of the Japan disaster include reviewing a policy that allows many plants to have only four hours of backup battery power when other power sources fail.

Virgilio confirmed after his testimony that the NRC is looking at expanding the evacuation zone for Indian Point.

"Right now, we have 10 miles for evacuation and a 50-mile zone for food consumption," he said. "We always assumed that 10-mile zone could be expanded out, if necessary. We are going to be looking at that as part of our lessons learned."

Many members of Congress, including Democrats, support nuclear power as long as federal regulators address safety issues raised by radiation leaks that have occurred in Japan. That includes both of New York's Democratic senators.

So far, Markey's proposed moratorium on relicensing has one co-sponsor: Democratic Rep. Jerrold Nadler of New York City.

Rep. Eliot Engel, D-Bronx, said he also supports the bill, although he's not yet a co-sponsor.

Engel and Rep. Nita Lowey, D-Harrison, have their own bill that would require the NRC to use the same safety standards for relicensing older plants as it does for licensing new ones.

Republican Rep. Phil Gingrey of Georgia labeled Markey's proposal a "knee-jerk reaction," noting that the White House and Energy Secretary Steven Chu support nuclear energy.

Gingrey said Markey's proposal "is very, very destructive to us having a viable, sensible energy policy in this country that's well-balanced and utilizes an all-of-the-above approach with renewables, wind and solar."

"For us to have only 20 percent of our power generation from nuclear is just way, way too low for a technology that, albeit expensive, has a great safety track record," Gingrey said.

## **Indian Point Security Chief: Nuclear Plants Akin To 'Military Installation' (WESTJN)**

### **Nuclear plants akin to 'military installation'**

By Greg Clary

Westchester Journal News, April 9, 2011

MANHATTAN — Indian Point was built to withstand various combinations of natural disasters, and improvements since the 9/11 terrorist attacks have strengthened the nuclear plant's defenses, security officials told state senators Friday.

"Nuclear power stations are the most hardened facilities in the United States," Indian Point security head Dan Gagnon told a Senate hearing on homeland security. "To put it in layman's terms, it's essentially an industrial setting inside a military installation during wartime activity."

Gagnon and two other Indian Point officials testified for about 30 minutes of an all-day hearing held in the state Senate building in New York City.

Sen. Greg Ball, R-Carmel, who chairs the Senate Veterans, Homeland Security & Military Affairs Committee, called the hearing as the state approaches the 10th anniversary of the terrorist attacks, to "assess the state of security in New York."

The six-member panel heard from federal lawmakers, New York City police leaders, private-protection executives and immigration officials.

Indian Point's presentation seemed quiet by comparison with a discussion about Muslims in America and whether a group within that population is working to undermine the US Constitution and replace it with Islamic law.

Ball and fellow Sen. Eric Adams, D-Prospect Heights, exchanged angry words when Adams held up the Quran and said it wasn't a threat, rebutting the testimony of Nonie Darwish, co-founder of [www.FormerMuslimsUnited.org](http://www.FormerMuslimsUnited.org).

Darwish had told the panel of growing up Muslim in Egypt before coming to America and that she worried about some anti-American Muslims infiltrating US institutions to bring the democracy down.

"I want to know why are we allowing her, Chair, to bring this poison into a hearing that is dealing with 'Are we ready in 10 years?' " Adams said.

Ball said Adams was "out of line" and playing to the media when the focus of the hearing was to get diverse points of view and work on real solutions.

"Let's let Nonie speak," Ball said. Other senators agreed.

Indian Point's former top executive, Fred Dacimo, now running the nuclear plant's relicensing efforts, said testifying about the plant's ability to withstand natural disasters and terrorism was important.

"What they're doing is a good thing to do," Dacimo said. "Everybody's real uptight with Japan, so the nuclear industry has become a real focus of everybody's attention. There's a lot more that needs to be said."

## **Indian Point Considers Seismic Safety (WESTJN)**

By John J. Kelly

Westchester Journal News, April 11, 2011

Re "Weigh new science in IP relicensing review," Sunday editorial:

As the retired director of licensing for Entergy Nuclear Northeast and a person who worked in support of Indian Point for over 30 years, I read this editorial with interest.

Reviewing seismic activity is not a new concept at Indian Point. I was the manager at Indian Point responsible for funding and supporting a network of 10 micro seismometers in Rockland and Putnam counties under the direction of Columbia University's Lamont-Doherty Earth Observatory in the 1970s to evaluate concerns raised by New York state over possible seismic activity in the surroundings of Indian Point. This study, conducted over several years, concluded the seismic design of Indian Point is sound and the plants are safe.

In 2008, an Independent Safety Evaluation was published by a panel of independent experts who evaluated 64 safety issues at Indian Point, including seismic design. That study again confirmed the seismic design of Indian Point is sound and the plants are safe.

Another study published that same year by scientists from Lamont-Doherty reports a possible new source of seismic activity near Indian Point. The NRC has already agreed to treat Indian Point on a priority basis to review the concerns of seismic activity including that in this new report and I know that Entergy will fully cooperate in this evaluation.

The editorial raised concerns about the seismic design of the Tappan Zee Bridge and whether that could impact emergency planning for Indian Point. It will not. The Hudson River bridges are not used in the Indian Point Emergency Plans.

I have lived less than four miles from Indian Point for 40 years and know that the plants are safe.

## **Indian Point Completes Refueling (MIDHUD)**

Mid-Hudson News, April 9, 2011

BUCHANAN – Indian Point's unit 3 nuclear power plant was returned to operation on Friday, sending electricity to the grid. This follows a 30-day scheduled shutdown for refueling.

"The 16th refueling outage at Indian Point's unit 3 was one of our most successful outages in site history," said Joe Pollock, site vice president and Entergy's top official at Indian Point. "Success is measured in part by industrial and radiological safety and in both areas the performance of our outage team was stellar."

In addition to the replacement of fuel, workers performed about 7,000 maintenance activities and inspections during the outage.

Prior to this refueling outage, unit 3 had been online generating electricity more than 97 percent of the time since it returned to service from its last refueling outage in April 2009.

## **First Stay Calm, Then Clear Out (MTWNHER)**

Middletown (NY) Times Herald-Record, April 10, 2011

Anybody who has been following the news from Japan knows that the crisis at the crippled nuclear power plants has been a consistent source of bad news followed by worse news. The initial reassuring statements from Japanese officials were followed by doubts and then outright repudiations from officials in other countries, adding confusion and distrust to an already worrisome situation. With minor variations, that cycle has continued.

With that in mind, is it difficult to understand why the Nuclear Regulatory Commission chose this time with this perilous situation so much in the front of every inquiring mind to resurrect the old and ridiculed reassurance that a 10-mile evacuation zone would be plenty big enough in the case of an emergency at Indian Point.

The press release came with the usual bureaucratic hedges, noting that the 10-mile zone would be enough for those who faced "the most significant threat." It would be enough because that's how far dangerous levels of radiation would travel "under most accident scenarios." Anybody 10.1 or more miles away from the plants is not likely to find that comforting.

Critics of the NRC have long claimed that it sees itself as a part of the nuclear industry, not as the buffer between the interests of that industry and the safety of the nation. At a time when people are skeptical with good reason, this what-us-worry attitude turns a familiar fairy tale on its head and shows that when it comes to trouble, the NRC has become the boy who won't cry wolf even if the wolf is in the room.

The only hope is that the NRC is operating on two levels. As a friend of the industry, it is doing all it can to keep people from worrying and from turning that worry into calls for action that might help the state effort to close Indian Point.

At the same time, let's hope that some inside the NRC are being honest with officials in New Jersey and Connecticut to make sure that should something happen at Indian Point, they all can work quickly to turn the inbound lanes around and put on extra trains.

If something goes wrong at Indian Point, people are not going to wait.

## **Nuclear Regulatory Commission: Watchdog Or Lapdog? (STAMADV)**

By Shay Totten

Stamford Advocate, April 11, 2011

Shay Totten, The New England Center for Investigative Reporting

Internal government watchdogs and outside experts alike say the US Nuclear Regulatory Commission is too lenient on the industry it is charged with regulating, often making decisions based on the industry's profit margins rather than public safety.

The charges are similar to complaints leveled against the Mine Health Safety Administration and the Minerals Management Service over the past year, after high-profile tragedies – the Upper Big Branch Mine collapse and the Deepwater Horizon spill – in the industries they are responsible for regulating.

In the wake of the events in Japan, there is a heightened sense of concern throughout the United States that a similar meltdown could occur, particularly in New England where reactors similar to those in Japan remain in operation.

Top nuclear industry officials maintain the public has nothing to fret about – that the NRC is a tough regulator that asks tough questions. NRC critics counter that the agency might ask tough questions, but is all too willing to accept easy answers.

Concerns about the NRC's oversight are nothing new. A clear illustration is a series of reports issued since 2002 by the NRC's internal inspector general and the US General Accountability Office related to a near-catastrophe at Davis-Besse, a nuclear reactor on the shores of Lake Erie.

From those reports:

In 2002 the GAO found the NRC weighed the financial impacts of its safety-related decisions on the industry's bottom line – stalling a forced reactor shutdown at Davis-Besse because the NRC fretted about the impact on the plant owner's finances and the "black eye" an emergency shutdown might give the industry.

In 2004 the GAO found that little had changed within the NRC's safety and inspection culture since Davis-Besse.

In 2009, the OIG found that key NRC staff couldn't name the four core areas of improvement the NRC had identified to better protect the public's health and safety after Davis-Besse incident. In fact, the OIG discovered many NRC staff didn't know the "lessons learned" project existed.

A report issued last month by the nuclear watchdog Union of Concerned Scientists found 14 "near misses" at US nuclear reactors in 2010, with the NRC's response to some less than reassuring.

"If you still believe that the NRC is a nuclear watchdog, you are probably still sending your money to Bernie Madoff," said Arnie Gunderson, a former nuclear-industry executive turned whistleblower.

### **KEY SAFETY RULE WEAKENED**

As detailed earlier in this series, an investigation by the New England Center for Investigative Reporting and Hearst Connecticut Media Group found the NRC has routinely allowed operators to pack spent fuel rods into cooling pools far beyond

the pools' original licensed capacity, and design basis, rather than forcing the plant owners to move the fuel into safer, more costly dry casks.

But the investigation also has found that the NRC has weakened a key, decades-old safety standard, potentially saving owners tens of millions of dollars by removing a key requirement that could avert a nuclear tragedy.

The failing reactors at Fukushima Daiichi in Japan are of the General Electric Mark 1 design. There are 23 such reactors in operation in the United States, including Vermont Yankee in Vernon, Vt., and Pilgrim Nuclear Power Station in Plymouth, Mass.

NRC Chairman Gregory Jazcko told a panel of US senators recently during a congressional hearing that the NRC had required upgrades of the Mark 1 model in the United States that would prevent some of the failures seen in Japan.

Still, additional concerns with the Mark 1, as well as Mark 2 and Mark 3 boiling water reactors have arisen thanks to the recent change in safety rules.

In 2005, both Gundersen and David Lochbaum, a nuclear engineer and director of the Nuclear Safety Project at the Union of Concerned Scientists, questioned the NRC's decision to allow some nuclear power operators to use their containment vessel as a way to help cool a reactor before turning to emergency cooling water pumps.

If the containment vessel is allowed to absorb heat from reactor and spent fuel pool water, the overall pressure could add stress to the concrete containment shell, increasing the risk of a failure, Lochbaum and Gundersen contend.

While the analogy isn't perfect, said Lochbaum, think of a plastic bottle half filled with soda. If you stick a straw down into the soda, you can drink the soda. But, if you put your thumb over the top and shake it up vigorously, the bottle is filled with foam. If you stick a straw into the foam region, you don't get soda.

With a boiling water reactor (BWR), trying to use emergency pumps without containment pressure is like drinking foam from a soda bottle with a straw, added Gundersen.

"In the old days, we had protection, and nowadays, we're relying on one thing, the containment remaining intact. If that's gone, we lose our ability to cool the reactor cores, and we also open up a pathway for radiation to be released to the environment," said Lochbaum.

NRC staff and industry officials disagree. In many filings, including one granting Vermont Yankee permission to use its containment vessel in this way, the NRC asserts that BWR containment vessels can absorb additional heat for short periods of time without causing a drop in the reactor pressure levels necessary to push water through emergency pumps.

"This issue is not new," said Tony Pietrangelo, senior vice president and chief nuclear operator, of the Nuclear Energy Institute. The NEI is the industry's chief lobbying and trade association. "I know there is some disagreement, but the NRC has reviewed this issue extensively."

But the NRC's own internal Advisory Committee on Reactor Safeguards has objected to the policy and believes the new stance is a "serious compromise" of reactor safeguards.

Lochbaum contends the NRC is unnecessarily putting industry profits ahead of public safety.

"The NRC sold out the American public in order to boost profits of companies," said Lochbaum. "It's put millions of Americans at undue and elevated risk, and it was done simply for business purposes instead of safety. There's no excuse for doing that."

Lessons learned -- or ignored?

The closest the United States has come to full-scale core reactor meltdown was in February 2002, when workers at the Davis-Besse reactor in Ohio found a pineapple-sized cavity in the reactor's vessel head -- a cavity caused by leaking boric acid used, in part, to help cool the reactor.

Davis-Besse's owner, FirstEnergy, had sought, and received, permission from the NRC to remain open 45 days beyond a required end-of-year inspection date.

The NRC allowed FirstEnergy to remain in operation beyond the end of 2001 to conduct a more thorough inspection of boric-acid related damage during a scheduled February 2002 refueling.

In 2002 the OIG found the NRC backed away from forcing FirstEnergy to shut down Davis-Besse prior to the refueling because the NRC fretted about the impact on FirstEnergy's finances and the "black eye" it might have on the industry as a whole.

It took two years, and millions of dollars in improvements, before Davis-Besse restarted in 2004.

The same year, a separate GAO report found that the NRC missed an opportunity to learn lessons from the Davis-Besse incident.

"We are concerned that NRC's oversight will continue to be reactive rather than proactive," the GAO concluded, adding that the NRC can make "a determination that a licensee's performance is good one day, yet the next day NRC discovers the performance to be unacceptably risky to public health and safety. Such a situation does not occur overnight."

"The NRC is a learning organization and always strives to incorporate lessons learned from previous events and developments," responded NRC spokesman Neil Sheehan. "In the case of the reactor head corrosion identified at Davis-Besse in 2002, the NRC formed a Lessons Learned Task Force that produced more than 50 recommendations, 21 of which were considered high-priority."

Yet key NRC staff responsible for disseminating information about the Lessons Learned Task Force couldn't name the four core areas of improvement the NRC had identified to better protect the public's health and safety, according to a 2009 OIG report.

NEI's Pietrangelo counters it's not just luck that has kept the US safe from a serious accident since Three Mile Island in 1979.

"They are tough regulators who are devoted to their public health and safety mission and are not afraid to bring down a plant if it is not safe to operate," said Pietrangelo. "I say, don't look at the reports, look at the record. We're operating now at record levels of safety for a decade and the proof is in the performance."

Lochbaum and the Union for Concerned Scientists think the NRC can be an effective regulator – if it forces the industry to live up to existing rules and regulations and not grant exemptions.

He pointed to the UCS report issued last month which found 14 "near misses" at US nuclear power plants, which Lochbaum calls a high number for a "mature industry."

"This overview shows that many of these significant events occurred because reactor owners, and often the NRC, tolerated known safety problems," the report said. The report highlighted both effective and ineffective responses by the NRC to safety problems, including an ineffective response at Vermont Yankee, where the agency allowed the release of radioactively contaminated air in ways that had forced shutdowns at other reactors.

"The chances of a disaster at a nuclear power plant are low – and current events remind us how important it is to keep them that way," notes the report's executive summary. "The NRC is capable of functioning as a highly effective watchdog, but ... much work remains to be done before the agency can fulfill that role as consistently as the public has a right to expect."

Vermont investigative journalist Shay Totten has covered the nuclear industry extensively over the past decade.

## **French-owned UniStar Not Eligible To Build Nuclear Reactor At Calvert Cliffs (BSUN)**

By Andrea K. Walker

Baltimore Sun, April 11, 2011

Federal officials said Friday that UniStar Nuclear Energy is not eligible to build a third reactor at Calvert Cliffs because it is not a US-owned company, but also said they would continue to process its application.

The Nuclear Regulatory Commission said in a letter that although a review of the application for the \$9.6 billion reactor in Southern Maryland will still take place, a license would not be issued until the ownership requirements were met.

Federal law prohibits complete ownership or control of a US nuclear plant by a foreign entity. UniStar is owned by French energy group EDF.

"We'll continue our review," said Diane Screnci, spokeswoman for the NRC's regional office in Philadelphia, which has supervision over Calvert Cliffs.

A spokeswoman for UniStar said the letter does not rule out the company's plans to seek approval to own and operate the reactor. The company has consistently said it ultimately will have a US partner, said the spokeswoman, Kelly Sullivan.

"While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application," Sullivan said. "This allows the project to continue moving forward as anticipated."

Sullivan said UniStar will continue to work with the commission to resolve the governance issue. The company has not said when it would find a US partner.

News that UniStar does not meet ownership requirements is not a surprise.

EDF formed UniStar in 50-50 partnership with Baltimore-based Constellation Energy Group with plans to develop several nuclear plants in the United States, including at Calvert Cliffs. Constellation pulled out of negotiations last year over a federal loan guarantee needed to finance the reactor.

Constellation left UniStar on its own to build the plants when CEG pulled out.

In December, UniStar gave the NRC a plan that it said would provide US control without a local partner. It included having two US citizens on its eight-member board and requiring that its chairman and chief executive be US citizens.

The company also set up a security subcommittee whose members would be the board chairman and two US members. The subcommittee would make decisions related to nuclear safety, security and reliability issues.

One watchdog group doesn't believe UniStar will be able to find a US partner.

Michael Mariotte, executive director of Nuclear Information and Resource Service, in Takoma Park, said his group has long warned that EDF's and the French government's dominant role in the project does not pass US nuclear regulations for power plant construction.

"There's probably less than a 5 percent chance at this point it will get built," Mariotte said, noting the recent worldwide concerns about nuclear power after an earthquake and tsunami damaged reactors in Japan. "It's going down fast."

## **UPDATE 1-US NRC: No License For Maryland Reactor For Now (REU)**

By Timothy Gardner, Roberta Rampton, Ayesha Rascoe And Tom Doggett

Reuters, April 11, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **US NRC Denies License To Build Nuclear Reactor In Maryland (REU)**

Reuters, April 9, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **NRC Defends Peach Bottom Accident Response, Despite Analyst's Concern (YDRPA)**

**In an email, an NRC analyst said some post-Sept. 11 procedures hadn't been tested. But a recent simulation showed that Peach Bottom avoided core damage**

By Sean Adkins

York (PA) Daily Record, April 11, 2011

At least one federal analyst has questioned whether improvements made by nuclear plants after the Sept. 11, 2001 terrorist attacks would work to stave off a severe accident.

The concern, voiced in the form of a 2010 email, was in response to a federal study, which found that Peach Bottom Atomic Power Station – thanks to those post-9/11 improvements – would avert reactor core damage after a hypothetical two-day blackout.

Without those updates, the study showed a much more dire result.

The author of the email, obtained by the Union of Concerned Scientists, said that certain post 9/11 measures "have really not been reviewed to ensure that they will work to mitigate severe accidents."

The US Nuclear Regulatory Commission disputes that assessment made by one of its staff. The post-911 equipment and measures do work.

Peach Bottom, a boiling-water reactor, and Surry Power Station in Virginia, a pressurized-water reactor, participated in the study, known as the State-of-the-Art Reactor Consequence Analyses project, of how the two plants would handle severe reactor accidents.

The US Nuclear Regulatory Commission has inspected each reactor in the nation to ensure that utilities have made the required updates, said Neil Sheehan, a spokesman for agency.

Those revisions for all nuclear plants across the nation included upgraded firefighting equipment, pumping equipment that could take water from a river to help fill the spent-fuel pool and back-up power sources such as portable generators responsible for pumping coolant into the reactor, he said.

"The NRC was satisfied that provisions were in place to deal with those kinds of (severe) scenarios such as fires and explosions at the site," Sheehan said. Volunteering for the study

Peach Bottom volunteered for the NRC's study that analyzed, through computer modeling, the possible consequences of a severe accident brought on by an earthquake, flood or fire, said David Tillman, spokesman for the plant.

"I think that this study will benefit the entire industry," April Schilpp, a then-spokeswoman for the plant, said in 2007 when the study was in its early stages. "The better technology will get us better information in analyzing the data."

The study's results will be used for emergency planning and for research.

On Wednesday, a US House Subcommittee on Oversight and Investigations released a memo stating that, according to a draft report of the NRC's study, Peach Bottom would come within one hour of core damage after a two-day blackout following a worst-case scenario.

"While Peach Bottom was a willing participant in the NRC's SOARCA study . . . the final report has not been released," Tillman said. "The snippets of the report that have been released (Wednesday) confirm that in all highly unlikely disaster



scenarios, with Peach Bottom's primary and secondary sources of power eliminated completely, the station would suffer no core damage and release no radiation."

The study, according to the memo, took into account three severe scenarios that involved the local power station:

- The plant loses offsite power and its backup diesel generators. The reactor's coolant system is powered by reserve batteries for about four hours until they become exhausted.

- All power, including the backup batteries, is lost and "all of (the plant's) safety systems quickly become inoperable in the 'short term'".

- A random vital power connection failure didn't result in damage since the safety systems were able to keep the core cool.

However, under the more severe blackout scenario, the plant's operators, after the first two days without power, narrowly averted a core meltdown by manually turning steam valves that switched on the reactor core's isolation cooling system.

In the less severe scenario, in which the plant still had four hours of battery backup, the reactor's core was not damaged. Computer modeling showed operators would have sufficient time to take other measures to prevent core damage, according to the memo.

The first two of those models took into account that the plant would have in place updated equipment and procedures ordered after the Sept. 11, 2001 attacks.

Without those updates, both simulations resulted in core damage and the release of radioactive contamination within two days. A look forward

The memo states that the NRC's modeling study ended after two days of simulated loss of power.

In Japan, the crisis at the Fukushima Dai-ichi plant has shown that the question of whether a reactor will suffer core damage and release radioactivity can't be answered after two days, according to the memo.

The two reactors at Peach Bottom are of the same design as those at the Fukushima.

In response to the crisis in Japan, the NRC is sending specialists to each plant across the nation to review the improvements completed after Sept. 11, 2001, emergency preparedness provisions and other procedures to check if other changes are necessary, Sheehan said.

"We'll be looking through the prism of what's taking place in Japan," he said.

If you go

The NRC will host a public meeting Wednesday regarding the agency's annual assessment of the 2010 safety performance at the Peach Bottom Atomic Power Station.

The meeting is scheduled to begin at 6 p.m. at the Peach Bottom Inn, 6805 Delta Road in Peach Bottom Township.

Prior to the session's conclusion, residents will have an opportunity to ask questions regarding the plant's performance.

About the study

Known as State-of-the-Art Reactor Consequence Analyses, the research project, conducted by the NRC, attempts to realistically determine the outcome of a severe reactor accident that could result in a release of radioactivity.

Peach Bottom Atomic Power Station, a boiling-water reactor, and Surry Power Station in Virginia, a pressurized-water reactor, were the first two plants to participate in the computer modeling study.

## **All Things Nuclear • Panic On The 18th Floor? (ATN)**

By Ed Lyman

All Things Nuclear, April 11, 2011

Several years ago the Nuclear Regulatory Commission started a research program known as the "State of the Art Reactor Consequence Analyses," or SOARCA, which I discussed in a post on April 6. SOARCA's mission is to assess the consequences of "severe accident scenarios" at nuclear power plants that might release radioactivity into the environment.

UCS has long been concerned that the NRC imposed constraints on the SOARCA program that would significantly skew its results to ensure an outcome suggesting the public has little to fear from severe nuclear plant accidents. In 2006, to bolster confidence in the process, UCS requested that the NRC publicly release its guidelines for the program, the constraints it imposed on it, and the assumptions underlying the program's assessment of accident scenarios as well as its justifications for them.

The NRC refused to release that information, despite the fact that the NRC plans to make SOARCA's results public and, earlier in 2006, NRC Commissioner Gregory Jaczko—now the agency's chairman—called for the agency to release the material UCS requested.

UCS just discovered from a new set of FOIA documents that in March 2010 Chairman Jaczko again asked the NRC to release the SOARCA materials. The agency still has not done so.

One reason UCS questioned the SOARCA process was that around the time the program was created, NRC staff and at least one commissioner repeatedly asserted that a previous study of this type—the 1982 Calculation of Reactor Consequences (CRAC2) study conducted by Sandia National Laboratory—overstated the potential severity of nuclear accidents. UCS was concerned that the NRC may have shaped the SOARCA study to produce results that cast the nuclear power industry in a more positive light.

For instance, in 2007, an NRC staff member provided preliminary SOARCA results to the Advisory Committee on Reactor Safeguards (ACRS) that concluded a long-term station blackout at the Peach Bottom nuclear power plant in Pennsylvania would result in zero early fatalities from acute radiation exposure and zero latent cancer fatalities if new “B.5.b” safety measures were taken into account (see April 6’s post). If these measures were not included, the preliminary results found, there would still be zero early fatalities, and 25 latent cancer fatalities.

The staff member pointed out that these were far fewer fatalities than were projected by the 1982 CRAC2 study, which found 92 early fatalities and 2,700 latent cancer fatalities. These results differ by so much one would expect the NRC to fully explain what changes in the analysis or assumptions in the SOARCA assessment led to such a different estimate. But it did not release the underlying details of the analysis.

Notes from this same 2007 meeting show that ACRS participants questioned the restrictions the NRC placed on SOARCA’s analysis of accident scenarios. The notes state that although the NRC staff agreed that a more comprehensive analysis of the kind the ACRS participants recommended “would certainly be desirable, performing such a study would go well beyond the scope described in the Commission’s Staff Requirements Memo” that set the terms of SOARCA analysis. This implies that the ACRS participants at that meeting, like UCS, were concerned about the limits the NRC placed on SOARCA.

The ACRS participants also called into question how the SOARCA program was including the potential for human errors in its analysis, and asked for additional justification for the number used in the analysis of the probability of core damage, which is central to the study because it is used to screen out the consideration of accidents that the NRC asserts are too improbable.

NRC staff members have consistently maintained that SOARCA has determined that there would be no fatalities from acute radiation syndrome under any circumstances from severe accidents. So it was notable that one of the emails the NRC released in response to UCS’s February FOIA request indicated that talk of SOARCA’s analysis finding a non-zero number for such fatalities caught some NRC staff members’ attention and set off some alarms. In a February 3, 2011, email, a member of the NRC staff expressed consternation about a recent development in SOARCA:

[T]hanks for the status update. I had heard unconfirmed information that [the NRC Office of Research] was now suggesting that there is some increase to the estimated hypothetical number of fatalities (early or late?) from some of the SOARCA assessed scenarios. If true, this would be a change from previous results that our office would like to know about well before the staff publishes the SOARCA report for public comment.

A few days later, the staff member had his answer, and notified the commissioner he works under:

FYI: I mentioned last week that the SOARCA project has some emergent issues. A number of “120” early fatalities has circulated up here on 18 [the 18th floor of One White Flint North, NRC’s headquarters]. I will find out more but my sense is any number above zero for acute radiation syndrome effects would be suspect.

These emails might be construed as a staff member simply wondering why the new results seemed out of line with the old results. But in light of the discussion above and our concerns about the SOARCA program, it sounds to us like the kind of meddling by the politically appointed NRC in the work of the agency’s Office of Research that we suspected was happening all along.

The email quoted above goes on to say that a number of early fatalities “above zero” would be suspect because Chernobyl led to fewer than 120 early fatalities. Such a comparison, however, is not relevant.

The modeling code used by SOARCA calculates doses received by people off-site, based on timing of the release, plume modeling, population characteristics, and evacuation modeling. The studies do not estimate risks to on-site personnel. Thus the number of fatalities among Chernobyl emergency worker is not directly comparable with the early public fatalities SOARCA computed.

And why might one expect off-site residents to die from acute radiation syndrome from an accident at a US light-water reactor when none died at Chernobyl?

In the case of Chernobyl, the radioactive plume’s extreme height, due to the initial violent explosion and subsequent hot graphite fire, dispersed much of the radioactive material far from the site, sparing the areas immediately surrounding the site from high radiation concentrations. The NRC came to the same conclusion in its 1989 study of Chernobyl, finding that “the high initial plume height contributed to relatively low initial dose rates in the immediate vicinity.” Most accidents at light-water reactors,

however, would not result in such a high plume, and could therefore result in higher doses to nearby residents if they are not evacuated in a timely fashion.

In any event, it's news that SOARCA studies are apparently showing there would be early fatalities from acute radiation exposure in a nuclear plant accident. To our knowledge, that has never before been disclosed.

It will be interesting to see how many acute fatalities are estimated in the draft SOARCA study when the NRC releases it publicly.

## **Vt. Ready To Fight Effort To Keep Nuke Plant Open (AP)**

Associated Press, April 9, 2011

BRATTLEBORO, Vt.—Vermont is preparing for a legal battle if the owner of the Vermont Yankee nuclear power plant tries to keep it running after its license expires, state Attorney General William Sorrell said.

Sorrell said he and his staff are preparing their legal strategy if plant owner Entergy Nuclear ignores the state's refusal to authorize it to operate after 2012 when its current license expires, even though the Nuclear Regulatory Commissioner has extended the plant's license for 20 years.

"We are not going to sit on our hands and let Vermont law be ignored," Sorrell told the Brattleboro Reformer. "We are prepared for any eventuality."

When Entergy bought the plant in 2002, it agreed to abide by the Vermont Public Service Board's decision on whether it would issue a certificate of public good to extend its operation beyond 2012. And in 2006 the Legislature gave itself the power to forbid the PSB from issuing the certificate.

But some feel Entergy could argue state law can't pre-empt the federal license issued by the NRC and sue the state of Vermont to keep operating. Company officials have said they feel the plant is under federal jurisdiction, but they won't comment on their legal strategy.

"We've been of the view that Entergy was going to be suing us and we would be defending the law," Sorrell said.

Gov. Peter Shumlin, who wants the plant to close, said the state would do what had to be done to enforce the law.

"We will always make the resources available to insure that corporations are held to the same standard as our citizens are and obey our laws," Shumlin said.

## **State Prepares For Vt. Yankee Legal Battle (WCAX)**

WCAX-TV Burlington, VT, April 9, 2011

Vermont is preparing for a legal battle over the closure of the Vermont Yankee Nuclear Power Plant.

The plant is scheduled to close for good in 2012, but Yankee officials remain adamant that the plant is safe and should stay open.

However, Attorney General William Sorrell says he and his staff are preparing their legal strategy if plant owners ignore the state's demands to close.

Last month the federal Nuclear Regulatory Commissioner extended the Vermont plant's license for 20 years.

## **Radioactive Leaks Increasing At US Nuclear Plants (COUNWNJ)**

By Todd B. Bates

Courier News (NJ), April 11, 2011

Millions of gallons of radioactive water have leaked from nuclear power plants throughout the US since the 1970s, threatening water supplies in New Jersey and other states, an Asbury Park Press investigation found.

Despite massive leaks that pollute groundwater, the US Nuclear Regulatory Commission has never fined a violator - even plant operators that repeatedly leaked tritium, a radioactive form of hydrogen and a common byproduct of nuclear fission that can cause cancer.

Major leaks at plants have increased in recent years. There was an average of one per year in the 1990s. There were five leaks or spills reported in 2010, five in 2009 and three in 2008, according to an NRC document.

"A leak in and of itself is generally not considered a violation," an NRC spokesman, Neil A. Sheehan, said in an email last week. The NRC's mission is to ensure the public faces "no undue risk," he said. Tritium leaks do not pose that risk level, he said.

NRC Chairman Gregory B. Jaczko, though, told US senators last month that tritium leaks are "not an acceptable situation for any power reactor in the United States."

Yet the NRC, which urged the industry in 1979 to focus on preventing radioactive leaks, spills and overflows, has seen major unplanned discharges increase in recent years as nuclear plants age and their underground pipes deteriorate.

NRC and industry officials say the leaks have posed little or no risk to drinking water wells or the public health because contaminated groundwater has almost always remained under the power plant sites.

Critics say that is not the point. Just as it is illegal for other companies to spill toxic waste onto the soil, nuclear plants should not get a pass when it comes to polluting groundwater with radiation. The critics say the NRC's lax oversight has allowed the radioactive leaks to go on for decades - with little regard for the public's health.

"The NRC is acting as if they're not going to do anything until someone dies and then they'll perhaps take those regulations (against leaks) seriously," said David Lochbaum, director of the Nuclear Safety Project at the Union of Concerned Scientists, a nonprofit alliance of scientists and citizens based in Cambridge, Mass. "It's too high a price."

NRC officials defended their efforts on the tritium issue.

"Nuclear power plants have an active program to eliminate or reduce tritium leaks, and existing leaks have not resulted in any adverse health effects or impact to public health and safety," Sheehan said in an email.

After hundreds of leaks and spills over the decades, the oversight agency is considering changing its regulations to address groundwater contamination problems, including maintenance of piping systems, he said.

New Jersey leads the nation in the intensity of radioactive water leaked or spilled by nuclear power plants, the Press found in its review of NRC data. The Salem and Oyster Creek plants have leaked tritium with radiation that is more than 500 times the legal limit for drinking water.

The US Environmental Protection Agency's limit is 20,000 picocuries (a measure of radioactivity) of tritium per liter of water. Its goal, however, is zero picocuries because tritium is a cancer-causing agent.

Drinking water with 20,000 picocuries could lead to about one cancer for every 25,000 people over a lifetime, according to the EPA. In a population of 1 million, that would be about 40 new cancer cases. But some states and countries have set or recommended much lower limits because of concern about tritium's health effects.

Recent scientific studies say its cancer risk could be two to three times higher than what the EPA claims.

"There is this apparent unwillingness on the part of the NRC to enforce its own regulations and, unfortunately, protection of groundwater is not the only area of public health and safety that this occurs," said Paul Gunter, director of the Reactor Oversight Project at Beyond Nuclear in Takoma Park, Md. "This stuff is out there. It is not supposed to be there."

Concern over nuclear power plants and radioactive contamination, no matter how slight, has grown in the weeks since high levels of radiation were released at the crippled Fukushima Dai-ichi nuclear complex in Japan following a devastating March 11 earthquake and tsunami.

In the US, hundreds of thousands of people swim, drink or fish in areas with water contaminated by routine releases of tritium.

Most of the time, the public doesn't know that tritium could be in their drinking water. About 200 out of 47,000 public water utilities test for tritium, according to one environmental group's survey of water quality. Tritium may be done when there is a known radiation source nearby.

Once contaminated, tritium cannot be removed from water and "you need to do everything you can to make sure that (it) doesn't take place," said Bill Buscher, manager of the Hydrogeology and Compliance Unit in the Groundwater Section of the Illinois Environmental Protection Agency. Findings

In a nearly year-long investigation, the Press found that:

- Nearly all nuclear plants have leaked tritium. There are 65 nuclear power sites in the US, with a total of 104 reactors, and essentially all have had some type of leak or spill of radioactive material. Of those, 37 had major tritium discharges above the legal limit since the 1970s. Many leaks were due to deteriorating underground pipes and lax inspections, according to NRC and industry documents. States most affected include New Jersey and Illinois.

- The current EPA limit for tritium in drinking water may be too weak. California set a goal of 400 picocuries per liter five years ago - 50 times lower than the EPA limit.

- Fifty-six water authorities that serve about 24 million people had tritium in their tap water at least once from 2004 to 2009, according to the Environmental Working Group, a Washington-based environmental association. But the tritium sources are unknown. Besides unplanned spills, nuclear plants are legally allowed to discharge tritium into waterways and the air. Other sources can range from nuclear weapons plants to research reactors to discarded exit signs.

- Most nuclear plants have had more than one tritium leak. More than 20 "significant underground pipe leaks" have been documented at Oyster Creek since 1980, according to plant owner Exelon Corp. In 1996, the plant accidentally discharged 133,000 gallons of radioactive water with tritium into its cooling canal, which flows into Barnegat Bay, according to the NRC.

– Big leaks have been increasing. From 2003 through 2010, two to five plants a year had unplanned releases of tritium higher than the EPA's legal limit, according to an NRC document. US nuclear reactors are 31 years old, on average, and the NRC has relicensed most plants for 20 additional years. Some plants could run until the late 2040s.

The Nuclear Energy Institute, an industry policy group, said the public should not be alarmed by tritium.

"We and NRC have emphatically shared the conclusion none of these (leaks has) posed significant risk to public health or safety," said Ralph Andersen, senior director of radiation safety and environmental protection at NEI. "It's really the issue of the leaks rather than the issue of what's in the leaks." Routine discharges into drinking water

One city keeps an eye on its neighboring nuclear power plant. It has to. Tritium is in its drinking water.

The city of Wilmington, Ill., regularly tests for the isotope because of Exelon's Braidwood nuclear power plant in Braceville.

The plant routinely and legally discharges tritium into the Kankakee River, the source of drinking water for 6,200 Wilmington residents. The plant is about 6 miles upstream of the city's water intake, according to an Illinois government report.

From 2004 to 2009, Wilmington had up to 11,800 picocuries of tritium per liter in its water supply, according to the nonprofit Environmental Working Group.

That's more than half the federal limit of 20,000 picocuries. The average tritium level reported was 382 picocuries per liter, according to the environmental group. Such low levels are safe to drink, according to the EPA.

Jacque Plese, superintendent of Wilmington's water department, said Exelon agreed to release tritium into the river at night, when Wilmington is not running its water treatment plant. Exelon and the city are supposed to let each other know when they need to change their operations, he said.

"I drink the water that we produce, and I have no problems with that," he said. "I'm very, very confident in our water supply right now."

In New Jersey, data on tritium levels in public water systems are not collected, according to Larry Ragonese, a spokesman for the state Department of Environmental Protection.

"It would not be a substance that would normally have any likelihood of showing up in public water," he said in an email. How dangerous is tritium?

Tritium ranks relatively low on the scale of dangerous radioactive materials.

If used fuel rods from a reactor are at the top of the scale in terms of lethal radiation, tritium would be close to the bottom.

Yet even small doses of tritium and other types of radiation could increase the risk of cancer, according to a 2006 National Academy of Sciences panel.

The radioactive intensity of tritium depends on its concentration in water. Once created, it takes 12.3 years for tritium to lose half its radioactivity. Tritium is most harmful when ingested through drink or food, according to scientists.

It is considered dangerous for at least 120 years, according to the Nuclear Information and Resource Service, an anti-nuclear group based in Takoma Park, Md.

Mary Nguyen Bright, a spokeswoman for the South Carolina Department of Health and Environmental Control in Columbia, S.C., who has dealt with tritium discharges, said, "If you have a (radioactive) leak, tritium will get there first. It's like a racehorse." It moves quickly once it gets into groundwater, she said.

New Jersey has had the two highest tritium levels in leaks and spills in the nation, according to the NRC.

The Salem nuclear complex in Salem County ranks first because a leak discovered in 2002 had radiation that was 750 times higher than what is permitted in drinking water. Oyster Creek in Lacey ranks second at 540 times above the limit. Both sites are working on cleaning up the spills. Debate over the risks

Arjun Makhijani, president of the Institute for Energy and Environmental Research (IEER) in Takoma Park, Md., a nonprofit that studies energy and environmental issues, said manmade tritium is the most pervasive radioactive pollutant.

"We ought to pay more attention to the various effects of tritium, not just the cancer effects," he said.

Other effects may include miscarriages, according to Makhijani.

Last year, the EPA said that it began reassessing the health risks of beta particles, including their possible effects on human development and reproduction.

Tritium and some other radionuclides emit beta particles - subatomic particles ejected from the nucleus of some radioactive atoms, much like a tennis player hitting a ball out of the court. Beta particles can damage cells, especially if a radioactive material is swallowed or inhaled.

Exposure to 500 picocuries of tritium per liter could cause about one cancer in 1 million over a lifetime, according to an EPA spokeswoman. Stuart Walker, a leading EPA Superfund staffer, though, said his calculations show 160 picocuries per liter would be a one in 1 million cancer risk over 30 years of exposure.

And not all agree that the EPA's 20,000 picocurie limit is safe enough.

California has established a public health goal of 400 picocuries for tritium in drinking water, while an Ontario advisory council has recommended a limit of 541. Colorado set a limit of 500 picocuries in some waterways near a closed federal nuclear weapons facility.

Tritium's cancer risk appears to be two to three times higher than the EPA views it, said David C. Kocher, senior scientist at the SENES Oak Ridge Inc. Center for Risk Analysis in Oak Ridge, Tenn.

An updated cancer risk estimate for tritium likely wouldn't have much impact on releases from nuclear power plants, said Kocher, a tritium risk expert.

But it's conceivable that EPA officials would think they need to reconsider their drinking water standard for tritium, he said.

EPA officials declined to comment on the issue. 6.2 million gallon leak

Buscher, of the Illinois Environmental Protection Agency, said the NRC needs to consider the protection of groundwater.

He oversees efforts to deal with tritium contamination discovered several years ago near Exelon's Braidwood plant.

The plant leaked about 6.2 million gallons of tritium-contaminated water - enough to fill more than 300 backyard swimming pools. Plant officials failed to adequately respond to leaks in 1996, 1998 and 2000, allowing the contamination to spread off-site. Tritium was detected in one private well, according to documents.

Exelon agreed to pay \$1.2 million to settle three Illinois lawsuits regarding tritium leaks at the Braidwood, Byron and Dresden nuclear plants in the state.

Since 2006, both industry and the NRC have launched initiatives aimed at dealing with the leak issue.

According to NRC spokesman Sheehan, a typical nuclear power plant site has an estimated 0.8 to 2 miles of buried and underground pipe that carries radioactive liquids.

Gunter, of Beyond Nuclear, said "because these systems are by and large buried and inaccessible, they're not being maintained. They're not being inspected and they are not contained when they eventually break, of course."

Oyster Creek had 720 feet of underground piping with radioactive liquids, according to Sheehan.

Exelon spent more than \$13 million to put the piping above ground or in trenches that are monitored, according to Exelon spokeswoman April Schilpp and Sheehan.

The DEP's Mulligan said he thinks the NRC does an excellent job reviewing piping that is linked to plant safety, such as reactor cooling systems.

But the NRC should inspect other pipes, especially those with tritium, he said.

In 2006, the nuclear industry launched a voluntary Ground Water Protection Initiative. Three years later, it launched a Buried Piping Integrity Initiative that was expanded to include underground piping and tanks.

Andersen, of the Nuclear Energy Institute, said tritium leaks detected since 2005 led to far-reaching and cooperative efforts to deal with the issue.

Sheehan said the NRC will have to decide whether its current rules are good enough to address the radioactive leaks and groundwater pollution issue. Delayed cleanup for many plants

The NRC's mission focuses on nuclear safety, and to a lesser degree environmental protection, according to officials.

NRC regulations recognize that unplanned releases will happen, said Steve Garry, senior health physicist in the NRC Office of Nuclear Reactor Regulation.

But plants still have to meet safety standards, he said.

Pam Henderson, chief of Plant Support Branch 2 in the NRC Division of Reactor Safety, said "of course, we don't want to see any groundwater pollution. Our regulations talk about keeping any of these releases as low as reasonably achievable."

Some plants will spend years cleaning up their contamination, but a cleanup can begin years or decades after a discharge is first detected.

The NRC does not require plants to clean up their sites until decommissioning - which for some may not be for nearly 40 years. Garry said the NRC staff is drafting a potential early cleanup rule.

Lochbaum, of the Union of Concerned Scientists, said the NRC simply has to enforce the rules on its books.

"Nuclear safety is not a spectator sport," he said. "The NRC is not there to watch. They're there to enforce the regulations."

"I'm hoping we're gonna have this behind us at some point," he said. "It seems to hang around as long as the tritium half-life. I think we'll get there. It will just take some time."

## **Five US Nuclear Reactors In Earthquake Zones (USAT)**

By Steve Sternberg

USA Today, April 11, 2011

At least five US nuclear reactors are located in earthquake-prone seismic zones, potentially exposing them to the forces that damaged the Fukushima plant in Japan, a new analysis shows.

The at-risk reactors are the Diablo Canyon Power Plant and San Onofre Nuclear Generating Station in California; the South Texas Project near the Gulf Coast; the Waterford Steam Electric Station in Louisiana and the Brunswick Steam Electric Plant in North Carolina.

They appear in an analysis by the mapping and geographic data firm ESRI Inc., based in Redlands, Calif. The online map, the first of its kind to let the public search potential danger zones by address, includes US Geologic Survey (USGS) seismic information and earthquake history for every nuclear plant in the USA.

Just days after the Fukushima disaster, President Obama ordered the Nuclear Regulatory Commission to evaluate the earthquake risk of every nuclear plant in the nation, said Victor Dricks, an NRC spokesman. Dricks said that NRC regulations require companies that build nuclear plants to take into account local seismic history and fortify the plants against the largest quake that is likely to occur.

Dricks said the US has taken proper precautions to ensure the safety of its plants. San Onofre, for instance, is built to withstand a magnitude-7.0 earthquake within 5 miles of the site, he said. In addition, the plant is 30 feet above sea level and has a reinforced concrete sea wall that is 30 feet tall and could withstand a 27-foot tsunami.

Japan's Fukushima Dai-ichi plant suffered major damage from a magnitude-9.0 earthquake and 46-foot tsunami that hit March 11. The disaster triggered nuclear radiation leaks and a massive evacuation in the region around the plant, which was built to withstand a 19-foot tsunami.

The ESRI map aims to help Americans determine their risk. It allows users to plug in their location and find the five nearest nuclear plants.

Users can also determine whether they live within 10-mile or 50-mile US evacuation zones of any nuclear plants and whether the region around the plant has been jolted by any major earthquakes, measuring magnitude 7.2 or above, in the past 30 years.

"All of the earthquakes on this map are significant," said ESRI analyst Bronwyn Agrios, noting that the analysis was eye-opening for those on ESRI's staff. "We found that we're just on the cusp of the evacuation zone of the San Onofre plant, just down the coast on the ocean side. Right around our area there have been three earthquakes. We're in a highly dense area for faults. We can feel that. We can feel tremors every week."

William Leith, acting associate director for natural hazards at the USGS, said it's impossible to predict the precise timing, location and magnitude of an earthquake, in part because quakes have only been measured in this country for a century.

Although most nuclear plants are in the central and eastern USA, where earthquakes are rare, the USGS ranks 39 states as having a high or moderate earthquake risk, Leith said. New studies have shown that at least 20 magnitude-9 earthquakes have struck off the coast of Northern California, Oregon and Washington in the past 20,000 years, most recently in 1700, he said.

"We don't want to alarm anybody," he said, "but it can happen here."

## **Energy NW: Hanford "Unusual Event" Report Unnecessary (AP)**

Associated Press, April 9, 2011

RICHLAND, Wash. (AP) - The agency that operates the nuclear energy plant on the Hanford nuclear reservation says that upon further review, it didn't need to make an "unusual event" declaration when a puff of hydrogen gas ignited on Thursday.

Energy Northwest said the decision to report the incident to the Nuclear Regulatory Commission was made in an abundance of caution.

A small amount of hydrogen gas ignited when workers cut into a pipe in a non-nuclear area of the Columbia Generating Station.

The 6-inch flame extinguished itself in less than a second, but Energy Northwest declared an unusual event and evacuated two dozen workers until a safety inspection could be completed.

## **NUCLEAR PLANT: Energy NW Withdraws 'Unusual Event' Declaration (TRICITYH)**

Tri-City Herald (WA), April 11, 2011

RICHLAND — Energy Northwest determined on Friday its declaration of an unusual event at Columbia Generating Station, submitted Thursday to the Nuclear Regulatory Commission, was unnecessary.

Upon further review, Columbia officials concluded that the hydrogen burn, a less than one-second "puff," in the turbine building posed no risk to the normal level of plant safety, according to a news release.



Though the declaration had no association with the reactor building or radiation, "the decision to declare an unusual event reflected the conservative safety culture of the US nuclear industry," Energy Northwest stated in the release.

On Thursday, a small amount of residual trapped gas ignited and extinguished itself in less than a second when workers cut into a pipe, according to the release.

No one was injured, but Energy Northwest declared an unusual event and evacuated a crew of approximately two dozen workers from the immediate area as a precautionary measure, according to the release.

Work resumed in the area following a safety inspection, the release stated.

Columbia powered down April 2 in preparation for its biennial refueling and maintenance outage, the release stated.

The outage is scheduled to be completed by mid-June.

An unusual event is a classification describing a condition at a commercial nuclear power plant or its surroundings that potentially could compromise the normal level of plant safety, or that warrants increased awareness by plant staff, Energy Northwest said.

## **Flare Of Hydrogen Gas Prompts Wash. Nuclear Plant To Briefly Evacuate Turbine Area (AP)**

Associated Press, April 11, 2011

RICHLAND, Wash. — A spokesman for a Washington nuclear power plant says a small amount of hydrogen gas ignited in a six-inch flame Thursday when workers cut into the pipe.

Columbia Generating Station declared an "unusual event," evacuated plant areas near the pipe for about 90 minutes, and notified the Nuclear Regulatory Commission.

Energy Northwest spokesman Mike Paoli says no one was injured in the one second-long "puff" of gas that had been trapped in the pipe in the plant's non-nuclear turbine building.

Paoli says there's was "no association whatsoever with the reactor building or radiation."

An "unusual event" describes a condition that could potentially compromise normal safety levels, the least serious of four NRC emergency classifications.

## **US Nuclear-Disaster Preparedness Hobbled By Uncertain Chain Of Command (PROPUB)**

By Sasha Chavkin

ProPublica, April 11, 2011

If the United States faced a nuclear disaster, local governments would automatically take charge, followed by federal authorities if the crisis grew too big for local responders to handle. But this system has a flaw: The nation's emergency plans don't spell out when or how the transfer of authority would be handled, even though small delays could put thousands of lives at risk.

The timing of federal involvement is deliberately kept ambiguous in order to "forestall a conflict about who's in charge," said William Banks, director of the Institute for National Security and Counterterrorism and a Syracuse University law professor.

"We don't practice scenarios where state and local officials are overwhelmed from the get-go and the feds have to step in and take charge," Banks said. "The exercising and planning that's going on never forces a clarification of the answers to those questions."

The bottom-up system sometimes gives local authorities a staggering amount of responsibility. For example, officials in Grundy County, Ill., which has a population of just 48,000, are solely responsible for activating the first steps in the government's response to a crisis at the Dresden nuclear power station, even though almost 7 million Chicago-area citizens live within 50 miles of the plant.

The response plan for an emergency at Dresden illustrates how authorities might respond to a nuclear crisis.

According to state and local officials in Illinois, the first signs of a problem would likely be detected by Dresden's owner, Exelon, or by a monitoring system for nuclear plants run by Illinois' Emergency Management Agency. Exelon is required by law to report any incident of note to local and state officials within 15 minutes of when it occurs.

Unless Illinois' governor declares martial law, it would be up to the county sheriff, the chairman of the Grundy County Board or the director of the county Emergency Management Agency – or their designated backups – to activate the response plans, said James Lutz, the emergency management agency's current director. If they decide they need help, they can request support from the state or/and the federal government. But emergency plans don't specify under what conditions that should happen.

Like every county in Illinois, Grundy County writes its own emergency plans. Lutz said that these plans must meet federal standards, but the requirements give counties broad discretion to develop plans that take into consideration their varying resources. "There are rules, but the way you get to them is up to us," Lutz said. "It's somewhat open to interpretation, because the rules use words like 'in a timely manner' or 'without undue delay.'"

Sheryl Klein, coordinator of the Illinois Management Agency's Radiological Emergency Response Team, said the state requires only that counties meet the federal standards. The state's responsibilities, she said, include sending teams of scientists to affected areas to assess conditions and helping with radiation detection and decontamination at emergency shelters.

If state and federal help is called in, Klein said a unified emergency command system would be set up to coordinate decision-making. The roles the various agencies and governments would play are laid out in federal emergency plans, specifically the National Response Framework.

But those plans don't specify what conditions would trigger federal involvement, beyond broad terms such as states being "overwhelmed" and requesting federal assistance, or a declaration by the US president. Banks, the Institute for National Security director, said in a recent paper that this ambiguity about when federal officials should wait for requests from the states – or when they should take action on their own – could create delays and confusion.

"Even minutes can make a tremendous difference in saving lives," he told ProPublica.

Even after the federal government becomes involved, the chain of command can be uncertain.

On March 13, Rep. Edward Markey, D-Mass., wrote a letter to President Obama raising concerns that "no agency sees itself as clearly in command of emergency response in a nuclear disaster. ... One Agency official essentially told my staff that if a nuclear incident occurred, they would all get on the phone really quickly and figure it out."

A White House spokesman told ProPublica that government plans clearly establish who takes charge in different scenarios. Federal emergency plans include six different agencies that could potentially coordinate the response, depending upon which of 15 scenarios is triggered by the source and nature of the nuclear release.

Many observers, including Michael McDonald, the president of Global Health Initiatives, have warned that the emergency command system itself, adopted in recent years across all levels of government, would likely break down in a serious nuclear or radiological emergency, and that more flexible, adaptive systems are needed.

"It's so complex," McDonald said, "that these hierarchical, controlled systems can't handle it."

## **FEMA To Evaluate Emergency Preparedness At Three Mile Island (PATNEWS)**

By Joe Elias

Harrisburg (PA) Patriot-News, April 11, 2011

MIDDLETOWN —The Federal Emergency Management Agency is scheduled to evaluate how prepared emergency crews are in case of an accident at the Three Mile Island Nuclear Generating Station.

These drills are held every other year to test governments' ability to protect public health and safety.

FEMA will evaluate state and local emergency response capabilities within the 10-mile emergency-planning zone of the nuclear facility starting on Monday.

Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions.

The final report will be available to the public about 120 days after the exercise.

FEMA will present preliminary findings of the exercise in a public meeting at 11 a.m. on April 15, at the Hilton Garden Inn in Swatara Twp.

## **FEMA To Evaluate Emergency Preparedness At Three Mile Island (WHSV)**

WHSV-TV Harrisonburg, VA, April 8, 2011

The Department of Homeland Security's Federal Emergency Management Agency will evaluate a Biennial Emergency Preparedness Exercise at the Three Mile Island Nuclear Generating Station.

The exercise will take place during the week of April 11 to test the ability of the Commonwealth of Pennsylvania to respond to an emergency at the nuclear facility.

These drills are held every other year to test government's ability to protect public health and safety. FEMA will evaluate state and local emergency response capabilities within the ten-mile emergency-planning zone of the nuclear facility.

Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions. The final report will be available to the public about 120 days after the exercise.

FEMA will present preliminary findings of the exercise in a public meeting at 11 a.m. April 15, at the Hilton Garden Inn on TecPort Drive in Harrisburg, Pennsylvania.

## **FEMA Will Evaluate Emergency Preparedness At TMI (WPMTTV)**

WPMT-TV Harrisburg (PA), April 10, 2011

The Federal Emergency Management Agency will evaluate the preparedness of emergency crews at and around Three Mile Island.

Starting Monday, April 11th, FEMA will evaluate state & local emergency response within the 10-mile Emergency Planning Zone of the nuclear plant in Londonderry Township, Dauphin County.

The drills are held every other year to test the government's ability to protect the public health & safety. Preliminary findings of the exercise will be presented to the public during a meeting at 11 a.m. on Friday, April 15th at the Hilton Garden Inn in Swatara Township. Final results will be available in 120-days.

## **NRC Investigates Emergency Systems At Two Exelon Nuclear Plants (NUCSTR)**

Nuclear Street, April 11, 2011

The Nuclear Regulatory Commission reported Thursday that it has sent additional inspectors to the Braidwood and Byron nuclear plants after an alarm and a backup pump were briefly inoperable.

The NRC required Exelon to assess auxiliary feedwater pump systems at both Illinois plants in February after a routine inspection at Byron. Calculations by the company eventually showed that a pump would not have been operable if the reactor lost its primary core cooling system. The NRC is monitoring Exelon's solution to the problem at both plants because they share a similar design.

The second issue arose during an unusual event at Braidwood March 24. For about an hour, all alarms in the main control room of unit 2 stopped working unexpectedly during maintenance of the alarm system. An NRC inspector on site reported to the control room immediately, and the reactor continued to operate at full power without further problems. According to an NRC release, a subsequent review of plant records indicated a similar event happened during alarm maintenance in August, 2010.

A special NRC inspection team will review the circumstances surrounding the problems and the actions Exelon has taken to address them.

## **Feds To Host Review Of Nuclear-plant Drill (OCR)**

Orange County (CA) Register, April 8, 2011

Federal officials plan to present a review April 15 in San Juan Capistrano of an emergency-preparedness drill at the San Onofre Nuclear Generating Station planned for earlier next week.

The Federal Emergency Management Agency and the Nuclear Regulatory Commission plan to present initial observations of what happens during the three-day drill, which starts Tuesday and also will involve Orange, Riverside, San Bernardino, San Diego and Los Angeles counties and the cities of Dana Point, San Clemente and San Juan Capistrano, according to a news release.

The April 15 meeting is scheduled for 4 p.m. at the Capistrano Unified School District headquarters, 33122 Valle Road in San Juan. The public is invited.

The NRC is the federal agency responsible for evaluating onsite emergency plans and exercises for nuclear power plants. FEMA is responsible for evaluating offsite plans and exercises for states and counties through its Radiological Emergency Preparedness Program.

## **Emergency Drill On Tap For Tuesday (NCT)**

By Paul Sisson

North County Times (CA), April 8, 2011

Emergency personnel from throughout Southern California will convene at San Onofre Nuclear Generating Station on Tuesday to simulate an accident at the seaside power plant.

The drill will test the emergency plan designed to protect the public if there were ever a release of radiation from either of San Onofre's twin nuclear reactors. The power plant is about 17 miles north of Oceanside, near the Orange County town of San Clemente.

The exercise was planned long before last month's devastating earthquake and tsunami in northeast Japan that crippled that country's Fukushima Dai-ichi nuclear power plant, leading to a near meltdown that has leaked radiation into the atmosphere and renewed questions worldwide about the safety of nuclear energy.

Yvette Urrea Moe, a spokeswoman with the county of San Diego, said the drill will involve monitoring a fictitious plume of radiation released into the air, adding that a radiological monitoring team from Oceanside will be dispatched to the plant.

Gil Alexander, a spokesman for San Onofre's owner and operator, Southern California Edison, said Friday that the upcoming drill — which is observed and graded by the Federal Emergency Management Agency — gauges how nuclear workers and emergency response crews would respond to an emergency at the plant.

Alexander added that about 700 people throughout the state, at all levels of government, will participate in the drill. That number includes a contingent from San Diego County, which has its own emergency response plan for the plant.

That plan, obtained by the North County Times, requires specially-trained monitors to go to the plant's perimeter fence as soon as Edison notifies emergency officials that a nuclear event has occurred.

Those monitors use special radiation-detecting equipment to determine whether an evacuation or other response is necessary. If an evacuation were ordered, Carlsbad High School would serve as a receiving area for the southern portion of a 10-mile emergency-planning zone around the plant. Those at San Onofre State Beach or other areas south of the plant would head down I-5 to stay away from any radiation in the air.

Peter Lawrence, a battalion chief for the Oceanside Fire Department and a member of the Southern California planning group that plans the region's response to a nuclear disaster, stressed in an interview on March 16 that first responders work independently of the utility in an emergency.

"We are not basing our decisions on public protection on information they're providing. We do not need to wait for information from the utility in order to order an evacuation," Lawrence said.

Though officials are dispatched to the site to participate in a nuclear emergency drill, some steps outlined in the emergency plan, such as reversing the flow of half of Interstate 5 or evacuating schools, are simulated with telephone calls because they are impractical to implement during a drill, Alexander said.

FEMA examines the emergency response for a disaster at San Onofre once every two years.

## **Nuclear Drill: San Onofre Nuclear Plant To Conduct Emergency Drill (KSWB)**

KSWB-TV San Diego (CA), April 10, 2011

SAN ONOFRE, Calif. – Radiation experts and emergency workers from Los Angeles to the Mexican border will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station next week.

The test is regularly-scheduled, but occurs as a major meltdown is threatened at an earthquake-crippled reactor complex in Japan, 5,500 miles across the sea.

The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting Tuesday, and concluding Thursday.

Southern California Edison spokesman Gil Alexander told the San Diego Union-Tribune that workers will test emergency shut-down procedures, and practice securing radioactive fuel rods.

"There are a total of about 200 of us associated with the plant that will drill," Alexander told the San Diego newspaper. Half of those will drill on plant procedures, and the other half will work on a pretend radiation leak with government officials, the news media and the general public.

San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **San Onofre Drill Planned | La Jolla Light (LAJOLLA)**

La Jolla Light, April 11, 2011

Radiation experts and emergency workers from Los Angeles to the Mexican border will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station next week.

The test is regularly-scheduled, but occurs as a major meltdown is threatened at an earthquake-crippled reactor complex in Japan, 5,500 miles across the sea.

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Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **Major Radioactive Gas Leak Simulation Drill Planned At San Onofre Nuclear Generating Station (SWRNN)**

Southwest Riverside (CA) News Network, April 11, 2011

Radiation experts and emergency workers from Los Angeles to the Mexican border will pretend that a major radioactive gas leak has occurred at the San Onofre Nuclear Generating Station next week.

The test is regularly-scheduled, but occurs as a major meltdown is threatened at an earthquake-crippled reactor complex in Japan, 5,500 miles across the sea.

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Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

Tags: California Emergency Management Agency, drills, nuclear reactors, Riverside County, San Onofre, securing radioactive fuel rods, SWRNN, test emergency shut-down procedures, tests

This entry was posted on Sunday, April 10th, 2011 at 3:33 pm and is filed under Local News, News . You can follow any responses to this entry through the RSS 2.0 feed. You can leave a response, or trackback from your own site.

## **Local Nuclear Plant To Test Emergency Plan (KNBC)**

KNBC-TV Los Angeles, April 11, 2011

Emergency personnel from throughout Southern California will convene at San Onofre Nuclear Generating Station on Tuesday to simulate an accident at the seaside power plant.

The drill will test the emergency plan designed to protect the public if there were ever a release of radiation from either of San Onofre's twin nuclear reactors. The power plant is about 17 miles north of Oceanside, near the Orange County town of San Clemente.

The exercise was planned long before last month's devastating earthquake and tsunami in northeast Japan that crippled that country's Fukushima Dai-ichi nuclear power plant, leading to a near meltdown that has leaked radiation into the atmosphere and renewed questions worldwide about the safety of nuclear energy.

## **Power Plant Named In Lawsuit For Firing So Called Whistleblower (DPT)**

By Stacie N. Galang

Dana Point Times, April 11, 2011

An employee fired from San Onofre Nuclear Generating Station in October filed a lawsuit last week against the plant's owner Southern California Edison, alleging his termination was retaliation for raising safety concerns.

Paul Diaz, who was in his second stint at the power plant at the time, had filed a complaint with the Nuclear Regulatory Commission just weeks prior to his firing, his attorney Maria Severson said.

"Mr. Diaz stood up for doing what's right for the employees that came to him," Severson said. "He's standing up for himself and the community directly."

SCE issued a brief statement saying the company did not comment on pending litigation.

"However, we can say that, by policy, SCE considers retaliation against employees who raise safety concerns a termination offense," the company's spokesman Gil Alexander said by email.

Diaz filed his lawsuit in Los Angeles Superior County and is seeking damages for lost wages, damage to his reputation and any other remedy under the law, Severson said. Diaz, who lives in Oceanside, is now working privately as a consultant, his attorney said.

After his firing, he grew frustrated and eventually contacted legal counsel. His lawyer said her client is "not a litigious person."

Severson said the timing of the lawsuit was unrelated to the circumstances in Japan and the first legal documents had been filed before the earthquake and tsunami overseas.

The attorney said plant workers needed a way to express concern about safety.

"If they don't have an avenue to raise concerns like the NRC requires, that is not an environment to have," Severson said.

Visit [www.sanclementetimes.com](http://www.sanclementetimes.com) for the latest details and to read the court filings.

## **Nuclear Crisis Fuels Duel At Diablo (WSJ)**

### **In Earthquake-Prone California, License Extension Sought for Reactors Poses Major Test for Nation's Atomic-Power Industry**

By Ben Casselman

Wall Street Journal, April 9, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Coast Lines: April 10, 2011: Blakeslee Set To Testify Before Senate Hearing On Nuclear Safety (SCS)**

Santa Cruz Sentinel, April 11, 2011

State Sen. Sam Blakeslee will testify this week before a US Senate hearing on nuclear safety after the Japanese tsunami triggered a crisis at a nuclear reactor there.

Blakeslee will testify Tuesday.

A seismologist and resident of San Luis Obispo who lives eight miles from Diablo Canyon Power Plant, Blakeslee has pushed for a better analysis of the seismic risks at the plant.

A Republican, Blakeslee will testify following a panel that includes Nuclear Regulatory Commission Chairman Gregory Jaczko.

He has questioned the relicensing process for Diablo Canyon, including whether the commission is too close to the nuclear industry.

## **Blakeslee Wants To Cool Down Reactor Relicensing (PACBT)**

By Stephen Nellis

Pacific Coast Business Times, April 11, 2011

State Sen. Sam Blakeslee called on Diablo Canyon operator Pacific Gas & Electric to "slow down" its efforts to extend the plant's life to 2045 until the fault lines near the coastal nuclear reactor near Avila Beach are better understood.

Blakeslee, R-San Luis Obispo, has a doctorate in geophysics and worked as a seismologist in the oil industry. He told a San Luis Obispo Chamber of Commerce lunch gathering that the recent earthquake and tsunami that has devastated Japan has caused scientists to re-evaluate how well they understand undersea faults such as the Hosgri fault that is several miles away from Diablo Canyon.

Moreover, Blakeslee said, a smaller fault has been discovered only several hundred yards from the reactor. Scientists need to know more about how it could interact with the Hosgri fault, he said. And because Diablo Canyon's current license runs until 2025, there is no reason to rush the relicensing process before the studies are complete.

"Slow down a little on the relicensing, do the studies, and get all the information for the regulators," Blakeslee told the crowd.

But Blakeslee emphasized that he neither opposes nor supports extending Diablo Canyon's life and that he is "in the middle, with both sides mad at me," he said. He also said that he does not want the debate to devolve into a dog fight between PG&E, which provides more than 1,200 jobs to San Luis Obispo County residents, and other economic interests, such as the county's booming wine and tourism sectors.

"I really think the question of relicensing should focus on whether [Diablo Canyon] is reliable and safe," Blakeslee said.

A small number of public-union demonstrators gathered outside the San Luis Obispo City/County Library to protest Blakeslee's talk, which was hosted by the Chamber of Commerce's Legislative Council and intended to give business leaders an update on the state's ongoing budget crisis. He is one of the "GOP 5" Republican lawmakers who have been negotiating with Gov. Jerry Brown. Blakeslee did not sign the "no new taxes" pledge like most of his Republican colleagues.

Blakeslee said the focus in Sacramento should be on structural fixes for the Golden State's budget. The tax system is extremely progressive — a relative few taxpayers fill most of the coffers — and he doesn't see that changing.

"When they have good years, they have great years," he said of the individuals and businesses that pay those taxes. "When they have bad years, they fall off the map."

But the increased spending that happened during the good years does not, Blakeslee said. He advocated an idea that dates back to the post-dot-com crash: capping state spending increases at 4 percent per year, and clipping any excess revenue during good years into a rainy day fund.

"If we had adopted that policy back in 2003, we'd have enough money today for a \$100 billion general fund spend, and we'd have \$11.6 billion in reserves on hand," Blakeslee said. "It protects schools and health and human services and those who are most vulnerable when times are hard. You're not spending as much as you like during the good years, but boy it helps during the bad years."

Are you a subscriber? If not, sign up today for a four-week FREE trial or subscribe and receive the Book of Lists free with your purchase.

Thousand Oaks-based biotech giant Amgen said April 8 that it had acquired Brazilian pharmaceutical company Bergamo for \$215 million, establishing commercial operations in the South American country.

Bergamo, now part of Amgen, supplies oncology and other medicines to hospitals in Brazil and has manufacturing facilities in Sao Paulo state. The Brazilian firm had \$80 million in revenues last year, Amgen said, and has been growing at an annual rate of 19 percent since 2007.

Amgen also said it had reacquired rights in Brazil to three of its products that were previously granted to Mantecorp, which was subsequently acquired by Hypermarcas. The agreement gives Amgen the rights in Brazil to sell Vectibix, a colon cancer treatment; Mimpapa, a treatment for those undergoing dialysis; and Nplate, a treatment for the blood disorder ITP currently under review by Brazilian regulatory authorities.

"Amgen's strategic goal is to make our innovative medicines available to patients in major markets around the world," Amgen Chairman and CEO Kevin Sharer said in a news release. "Acquiring Bergamo, a profitable company with an established local infrastructure, and regaining the rights to our products in Brazil, provides us an attractive entry into the Brazilian market."

Brazil is among the top 10 pharmaceutical markets in the world and in recent years has been growing at a rate of about 12 percent per year, Amgen said.

The company's shares were up 0.4 percent to \$54.21 in midday trading.

Are you a subscriber? If not, sign up today for a four-week FREE trial or subscribe and receive the Book of Lists free with your purchase.

Western National Group purchased a 165-unit apartment complex in Camarillo on March 31 for \$38.1 million, marking the largest multi-family deal in the region so far this year.

A growing group of business leaders thinks it is time for Santa Barbara County to do what its northern and southern neighbors have done — create a countywide organization to chart an economic course for the future.

## **Blakeslee Explains As Others Complain About The Budget (SLOT)**

By Joe Johnston

San Luis Obispo Tribune, April 8, 2011

It was a tale of two political worlds, and perhaps two realities.

Inside the San Luis Obispo City-County Library on Palm Street, state Sen. Sam Blakeslee, R-San Luis Obispo, led 60 members and guests at a Chamber of Commerce luncheon on a 30-minute verbal tour of the Legislature and its budget woes Friday, summoning pie charts and bar graphs to help them along.

Outside, on the other side of the closed library door, 50 feet and a world away, the same number of people also spoke about the state budget. But they were deploring the injuries that budget cuts have handed to the poor and challenging Blakeslee to stand up for them.

The protesters' chants sometimes filtered through the door, although the words could not be understood, and those listening to Blakeslee occasionally looked nervously toward the muffled sounds.

That is as close as the two sides got Friday. A Blakeslee aide did monitor the rally, but Blakeslee did not speak to the protesters, and a couple of demonstrators were denied admission to the luncheon.

The dueling events Friday were as clear a demonstration as you could get of the emotions tugging at Americans and the contrasting pull of those feelings.



The Central Coast Clergy and Laity for Justice kicked things off at 11:30 a.m. with a rally on the steps of the courthouse that moved to the library half an hour later, as Blakeslee prepared to speak.

Carrying signs that held such sentiments as "SLO values its children," and "Budget Cuts Hurt the Wounded," the protesters argued that budget reductions already enacted will damage the disabled, the homeless, seniors and the hungry.

The Rev. Caroline Hall, Clergy and Laity for Justice's co-president, said compassion is the mark of a spiritual and moral person.

Speakers chided Blake-slee for "excessive partisanship" and asked him to work on creating jobs for the unemployed and health care for those who do not have it.

More specifically, they asked that Blakeslee acquiesce to putting Gov. Jerry Brown's proposed license fee and sales tax extensions on a ballot so that the California public can vote on them.

Blakeslee later said it is too late for a measure to be ready for the ballot in June. However, he said, "There is still the opportunity for a compromise" to get a measure to the public later in the year.

For that to happen, however, Blakeslee said, the governor must add Republican proposals to rein in public employee pensions and work toward a spending cap.

Brown and the Legislature's Democrats would like Californians to vote on whether they want to keep current vehicle license fees and sales taxes in place. But putting those on a statewide ballot requires a two-thirds vote of the Legislature, which means some Republicans must sign on.

Blakeslee said those on the left have sought to put Brown's plan on the ballot as is, while Republicans at the other end of the political spectrum want no vote at all. The middle path is to find a compromise that includes some GOP plans, he said.

"I want to be part of the conversation" with Brown and the Democrats, he said, but he does not want to be "a sucker" and just say yes to their proposals.

In his prepared remarks and in a 45-minute question-and-answer period, Blake-slee also said: • Brown, who was sworn in as governor in January, didn't realize the width and depth of the Democrat-Republican fissure in state politics, but he is "coming up to speed in a race against time."

- The discussion about the Diablo Canyon nuclear power plant should focus on safety and not on tourist dollars or other economic issues. Blakeslee, a geophysicist by training, noted that there are two faults close to the reactors and there is "tremendous uncertainty" about the relationship between them. He has criticized PG&E for not suspending its relicensing push until a seismic study is completed.

- He prefers to see "targeted surgical cuts" when addressing the state budget rather than a "meat cleaver" approach.

- Asked about a Los Angeles Times news story that said the GOP lost a chance at political clout by not going along with Brown, Blakeslee said the Times reporter, whom he named, was biased.

- He stressed that there are two major sets of negotiations going on in Sacramento, one about the state budget, the other about whether to have a ballot measure and what it should include. He cautioned his listeners not to conflate the two, and accused Brown's news office of doing so.

- Public schools were less expensive to run when they were contracting out janitorial and other services than they have been since some of those workers became unionized.

- Forced austerity measures put people in "emotionally distressing" frames of mind. "Tough austerity measures cause a lot of angst," he said, noting that economies are struggling not just here but around the world. He mentioned Portugal, France, Ireland and Greece as some of the countries facing hard times.

## **Anti-Diablo Rally Is Set For Avila (SLOT)**

By David Sneed

San Luis Obispo (CA) Tribune, April 11, 2011

Organizers are hoping that activists from all over the state will protest the renewal of Diablo Canyon nuclear power plant's operating licenses at a rally at noon Saturday at the pier in Avila Beach.

The peaceful protest, called "No More Nuclear Victims," is in response to the triple disaster in Japan on March 11 in which a powerful earthquake spawned tsunamis that crippled a nuclear power plant and caused radioactive contamination of air, land and food. Organizer Linda Seeley said she does not know how many people will attend the event sponsored by the anti-nuclear group San Luis Obispo Mothers for Peace.

"If there were a release of radioactivity from the plant, it would affect all of California — its health, agriculture and economy," she said. "Not worth the risk."

Plant owner PG&E has applied to extend the operating licenses of the plant to 2044 and 2045. Concurrently, the utility is conducting seismic studies to learn more about two earthquake faults found offshore of the plant.

Mothers for Peace has legally intervened with the Nuclear Regulatory Commission in an effort to block license renewal.

## **Officials May Seek Diablo License Delay (SLOT)**

By David Sneed

San Luis Obispo (CA) Tribune, April 8, 2011

April 08--As promised, county supervisors Tuesday will vote whether to send a letter to PG&E asking it to suspend the relicensing of Diablo Canyon nuclear power plant until seismic studies have been completed and verified.

The letter was put on the agenda by Supervisor Adam Hill, whose district includes the power plant. Approval of the letter is considered all but certain given that a majority of the board has already expressed support for it.

Addressed to PG&E President Chris Johns, the letter says that staying license renewal would be a good way for the utility to restore the trust of the community. The letter cites an interview Johns gave The Tribune shortly after the earthquake and nuclear disaster in Japan in which he admitted that the company needs to 'earn its customers' trust.'

'We can think of no better way to do so in our county than to agree to our request,' summarizes the letter. 'In doing so, PG&E would help to allay many concerns, rebuild customer confidence and show that indeed safety is of the utmost importance.'

PG&E and the federal Nuclear Regulatory Commission have insisted that license renewal and the seismic studies can proceed concurrently. If approved, license renewal would extend the operating lives of the plant's two reactors to 2044 and 2045.

PG&E will hold an open house from 4 to 7 p.m., Wednesday at the South County Regional Center in Arroyo Grande to answer the public's questions about seismic safety and other issues at Diablo Canyon.

## **Get An Inside Look At Palo Verde Nuclear Power Plant (KSAZ)**

KSAZ-TV Phoenix, AZ, April 10, 2011

WINTERSBURG, Ariz. - Arizona is home to the biggest nuclear power plant in the country – Palo Verde – and many concerns about nuclear power have been raised since the catastrophe in Japan. FOX 10 gets a rare look inside the facility.

The Palo Verde Nuclear Generating Station is about 55 miles west of Phoenix, and it's the largest power producer in the country – and has been since 1992.

There are three reactors at the facility, and inside, workers remove spent fuel and take it to a cooler. Everything at the plant occurs underwater, where the nuclear fuel can actually be seen glowing.

Spent fuels spend time in a cooling building underwater before going into dry storage containers.

Batteries serve as power backups for the plant, and the workers are constantly figuring out how to deal with worst-case scenarios. A team of nuclear engineers is even keeping track of the ongoing crisis in Japan.

The end product at Palo Verde is power. Generators turn turbine energy into massive amounts of electricity – nearly 4,000 megawatts.

It's the only nuclear plant in the US that is not located by a large body of water. Instead it uses 20 billion gallons of wastewater from nearby cities and towns for the water it needs to cool its nuclear fuel.

## **Arizona Workers Monitor Japan Nuclear Crisis (KNXV)**

By MaryEllen Resendez

KNXV-TV Phoenix, AZ, April 10, 2011

TONOPAH, AZ - Within hours after a nuclear crisis hit Japan's Fukushima Daiichi plant, workers at Palo Verde Nuclear Generating Station formed what they call a "war" room.

Inside you will find experts from several different fields monitoring the events and updates from Japan. The walls are lined with diagrams of Fukushima, along with crisis plans should a natural disaster or terrorist threat penetrate Palo Verde.

"In simple terms, we will learn how to do it better," said Michael Powell who is part of the crisis team.

Powell points out the many differences and extra security measures Palo Verde already has in place.

Its nuclear reactors and fuel cooling pools are placed in separate buildings within missile strong concrete walls.

"These walls are very robust, enough to where a plane couldn't penetrate them," said Brian Hansen, a Palo Verde worker.

While Fukushima Daiichi had its reactor behind concrete walls, its cooling pools were not.

As we toured Palo Verde's plant we got a rare glimpse inside nuclear reactor number two. The reactor is down for refueling which takes place every 18 months.

Plant managers showed us how they deal with the radioactive fuel once it's spent. The fuel rods are placed in a cooling pool.

"Depending on how close it is to the reactor's core, it could take five to 17 years to cool," said Powell.

Once the fuel is cooled, it's then moved into dry storage containers.

The containers have the same missile strong concrete used to house the reactor. It is then stored on concrete pads. Right now Palo Verde has 84 storage containers full of radioactive waste. And for now will have to store it indefinitely, as there is no other way to dispose of it.

As we continued on our nearly nine hour tour we also saw the various back up generators that will kick in to keep the reactor powered.

One is very much like Fukushima Daiichi's back up generators that failed, but unlike Fukushima, Palo Verde has five back up sources including large batteries kept on site.

While the plant appears to be very secure, workers say confidence doesn't play into their security. There is always more to learn and more to do.

## **Decision To Complete Bellefonte Put On Hold (CHTNGA)**

By Pam Sohn

Chattanooga Times Free Press, April 11, 2011

The decision to complete a nuclear reactor at TVA's Bellefonte plant has been put on hold while officials continue considering the lessons learned from Japan in its recent nuclear accident.

The issue is on TVA's board of directors agenda for Thursday with the notation: "Extension of Decision and Budget."

TVA President and CEO Tom Kilgore has told residents who live near Bellefonte in Northeast Alabama that the utility staff has decided not to ask the TVA board to consider completion of the unit 1 reactor at this week's TVA board meeting in Chattanooga.

"The challenges at the Fukushima Dai-ichi plant call for a studious and thoughtful review of the Japanese experience," Kilgore was quoted in the Scottsboro Daily Sentinel. "The prudent steps will be to listen, learn, incorporate those lessons into our designs and be in a position to proceed more confidently in the near future."

The board will consider the utility's new 20-year energy plan, which still calls for adding more nuclear power into the TVA energy mix.

Kilgore said the 500 people working at Bellefonte on plant engineering and assessment will not be laid off.

TVA has budgeted \$248 million for engineering and assessment of the 37-year-old unfinished plant. It was designed in the 1960s, and construction began in 1974. Construction stopped and the plant was idled in 1985. The utility already has spent about \$4.3 billion to build the plant and estimates it will cost another \$4.3 billion to \$4.7 billion to finish.

At one point, TVA officials said the plant was 90 percent complete, including its unit 1 Babcock & Wilcox pressurized water reactor — a design that has operated only for a few years in Germany.

Kilgore said the tentative start-up date remains in the 2018-19 time frame, but the plan following the Japanese disaster is to "harden" the plant.

The earthquake and resulting tsunami in March damaged and flooded the Fukushima plant, leading to several explosions and the release of radiation into the air. How much radiation and how dangerous its effects are have not been completely determined, officials said.

### **Energy planning**

Also on the agenda for Thursday's TVA board meeting is the utility's 20-year energy plan.

The \$3 million blueprint calls for idling nearly half of the utility's coal-fired power plants, building more nuclear plants and ramping up energy conservation programs — at least until 2020.

Critics of the plan say it does not adequately use conservation and alternative clean energies such as solar and wind power or other technologies.

Louise Gorenflo, a member of the Tennessee Sierra Club, said TVA should not plan to cut off its conservation programs in 2020, about the same time the utility plans to begin significantly ramping up nuclear power.

Stephen Smith, director of the Southern Alliance for Clean Energy, said that, while he is pleased the plan suggests reducing coal power production, TVA far underplays the potential of solar power and wind power with its plan to add only 900 megawatts in renewable-source production to the 1,600 megawatts of wind power it already buys.

"The fact that the nation's largest public utility might plan to largely ignore the economic development and environmental benefits of renewable energy resources over the next 20 years is ridiculous," Smith said.

about Pam Sohn...

Pam Sohn has been reporting or editing Chattanooga news for 25 years. A Walden's Ridge native, she began her journalism career with a 10-year stint at the Anniston (Ala.) Star. She came to the Chattanooga Times Free Press in 1999 after working at the Chattanooga Times for 14 years. She has been a city editor, Sunday editor, wire editor, projects team leader and assistant lifestyle editor. As a reporter, she also has covered the police, ...

## **Meigs Emergency Director Assured Of Watts Bar Safety (DPA)**

By Richard Edwards

Daily Post Athenian, April 11, 2011

DECATUR – Meigs County Emergency Management Director Tony Finnell said a recent briefing left him with a favorable view toward the Tennessee Valley Authority's Watts Bar Nuclear Plant being able to withstand the kind of damage that occurred in Japan when a powerful earthquake struck.

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## **Tennessee Senate Kills Bill To Limit Radioactive Waste Dumping (MTCA)**

By Richard Locker

Memphis (TN) Commercial Appeal, April 10, 2011

NASHVILLE – The state Senate has killed a bill by a Sen. Beverly Marrero of Memphis that sought to halt or curtail the amount of low-level radioactive waste being dumped into Tennessee landfills, including two in Shelby County.

Marrero, D-Memphis, told her colleagues on the Senate Environment, Conservation & Tourism Committee that she's concerned about the volume of the waste flowing into the state for processing.

Some of the waste is dumped into the South and North Shelby landfills, two state-licensed, privately operated landfills authorized to accept the waste under a state regulatory program that exists only in Tennessee.

The committee discussed the bill for about 50 minutes Wednesday before amending it so that its provisions would not interfere with any current private waste-processing contracts until they are renewed. The committee then killed the entire bill, with only two Democrats' votes for passage and five Republicans' votes against.

The Shelby landfills are two of four across Tennessee authorized by the state to accept low-level radioactive waste under what's called the "Bulk Survey for Release" program. The other two are in Anderson and Hawkins counties in East Tennessee. A fifth, in Murfreesboro, ceased accepting the waste in 2005 under public pressure after it was revealed the landfill received waste from a decommissioned nuclear power plant in Michigan.

Although other states accept low-level radioactive waste, the Tennessee Environmental Council says Tennessee has become the primary destination for it, largely because of a regulatory decision in the 1990s by the state's Department of Environment and Conservation, or TDEC.

That policy change created the Bulk Survey for Release program, which basically allows private companies that process the waste to operate under a single license without having to get the specific government approval for each separate shipment of processed waste that it deposits into the four specified landfills.

TDEC and the Tennessee Environmental Council, a coalition of environmental and conservation groups, say Tennessee is the only state with such a licensing system. Other states require specific approval, inspection and monitoring of the wastes for every shipment, a more expensive and time-consuming process.

"The difference is that other states and the Nuclear Regulatory Commission go through a case-by-case analysis of a particular batch, you might say," Alan Leiserson, TDEC's legal services director, told the Senate committee. "We used to do that. Because there were a lot of requests that we were getting, we decided to standardize the process so it doesn't require a specific action on each load – as long as the material meets the standards and it's done under the requirements ..."

In return for that streamlined process, TDEC set the limit on radioactivity in the material that can be put into the landfills at 1 millirem – lower than the 5 millirem standard of the Nuclear Regulatory Commission for some of its material release programs. That makes it "extremely low level," said Leiserson. The four landfills were inspected beforehand and determined structurally sound enough to accept the waste.

But Don Safer, board chairman of the Tennessee Environmental Council, told the committee that without inspection and monitoring of individual loads of waste, the Tennessee program essentially trusts the waste processors to abide by the rules and the radiation limits.

And from a public policy perspective, the program has "caused Tennessee to be the destination for as much as three quarters of the low-level radioactive waste from the United States, much of it from out of the state," Safer said.

The Environmental Council, citing government reports, says about 40 million pounds of low-level radioactive waste is processed in Tennessee annually. After processing, much of it is shipped out of state, but about 49 million pounds was dumped into the Tennessee landfills from 2004 through 2009.

Rather than abolish the bulk regulatory process, the bill would have prohibited Tennessee landfills from accepting the low-level waste, except that generated by government, colleges and medical facilities.

Marrero told the committee she will try again next year.

Contact Nashville Bureau chief Richard Locker at (615) 255-4923.

## **Cancer-causing Chemical Spreading From Cotter Uranium Mill Site Near Canon City (DENP)**

By Bruce Finley

Denver Post, April 10, 2011

Full-text stories from this source currently cannot be included in this document. You may, however, click the link above to access the story.

## **Japan's Crisis Adds Fuel To Florida Nuclear Fears (PALMBEACHP)**

By Susan Salisbury

Palm Beach Post (FL), April 10, 2011

Once, the thousands of 12-foot-long rods now being stored in 40-foot-deep pools of water at Florida Power & Light Co.'s two South Florida nuclear plants helped power the state's electric grid.

Their job is done. However, the used, or "spent," fuel rods have not gone anywhere. They're still at the St. Lucie and Turkey Point nuclear plants, they're still close to population centers on water and they're still radioactive. The pile of waste continues to grow.

The unfolding calamity with issues of cooling fuel rods at Japan's Fukushima Daiichi nuclear facility has drawn renewed attention to the safety of US nuclear plants.

Nuclear officials plan to visit the St. Lucie plant Wednesday to hold a public meeting on last year's safety review, and Nuclear Regulatory Commission officials say they have found more public interest since the Japan crisis began.

Should we be worried about the huge amounts of spent fuel stored in our state? The industry says no, but watchdog groups and others have concerns.

"Our federal regulatory and operating history proves that this can be done safely and securely," FPL spokesman Michael Waldron said. "We are supportive of the government's effort to try and identify a permanent disposal solution."

David Lochbaum, director of the nuclear safety project at the Union of Concerned Scientists, said spent fuel pools are among the most vulnerable spots at a nuclear plant. They are housed in buildings that aren't as strong as those that house reactors.

"It would be hard to manage this hazard (more) foolishly. The federal government's ineptitude in disposing of spent fuel has left Americans across the country exposed to elevated and undue risks," Lochbaum said.

The situation is the same at most of the nation's 104 reactors on 65 sites in 31 states. An additional 15 closed reactors also hold spent fuel.

The best plan would be to transfer spent fuel that has been out of the reactor for at least five years into dry casks, then spread the remaining fuel as far as possible, Lochbaum said.

South Miami Mayor Philip Stoddard, a Florida International University professor who lives about 17 miles from Turkey Point, said some hurricane models show storm surge coming to the brink of the plant.

In 1992 Hurricane Andrew devastated Homestead and damaged Turkey Point, which had been shut down before the storm. NRC reports issued in 1993 and 1994 stated that although the plant's reactors were not compromised, damage to the plant's stack, ductwork and monitoring equipment would have prevented monitoring a radiological release if it had been necessary to do so. There was no damage to safety-related structures, the reports said.

"I do believe the facility is vulnerable," Stoddard said. "With Hurricane Andrew, the plant got the clean side of the storm. If you have been around for some of these storms, stuff comes loose. Imagine a construction barge coming loose and bludgeoning the spent fuel pool."

James Tulenko, director of the Florida Laboratory for Development of Advanced Nuclear Fuels and Materials for the University of Florida, said the spent fuel pools in Florida do not pose a health risk.

"However, they do require either maintenance of the spent fuel cooling system or, in case of a power failure, maintenance of the water level to offset evaporation," Tulenko said.

Waldron said FPL's plants have multiple redundant systems to ensure there is adequate power to operate the spent fuel pool cooling systems.

Tulenko said all of Florida's spent fuel pools are next to reactors rather than on top of them, making them easy to maintain. Dry casks are safe and require no maintenance, he said.

Florida has 3,002 tons of discarded rods sitting in the stainless steel and concrete pools filled with recirculating water, according to the Nuclear Energy Institute in Washington. The pools are in steel-reinforced concrete buildings.

Although the pools' racks have been reconfigured to hold more than originally designed for, space is running out. At the St. Lucie plant on Hutchinson Island, 197 tons of rods are in concrete and steel casks, and cask storage is under construction at Turkey Point in Miami-Dade County.

"Almost every plant in the country is currently out of storage space or will be soon," said Roger Hannah, Atlanta-based spokesman for the Nuclear Regulatory Commission. "Spent fuel pools were designed for a limited time period with the expectation that the US government at some point would provide a permanent site for disposal."

"Everything is planned many years in advance," FPL's Waldron said. "We know exactly how much fuel there is, where it is and what our margin is of what any pool can handle safely."

Federal law required the US Department of Energy to begin moving used fuel from plant sites in 1998, but it has not begun to do so. The nuclear industry has poured more than \$35 billion in fees into a nuclear waste fund and is required to continue to do so. Of that, \$11 billion was spent to prepare Yucca Mountain in Nevada as a repository. However, the Obama administration has said it will not pursue the Yucca deal, and in January it appointed a blue-ribbon commission to study the issue. A final report is expected by late 2012.

Spent fuel pools are among the issues a Nuclear Regulatory Commission task force is reviewing as the agency looks at its regulations and programs in light of the March 11 Japan earthquake and tsunami. The six-member task force plans to report its recommendations at a July 19 agency meeting.

With more casks needed to store spent fuel, companies such as Jupiter-based Holtec International, one of three US companies in the business, are meeting the demand.

Joy Russell, Holtec's sales and marketing manager, said the firm has manufactured more than 400 casks in use in the US and Spain. It also manufactures high-tech spent fuel pool racks that can quintuple storage space.

The \$1.5 million cask's "overpack," or outside cask, is about 8 feet in diameter and 20 feet tall. It has two carbon shells and 27 inches of concrete. A stainless steel canister is stored in the inner cavity.

"Since the mid- to late '90s, the demand has increased because the spent fuel pools have been filling up," Russell said.

The NRC's Atomic Safety and Licensing Board has determined that Holtec's cask system can withstand the impact of a crashing F-16 fighter jet, Russell said.

Though some countries, such as Russia and France, recycle spent nuclear fuel, the US government has not allowed reprocessing since 1978 because of concerns about plutonium, which can be used to make atomic weapons.

The bottom line, experts say, is that while spent fuel is being stored safely, centralized, secure storage is needed. Until then, every precaution should be taken.

"At some point, spent fuel needs to be disposed of in a federal repository. But even if that repository were to open tomorrow, spent fuel will be stored on site for a decade or longer," said Lochbaum, of the Union of Concerned Scientists.

"We need to take steps to better manage that known risk before our luck runs out."

## **Radiation Detected In Drinking Water In 13 More US Cities, Cesium-137 In Vermont Milk (FORBES)**

By Jeff McMahon

Forbes, April 11, 2011

Radiation has reached the EPA's maximum contaminant level in some milk samples (Royalty-free image collection via flickr) • Unusual Reading At Chatanooga Nuclear Plant • Milk Contamination At EPA Maximum • Highest Levels Yet In Boise Rainwater

Radiation from Japan has been detected in drinking water in 13 more American cities, and cesium-137 has been found in American milk—in Montpelier, Vermont—for the first time since the Japan nuclear disaster began, according to data released by the Environmental Protection Agency late Friday.

Milk samples from Phoenix and Los Angeles contained iodine-131 at levels roughly equal to the maximum contaminant level permitted by EPA, the data shows. The Phoenix sample contained 3.2 picoCuries per liter of iodine-131. The Los Angeles

sample contained 2.9. The EPA maximum contaminant level is 3.0, but this is a conservative standard designed to minimize exposure over a lifetime, so EPA does not consider these levels to pose a health threat.

The cesium-137 found in milk in Vermont is the first cesium detected in milk since the Fukushima-Daichi nuclear accident occurred last month. The sample contained 1.9 picoCuries per liter of cesium-137, which falls under the same 3.0 standard.

Radioactive isotopes accumulate in milk after they spread through the atmosphere, fall to earth in rain or dust, and settle on vegetation, where they are ingested by grazing cattle. Iodine-131 is known to accumulate in the thyroid gland, where it can cause cancer and other thyroid diseases. Cesium-137 accumulates in the body's soft tissues, where it increases risk of cancer, according to EPA.

Airborne contamination continues to cross the western states, the new data shows, and Boise has seen the highest concentrations of radioactive isotopes in rain so far.

A rainwater sample collected in Boise on March 27 contained 390 picocuries per liter of iodine-131, plus 41 of cesium-134 and 36 of cesium-137. EPA released this result for the first time yesterday. Typically several days pass between sample collection and data release because of the time required to collect, transport and analyze the samples.

In most of the data released Friday the levels of contaminants detected are far below the standards observed by EPA and other US agencies.

But the EPA drinking-water data includes one outlier—an unusually, but not dangerously, high reading in a drinking water sample from Chatanooga, Tennessee.

The sample was collected at the Tennessee Valley Authority's Sequoyah nuclear plant. A Tennessee official told the Chattanooga Times last week that radiation from Japan had been detected at Sequoyah but is “1,000 to 10,000 times below any levels of concern.” The 1.6 picocuries per liter reported by the EPA on Friday is slightly more than half the maximum contaminant level permitted in drinking water, but more uniquely, it is many times higher than all the other drinking water samples collected in the US

[UPDATE: EPA released new data Saturday revealing higher levels than reported here in Little Rock milk and Philadelphia drinking water]

The EPA released this new data through a new interactive open-data system it quietly launched on the EPA website Wednesday. The new interface is to be regularly updated, replacing EPA's periodic news releases and pdf data charts. Here are more details of the data released Friday: Drinking Water

Radioactive Iodine-131 was found in drinking water samples from 13 cities. Those cities are listed below, with the amount of Iodine-131 in picocuries per liter. The EPA's maximum contaminant level for Iodine-131 in drinking water is 3 picocuries per liter.

Oak Ridge, TN collected 3/28: 0.63

Oak Ridge, TN collected at three sites 3/29: 0.28, 0.20, 0.18

Chatanooga, TN collected 3/28: 1.6

Helena, MT collected 3/28: 0.18

Columbia, PA collected 3/29: 0.20

Cincinnati, OH collected 3/28: 0.13

Pittsburgh, PA collected 3/28: 0.36

East Liverpool, OH collected 3/30: 0.42

Painesville, OH collected 3/29: 0.43

Denver, CO collected 3/30: 0.17

Detroit, MI collected 3/31: 0.28

Trenton, NJ collected 3/31: 0.38

Waretown, NJ collected 3/31: 0.38

Muscle Shoals, AL collected 3/31: 0.16 Precipitation

In the data released Friday, iodine-131 was found in rainwater samples from the following locations:

Salt Lake City, UT collected 3/17: 8.1

Boston, MA collected 3/22: 92

Montgomery, Alabama collected 3/30: 3.7

Boise, ID collected 3/27: 390

As reported above, the Boise sample also contained 42 pC/m<sup>3</sup> of Cesium-134, and 36 of Cesium-137. Air

In the most recent data, iodine-131 was found in air filters in the following locations. In the case of air samples, the radiation is measured in picoCuries per cubic meter.



Montgomery, AL collected 3/31: 0.055  
Nome AK collected 3/30: 0.17  
Nome AK collected 3/29: 0.36  
Nome AK collected 3/27: 0.36  
Nome AK collected 3/26: 0.46  
Nome AK collected 3/25: 0.26  
Juneau AK collected 3/26: 0.43  
Juneau AK collected 3/27: 0.38  
Juneau AK collected 3/30: 0.28  
Dutch Harbor AK collected 3/30: 0.14  
Dutch Harbor AK collected 3/29: 0.11  
Dutch Harbor AK collected 3/26: 0.21  
Boise, ID collected 3/27: 0.22  
Boise, ID collected 3/29: 0.27  
Boise, ID collected 3/28: 0.32  
Las Vegas NV collected 3/28: 0.30  
Las Vegas, NV collected 3/30: 0.088  
Las Vegas, NV collected 3/29: 0.044

No other types of isotopes were found in the most recent data from air samples, even though EPA is also on the lookout for barium-140, cobalt-60, cesium-134, cesium-136, cesium-137, iodine-132, iodine-133, tellurium-129, and tellurium-132.

In older samples, isotopes of cesium and tellurium were found in Boise; Las Vegas; Nome and Dutch Harbor; Honolulu, Kauai and Oahu, Hawaii; Anaheim, Riverside, San Francisco, and San Bernardino, California; Jacksonville and Orlando, Florida; Salt Lake City, Utah; Guam, and Saipan on the Mariana Islands.

Some of these locations had not been previously reported in EPA news releases.

The EPA has said it will continue to monitor radiation levels in air, precipitation, drinking water, and milk even if the budget impasse shuts down the government next week.

There is more discussion of maximum contaminant levels and health concerns in the related links below and their associated comments: Related Posts: How To Remove Iodine-131 From Drinking Water Three Sites Where You Can Monitor US Radiation Levels First US Drinking Water Samples Show Radiation from Japan

## **Heatwaves Cause Problems For Nuclear Power Plants (CC)**

**Heatwaves reduce the power output of many nuclear power plants, including the Browns Ferry facility run the Tennessee Valley Authority**

Climate Central, April 11, 2011

On July 8, 2010, as the temperature in downtown Decatur, Alabama climbed to a sweltering 98°F, operators at the Browns Ferry nuclear power plant a few miles outside of town realized they had only one option to avoid violating their environmental permit: turn down the reactors. For days, the Tennessee Valley Authority (TVA), which owns the nuclear plant, had kept a watchful eye on the rising mercury, knowing that more heat outside could spell trouble inside the facility. When the Tennessee River, whose adjacent waters are used to cool the reactors, finally hit 90°F and forced Browns Ferry to run at only half of their regular power output, the TVA hoped the hot spell would last just a few days.

Eight weeks of unrelenting heat later, the plant was still running at half its capacity, robbing the grid of power it desperately needed when electricity demand from air conditioning and fans was at its peak. The total cost of the lost power over that time? More than \$50 million dollars, all of which was paid for by TVA's customers in Tennessee.

The Browns Ferry nuclear plant, located on the Wheeler Reservoir along the Tennessee River near Athens, Alabama. It has three reactors, each producing about 1000 megawatts of electricity. Credit: Nuclear Regulatory Commission.

"Last summer, the water in the Tennessee River warmed up early and stayed warm," says TVA spokesman Ray Golden. "When it got hot again in July and August, we were impacted by that and had to reduce power at the plant and get it from somewhere else."

With river water so warm, the nuclear plant couldn't draw in as much water as usual to cool the facility's three reactors, or else the water it pumped back into the river could be hot enough to harm the local ecosystem, says Golden. But for every day that the Browns Ferry plant ran at 50 percent of its maximum output, the TVA had to spend \$1 million more than usual to purchase power from somewhere else, he says.

What happened in northern Alabama last summer, at the largest of TVA's nuclear power plants, did not present a human safety concern. Operators knew there was never a risk of an explosion or nuclear meltdown, nor was there a threat of leaking radioactive material. But the prolonged spell of hot weather put the TVA at risk of violating environmental permits, with hefty fines as one consequence and potential harm to the Tennessee River ecosystem as another.

It's not the first time high temperatures have affected the performance of the Browns Ferry plant, and extreme heat is a growing concern for power plant operators across the Southeast. While some nuclear plants can improve their cooling procedures to cope with the intake of warmer water, the upgrades can cost hundreds of millions of dollars and still don't offer an indefinite defense against extreme heat. Because scientists say the Southeast (like many other parts of the world) can expect to see more frequent and intense heat waves by the end of this century, the problems for nuclear power and the people that rely on it for electricity may only be beginning. **Extreme Heat Limits Nuclear Energy Production**

The disaster still unfolding at Japan's Fukushima Daiichi nuclear plant has refocused America's attention on nuclear power, calling into question its future role in the country's energy portfolio. Many advocates of nuclear power say that we need to maintain — and even expand — nuclear power to get away from using fossil fuels, such as coal, and to help lower greenhouse gas emissions.

But nuclear power has a paradoxical relationship with climate change. Even though it might help mitigate long-term global warming, nuclear power is already being challenged by rising temperatures and the increasing number of heat waves around the world. Throughout the last decade, several plants have had to reduce electricity production during heat waves, just when electricity demand typically reaches peak levels.

"It's a dilemma between mitigation of climate change, and adaptation to it," says Natalie Kopytko, an energy policy doctoral student at the University of York in England. Having recently studied the ways in which climate change could have a negative impact on nuclear power, she says nuclear power is caught in the middle because it could be used to help lower greenhouse gas emissions, but global warming is making the technology less effective at providing electricity.

Most nuclear power plants draw water from nearby sources to help cool the reactors. Several American plants are on the coast and rely on ocean water, but the vast majority of nuclear reactors in this country (89 of the total 104) are inland, next to freshwater sources, and many of these are constantly cycling through river or lake water. Normally, there isn't much difference between the water cooling process of inland and coastal facilities, but when hot weather strikes, a slow-moving and shallow river or a lake heats up a lot quicker than the ocean does. And when a nuclear power plant is drawing in such warm water, it can end up releasing unusually hot water back into the river. That's because the water gains heat while cycling through the plant.

The March-August 2010 was the warmest such period on record in the Southeast. Studies show that by the end of the century, the number of hot days in the summer could double for this region. Credit: NOAA NCDC.

Power companies like the TVA can't control the weather. Nevertheless, plant operators are bound by environmental guidelines that are meant to keep temperatures at a safe level for fish in the river. For example, the Alabama Department of Environmental Management (ADEM) stipulates Browns Ferry cannot release water back into the Tennessee River that is above 90°F.

"I know this past summer the TVA was worried about exceeding their permits," says Scott Hughes from the ADEM. "But they adjusted their operations and stayed within the limits."

The 90°F ceiling has been especially problematic for the TVA because in the past five years, the river water has, on several occasions, warmed that much on its own. And each time, Browns Ferry has been forced to reduce electricity production. This puts a pinch in the electricity supply for the more than 2.1 million homes and businesses that depend on electricity from Browns Ferry. More importantly, the problem gets transferred to the pocketbooks of TVA's customers.

"When we can't generate that power from our nuclear plant, we have to go elsewhere in the energy market to get it," says the TVA's Golden "In some cases we have to increase the production from some of our other plants, including coal plants, and in other cases we go to other companies and buy power."

In addition to finding power from other sources, last summer the TVA called upon its customers to cut down on their electricity use throughout July and August. But the request came at the hottest time of the year, when electricity demand is usually at its highest. **Heat Waves are on the Rise**

What happened last summer at Browns Ferry may be a sign of what people living in the Southeast can expect in the future. As average global temperatures rise, studies show the risk of heat waves also increases. New research suggests extreme heat will become a more regular occurrence across the US.

"One of the things that is happening is that the heat wave season, the time over which heat waves might occur, is actually getting longer," says Kenneth Kunkel, a climate scientist from the Cooperative Institute for Climate and Satellites in North Carolina. "Consequently, you can get heat waves a lot earlier in the year, and the season can also extend a lot longer."

Kunkel and his colleagues have recently modeled the future of heat waves across the United States, depending on what global greenhouse gas emissions are like during the rest of this century. In the Southeast, they found that by 2100, every year there could be between 60 and 80 more days with heat wave-level temperatures than there are currently. More frequent heat waves will mean higher Tennessee River water temperatures.

A separate Climate Central analysis shows similar trends for the region. For example, each summer between June and September, there is an average of 44 days when the temperature is above 90°F in Athens, Ala., a location nearby to the Browns Ferry nuclear power plant. By the end of the century, however, Athens should expect to see about 80 summer days above 90°F. That 80-day estimate is based on a future climate scenario with relatively low greenhouse gas emissions; if atmospheric carbon dioxide emissions continue to climb at the current rate or higher, Athens could see even more of those exceptionally hot days.

"It may be that humans are able to adapt to the higher temperatures," says Kunkel, "but of course, a nuclear power plant is just going to have to deal with the conditions." When Nuclear is the Primary Power, Extreme Heat Can Hit Hard

Temperature departures from average during the 2003 summer heat wave in Europe. In France, more than 200 reactor days were lost because of shut-downs or reduced power productions across the country. Credit: NASA Earth Observatory.

The vulnerability of nuclear power to heat waves isn't restricted to the Southeast. In the summer of 2003, during a record-breaking heat wave in Western Europe, millions of people across France and Italy suffered through an extended power shortage after the French network of 19 nuclear power plants had to reduce their operations. In France, over 70 percent of the country's electricity comes from nuclear power, and Italy also purchases about a third of its electricity from French nuclear providers.

During the heat wave, France took some of the pressure off its electrical grid by purchasing power from other sources, promoting energy conservation among citizens and industry, and by exporting less to Italy — causing many Italian towns to endure blackouts.

Although the energy shortage can't be solely blamed for the thousands of heat wave-related deaths in France and Italy that summer, it put a strain on people who lost air conditioning, as well as hospitals.

In Illinois, where a larger portion of electricity comes from nuclear power than any other state, plants have also fallen prey to summer heat waves. Back in 1988, which featured an unusually hot and dry summer, several reactors were reduced to just one-third of their maximum power output during a 90-day bout of abnormally hot weather.

But while inland nuclear power plants everywhere are threatened by heat waves, the dilemma may be growing worse in the Southeast. Last summer was the hottest on record for the region. An early season heat wave in May warmed the Tennessee River more than usual for that time of year. And then more hot weather settled in a few months later and sent water temperatures soaring; August 4, 2010 marked the hottest single day in the TVA region in more than 50 years — temperatures in Nashville climbed as high as 111°F, for example.

The power lost at Browns Ferry during the late summer heat wave of 2010 was enough to catch the TVA's attention. In late August, the company decided to invest in more cooling infrastructure at their biggest nuclear power plant. "At Browns Ferry, we're spending about \$160 million on retrofits to improve the cooling," says Golden. "It's an awful lot of money but the project should pay for itself in just a few short years — especially if there are more heat waves." The upgrade has added a larger cooling tower to the nuclear plant than the one originally there, which helps bring down the temperature of the water before it is sent back into the river. A few more similar improvements will be made in the next two years, says Golden.

Other power companies may have to explore similar options in the years to come. Installing better cooling to combat high water temperatures, and designing more efficient closed-loop systems that don't constantly demand fresh water are technically feasible, says Golden, but they could prove to be prohibitively expensive upgrades for older power plants.

The Browns Ferry upgrades will be enough to combat heat waves similar to those seen in 2010. Whether they are able to withstand the earlier and more intense heat waves of the future, on the other hand, isn't something the TVA can tell just yet. The repairs may end up being just a short-term solution for a long-term problem the nuclear industry is facing.

## **Lawmakers Told Nuclear Reactor Is Safe (PROJO)**

By Philip Marcelo, Journal State House Bureau

Providence Journal, April 9, 2011

PROVIDENCE — The head of the state's only nuclear reactor assured state lawmakers at a State House hearing Friday afternoon that the facility was safe, secure, and under no threat of failure.

"Are we a Japanese reactor? No. It's the difference between a pit bull and a Pekingese. We're a little trash can that runs a couple of hours a day," said Terry Tehan, director of the Rhode Island Nuclear Science Center, as he testified before the House Finance Committee on the center's proposed budget for next year.

Concerns about the reactor, which is used for research and does not generate electricity, were raised in the wake of the deadly earthquake and tsunami that crippled a nuclear power plant in Japan in March.

The crisis in Japan prompted state Sen. James C. Sheehan, a Democrat whose Narragansett district includes the state-owned reactor, to inquire about whether the facility had been inspected recently. (The US Nuclear Regulatory Commission inspects the facility at least once a year, and it has been fully compliant during each inspection, according to Tehan).

At the hearing, former Providence state Rep. Ray Rickman, who voiced concerns last month to Governor Chafee, repeated his call to have the state decommission the reactor and reduce the budget of its overseers, the state Atomic Energy Commission.

"There is no such thing as a safe nuclear reactor," he said. "Do not give them an increase. It is an absurdity. \$1.5 million while we are closing Providence public schools? It is an affront."

Located at the University of Rhode Island's Narragansett campus, the Nuclear Science Center is one of about 30 university research reactors in the US for training students in nuclear technology.

It holds a 2-megawatt reactor that has been in operation since 1964. The facility uses low-enriched uranium, which commission officials have said cannot be used to create a nuclear weapon. The reactor, which is 2,000 times smaller than a typical nuclear power plant's, is housed in a five-story windowless concrete building atop a hill along Reactor Road.

"It's a nice facility, and it's a state facility, and Rhode Island should be proud of it," Tehan said.

Rickman rejected Tehan's comparison of the reactor to a Pekingese. He noted that most nuclear reactors as old as Rhode Island's have since been decommissioned. "If this was a car, this would be the 450,000-mile car, and you would not take it far from home," Rickman said.

Under Chafee's proposed budget for next year, the Atomic Energy Commission budget would increase by almost \$40,000 from the current fiscal year to \$1.5 million. About \$800,000 of its budget comes from state revenues and the rest comes from outside grants and user fees.

The committee took no action on the budget proposal.

## **Head Of RI's Only Nuclear Reactor: It's Safe (BOS)**

Boston Globe, April 9, 2011

PROVIDENCE, R.I.—The director of Rhode Island's only nuclear reactor has assured state lawmakers the reactor is safe and under no threat of failure.

Terry Tehan, head of the Rhode Island Nuclear Science Center, told the House Finance committee Friday that the reactor was nothing like the reactors that have had problems after the tsunami in Japan.

The reactor, which doesn't produce electricity and is used only for research, is 2,000 times smaller than one at a typical nuclear power plant.

But former Providence state Rep. Ray Rickman said no nuclear reactor is safe. He repeated his call for the state to decommission the reactor and reduce the budget of its state overseers.

The reactor, located at the University of Rhode Island's Narragansett campus, is used for training students in nuclear technology.

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Information from: The Providence Journal, <http://www.projo.com/>

## **New Nuclear Plant In Missouri Nears Debate In State Senate (AP)**

Associated Press, April 11, 2011

Missouri legislation sought by utilities as a potential first step toward a new nuclear power plant could be headed to the full Senate for debate.

A Senate committee has signed off on the measure, and the chamber's leaders say the full body could debate the bill as soon as this week.

Missouri utilities are asking the legislature to allow them to charge customers for the cost of an early site permit from the US Nuclear Regulatory Commission. A state law approved by voters in 1976 currently bars utilities from charging customers for the costs of a new power plant before it starts producing electricity.

Power companies and other supporters of the legislation contend the early site permit is needed to move forward with possibly expanding nuclear power in Missouri. However, consumers and industrial energy users are concerned about protections for ratepayers.

Missouri now has one nuclear power plant, operated by Ameren Missouri, in Callaway County.

Last fall, a group of utilities that includes Ameren Missouri, Empire District Electric, Kansas City Power & Light, electric cooperatives and municipal utilities announced that they were considering seeking an early site permit for a second nuclear plant. The permit would not authorize construction, and the group has said it has not decided whether to build a second plant.

Gov. Jay Nixon endorsed the idea last fall, and a House committee has approved it. Since then, the public discussion has trailed off.

The idea received a new start after a Senate committee tacked it onto a different measure. The Jefferson City News Tribune reported that Senate leaders say the measure is ready for debate.

## **Following Crisis, Iowa Still Mulling Nuclear Power (AP)**

By ANDREW DUFFELMEYER

Associated Press, April 11, 2011

DES MOINES, Iowa— Japan's nuclear disaster has chilled support for nuclear projects across the United States. But in Iowa, where the state's largest utility is considering a new nuclear plant, some momentum has continued to the surprise of both critics and some supporters.

MidAmerican Energy, the state's largest utility, has proposed building a plant with one or more small modular nuclear reactors that could be on line as early as 2020. It would become the state's second nuclear facility.

The earthquake and tsunami that struck Japan on March 11, swamping the Fukushima Dai-ichi nuclear complex and causing a nuclear crisis, have put a damper on talk of nuclear ventures in other states.

Â But in Iowa last week, legislative leaders kept alive a proposal that would help make a new plant here more feasible financially. They placed on a list of pending business a measure that would allow MidAmerican to begin billing customers in advance for the cost of the project. The action prevented the measure from expiring for lack of action.

"For some reason it seems like the Fukushima accident really hasn't happened in Iowa," said one surprised opponent, Michele Boyd, who focuses on nuclear safety for the Washington-based Physicians for Social Responsibility. "It has not affected the politics in Iowa, but everywhere else people are saying now is not the time to build a new reactor."

John Laitner, of the American Council for an Energy-Efficient Economy, which lobbies against nuclear energy, said his group was also confused.Â "I don't quite know what's generating momentum here, but it seems different than other places."

The measure still may not win approval before the Legislature adjourns in less than a month. Republican Gov. Terry Branstad has not decided whether he would sign it. And any nuclear project would face formidable regulatory and financial challenges.

But Tim Albrecht, a spokesman for Branstad, said the idea of more nuclear energy has attracted some bipartisan support because tighter federal regulations on fossil fuel-powered power plants have made them increasingly costly.

"The government says you can't build these plants anymore, so we've got to look at it," Albrecht said.

Iowa has been among a handful of states giving new attention to nuclear energy, although construction in the US has been dormant for decades. Two nuclear plants have been proposed in Georgia. Four states have considered lifting moratoriums on new plants. Florida, Georgia, Louisiana, Mississippi, North Carolina and South Carolina have approved financing measures like the one MidAmerican has sought.

But most pro-nuclear efforts have stalled since the Japan crisis began unfolding.

MidAmerican has continued to push for the early-billing measure, which supporters say would save consumers money in the long run because the utility wouldn't have to borrow as much later for construction, and thereby avoid some interest costs. A proposed Iowa plant would cost at least \$1 billion.

The measure sailed through House and Senate committees before the Japan earthquake hit.

House Minority Leader Kevin McCarthy, a Democrat, said the proposal isn't a partisan issue in Iowa and he thinks the Legislature could approve it. Sen. Jack Hatch, a Des Moines Democrat who opposes the measure, said nearly all the Senate Republicans would vote for the bill, along with some Democrats.

"I think leadership in both parties and in both chambers and the governor want this to move forward and that's a big mistake," Hatch said.

Hatch said he thinks the measure could still face a backlash from consumers because it allows the company to charge money for a plant that may never be built and to collect a return on the funds. Consumers, he said, "don't know the extent of this obligation for them."

Sen. Jerry Behn, a Boone Republican, said the disaster in Japan shouldn't affect support for nuclear energy here. "All that does to me is illustrate how the technological advances in nuclear have come a long way and how we can assure the safety of Iowans and yet have reasonably low cost energy for the foreseeable future."

MidAmerican President William Fehrman said Iowans are especially receptive to energy options. He noted that Iowa ranks second nationally in power produced by wind turbines. "I don't see this as any different. I think it's a good debate and one that's very timely."

The state has one nuclear plant in eastern Iowa. The new plant would be equipped with small modular nuclear reactors whose design has yet to be approved by the Nuclear Regulatory Commission. Fehrman said electricity demands in Iowa will increase up to 2 percent a year, and that coal-fired plants and natural-gas power plants face regulatory problems and price volatility.

However, it is not clear when the measure would come before the full House or Senate. Nine Democratic members of the Democrat-controlled Senate have signed a letter asking to hold off on the proposal until next year.

## **Nuclear Energy Bill Guarantees Nothing (DMR)**

Des Moines Register, April 8, 2011

The American Association of Retired Persons (AARP) is deliberately misleading Iowa's seniors about Senate File 390 and House File 561. This legislation is needed to keep nuclear power as a viable option for the state's future energy mix.

Recent ads paid for by AARP imply that the Legislature is voting to approve a nuclear project and that it includes electric rate increases. This is not true. Nothing in the proposal increases rates or authorizes construction of a nuclear facility, nor does it alter the traditional roles and responsibilities of the Iowa Utilities Board (IUB) and Consumer Advocate in deciding such matters.

If a nuclear project is proposed, the IUB will consider whether the project will go forward, and make decisions on rates after all the facts are presented and all parties have an opportunity to participate.

By trying to eliminate the option of nuclear generation, AARP will force utilities to generate electricity with natural gas, the only base load option left if coal and nuclear are off the table.

Natural gas is an important part of a diverse energy portfolio, but reliance on it will result in a dramatic increase in demand for natural gas, driving up the price of this already volatile fuel. Most Iowa seniors rely on natural gas to heat their homes, and would not be able to afford that type of cost fluctuation.

The legislation and proposed amendments are crafted to include a number of consumer protections, like annual reporting and stringent accountability measures.

Iowa needs to keep a nuclear power option in the mix to keep control of our electricity costs and continue to advance our economy.

- Sen. Swati Dandekar, Senate Commerce Committee chair; Rep. Chuck Soderberg, House Commerce Committee chair; Sen. Jerry Behn, ranking member, Senate Commerce Committee; Rep. Brian Quirk, ranking member, House Commerce Committee.

## **Nuclear Should Be In Mix For Wisconsin's Power Grid (MJS)**

Milwaukee Journal Sentinel, April 11, 2011

Gov. Scott Walker is going to unveil sometime in the next several months a statewide energy plan. Included in the plan will be a proposal to lift the state's moratorium on building new nuclear plants. It should be.

That does not mean that someone will start building new nuclear plants tomorrow. Nor does it mean that the tragedy in Japan doesn't have lessons for Wisconsin. It just means that discussion and proposals for eventually building new plants will no longer be off the table.

That's important, because as Wisconsin moves forward into an energy future that needs to be less dependent on carbon-based fuels, nuclear power plants can be an important part of that future.

What Wisconsin needs - what the country needs - is a balanced portfolio. Coal is still the mainstay of electricity generation, but when it comes to carbon emissions that contribute to climate change, it's the dirtiest fuel. Efforts to make it cleaner have had limited success. Still, given the abundance of coal resources in the United States, it makes sense to continue those efforts.

Natural gas is better, but it's still a carbon fuel, emitting about half of the carbon emissions that coal plants do. But building more natural gas plants makes sense to reduce the reliance on coal.

Alternative fuels such as solar and wind are preferable, but they have a reliability problem: The sun doesn't always shine, and the wind doesn't always blow. For the foreseeable future, they remain - with such sources as biomass - promising technologies that can help at the edges of power production but can't provide the base load generation on which businesses and families rely.

Those alternatives should receive more encouragement and support from Walker's administration - and he said last week he is open to them - but right now they can't meet the full need.

Nuclear power can provide base load generation. And although there are some environmental issues in production of the fuel, the plants themselves generate zero carbon emissions. That continues to make nuclear a viable option if the state and country are serious about reducing carbon emissions.

Yes, there are issues. And the earthquake and tsunami that hammered Japan's Fukushima Dai-ichi plant are severe reminders of the need for adequate preparation and thinking through all the contingencies.

While it's true that not every disaster can be predicted, it is beginning to appear that there may have been some design flaws at the Fukushima plant given its proximity to a fault line and the ocean. Plant owners were slow to release information about the true nature of the disaster at times. And emergency plans may not have been adequate.

There is no guarantee that every plant in the US is better protected from a similar disaster than the Fukushima plant was. The Nuclear Regulatory Commission's safety review in the wake of the Japan disaster is in order. But US plants do appear to be safer, and one thing we know for sure: Wisconsin's plants at Point Beach and Kewaunee do not sit on earthquake fault lines and passed a 2010 safety review with flying colors. Also, the next generation of plants will be safer than the Fukushima plant.

Nuclear waste remains a worry, especially in the wake of President Barack Obama's decision to shutter the Yucca Mountain repository. Revisiting that issue makes sense, as does reprocessing, which reduces dangers from waste. Efforts to lessen the danger of nuclear waste are ongoing and should be pressed.

Critics also argue that nuclear plants are expensive - and likely to get more expensive in the wake of Japan -and that Wisconsin has adequate power generation now. Both are good points. And odds are that not many single companies - and no single utility - can afford to build, say, a 1,000-megawatt plant. But consortiums of companies could. And the future of nuclear power may lie in smaller modular plants that are simpler and cheaper.

While the state's energy needs are being met now, climate change regulations could affect the future of the state's fleet of coal plants. If that's the case, let's at least start talking about nuclear plants as an option to replace the coal plants.

As Walker develops his energy plan for Wisconsin, he needs to keep in mind that the state can't afford to ignore any fuel source. Nor can he ignore the effects of climate change and the requirements that the federal government may impose on utilities.

A balanced portfolio should include traditional base load power plants - perhaps heavier on natural gas - as well as renewable sources such as wind and solar. And, yes, nuclear, too.

## **Say No To Removing Nuclear Plant Moratorium (MJS)**

By Charlie Higley

Milwaukee Journal Sentinel, April 11, 2011

Rep. Mark Honadel (R-South Milwaukee), chair of the Assembly Committee on Energy and Utilities, wants to repeal Wisconsin's nuclear power plant law, the so-called nuclear moratorium. Efforts to repeal the law may take place later this year.

Since 1983, Wisconsin consumers have been protected from the high costs and dangerous risks of nuclear power. The nuclear power plant law, Wisconsin Statute section 196.493, also known as the nuclear moratorium, requires that before any new nuclear power plant is built in Wisconsin, several criteria must be met:

- "A federally-licensed facility . . . with adequate capacity to dispose of high-level nuclear waste from all nuclear power plants operating in this state will be available, as necessary, for disposal of the waste;" and
- "the proposed nuclear plant, in comparison with feasible alternatives, is economically advantageous to ratepayers" in terms of fuel supply, costs for construction, operation, decommissioning, nuclear waste disposal and any other economic factor.

This law protects Wisconsin consumers from nuclear's high cost and the radioactive waste it produces, nuclear power's two worst faults that make it a terrible choice for meeting our electricity needs.

First the issue of high costs.

Recent proposals for new nuclear plants are extremely expensive, costing at least \$10 billion.

With costs in the neighborhood of \$10,000 per kilowatt, nuclear is much more expensive than other technologies: Electricity from a new coal plant costs less than \$3,500 per kilowatt, wind electricity costs less than \$2,500 per kilowatt and electricity from a natural gas combined cycle plant costs less than \$1,500 per kilowatt. Energy efficiency is the least expensive way to make electricity available for other purposes, coming in at less than \$900 per kilowatt saved.

Wisconsin ratepayers should not have to pay higher rates for nuclear when energy efficiency and other technologies are available at less than half the price. A new nuclear plant would cause electricity rates to skyrocket, making Wisconsin uncompetitive with states with lower electricity rates.



Besides, Wisconsin has excess base load capacity and doesn't need a new base load power plant. Therefore, repealing the nuclear moratorium will not lead to any new power plants or create any jobs. Though there are companies in Wisconsin that service the nuclear industry, repealing the moratorium won't provide them with any direct benefit.

Florida, Georgia, and South Carolina are already forcing their ratepayers to pay for just thinking about new nuclear power plants, even though no plants are under construction, their owners don't have federal construction licenses and any plants that actually get built won't produce electricity for many years, if ever.

The nuclear industry admits that new nuclear plants won't be built without subsidies from federal taxpayers. Congress has authorized \$18 billion in loan guarantees for new nuclear plants, and pending legislative proposals are calling for \$36 billion more. These loan guarantees put taxpayers on the hook for billions should the plants never be completed or have cost overruns, as have most if not all nuclear plants built in the United States.

The risks of nuclear power have been tragically dramatized by the disaster unfolding at the Fukushima Dai-ichi plant in Japan. Explosions and possible earthquake/tsunami damage has spread radioactivity from the reactors and the used fuel stored nearby, contaminating land near the plant and forcing an evacuation of thousands of people from their homes, perhaps permanently. Radioactive water is leaking from the plant and being drained into the ocean, and radiation has been scattered throughout Japan and the world. These problems will likely persist for years at untold costs to the health of the Japanese people and their economy.

In the US, nuclear waste is piling up at reactors in Wisconsin and elsewhere, exposing those living near the plant to the hazards and costs of potential releases of radioactive material. The federal government hasn't opened a dump for nuclear waste at Yucca Mountain, Nev., and probably never will: Work on this project has come to a halt as the feds consider new options for dealing with nuclear waste. The US will likely have no safe way to dispose of nuclear waste for decades, if ever, leaving radioactive waste on the shores of Lake Michigan and the Mississippi River.

As the US continues producing more nuclear waste, it may look again at the Wolf River batholith, an area in central and northeastern Wisconsin, which was studied by the federal government in the 1980s as a possible site for a nuclear waste dump.

Repealing the nuclear moratorium will do nothing for Wisconsin consumers other than expose them to the high costs and risks of new nuclear power plants and more radioactive waste.

Charlie Higley is executive director of the Citizens Utility Board of Wisconsin.

## **Troubles In Japan Don't Deter Energy Officials (LAXTRIB)**

By Ron Seely

La Crosse (WI) Tribune/Wisconsin State Journal, April 10, 2011

Wisconsin legislators and energy officials who support a renewal of nuclear power in Wisconsin say they plan to continue their efforts despite the struggles in Japan to bring an earthquake-damaged nuclear power plant under control.

State Rep. Mark Honadel, R-South Milwaukee, indicated he intends to introduce legislation this session that would lift a moratorium on construction of nuclear power plants in Wisconsin.

And Phil Montgomery, a former Republican legislator and now chairman of the state Public Service Commission, said he plans to consult with University of Wisconsin-Madison nuclear power expert Michael Corradini in the coming days to discuss safety issues related to the Japanese incident and how they might affect the potential lifting of Wisconsin's nuclear ban.

Corradini, a UW-Madison professor of engineering physics, testified before a subcommittee of the US House of Representatives last week on the implications of the Japanese disaster for nuclear power in this country. He said Thursday the Japanese situation likely will offer some lessons about the management of spent fuel. But he added he sees no reason to continue to ban nuclear power in Wisconsin.

"I don't think anything that has occurred in Japan has made me change my mind about the eventual need in Wisconsin for more nuclear power," Corradini said.

Proponents of the ban argue the disaster at the Japanese plant, especially the failure of spent fuel storage pools and the resulting release of radiation, is even more reason to keep Wisconsin's moratorium in place.

"We feel the current state law speaks directly to the concerns that people in Wisconsin have about nuclear power," said Pam Kleiss, executive director of Physicians for Social Responsibility in Wisconsin, which opposes construction of new nuclear plants.

Wisconsin has two operating nuclear plants - Point Beach 1 and 2 near Two Rivers in Manitowoc County, and the Kewaunee plant near the city of Kewaunee. The plants produce about 20 percent of the electricity used in the state each year. A third nuclear plant, the La Crosse Boiling Water Reactor in Genoa on the Mississippi River, ceased operation in 1987 but still has spent nuclear fuel stored on site.

The state's moratorium on the construction of nuclear plants has been in place since 1984. The statute says the state's Public Service Commission cannot approve a new plant unless there is a federally licensed facility for the disposal of high-level nuclear waste and the new plant is economically advantageous to ratepayers when compared with feasible alternatives. Economic viability, according to the law, must take into account costs of construction, decommissioning and waste disposal.

Nuclear opponents argue new plants make no economic sense because Wisconsin has a surplus of power, and construction of plants - which are estimated to cost up to \$10 billion and take a decade or more to build - would not be possible without a substantial infusion of tax dollars.

Even more problematic, according to opponents, is the problem of waste. At the Fukushima Dai-ichi plant in Japan, in addition to damage done to the reactors themselves by the earthquake and tsunami, water drained from pools in which spent nuclear waste was stored and backup systems failed to replace the cooling water. That led to radiation escaping.

Because no federal storage facility is operating in the US, spent nuclear fuel is stored on site at US reactors, including the Wisconsin plants. While all of the Wisconsin plants have pools in which spent fuel is stored, the plants at Kewaunee and Point Beach, faced with not having enough room in their spent fuel pools, also built supplemental dry storage casks.

At the Genoa plant, all of the plant's spent fuel assemblies are stored in a pool. According to the Nuclear Regulatory Commission, the plant cannot be fully decommissioned until all of the spent fuel is removed from the pool.

Prema Chandraphil, a spokeswoman for the Nuclear Regulatory Commission, said plans are under way to build dry storage facilities at Genoa.

Chandraphil said the used fuel removed from nuclear reactors must be stored five to seven years in a storage pool so it is cool enough to move into dry storage. She said the NRC has two resident inspectors at both the Kewaunee and Point Beach plants who regularly inspect the stored spent fuel. She said a regional inspector regularly visits the Genoa plant to check on the fuel stored in that plant's pool.

Mark Kanz, a spokesman for Dominion Energy, which operates the Kewaunee plant, said the spent waste is closely watched. "We monitor what is going on on a daily basis," Kanz said.

Sara Cassidy, a spokeswoman for

NextEra Energy Systems, the Florida utility that owns and operates the Point Beach plants, also said the safe storage of spent nuclear fuel is a priority. She said the storage systems are checked regularly by NRC inspectors who work full time at the plant. She also described the dry storage casks as being protected by "state-of-the-art" intrusion and security systems.

Critics, however, said the failures at the Japanese plant show that even storage systems that seem well designed and safe can fail, especially when backup safety systems do not work as anticipated.

"What the Fukushima Dai-ichi incident is showing us is that there are things that are happening that are beyond what the owners and operators perceived to be the highest level of risk," Kleiss said.

Charlie Higley, with the Citizens Utility Board, a consumer advocacy group that opposes expansion of nuclear power, agreed. "Even if you have all the best defenses you can think of, there are times when nature still wins," said Higley.

Higley also said he was concerned about the NRC citing the Wisconsin nuclear plants for 22 violations since 1996. Both Kanz and Cassidy said most of those violations happened under previous owners.

But Montgomery, who backed nuclear power when he was a state legislator, said the incidents in Japan and concern about the storage of spent fuel should not hold up discussions about the future of nuclear power in Wisconsin.

"In this country, we've had no accidents, no injuries and no deaths related to the transportation or the storage of spent nuclear fuel," Montgomery said.

Montgomery added, however, that it is reasonable to discuss what failed at the plant in Japan and to incorporate that knowledge into discussions about resuming the use of nuclear power in Wisconsin. "The fact that you had a significant event occur lends itself to some caution," he said.

## **Tritium Released From Oconee Reactors Flows Into Lake Hartwell (GRNVN)**

By Anna Simon

Greenville (SC) News, April 10, 2011

The Oconee Nuclear Station routinely discharges water contaminated by radioactive tritium into the Keowee River that flows into Lake Hartwell, a source of recreation and drinking water — discharges regulators say are within safe limits and critics say can increase cancer risk.

Oconee makes routine releases of diluted concentrations, said Sandra Magee, a Duke Energy spokeswoman. The releases are safe, well below the Environmental Protection Agency ceiling for drinking water, and are reported to the Nuclear Regulatory Commission, Magee said.

Oconee's most recent annual report, for 2009, shows an average of 4,700 picocuries per liter. The highest single sample result was 9,760 picocuries.

The federal EPA and state limit for tritium in drinking water is 20,000 picocuries per liter, according to the state Department of Health and Environmental Control.

"The tritium levels that we are releasing are not a health threat to the public or our workers. There is no impact to the public health," Magee said.

High doses of tritium over a long time can increase cancer risk, though regulated tritium releases from nuclear plants pose a negligible risk to the population, said Dr. Paul Kountz, a nuclear specialist with Upstate Carolina Radiology at Bon Secours St. Francis Health System.

Tritium, a naturally occurring radioactive form of hydrogen, is a byproduct of nuclear power operations.

Small amounts of tritium are present normally in the atmosphere due to interactions with cosmic rays, said Dan Zurosky, director of radiation safety and a professor in the radiology department at the University of South Carolina's School of Medicine.

"Tritium is a very low energy beta particle emitter and it is one of the few isotopes that can't be detected with a Geiger counter," Zurosky said. It has a half-life of 12 years in the water and can accumulate in just about any part of the body. It can cause cell damage if taken internally in high enough concentrations, he said.

Oconee's reported tritium levels "are not insignificant," said Bob Guild, a Columbia attorney involved in litigation regarding tritium and other nuclear waste and vice chairman of South Carolina's chapter of the Sierra Club.

Colorado has a limit of 500 picocuries per liter in drinking water, and California has a public health goal of 400 picocuries, he said.

"Radiation is a long-term threat to people's health," Guild said. "No additional dose of radiation is safe or good for you. Radiation is all around you, but any dose of radiation can increase the risk of cancer over the long term. You want to avoid any additional exposure."

Discharges are released slightly below Duke's Keowee hydroelectric dam downstream from Lake Keowee and not into Lake Keowee, Magee said.

Greenville Water System draws water from Lake Keowee, upstream from Oconee's discharge point. The most recent test results, from 2009, detect no tritium in the water, said David Bereskin, general manager of the system. Duke Energy conducts the testing, and it is federally regulated, Bereskin said.

Duke samples water continuously from Lake Keowee and from the Keowee River downstream from the hydroelectric dam, Magee said. Samples are collected in a single container, and a composite sample is pulled from the container for analysis each quarter.

Releases are controlled and scheduled during normal operations, Magee said. Most of the tritium that is produced comes from boron that is added to the water that cools the reactors. Tritium also is produced by the uranium in the fuel.

The NRC oversees Oconee's radiological environmental sampling and monitoring, Magee said.

Sample results are submitted to the state and the NRC and are publically available, Magee said.

All US nuclear power plants report tritium levels under a voluntary industry program, said Roger Hannah, spokesman for the Nuclear Regulatory Commission, which monitors environmental sampling done by plant employees.

"Our goal is to keep exposures as low as possible and certainly within regulatory limits," Hannah said.

The tritium dose from nuclear power plants is much lower than the exposures attributable to natural background radiation and medical administrations, Magee said, citing NRC data.

Duke samples and monitors the water on and off the plant site and also tests at the discharge point on the Keowee River. The releases "are strictly controlled and maintained within our operating license requirements," Magee said.

DHEC tests for tritium from Duke Energy's Catawba Nuclear Station near Rock Hill, but not Oconee. That's because two nuclear power plants are upstream from Lake Wylie — Catawba and Duke's McGuire Nuclear Station in North Carolina, posing two potential sources, while Oconee is alone on its watershed, said Mary Nguyen Bright, a DHEC spokeswoman.

DHEC receives Oconee's reports, as it does from all nuclear power plants in the state, and any spikes could prompt DHEC testing, Bright said.

Catawba's average was 3,930 picocuries per liter and the highest single sample result was 4,420 picocuries per liter, Magee said. McGuire's average was 1,181 picocuries per liter, and the highest single sample result was 1,610 picocuries per liter.

Elevated levels of 42,760 picocuries per liter have been found at one of 66 monitoring wells on the Oconee Nuclear site. The well is for monitoring and not for drinking water.

"Our investigation leads us to believe the source is related to previous discharges into a former yard drain on the property that is no longer used for that purpose," Magee said. Duke has installed an additional well near the elevated well to gather more data. Routine sampling is done quarterly, and the additional test well is being monitored continuously.

There is no indication that the tritium is moving off the plant site or into the ground water, Hannah said. In 2008, DHEC tested for tritium around Oconee Nuclear Station and all nuclear power plants in the state after an industry initiative showed release of tritium at Oconee and Catawba. Samples were tested from Lake Keowee and from drinking water wells at homes near Oconee. The tests indicated no adverse effect on the quality of groundwater surrounding the plant, according to a DHEC report. The 2008 testing is the most recent water testing for tritium done by DHEC in the vicinity of Oconee Nuclear Station.

## **Garrett Holds Forum On Nuclear Plant Decommissioning (CHIST)**

By Ed Collins

Chicago Sun-Times, April 10, 2011

**LAKE FOREST** — State Sen. Susan Garrett, D-Lake Forest, along with many other Lake Countians, has been wondering what's going on in decommissioning the former Zion Nuclear Reactor site on the shores of Lake Michigan. They received some answers at a forum held at Lake Forest Health and Fitness Center Saturday.

Garrett and a group of citizens received an extensive briefing on activities now taking place at the plant since last September from Patrick Daly, general manager of Zion Solutions LLC, who heads up an estimated \$960 million, ten-year project to return the 257-acre site back to productive use.

The plant was built between 1968 and 1973, and was licensed by the Nuclear Regulatory Commission for operation in 1973.

The first of Zion's two reactors began producing nuclear power in December 1973. The second reactor came online the following September.

The plant generated electricity for its owner, ComEd, a subsidiary of Exelon, until February 1997, when the company decided the facility in the long term could not produce power with other companies on a competitive basis.

In 1998, the plant's 2,226 spent nuclear fuel rods were then permanently removed from the two reactors and placed in an on-site water pool for long-term safe storage.

Formal decommissioning of the plant began with preparations in 2007. Zion Solutions, a division of Energy Solutions Inc., Salt Lake City, was then retained to carry out the project in September 2010. The company now has 250 employees on site.

"We will do the work in three major stages. The site will be ready for beneficial reuse in 2020, 12 years earlier than previous plans," Daly said.

He said, under the two NRC licenses, it is the company's responsibility to remove the spent fuel rods, some more than 40 years old, from the water-cooling pool. Demolition will then start on the Fuel Storage Building in 2014.

The spent fuel will then be placed into specially engineered "dry cask" containers for indefinite storage on site on a solid and secure foundation pad until the US Department of Energy can ship them to Clive, Utah, for permanent storage.

These specialized "dry cask" containers, used at more than 45 nuclear plants throughout the nation, are heavily shielded with steel and concrete, and meet all NRC and DOE stringent design standards.

Other work facing Zion Solutions will be demolishing and removal of various buildings and structures, and restoring the grounds to its natural environment.

"Once most of the site is restored to use, the ComEd electrical switchyard at the rear of the property and the spent fuel storage pad will still remain," Daly said.

In response to a question, Daly was not able to estimate how long the dry spent fuel canisters would remain on the property, but he did expect it would be a minimum of four years and could be much longer. He indicated the decision would be made by the US Department of Energy.

Garrett, who moderated the busy question period, allowed more than an hour for this purpose. Many were concerned about potential radiation from the 61 stored fuel rods, and the possibility of radiation reaching the drinking water of Lake Michigan, only 1,300-feet away. Daly assured the audience that this was highly unlikely and the company is well aware of the public's concern.

Garrett summed up the concerns of many by stating, "The lake water should be tested periodically."

## **Kewaunee Power Plant's Reactor Refueling More Efficient (GBPG)**

Green Bay (WI) Press-Gazette, April 8, 2011

It took only 29 days for the Kewaunee Power Station to complete its reactor refueling, a process that traditionally has taken about 40 days.

"It's lessons learned, not only what you've done, but what other people in our industry are doing," said Mark Kanz, Kewaunee spokesman. "You find ways to do it better, smarter."

The one-reactor, 568-megawatt nuclear power plant replaces one-third of its 121 fuel assemblies every 18 months. The last refueling was in September 2009.

The plant shut down for refueling on Feb. 25 and restarted on March 26.

The Kewaunee Power Station is owned by Dominion Resources Inc. of Richmond, Va. It is in the town of Carlton about 10 miles south of Kewaunee and 25 miles southeast of Green Bay.

## **Senator wants nuclear plant ban to be lifted (BECKLEY)**

By Mannix Porterfield

Beckley (WV) Register-Herald, April 11, 2011

CHARLESTON — Energy-rich West Virginia is maintaining its prohibition on nuclear power plants — a ban Sen. Brooks McCabe said is inconsistent and must change.

McCabe sought to lift it a year ago and had a similar measure this year before the Legislature but didn't push it, and the bill was never considered in committee.

"My whole feeling on nuclear power is I just didn't feel we should exclude a possible, viable source of energy production," McCabe, D-Kanawha, said.

"The fact that something like that would come to West Virginia is a stretch by any sense of the imagination."

In fact, even if the ban were dismantled, McCabe said he doesn't envision a plant being erected in this state in his lifetime.

"I would suggest that, at some point in the future, I think rather than these multibillion-dollar power plants, you're going to see much smaller, in some ways more mobile, nuclear power plants — little, mini-plants, almost like you see in some of these natural gas turbines that are out there," the senator said.

Fears mounted around the world in the wake of a tragic earthquake and subsequent tsunami in Japan that rattled a nuclear power facility, focusing new attention on the industry.

Yet, as McCabe emphasized, the real damage wasn't caused by the quake itself, but, as scientists explained through various news outlets, rather the waves of destructive water. What's more, the plant was old and in desperate need of upgrading.

"That's an older plant that hadn't been retrofitted," McCabe said.

"There were some engineering design issues that they had already identified, and they were correcting the newer plants and had not corrected that plant. When you drill down to the specifics, there's a lot of things that are specific to that situation."

Moreover, the likelihood of a tsunami is on par with oceanfront property in the Mountain State.

"We don't have to worry about that at all," he said.

McCabe sees the nuclear industry shifting gears into smaller facilities that are cheaper, less invasive and more readily able to gain permits.

"Even with that, I don't expect to see nuclear power in West Virginia in my lifetime," the senator said.

"But the reason to eliminate the ban on it is, assuming there is a viable alternative out there, if we are an energy state, we ought to say we're an energy state and not exclude anyone. In reality, we're going to be focusing on coal, natural gas, geothermal and wind. And a little bit of biomass, maybe. That's West Virginia's future, and it primarily, in the near term, is coal and natural gas, and then, over time, it will move over into renewables."

From his own view of the energy situation, McCabe said the nation must devise a means of making the country self-sufficient, sooner rather than later.

"Nuclear will have some part of that equation," he said.

"How big it will be remains to be seen. Probably less substantial than it would have been prior to what's happened in Japan. But I think technologies are changing and improving."

And if America's coal industry pleads against elimination, that position shouldn't be advocated while at the same time making sure nuclear interests are left out of the picture, McCabe said.

"It's a significant inconsistency when you start looking at trying to create a national discussion around the value and use of coal going forward," he said.

Some states have turned to nuclear power since they lack the abundance of coal, natural gas and geothermal enjoyed by West Virginia, he pointed out.

"So, I'm not in any way fearful that by eliminating the ban, that you're going to see somebody come forward in the next couple of years and say, 'We're going to build a big, nuclear plant,'" McCabe said.

"That's not the issue at all. The issue is a consistency of our story we're trying to tell at the national level. Recast the discussion of energy toward making this country self-sufficient in the intermediate term, not continue our dependence on foreign oil, and, to do that, it has to be a mix of all the above energy sources — renewable, coal, gas, hydro, geo-thermal, all of that, and nuclear will be some part of it."

McCabe said he is concerned the federal government isn't properly balancing a beefing up of environmental regulations with the need to maintain reasonable energy costs, which makes the nation less competitive globally.

"I have a real concern about maintaining affordable cost of electricity in this state so our industry can be competitive at the global level," he said.

"If we're not careful, we're going to price ourselves out of manufacturing, and that would be just an unmitigated disaster."

## **Dominion, State Differ Over Profit Numbers On Which New Tax Is Based (NLDAY)**

New London (CT) Day, April 11, 2011

The owner of Millstone Power Station said Friday that the estimated profit margins used as a basis for a proposed tax on electricity are inflated, but the state's consumer advocate stands by the numbers.

Millstone owner Dominion has said the company will shut down one or both of its operating reactors in Waterford if lawmakers' proposed \$332 million tax is approved. The tax represents 2 cents per kilowatt hour on more than 16 million megawatts of generation a year. Lesser tax rates are also proposed for coal and oil generation in Connecticut.

Since the company does not have to open its books to the public, lawmakers and Mary Healey, the state's consumer counsel, have relied on estimates of Millstone profit margins as they've studied the issue, Healey said.

This year, they've determined that, if taxed at \$332 million, Millstone's owner would still clear profit margins of between \$190 million and \$700 million.

The profit margins constitute the difference between the price for which electricity was sold and the cost to make it. The state Office of Consumer Counsel is just corroborating the figures for lawmakers, she added. A variety of consultants she would not name helped compile that analysis, she said.

If the tax is approved, counters Dominion spokesman Ken Holt, "we will be making little or no profit, or even losing money."

"And I don't think anybody wants a nuclear power plant operating on low margins," Holt said. "The owners before us did that, and I don't think anybody wants that because we are a safe operator."

Northeast Utilities, the previous owner of the Millstone complex, was forced to shut down the reactors in the mid-1990s after federal findings of mismanagement.

Holt declined to specify what would constitute an unacceptably low profit margin.

Healey insisted that her agency's estimates of Dominion's past annual profit margins, which ranged between \$298 million and \$975 million over the past decade, are reliable.

According to a financial spreadsheet provided by the Office of Consumer Counsel to The Day, those annual margins are based on the past decade of public records of output for Millstone, an estimated average annual clearing price and estimated fixed costs. The analysis puts Millstone's annual profit margin at nearly \$514 million last year.

The clearing price is the price bid by many electric generators in the wholesale spot market for a particular time period. Instead of bidding in the wholesale market, most of Dominion's power is hedged, said Holt. This means it is sold in advance at a fixed price and does not fluctuate in the spot market.

"Their assumptions are wrong, plain wrong," Holt insisted. "They're assuming our costs have remained flat over the last 10 years. Our business costs have not remained flat over the last 10 years. And their clearing price is not the price that we get for our electricity."

The Hartford-based Connecticut Business & Industry Association, which has 10,000 members, is opposing the proposed energy tax.

"Dominion pays taxes in other ways, and this attitude that exists with some that companies are just bottomless pits of money is ridiculous," said Bonnie Stewart, vice president of government affairs for CBIA. "That's not the case. Companies have choices where they locate. We don't want to discourage them from locating here."

The proposed tax is based on sound estimates, said Healey and Rich Sobolewski, her supervisor of financial analysis. Dominion should "step up to the plate and leave" some of their profits in Connecticut instead of in the hands of shareholders, either for electric ratepayer relief, a balanced budget or to promote conservation and renewables, she said.

"At first blush, I could understand why people say this is not fair to Dominion, that it's anti-business," she said. "But it really is an attempt to help provide relief to ratepayers in Connecticut and at the same time to still allow the company to make a healthy profit, which is their right, but not an excessive profit."

"The numbers done to calculate the tax show (Millstone's earnings) are excessive and haven't met the goal of reducing our electric rates in Connecticut," Healey said.

Earlier this week, state Sen. John Fonfara, D-Hartford, co-chairman of the legislature's Energy and Technology Committee, said the Office of Consumer Counsel and its consultants estimated that this year Millstone would earn \$480 million before deducting for taxes and other expenses.

Based on the Virginia-based Dominion's own 2011 earnings guidance, that \$480 million figure represents the bulk of some \$581 million in earnings the company has projected for its New England-based nuclear and coal plants in 2011. Healey would not say how her staff and consultants arrived at that estimate, however.

"It's one year's result," said Sobolewski. "It's an estimate. That \$480 million will probably be the lowest result they've had in a decade."

Fonfara could not be reached Friday to elaborate.

"They're suggesting that nuclear power is selling for five times as much as coal," said Holt. "That's incorrect. Their estimates for 2011 sound very favorable for collecting a tax, but they don't sound like they smack of reality."

Fonfara has also said the proposed legislation, which calls for the tax revenue to be used in part to reduce electric ratepayers' bills, will not pass on costs to those ratepayers.

A spokesperson for ISO New England, which manages the region's wholesale electric market, said Friday that if Dominion decided not to operate one or more reactors, not only could the agency not stop them, but ISO-New England's costs to replace those missing megawatts over the next three years would be passed on to ratepayers.

## **The Day - Millstone Owner Dominion Holds Public Meeting Monday On Key Issues | News From Southeastern Connecticut (NLDAY)**

By Patricia Daddona

New London (CT) Day, April 11, 2011

The Day - Millstone owner Dominion holds public meeting Monday on key issues | News from southeastern Connecticut

Millstone owner Dominion holds public meeting Monday on key issues

April 10, 2011 TheDay.com The Web Web Search powered Yahoo! SEARCH

Waterford - On Monday the owner of Millstone Power Station will publicly discuss issues affecting the nuclear complex ranging from a proposed tax on power production to environmental monitoring. The meeting is scheduled for 7 p.m. at Waterford Town Hall.

The discussion of Senate Bill 1176 is only part of the presentation that will be made by Dominion officials at the meeting, said Ken Holt, a spokesman.

Also covered will be an overview of Millstone and the nuclear complex's response to problems at the reactors in Japan following the earthquake and tsunami of March 11.

Reactor operations, including the normal refueling outage at the Unit 2 reactor, and environmental monitoring are on the agenda, as is the Nuclear Regulatory Commission's special inspection after an accidental power spike at Unit 2 in February. Company officials will stay to answer questions, Holt said.

## **Will Millstone Powerstation Shut Down? (WATRFPTC)**

By John Sheehan

Waterford (CT) Patch, April 11, 2011

Commercial Nuclear Power has been in the headlines for the past few weeks due to the tragedy in Fukushima, Japan and a pending bill (SB1176) in the Connecticut State Legislature. Unfortunately, there is a greater chance that Millstone Power Station will be shut down by the consequences of the action of the State Legislature than by any impact from the casualty in Japan.

SB1176 is Titled "An Act concerning Electric Rate Relief" but in its first section it imposes a new tax on nuclear generation of two cents per net kilowatt hours of electricity generated and uploaded to the bulk power grid. Proponents of the bill state that this will not impact Connecticut Rate Payers since Dominion sells its power in negotiated contracts to customers outside the state. These proponents assume that Dominion will absorb the tax to keep their rates competitive or they will raise the rates to these customers but this will have no impact on local electric rates.

It is estimated that the tax on Millstone's output will generate \$330 million in revenue annually based on an annual generation of over 16.5 million megawatt hours of electricity by Millstone Station. There is no way that any business would



willingly absorb a cost of \$330 million with no return on investment. The company would either pass the cost to the customer, sell the company to some group willing to absorb this new cost of doing business, or simply go out of business.

The State Legislature deregulated power generation in Connecticut in 1998. As part of that bill, the original owner of Millstone Power Station, Northeast Utilities (NU), was forced to get out of the generating business although the company remains in the distribution business through Connecticut Light and Power and United Illuminating. Since NU was in the final steps of recovering from operational mismanagement at Millstone in the mid nineties, it was more than willing to get out of the generating business.

Dominion, a Virginia based Power company, bought Millstone at a state-sanctioned auction for around \$1.3 Billion in 2001. According to testimony before the Energy and Technology Committee by Dan Weekly, Dominion Vice President for Governmental Affairs, since the purchase Dominion has invested over \$600 million in operational improvements "in order to increase margins of safety, attain greater efficiency, and improve reliability at Millstone."

This investment has meant that Millstone Station has improved reliability so that the annual output is more than when Northeast Utilities was operating three plants at the station. Millstone 2 was operational 86% of the time in 2010 and Millstone 3 was operational 89% of the time. Dominion also made the necessary investments to extend the useful life of Millstone Two to 2035 and Millstone Three to 2045. It also means that the tax contribution of Millstone to the Town of Waterford has remained at 30% despite the allowed equipment depreciation schedule. In fact, the assessed value of Millstone has gone up by one or two percent each year.

Millstone Station also employs around 1100 employees and purchases approximately \$200 million of goods and services annually from local vendors.

Based on this performance, the Connecticut State Legislature should be looking for ways to encourage Dominion to continue to increase plant safety, reliability, and performance and consider increasing its investment in Connecticut by constructing another base load plant on the site. Instead, the legislature is considering a bill that may lead to the shutdown of one or both of the plants at Millstone Station, the loss of high paying technical jobs, and the loss of much of the local purchases. Waterford and neighboring communities would lose the Millstone employed residents who serve in local government and buy goods and services from local retailers.

More importantly, the nation would lose one or two base load electrical generators and Connecticut would be even more reliant on natural gas as the supplier of electricity. Since 1998, natural gas has grown as the energy supplier as oil has decreased. It is important to note that there is no natural gas in New England. All of it must be imported from other states or abroad. While natural gas prices are currently very low when compared to oil or other sources of energy, there is no guarantee that this will remain the case. It is important that Connecticut, and all of New England, diversify fuel sources to prevent any further increase in electrical rates. Nationwide, according to a 2007 study, 50,000 Megawatts of new nuclear plants are needed to maintain the existing energy supply diversity as the existing 104 nuclear power plants reach the end of their extended lives between 2035 and 2055. Since it currently takes ten years to license and then ten years to build a new nuclear power plant, the nation needs to be taking action now to make up this impending gap in electrical power.

According to reliable sources, Dominion is not bluffing when their officials announce that one or both of Millstone Power Station Plants will shut down if the tax on nuclear generation is passed in its current form because the tax will make operating the plants too expensive. A look at Dominion's 2010 Annual Report posted on the <http://www.dom.com>, shows that "Expectation of future success is predicated on the continuation of our regulated infrastructure growth plan, which was introduced in 2006." (page 10 of the report). The report also comments that "Virginia is one of the best states for business...Virginia continues to be largely recession-resistant. Its economy continues to grow." (page 14 of the report). "(Dominion) will continue to seek a combined construction and operating license (COL) from the Nuclear Regulatory Commission, which we expect to obtain in 2013...A decision to proceed with a construction schedule at North Anna will not come until we approach receipt of the COL" (page 16 of the report). There is no comment or consideration of expanding the "merchant fleet" of power plants which include Millstone Power Station.

It seems that unregulated generation has not been the profitable business that was expected when Dominion purchased Millstone Power Station in 2001. According to the 2010 SEC Form 10K that is posted at the Dominion web site "Dominion's merchant power business is operating in a challenging market, which could adversely affect its results of operations and future growth." (Page 24 of SEC Form 10K). The Form 10K notes that the market is driven by the "cost of natural gas plus the cost to convert the fuel to electricity." (page 24). The report also notes that, on an after tax basis the merchant generation margin was a loss of \$209 million in 2010 when compared to 2009 (Page 40 of SEC Form 10K). There is no way to tell if this loss is a result of Millstone operations since there is no breakdown by individual power generator.

Based on the above information, there is little incentive for Dominion to remain in the unregulated market or make a large investment in the merchant plants. The addition of a \$330 million tax expense will only exacerbate this situation. I doubt that either the state or Dominion will be able to find a buyer for the plants to keep them operating. This is not how to say that "Connecticut is open for business."

The SEC Form 10K for 2010 also shows that the estimated cost of decommissioning Millstone 2 is \$651 million and decommissioning Millstone 3 is \$680 million in 2010 dollars. The funds currently in trust for the decommissioning are \$385 million for Millstone 2 and \$374 for Millstone 3. (Page 12 of SEC Form 10K). If the time frame for decommissioning Connecticut Yankee in Haddam Neck is an example, Dominion could decommission Millstone Power Station for the cost of two years of the \$330 million in taxes.

Again, the shutdown of Millstone Power Station would have a significant impact on Waterford due to loss of tax revenue and the skilled jobs at the station but will also mean that Connecticut will lose two base load electrical generators which will drive the cost of electricity even higher.

State Senator Andrea Stillman and Representative Betsy Ritter are sponsoring a public meeting regarding Millstone and the Fukushima disaster on Monday April 11, 2011 at 7:30 PM in the Waterford Town Hall auditorium. I am sure that there will also be some mention of the impact of SB1176 during that presentation.

## **Conn. SC Says Nuclear Plant Can Increase Capacity (LEGNEWS)**

By JESSICA M. KARMASEK

Legal Newsline, April 11, 2011

HARTFORD, Conn. (Legal Newsline) – The Connecticut Supreme Court says a nuclear power plant can continue to implement an increase in its electric power generating capacity in one of its nuclear reactors.

The plaintiff in the case, Nancy Burton, appealed a trial court judgment dismissing her complaint and denying her application for a temporary restraining order on the ground that the court lacked subject matter jurisdiction.

Burton, who represented herself, sought to prevent the defendant, Dominion Nuclear Connecticut, Inc., which owns and operates the Millstone Nuclear Power Station in the town of Waterford, from implementing, or continuing to implement, a 7 percent increase in electric power generating capacity in its Unit 3 nuclear reactor.

She alleged the increase would cause unreasonable pollution by significantly increasing the discharge of radioactive waste and raising the temperature of the cooling water released into Long Island Sound.

On appeal, she claims that the trial court improperly dismissed, for lack of standing, her complaint.

The state's high court affirmed the trial court's judgment. Justice Peter T. Zarella authored the Court's opinion, which will be officially released April 19.

"We conclude that the trial court properly dismissed the plaintiff's claim regarding an increase in the discharge of radioactive waste because Congress has preempted state authority in this area," it wrote. "We also conclude that the court properly dismissed her claim regarding an increase in the temperature of the thermal plume for lack of standing."

The Court said Burton, in her public nuisance claim, does not allege a personal injury arising from an incident at a nuclear power plant but "merely alleges that she and other members of the public might be injured at some future time from radioactive waste released into the environment."

That is despite, according to an environmental assessment, the amount of anticipated radioactivity fell well below the "as low as is reasonably achievable" regulatory guidelines.

The Court said Burton also failed to make a "colorable claim" sufficient to establish her standing because her complaint does not contain allegations of "substantive violations giving rise to unreasonable pollution."

Moreover, it said, she neither filed an affidavit containing her allegations "nor adduced evidence at the hearing on the motion to dismiss to remedy this defect."

The Court said Burton's allegations were "insufficient," relating almost exclusively to the effect of the increased water temperature on wildlife, fish and other aquatic organisms, as opposed to members of the public.

## **Poll: Few Confident US Ready For Nuclear Emergency (AP)**

By Matthew Daly, Associated Press

Associated Press, April 8, 2011

WASHINGTON – Most Americans doubt the US government is prepared to respond to a nuclear emergency like the one in Japan, a new Associated Press-GfK poll shows. But it also shows few Americans believe such an emergency would occur.

Nevertheless, the disaster has turned more Americans against new nuclear power plants. The poll found that 60 percent of Americans oppose building more nuclear power plants. That's up from 48 percent who opposed it in an AP-Stanford University Poll in November 2009.

The Associated Press-GfK poll comes as Japan continues to struggle with a nuclear crisis caused by a March 11 earthquake and tsunami. The crippled Fukushima Dai-ichi nuclear plant has leaked radiation into the environment and radioactive water gushed into the Pacific Ocean. Japan was rattled by a strong aftershock and tsunami warning Thursday, but officials reported no immediate sign of new problems.

The poll finds that about a fourth of those surveyed were highly confident that the US government is prepared to handle a nuclear emergency, while almost three-fourths were only somewhat or not confident.

But many people doubt such an emergency will happen in this country.

About three in 10 think such an emergency is extremely or very likely, compared with seven in 10 who think it is only somewhat or not likely. Among people who think a disaster is highly likely, almost eight in 10 lack confidence the government would be ready.

Even among those think it's not too likely or not at all likely to happen, almost two-thirds still lacked confidence the government would be ready.

Nancy Hall of Long Beach, Calif., said the Japanese crisis has not soured her on nuclear power.

"Well, despite the disaster in Japan, I think that nuclear power still has a lot of advantages over fossil fuels," she said, noting that nuclear energy, unlike oil, does not funnel money to "Middle East dictators" and is not as polluting as coal-fired power plants.

"You have to keep in mind that gas and coal are constantly polluting, day in and day out, and we don't even think about it," she said.

Hall, 36, a linguistics professor, lives within a four-hour drive of two nuclear plants but said she is not too worried about either one.

"I do hope the government is looking carefully at how to safeguard them," she said. "But truthfully, nuclear power is not at the top of my list of worries." Of more immediate concern: The building where she works is not earthquake-proof.

The poll indicates that nearly one in four Americans lives within 50 miles of a nuclear power reactor. Those who reported living within 50 miles of a nuclear plant were not significantly more or less likely to have confidence in the government's ability to handle a nuclear disaster.

Those who live close to nuclear power plants were less likely to be strong opponents of building more nuclear power plants than those who live farther away. A total of four in 10 of those who live more than 50 miles from a plant strongly oppose building new ones, compared with three in 10 who say they live within 50 miles of a plant.

US government regulators are reviewing safety at the nation's 104 nuclear reactors in the wake of the Japanese crisis. The Nuclear Regulatory Commission says it will look at the plants' ability to protect against natural disasters and terrorist attacks, respond to complete power blackouts and cope with accidents involving spent fuel, among other issues.

The NRC says US nuclear plants continue to operate safely.

Still, Kelli Hughes of Brookhaven, N.Y., worries about nuclear power, calling it a toxic menace. Hughes, 33, owns an online business and lives less than 80 miles from nuclear plants in New York and Connecticut. She said she strongly opposes construction or expansion of nuclear plants.

"We have to think about what it's going to do to the environment when we're done with it," she said, referring to nuclear waste. "Look what's happening in Japan now," she added. Radioactive waste "is leaking and it's toxic."

Once land is tainted by nuclear waste, "you can't use it," Hughes said. "It kills everything — the land, the air, the water around it."

Damian Padua of Chicopee, Mass., said he is skeptical that renewable energy sources such as solar and wind power can generate the electricity the country needs. Padua, 32, a printer, said the US government and citizens alike are likely to be overwhelmed in the event of a nuclear disaster.

But after the initial shock, he said he is confident authorities and the public would rally.

"I think we have the necessary resources to help everyone," he said. "I think we can do a better job than the way it's going in Japan actually."

The Associated Press-GfK Poll was conducted March 24-28 by GfK Roper Public Affairs and Corporate Communications. It involved landline and cellphone interviews with 1,001 adults nationwide and has a margin of sampling error of plus or minus 4.2 percentage points.

## Nuclear Worries Heating Up | Timesfreepress.com (CHTNGA)

By Pam Sohn

Chattanooga (TN) Times Free Press, April 11, 2011

At TVA's three operating nuclear plants near Chattanooga, more than 2,544 metric tons of highly radioactive spent fuel are being held in cooling pools — far more than what is in the reactors themselves.

Looking at lessons learned from Japan's continuing nuclear crisis, the nuclear industry is taking fresh interest in spent fuel pools across the country that hold tons of radioactive materials.

"That quantity of fuel [from TVA's reactors] represents, very roughly, about 100 reactor-years worth of discharges," said Edwin Lyman, senior scientist for the Union of Concerned Scientists, a nonprofit group committed to safety issues.

"Keep in mind that Fukushima Dai-ichi Unit 4 had only about 240 tons of spent fuel [in the spent fuel pool], and it is believed to have caught fire," Lyman said Friday.

What's more, spent fuel pools here and across the US are not housed within robust concrete containment structures designed to protect the public from the radioactivity.

Nor are they cooled by an array of highly reliable emergency systems that can be powered from the grid, diesel generators or batteries, said David Lochbaum. He is a nuclear engineer who once worked at TVA's Browns Ferry Nuclear Plant in Athens, Ala., and for the Nuclear Regulatory Commission.

"Instead, the pools are cooled by one regular system sometimes backed up by an alternate makeup system ... and instead the pools are often housed in buildings with sheet-metal siding like that in a Sears storage shed," Lochbaum said to members of the Senate Energy and Water Development Appropriations Subcommittee on March 30.

"I have nothing against the quality or utility of Sears storage sheds, but they are not suitable for nuclear waste storage," Lochbaum testified.

An end to pools

Both Lochbaum and Lyman have testified before congressional committees in recent weeks, urging better — and, especially, faster — regulation by the NRC.

He and Lyman told senators highly radioactive waste is languishing in pools across the country. At some sites, pools hold nearly 10 times as much spent fuel as the active fuel in the reactor cores.

Both men have been pressing for years to move spent fuel out of pools and into dry cask storage. Casks holding spent fuel rods are made of heavy steel, concrete or both and placed on concrete pads.

The warnings appeared to fall on deaf ears until the Japanese nuclear crisis began at four reactors and their spent fuel pools following a 9.0-magnitude earthquake and tsunami.

Ray Golden, spokesman for TVA's nuclear program, insists the five spent fuel pools at TVA's three nuclear plants are safe.

But he said the utility likely will move more aggressively to transfer spent fuel from pools to casks, though he couldn't say when that might happen.

And NRC spokesman Roger Hannah said Friday the regulatory agency has committed to Congress to make a 90-day "quick look" at potential problems, including spent fuel and seismic threats.

"We have not made any decision on spent fuel pools," he said. "We'll obviously look at that."

Evidence from Japan's Unit 4 spent fuel pool suggested fuel damage and the ejection of radioactive fuel particles — which some science observers said would explain the presence of plutonium in the air early in the crisis.

Spent fuel here

At Browns Ferry, a plant with the same design as Fukushima-Dai-ichi, more than 1,415 metric tons of spent fuel and rods lie in three pools on a massive concrete pad above the plant's three reactors.

All that encloses the pools is a heavy garagelike metal roof and walls.

"We may harden that," Golden said.

He said firehoses and other safety cooling back-ups were installed at the plant's pool level after the Sept. 11, 2001, terrorists attacks.

At Sequoyah and Watts Bar, about 812 and 315 metric tons of spent fuel, respectively, lie in pools next to the plants.

In the pools, cooling water and boron cover the radioactive fuel assemblies that have been removed from reactors. The cooling water is circulated by pumps run by electricity. If electricity and back-up power fails, as happened in Japan, the fuel heats the water to boiling and it can steam away.

Lyman and Lochbaum say nuclear scientists have known for more than two decades that losing water in a dense-packed pool would cause the waste fuel to heat up quickly and possibly catch fire.

"The long-term land-contamination consequences of such an event could be significantly worse than those from Chernobyl," states a Union of Concerned Scientists study that promotes moving spent fuel to dry casks.

Blaming Yucca Mountain

TVA, the nuclear industry and the NRC say there would be far less fuel in holding pools had Congress and the Department of Energy approved a long-term storage facility such as Yucca Mountain in Nevada.

"TVA paid in hundreds of millions of dollars" to the fund for the Yucca Mountain site, Golden said, adding the entire nuclear industry contributed \$30 billion.

He said \$13 billion was spent to study Yucca Mountain, which now appears to be off the table.

"There's about \$17 billion that hasn't been allocated, but it's intended for the safe storage of high-level waste," Golden said.

Lyman said he thinks the build-up of spent fuel in pools is related to Yucca Mountain, but not in the way the nuclear industry relates it. He said keeping fuel in pools is an industry effort to "keep pressure on the government to take spent fuel off their sites."

"However, the reality is that utilities will be storing large quantities of spent fuel on their sites for decades to come no matter what happens with Yucca Mountain, so they need to take steps to make on-site storage as safe and secure as possible."

Lochbaum told senators the same thing, but added a challenge.

"The irrefutable bottom line is that we have utterly failed to properly manage the risk from irradiated fuel stored at our nation's nuclear power plants. We can and must do better," he said in testimony.

## **Yucca Mountain Left Out Of Budget Deal (LVSRJ)**

By Steve Tetreault

Las Vegas Review-Journal, April 10, 2011

Full-text stories from this source currently cannot be included in this document. You may, however, click the link above to access the story.

## **Waxman: Cut Yucca Trip, Save \$200K (POLITCO)**

By Darius Dixon

Politico, April 8, 2011

With the federal government preparing to shut down and save money wherever it can, Rep. Henry Waxman suggests Congress look at its own travel budget.

The California Democrat wants a House Energy and Commerce subcommittee to shelve a possible \$200,000 trip to the Yucca Mountain nuclear waste dump in Nevada

According to the Energy Department, the cost of the congressional trip includes helicopters, ground transportation and safety inspections.

Rep. John Shimkus (R-Ill.), chairman of the Environment and Economy Subcommittee, asked DOE to price out the trip as part of his campaign to push the Obama administration to move forward with the nuclear waste repository.

"According to the [Energy] Department, since Yucca Mountain has been closed for nearly two years, preparing the site for your tour would take significant resources," Waxman wrote in a letter to Shimkus on Friday. "I am writing to urge you to cancel this site visit because of its excessive costs to the taxpayer."

He added: "At a time when the government is facing a shutdown over funding, it seems completely inappropriate to incur these needless expenses."

## **Lawmakers' Planned Trip To Yucca Criticized (LVSRJ)**

Las Vegas Review-Journal, April 9, 2011

Full-text stories from this source currently cannot be included in this document. You may, however, click the link above to access the story.

## **BURNETT & STEVENSON: Lessons From Japan On Nuclear Waste (WT)**

**Safe storage solutions are available - if Congress will act**

By H. Sterling Burnett And David T. Stevenson, The Washington Times

Washington Times, April 11, 2011

The nuclear crisis in Fukushima, Japan, has shown, beyond a doubt, the time has come to deal with the United States' supply of used nuclear fuel rods - commonly, but erroneously, called "waste." The most immediate potential hazard in the Fukushima crisis stems from the loss of water cooling the plants stored spent fuel.

Unnecessarily, in the United States we currently store spent nuclear fuel rods, in many instances, at power plants in above-ground facilities just like the one in Japan now troubling the world.

Indeed, there are currently about 71,000 metric tons of spent fuel and high-level radioactive waste stored at 121 nuclear power plants and nonmilitary government sites. While this may seem like a lot, the entire 50 years worth of spent fuel could be stored in a space the size of one football field piled 41 feet high. Waste grows at a rate of 2,000 metric tons a year.

Three options have existed for years - but politics has prevented us from availing ourselves of them.

In 1982, Congress passed the Nuclear Waste Policy Act requiring the federal government to provide a high-security, permanent, underground storage site and began charging a fee of one-tenth of a cent on every kilowatt-hour of nuclear power produced to pay for it. According to the Department of Energy, the Nuclear Waste Fund totals \$25 billion and is increasing by \$750 million a year in payments and \$1 billion a year in interest.

The act required the Department of Energy to develop and maintain an underground storage facility for nuclear waste. The site had to meet strict criteria, including the ability to safely contain 77,000 metric tons of material for up to 10,000 years, and the material had to be accessible for 50 years in the event fuel recycling was allowed. The Energy Department determined that Yucca Mountain, Nevada, was uniquely suited to serve as a safe storage place. After 26 years and more than \$13.5 billion spent, the initial facility is complete and ready to accept up to 70,000 metric tons of waste and only requires final licensing. The storage capacity of Yucca Mountain could be tripled.

However, despite scientific evidence that Yucca Mountain is safe, political wrangling has prevented opening the facility. In an executive order, the Obama administration zeroed out spending on it.

Absent Yucca Mountain, we have a second storage option: the Waste Isolation Pilot Plant (WIPP) located 25 miles east of Carlsbad, N.M., used to store military-grade nuclear waste. It is already open and more than 100,000 containers of radioactive material have been stored in a massive, bedded (layered) salt deposit. Only a small portion of the available space has been used. The salt in the formation is self-sealing: It flows like sand to fill in, or seal, the disposal chambers completely.

WIPP has been extensively monitored for human health and environmental risks for 15 years with the Carlsbad Environmental Monitoring and Research Center at New Mexico State University reporting that there has been no evidence of an increase in contaminants in the ground, air or water near WIPP. Indeed, radiation levels have not exceeded the baseline measured before the operation began.

The main impediment to using WIPP to store spent nuclear fuel rods is the legal requirement that waste be retrievable for up to 50 years. Once waste is stored in WIPP, it isn't coming out again. Congressional legislation should allow immediate use of WIPP for civilian waste starting with the most at-risk waste unless or until Yucca Mountain is opened.

The third option - recycling spent fuel - offers two benefits: It provides an almost unlimited supply of fuel for the nation's existing nuclear fleet and it would reduce the overall amount of waste that would have to be stored. One kilogram of natural uranium contains as much energy as 38.5 tons of coal, but only about 3 percent of that energy is utilized in conventional reactors. Reprocessing this fuel as is done in other countries would provide a virtually unlimited supply of nuclear fuel. France, for example, which gets more than 75 percent of its electricity from nuclear plants, reprocesses its uranium. Even if another nuclear power plant is never built in the United States, currently operating plants are not going to be shuttered anytime soon, thus recycling spent fuel provides additional fuel without the mining. It also reduces the waste stream that needs to be stored - a win, win for the environment.

Congress should act now and embrace one or all of the available options for handling and storing the nation's nuclear waste. We can store it safely, so why should Congress allow it to sit around at 121 locations waiting for a crisis (however unlikely) to occur here? Let's have some positive fallout from the Japanese nuclear crisis. In the words of Benjamin Franklin, "an ounce of prevention is worth a pound of cure."

H. Sterling Burnett is senior fellow at the National Center for Policy Analysis. David T. Stevenson is the director of the Center for Energy Competitiveness at the Caesar Rodney Institute.

## **Yucca Mountain Politics (LVS)**

### **Republicans' hypocritical criticism misses the real issue at Nevada site**

Las Vegas Sun, April 9, 2011

In a hearing in the House of Representatives last week, Republican Rep. Mike Simpson of Idaho grilled Gregory Jaczko, chairman of the Nuclear Regulatory Commission.

Jaczko came under fire because he told staff to quit working on the technical review of the plans to store the nation's nuclear waste at Yucca Mountain, 90 miles northwest of Las Vegas. Jaczko was responding to the Obama administration's decision to abandon the plan.

According to Reuters news service, Simpson later told reporters that Jaczko “made decisions unilaterally that I don't think he has the authority to make” and alleged that the commission was making “political decisions.”

Simpson's criticism is part of a larger effort by the nuclear industry's supporters in Congress to try to save the foolish Yucca Mountain plan since President Barack Obama announced he was abandoning it. House Republicans recently launched an investigation into Jaczko's actions. They question Jaczko's motives because he previously worked for Senate Majority Leader Harry Reid, D-Nev., who has led the fight against a Yucca dump. Never mind the campaign contributions and support Yucca allies in Congress get from the nuclear industry.

Jaczko defended his actions, saying they were apolitical. He reasoned that it's not up to the commission to require the administration to pursue a Yucca dump. Indeed. In this era of budget cutting, shouldn't Republicans be applauding Jaczko for not spending millions of dollars of taxpayer money to review a plan that the administration isn't pursuing?

Republicans have complained about Obama pulling the plug on Yucca Mountain, but it was a wise decision. The plan is dangerous, expensive and unworkable. And politics? Simpson and his pro-nuclear allies are being hypocritical making that charge, considering the project's history.

The idea for a “repository” for the nation's waste was born several decades ago and founded on the idea that casks of radiation would be stored underground where the geology would naturally shield the environment from the radiation. Scientists looked across the nation for someplace that would not only contain the radiation but would also keep out water, fearing that water would seep through and corrode steel casks, causing radiation to leak.

They had some sites, but the states they were in had political clout and didn't want the nuclear waste. Nevada, at the time, had little power in Washington. So Congress passed what is infamously called the “Screw Nevada bill” in 1987, ending the scientific quest for the best site and designating Yucca Mountain as the nation's nuclear waste dump.

In the decades since, scientists have tried to prove Yucca Mountain's suitability. Specifications and requirements have been tweaked to try to qualify Yucca Mountain, but it hasn't worked. There is no escaping that this is a poor plan. Yucca Mountain is a porous volcanic ridge in a region prone to earthquakes.

But politics have largely prevailed as the nuclear industry and other states have lined up to support it, over Nevada's fierce opposition. Despite serious safety and scientific issues, President George W. Bush in 2002 gave the Energy Department the go-ahead to move forward with the plan to build a repository at Yucca Mountain.

Nuclear supporters in Congress cheered and dismissed Nevada's vigorous objections, with some members of Congress suggesting Nevada should consider that it would be doing its duty for the nation.

So much for the Republicans who profess a love for states' rights.

This isn't just about the plan being bad for Nevada, but it's also bad for the country. Unfortunately, politics — not science — prevailed. The other states don't want the waste in their backyards, and for years they have thrown their weight around and gotten their way. Now they accuse anyone who opposes them of being political?

That's not just hypocritical, that's shameful.

## **As Nuclear Waste Piles Up, Obama Must Step Up (BOS)**

Boston Globe, April 10, 2011

THE OBAMA administration's decision last year to cancel the long-planned federal nuclear waste depository in Nevada has never seemed more irresponsible. The dangers of unsafely stored nuclear waste have been vividly illustrated in Japan, where spent nuclear fuel rods at the Fukushima Daiichi nuclear plant caught fire, releasing radioactive material. The administration should reverse itself before pursuing any expansion of nuclear power.

Right now, most spent nuclear fuel in the United States is stored in wet-storage pools at reactors, in much the same manner as the fuel storage system at Fukushima. Nationally, 71,862 tons of waste have accumulated, packed into pools that were never intended to hold so much. Massachusetts is home to 701 tons of spent nuclear fuel, with much more stored across New England.

The Yucca Mountain depository, about 90 miles northwest of Las Vegas, was designed to hold radioactive waste for 10,000 years. The facility would not be a complete solution — the nation's waste stockpiles have already grown too big for Yucca to hold — but it is a viable plan that the federal government spent more than \$10 billion developing. The administration's decision to cancel the depository was a profile in craven political calculation: candidate Obama promised to cancel Yucca Mountain to curry favor in the 2008 Nevada caucuses, and he followed through on the urging of a key political ally, Democratic Senator Harry Reid of Nevada.

While canceling Yucca, Obama also named a blue-ribbon panel to come up with new strategies for dealing with waste. The panel is expected to consider ways to reuse spent fuel, and may also recommend more dry-casing of waste, a process that



moves spent rods from wet pools into safer concrete-and-steel boxes. That would be an improvement, but it is not a substitute for long-term, permanent storage.

The administration's cancellation of Yucca was especially troubling because Obama has also been a stalwart backer of expanding nuclear energy. The attitude of supporters of nuclear power seems to be to push ahead with new reactors, even while passing responsibility for the waste on to future generations.

Especially in the wake of the Japanese crisis, that's clearly an irresponsible strategy. Since 1982, the federal government has promised to build a permanent storage facility for spent fuel. It's time to quit stalling. If the administration wants to build more nuclear power, it first has to produce a long-term strategy for handling the waste.

## **EPA Water Intake Rules Fall Short Of The Disaster Scenario (CLIMWIR)**

**NYT**

By Peter Behr

Climatewire, April 8, 2011

For many months, the nuclear power industry has been warning of an impending "train wreck" caused by the new regulations over air emissions, greenhouse gases and cooling water systems at existing reactor plants being prepared by US EPA.

The proposed water intake regulations arrived, issued by EPA last week in a still-unofficial form. But that train wreck didn't happen, according to a range of experts on various sides of the controversy.

Instead of mandating the construction of \$700 million cooling towers at the nearly 60 US nuclear plants that lack them, as EPA critics predicted, the agency has proposed a complex case-by-case assessment of how each plant should achieve protection standards for fish, shellfish and the small aquatic organisms that make up the bottom layers of the marine food chain.

The proposed regulations, which also affect large coal-fired power plants and factories covered by the rule, will be the subject of a 90-day public comment period before EPA's court-set deadline for final action, on July 27, 2012. Lengthy investigations will follow into the interaction of specific water intake and cooling systems at each plant and the marine environment where its cooling water comes from, said Christine Tezak, a senior research analyst with Robert W. Baird & Co. Inc.

Only then, under EPA's plan, would regulators decide which protective strategy should be required. And in nearly all of the United States, those regulators would be state officials who are delegated to handle water permits under the federal Clean Water Act. Regulators in different states see this duty in very different ways, Tezak said.

The EPA proposal, if it becomes final, would create a process for handling water intake issued after decades of debate and litigation. But every nuclear plant operator will have to calculate the cost of compliance and weigh that against other options.

The result could be more uncertainty for an electric power industry whose future is clouded already by unresolved policy issues on high-voltage transmission, nuclear power financing, a proposed national renewable energy standard, the future of shale gas production and the "smart grid." "There is a lot in this rule that is not yet definitive," Tezak said.

### **Protecting underwater life**

The EPA proposal authorizes options for protecting fish from being killed or mortally weakened by impingement – when fish and shellfish are trapped against screens at the entrances to water intake systems of large facilities – or entrainment, when larvae and other small organism are sucked into water systems and perish.

EPA estimates that 559 electric generators would be affected by the proposed rule, representing about 45 percent of total US generating capacity. The agency fixes the cost of its proposal at \$384 million annually and asserts that the benefits of the rule would be greater, although it doesn't document them. Since 40 percent of the fresh water withdrawn from US rivers, lakes and bays is pumped through cooling systems, the impact of protective regulation is obvious, environmental organizations say.

Some older nuclear plants may be ordered to build cooling towers, in order to reduce the flow of cooling water through their reactors. Some plant owners may opt to retire the plants instead, as Exelon Corp. has done with its Oyster Creek nuclear plant on New Jersey's Barnegat Bay. Faced with a state order to build a cooling tower, Exelon negotiated an agreement to close the plant on Dec. 31, 2019 – 10 years before the plant's operating license expires.

But other nuclear plant owners may be able to show state permit writers that their water intake systems aren't pushing marine life mortality above regulated limits; that less expensive changes could serve the purpose, such as extending a water intake pipe farther into a lake or bay; or that modified operations could protect organisms during the most critical spawning periods, Tezak said.

Significantly, the EPA proposal would not require cooling tower installation when existing nuclear power plants are uprated or modified to increase their power output. (Nuclear plant operators are seeking approval to add 3,000 megawatts of uprates by 2014.) And the rule does not affect new nuclear plants, which already are required to provide cooling towers.

"This proposal establishes a strong baseline level of protection and then allows additional safeguards for aquatic life to be developed through a rigorous site-specific analysis, an approach that ensures the most up to date technology available is being used. It puts implementation analysis in the hands of the permit writers, where requirements can be tailored to the particular facility," said Nancy Stoner, acting assistant administrator for EPA's Office of Water, in a statement last week.

NEI, the nuclear industry's chief trade association, kept its alarms ringing after EPA released the proposed rule. "A one-size-fits-all approach to environmental issues isn't in keeping with sound scientific analysis and will have severe and unnecessary regional economic impacts," NEI President Marvin Fertel said in a statement. "A blanket requirement to force the installation of cooling towers is unnecessary and will put regional economies and tens of thousands of jobs at risk by potentially forcing scores of power plants to shut down over the next decade."

Enviros accuse EPA of 'caving in' to industry

But Exelon, the largest US nuclear plant owner, had a more measured response.

"Rumors of a 'train wreck' caused by new EPA regulations are simply false," said Joseph Dominguez, senior vice president of federal regulatory affairs, public policy and communications for Exelon. "While each utility may have a different regulatory focus, we all generally agree that regulatory certainty is critical to how we plan for the future. EPA has done a good job listening to the industry and moving the ball forward."

The Edison Electric Institute, representing major utilities, also saw pluses and minuses based on its first look at the proposal: "We are pleased that EPA has chosen not to establish a blanket requirement that cooling towers be installed at all existing facilities. We're also encouraged that the agency appears not to be mandating cooling tower retrofits on existing facilities when modified." But EEI said the proposed rule is slanted to favor cooling towers as protection for small organisms pulled into cooling systems. The result could be "premature plant retirements," power shortages and higher consumer costs, EEI said.

The environmental organizations that have fought for a strong water intake rule say EPA knuckled under to industry pressure, producing a policy that falls far short of the need. Steve Fleischli, senior attorney in the Natural Resources Defense Council's water program, said, "EPA has chosen the path of least resistance by caving into industry pressure and punting this issue to state agencies that too often lack the resources and the will to stand up to industry on this issue."

Reed Super, attorney for Riverkeeper, a New York environmental organization, who represents environmental organizations in litigation over the issue, said EPA has the authority to set national standards but abdicated its responsibility, leaving it to the states. Energy companies "make it enormously difficult" for EPA and the states to effectively regulate water use, he said. "The states have proven they don't have the resources and revenue to make these rules effective. The states have said, 'We can't do this on our own.' If the rule goes through, there will be bureaucratic paralysis, with plants continuing to operate on expired [water intake] permits," he said.

EPA argues that its proposal will create a clear policy at last. EPA Administrator Lisa Jackson wrote to Rep. Fred Upton (R-Mich.) in December, "By the time the agency takes final action in July 2012, industry will have been waiting nearly twenty years for the regulatory certainty that facilitates sound investment decisions," she wrote. "The public will have been waiting just as long for reassurance that the aquatic environment is being protected. I do not want to delay any longer," she said.

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## **Radiation Monitoring To Continue In A Shutdown (WSJ)**

By Tennille Tracy

Wall Street Journal, April 11, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Scientists detect minute levels of Japanese nuclear radioactivity in air around Carlsbad (ALAMOG)**

Alamogordo (NM) Daily News, April 11, 2011

CARLSBAD - After testing air samples from three Carlsbad locations, local radio chemists have discovered minute traces of radiation from the Fukushima incident in Japan.

Researchers at the Carlsbad Environment Monitoring & Research Center, located next to New Mexico State University-Carlsbad, primarily measure the soil, air, water, native plants and animals in the region around the Waste Isolation Pilot Plant, a nuclear waste repository some 26 miles south of Carlsbad.

After studying three locations within 19 kilometers of the plant - Onsite, Nearfield and Cactus Flats - scientists pulled high-volume air samples running from March 14, just after the earthquake and resulting tsunami in Japan, until March 31, to study the possibilities of radiation from the Fukushima nuclear power plant reaching Carlsbad.

According to radio chemist Punam Thakur, the air samples yielded extremely small amounts of iodine 131, tellurium 132 and caesium 137. These traces can be attributed to Japan, but are also likely to be caused by events such as the radioactive fallout from global weapons testing in the 1960s.

According to Dr. George Mulholland, scientists also found small traces of caesium 134, which is definitely caused by the nuclear system in Japan.

"We are still very safe," said Thakur, "We are well below any action limits. The levels are so low that they will not affect any human health or the environment."

Thakur said the glass fiber filters containing testable air samples are weighed before and after processing, sorted for radioactive and non-radioactive materials, run through a 48-hour gamma analysis and the filter is then dissolved for CEMRC scientists to conduct more analysis.

The wind in Japan is not strong enough for high-level amounts of radiation to be carried to the United States, said Thakur, who said the Japanese have done a good job of containing nuclear energy with the help of their double containment wall.

The heightened amounts found in the air samples are very close to the minimal detectable activity level, said Mulholland.

"We will continue to monitor the situation very closely and will notify the public immediately in case of a change," said the director, emphasizing that measurements taken at the center are extremely precise.

For locals who remain concerned about internal radiation, CEMRC offers a free program to people within a 100-mile radius of WIPP. The research project, called Lie Down and be Counted, uses internal dosimetry to measure the tiny amounts of radioactive material typically found inside the human body.

The procedure is nonintrusive and participants are asked to follow a small number of steps before lying down on a test bed inside a counting room for 30 minutes, allowing for measurements to be made. Participants will then go over their results with a CEMRC scientist. Each participant contributes to scientific research conducted by the center.

The interim director echoed the same message to local legislators, Sen. Tom Udall and Congressman Steve Pearce, who toured the center Monday.

"In light of the events in Japan, we want to continue to remind area residents that the state's nuclear facilities are safe, and we keep regularly testing to ensure it," said Mulholland in a joint news release from the respective congressional offices.

"Our facility is here to give a certain level of security to the general public," he said. "We will continue to do everything we can to maintain the public's trust in New Mexico's nuclear programs."

Officials on a national level also echo the opinions given by local researchers.

"There is no health risk of radiation from the Fukushima incident to people in the United States or its territories," said representatives from the American Nuclear Society.

"The doses received by people per day from natural sources of radiation such as rocks, bricks, the sun and other background sources are 100,000 times the dose rates from the particles and gas detected in California or Washington state (because of the Fukushima incident)," according to a joint press release from the US Environmental Protection Agency and US Department of Energy.

## **New Doubts About Turning Plutonium Into A Fuel (NYT)**

By Jo Becker And William J. Broad

New York Times, April 11, 2011

On a tract of government land along the Savannah River in South Carolina, an army of workers is building one of the nation's most ambitious nuclear enterprises in decades: a plant that aims to safeguard at least 43 tons of weapons-grade plutonium by mixing it into fuel for commercial power reactors.

The project grew out of talks with the Russians to shrink nuclear arsenals after the cold war. The plant at the Savannah River Site, once devoted to making plutonium for weapons, would now turn America's lethal surplus to peaceful ends. Blended with uranium, the usual reactor fuel, the plutonium would be transformed into a new fuel called mixed oxide, or mox.

"We are literally turning swords into plowshares," one of the project's biggest boosters, Senator Lindsey Graham of South Carolina, said at a hearing on Capitol Hill last week.

But 11 years after the government awarded a construction contract, the cost of the project has soared to nearly \$5 billion. The vast concrete and steel structure is a half-finished hulk, and the government has yet to find a single customer, despite offers of lucrative subsidies.

Now, the nuclear crisis in Japan has intensified a long-running conflict over the project's rationale.

One of the stricken Japanese reactors at the Fukushima Daiichi plant uses the mox fuel. And while there has been no evidence of dangerous radiation from plutonium in Japan, the situation there is volatile, and nuclear experts worry that a widespread release of radioactive material could increase cancer deaths.

Against that backdrop, the South Carolina project has been thrown on the defensive, with would-be buyers distancing themselves and critics questioning its health risks and its ability to keep the plutonium out of terrorists' hands.

The most likely customer, the Tennessee Valley Authority, has been in discussions with the federal Department of Energy about using mox to replace a third of the regular uranium fuel in several reactors — a far greater concentration than at the stricken Japanese reactor, Fukushima Daiichi's Unit No. 3, where 6 percent of the core is made out of mox. But the T.V.A. now says it will delay any decision until officials can see how the mox performed at Fukushima Daiichi, including how hot the fuel became and how badly it was damaged.

"We are studying the ongoing events in Japan very closely," said Ray Golden, a spokesman for the utility.

At the same time, opponents of the South Carolina project scored a regulatory victory this month when a federal atomic licensing panel, citing "significant public safety and national security issues," ordered new hearings on the plans for tracking and safeguarding the plutonium used at the plant.

Obama administration officials say that mox is safe, and they remain confident that the project will attract customers once it is further along and can guarantee a steady fuel supply. Anne Harrington, who oversees nuclear nonproliferation programs for the Energy Department, noted that six countries besides Japan had licensed the routine use of mox fuel. She accused critics of "an opportunistic attempt" to score political points by seizing on Japan's crisis.

"Mox is nothing new," she said.

Even so, the critics say there is an increasing likelihood that the South Carolina project will fail to go forward and will become what a leading opponent, Edwin Lyman of the Union of Concerned Scientists, calls a "plant to nowhere." That would leave the United States without a clear path for the disposal of its surplus plutonium.

A cheaper alternative, encasing it in glass, was canceled in 2002 by President George W. Bush's administration. The energy secretary at the time, Spencer Abraham, is now the non-executive chairman of the American arm of Areva, a French company that is the world's largest mox producer and is primarily responsible for building the South Carolina plant.

After the cold war, the United States and Russia were left with stockpiles of plutonium, and the fear was that one or the other would reverse course and use the plutonium to make new weapons, or that, in what the National Academies of Science called a "clear and present danger," thieves could make off with it.

Plutonium is easy to handle because the radiation it gives off is persistent but relatively weak. The type used in weapons, plutonium 239, has a half-life of 24,000 years and emits alpha rays. They make the plutonium feel warm to the touch but are so feeble that skin easily stops the radiation. If trapped inside the body, though, alpha rays can cause cancer.

At the same time, plutonium is preferred over uranium as nuclear bomb fuel because much less is needed to make a blast of equal size. And while it is difficult to work with, it does not need to undergo the complex process of purification required for uranium.

The 43 tons of surplus plutonium in the American stockpile could fuel up to 10,000 nuclear weapons and even more "dirty bombs" — ordinary explosives that spew radioactive debris. Alternatively, they could fuel 43 large reactors for about a year.

After studying a range of options, the Clinton administration decided to build a mox fuel plant to dispose of a portion of the plutonium, awarding a contract to a consortium now called Shaw Areva Mox Services.

The rest of the plutonium was to be mixed with highly radioactive nuclear waste and immobilized in glass or ceramic blocks, making it difficult and dangerous for any thief to extract. The government judged the mox route to be more expensive, but the dual-track approach was seen as insurance should either fail.

That strategy also helped persuade Jim Hodges, the Democratic governor of South Carolina from 1999 to 2003, to sign off on plutonium shipments to the Savannah River Site. When the Bush administration canceled the glass-block disposal program, Mr. Hodges was furious.

His concern, he said in a recent interview, was that South Carolina would become a dumping ground if the mox program did not work out because of political or technical difficulties. "That site was never designed for long-term plutonium storage," he said. "We were concerned about health and safety." Now, he said, that dumping ground is in danger of coming to pass.

Mr. Abraham said that budget cuts had made it necessary to end one of the programs, and that with the Russians favoring mox, the administration had feared that going the other route would discourage Moscow from keeping its end of the bargain. (Only later, Mr. Abraham added, did he decide to join Areva in a largely advisory role.)

"The politics of it — both from a budget standpoint and in terms of the Russian comfort level — both argued for going to the mox-only approach," he said.

If mox fuel was to be licensed for widespread use, though, Washington first needed to have it tested in reactors. Duke Energy agreed to use French-made mox. The government paid \$26 million to prepare a reactor, according to the Energy Department. But a test in 2005 was aborted after the fuel began behaving strangely. Though the problem was ultimately traced to a different material in the fuel assemblies, Duke subsequently said it had no further plans to test or use the mox.

Along the way, the cost of the South Carolina project, originally about \$1 billion, nearly quintupled. Energy Department officials said cost increases were to be expected because the original estimates were rough approximations. The sprawling plant, which is just south of Aiken, S.C., is to be bigger in size than eight football fields, and its construction currently employs nearly 2,000 workers.

For other countries, plutonium is seen as an opportunity rather than a problem. Nearly all reactors produce some plutonium as a byproduct of splitting atoms in two, and it can be gathered from spent fuel and mixed with uranium to make mox.

The United States, worried that plutonium recycling would contribute to the global spread of nuclear weapons, gave it up during the Carter administration. President Obama's panel on America's nuclear future is considering whether to recommend a return to recycling.

The Japanese government has followed the recycling path, despite citizens' protests about possible safety risks. In the wake of the accident at the Fukushima Daiichi plant, officials at Areva, which supplied the mox fuel for Reactor No. 3 there, are cautioning against drawing hasty conclusions.

"Mox was not the cause of that accident, and the consequences of it have not been impacted by mox," said David Jones, a vice president at Areva, which has been providing on-the-ground assistance in Japan.

There is no clear evidence that plutonium has been released by the mox-loaded Japanese reactor; small traces found at the site could have come from other sources or from the site's other reactors. But Reactor No. 3 is one of three at Fukushima Daiichi that are judged to have undergone at least partial meltdowns, and experts are debating whether high radiation readings beneath the reactor vessels indicate that they have begun to leak. It would take full meltdowns, high heat and the rupture of a reactor's containment vessel to loft substantial plutonium into the air.

The dangers vary depending on the chain of events that led to the accident and the concentration of mox in the reactor core. Even so, studies show that a nuclear meltdown and containment failure in a reactor that holds mox would result in more cancer deaths than one in a reactor fueled only with uranium.

In 2001, Dr. Lyman, a Cornell-trained physicist who has led the battle against mox, published a detailed study in the journal *Science & Global Security* that concluded the fuel could produce up to 30 percent more cancer deaths.

Energy Department officials do not dispute that there would be additional health consequences, but they see them as less severe than the critics have predicted. In any event, they argue, a major release of plutonium would require an accident so severe that the additional health effects would amount to a "sliver on top of a mountaintop."

"It's not that significant — 10 percent or less," said Kenneth Bromberg, the department's assistant deputy administrator for fissile materials disposition.

"Proliferation causes a far greater danger to a far greater number of people than highly controlled use of this fuel in a reactor," said Ms. Harrington, his boss.

But critics say that in its efforts to move the mox program along, the government has undercut the nonproliferation benefits by allowing or entertaining exceptions to a number of its rules for safeguarding plutonium.

Disposing of plutonium by burning it in reactors involves moving and then storing mox fuel at a commercial site. Such a plan, they argue, could make the fuel vulnerable to theft before it is irradiated into something that would be too deadly to steal.

But at the request of Duke Energy, which had agreed to test the fuel, the government decided to exempt nuclear plants that burn mox from special security requirements imposed on other facilities that handled "strategic special nuclear material" like plutonium.

In doing so, the Nuclear Regulatory Commission overruled its own Atomic Safety Licensing Board, which had recommended a middle ground requiring some additional security. But the commissioners reasoned that mox encased in heavy assemblies would not be as attractive to terrorists as pure plutonium, and so did not require the same level of security.

Jeffrey Merrifield, one of the commission members who voted on the matter, now works for the Shaw Group, which is designing the mox plant with Areva. He said in a statement that he had not discussed jobs with the company until after the vote and that he works in a section unrelated to the mox project.

The Shaw Areva Group requested an exception to the government's material control and accounting standards for plutonium. Though the company subsequently withdrew the request, it led the Atomic Safety Licensing Board to rule that more hearings were needed to determine whether the Savannah River plant was capable of keeping track of the plutonium that is expected to move through it and on to commercial utilities.

In a statement, Shaw Areva said, "We continue to believe that the mox project meets all the regulatory requirements for licensing, and we welcome the opportunity to present our case" in hearings this year.

Ms. Harrington said security at the Savannah River Site was so tight that "I'd defy anyone to walk in and walk out with any of our plutonium."

Still, Mr. Abraham, the former energy secretary, says that given the crisis in Japan, he understands the hesitation of utilities to embrace mox.

"I can't imagine any utility would say, 'Yeah, we are going to ignore Japan,' " he said. "I think the dust has to settle here."

## **LANL Upgrade Could Cost \$80M (ALBQJ)**

By John Fleck

Albuquerque Journal, April 11, 2011

It would cost between \$40 million and \$80 million to upgrade the ventilation systems in a Los Alamos National Laboratory plutonium building to withstand a major earthquake, according to a preliminary estimate from the lab's federal managers.

The upgrades, which would take an estimated seven years to complete, are part of a proposal under discussion to retrofit the lab's Plutonium Facility to prevent dangerously radioactive plutonium from leaking from the building in a major quake.

The massive concrete blockhouse, built in the 1970s, is home to much of the lab's nuclear weapons work with plutonium.

The possible upgrade of the ventilation system is one of a number of steps being taken in response to a 2009 analysis by independent federal nuclear safety auditors who concluded that a worst-case earthquake followed by a fire could result in radiation exposures to the general public 100 times the limits set by federal regulations.

The auditors, at the Defense Nuclear Facilities Safety Board, said in an October 2009 letter to the Department of Energy that the problem "warrants immediate attention and action."

Board member Joe Bader said in a telephone interview that Los Alamos is making good progress on implementing safety improvements at the Plutonium Facility.

Congress established the board in 1988 to provide independent reviews of the nation's nuclear weapons laboratories and factories amid growing concern over environmental and safety concerns at the Cold War sites.

The board's work has played a key role in changes at Los Alamos aimed at reducing the risks posed by a worst-case earthquake, both for existing buildings and in new facility design.

Work with radioactive materials in the Plutonium Facility is done within sealed "glove boxes." The proposed upgrades are aimed at ensuring that the ventilation systems used to filter air from the glove boxes continue to safely function in a serious earthquake, ensuring that airborne plutonium cannot escape the building.

The upgrades would include new power supply systems designed to withstand an earthquake, according to a memo from National Nuclear Security Administration Los Alamos Site Office Manager Kevin Smith.

## **ABQNews: LANL Seismic Retrofit Costs (ALBQJ)**

By John Fleck

Albuquerque Journal, April 11, 2011

Some links and background for this morning's story about the cost of seismic retrofits to Los Alamos National Laboratory's Plutonium Facility.

The story:

It would cost between \$40 million and \$80 million to upgrade the ventilation systems in a Los Alamos National Laboratory plutonium building to withstand a major earthquake, according to a preliminary estimate from the lab's federal managers. The upgrades, which would take an estimated seven years to complete, are part of a proposal under discussion to retrofit the lab's Plutonium Facility to prevent dangerously radioactive plutonium from leaking from the building in a major quake.

NNSA notice to the DNFSB explaining the cost estimates (pdf)

NNSA sent me a more detailed explanation yesterday evening:

The LANL PF-4 major facility and infrastructure systems are aging and, as a consequence are beginning to require more extensive maintenance. Incremental work needs to be accomplished due to the extended service life. As a result, the facility is experiencing gradually increasing operating costs and reduced system reliability. Compliance with safety and regulatory requirements are mandatory for mission operations, and as they age become more costly and cumbersome to maintain due to the physical conditions of facility support systems and equipment. The Technical Area 55 Reinvestment Project, Phase III (TRP-III) is essential to maintain safety and enable cost effective operations so that the facility can continue to support critical Defense Programs missions and activities.

As discussed in the DOE implementation plan for DNFSB Recommendation 2009-2, the post-seismic-fire accident in PF-4 is being re-evaluated, and the results of that evaluation may drive upgrades to the active confinement ventilation system. NNSA and LANS are evaluating various options for these upgrades and their advantages and disadvantages. The TRP-III project is the currently envisioned path forward for funding any selected upgrade options.

Additional funding will be requested by NNSA for TRP-III as the project matures. The FY12 President's budget request includes funding for TRP-II. TRP-III will be developed as a separate, stand-alone line item construction project. Initial out-year funding projections for TRP-III have been identified by NNSA in the DOE/NNSA five-year planning window within the DOE/NNSA Program Planning and Budget Execution System. It is important to note that planning for TRP-III at this point is very preliminary and initial cost estimate ranges are based only on feasibility analyses and pre-conceptual alternative evaluations. Considerable development is required prior to inclusion of TRP-III funding in future President's budget requests.

Read more: ABQNews: LANL Seismic Retrofit Costs <http://www.abqjournal.com/abqnews/john-fleck-nm-science-mainmenu-31/28523-lanl-seismic-retrofit-costs.htm#ixzz1JCtXLYkg>

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## **DOE Found Not Responsible For Nuclear Waste Expenditures (NYT)**

By Hannah Northey

New York Times, April 8, 2011

A Washington state utility did not prove that the federal government's failure to dispose of nuclear waste from its embattled reactor forced the company to upgrade a \$60 million nuclear waste storage facility, a federal appeals court ruled yesterday.

The US Circuit Court of Appeals for the District of Columbia said Energy Northwest did not make the case that the federal government's failure to take waste from its 1,150 megawatt Columbia Generating Station required the company to modify its spent fuel storage facility.

The 26-year-old nuclear reactor and dry storage facility are located 10 miles north of Richland, Wash.

Energy Northwest sued the Department of Energy in 2004 for money it spent on moving spent nuclear fuel from its overcapacity spent fuel pools to a newly built dry storage facility. The US Court of Federal Claims then granted Energy Northwest more than \$55 million in damages last year.

But the appeals court yesterday vacated the claims court's ruling, saying Energy Northwest failed to prove the government's breach of contract required the company to make the upgrades. Therefore, the court said, the federal government is not required to pay the utility \$7 million for modifying the spent fuel storage facility or interest payments the utility made in connection with the project.

However, the appeals court ruled Energy Northwest was rightfully granted \$2.9 million in "overhead costs" associated with the storage facility.

Energy Northwest could not be reached for comment.

The Columbia Generating Station grabbed headlines yesterday after workers there cut into a pipe containing hydrogen, causing a small flame and prompting an evacuation. The Nuclear Regulatory Commission is now investigating the "unusual event" and said workers cut into a pipe that cools the reactor's turbine containing a hydrogen bubble, sparking the flame.

Meeting obligations

Energy Northwest signed a contract with DOE in 1983 to take spent nuclear fuel from the facility and store it in a permanent repository, which has not yet been built. The agreements followed in the wake of Congress directing the agency to prepare a permanent dump for spent nuclear fuel in 1982.

The contracts stipulated that the federal government was required to dispose of spent nuclear fuel generated by the reactor by 1998 and Energy Northwest was bound to prepare the waste for storage and contribute money to the Nuclear Waste Fund.

But as time passed it became increasingly clear that DOE was falling through on its obligation to take the waste. The Obama administration made that official last year by pulling support for the Yucca Mountain project in Nevada, prompting DOE to withdraw its application for the project and forcing utilities to store waste on-site (E&ENews PM, March 18).

Nuclear plants must store spent fuel in pools for at least five years and thereafter can leave the rods in water indefinitely, but the pools can fill up depending on their arrangement and must be moved to dry storage, according to NRC.

Energy Northwest determined by the early 1990s that the pool would reach capacity after 2003 if the government did not take the waste and decided in 1999 to build an "independent spent fuel storage installation" to store the fuel indefinitely in dry casks. The facility was approved to store spent nuclear fuel in 2002.



Energy Northwest then had to make modifications to get the spent fuel safety out of the wet pool and into dry storage casks, including the installation of a seismic device, moving large parts of the reactor and making changes to piping and pathways.

The federal claims court granted Energy Northwest \$56.9 million in damages in 2004, including \$1 million for site modifications, \$2.9 million in overhead costs and \$6 million for interest charges the company paid.

The federal government appealed the Court of Federal Claims' decision, saying that upgrading the storage facility was a responsibility Energy Northwest had taken on when signing the contract, which spelled out that nuclear plants are responsible for "all preparation, packaging, required inspections, and loading activities" necessary to prepare the spent fuel for storage.

DOE challenged all but \$47 million of the utility's awards.

The appeals court said Energy Northwest failed to "prove that its site modifications were actually caused by the government's breach," namely the government's failure to take the waste. The appeals court also dismissed the utility's argument that it would be required to change the facility again if DOE "eventually performs" and begins accepting spent nuclear fuel.

"The trial court should have required Energy Northwest to prove that the Columbia site modifications would not have been necessary but for the government's breach," the appeals court said.

## **Damaging Earthquake Here? (OAKR)**

By Beverly Majors

Oak Ridger, April 9, 2011

An earthquake could damage the structural strength of the uranium processing facility at the Y-12 National Security Complex, but the likelihood of a major earthquake in the Oak Ridge area is pretty slim.

However, the facility where bomb-grade uranium is processed – the 9212 Complex – was built during the Manhattan Project.

"Of course, a facility that old would not meet with today's standards," said Steven Wyatt, spokesman for the National Nuclear Security Administration's Y-12 Site Office.

Wyatt said the aging 9212 structure has been added on to over the years and has been modified, but if a major earthquake hit the area, the 9212 complex could be compromised. If that happened, structural damage could cause process failure and could start a nuclear chain reaction and release radiation.

Questions about earthquakes and other disasters brought the radiation release question and the Y-12 plant to the front burner after the Japan nuclear disaster in March.

A 9.0 magnitude earthquake and tsunami hit off the coast of Japan on March 11 that rocked Japan into a nuclear emergency, causing explosions and leaks of radioactive gas at three reactors that suffered partial meltdowns.

Unlike Japan, however, the Y-12 plant is a manufacturing facility and has no nuclear reactors.

Wyatt said many of the modifications of the 9212 Complex were made taking seismic design into consideration. Walls were fortified, and roofs strengthened the structural integrity when cross bracing, modifications to equipment and piping, and the addition of seismic shut-off valves for various processes were made.

"We also have a continuing effort under way to minimize the quantity of materials at risk to further reduce the consequences of any potential events, including earthquakes," Wyatt said. "We have spent millions of dollars to upgrade 9212 and under NFRF (Nuclear Facilities Risk Reduction) will spend additional funds for this facility."

Wyatt said Y-12 staff analyzed potential hazards pertaining to enriched uranium operations "very carefully" and have not identified any scenarios that would have an impact beyond a few meters from the facility.

Many of those hazards relating to building structures and equipment were analyzed using the current seismic requirements for nuclear facilities to determine their seismic structural capacities.

Y-12's seismic analyses are based on maximum horizontal ground surface accelerations and not the Richter scale, but if using the Richter scale, rates would be between 5 and 6 magnitude.

### **Area quakes**

Earthquakes have been recorded in East Tennessee throughout the century, but no records indicate an earthquake higher than 5.0 magnitude has occurred. An earthquake in 1998 with an intensity of about 3 on the Richter scale occurred about 2 miles from Oak Ridge. The last earthquake reported in the area was a 3.3 magnitude earthquake centered in Blount County last April.

According to the Y-12 Site Wide Environmental Impact Statement, there's no evidence of capable faults in the immediate area of Oak Ridge.

The most active fault, the New Madrid Fault Zone, is about 300 miles west of Y-12. Earthquakes recorded about 100 years ago, 1811 and 1812, and about 26 others over the years, have been felt in Oak Ridge, according to the Statement. Using the

Modified Mercalli Intensity model, those quakes would be on a scale of three to four, or about 3 or 4 on the Richter scale. Observed effects would include windows and doors rattling, walls might creak, and a person might feel a vibration.

One of the closest seismic events to Oak Ridge occurred in 1930; its epicenter was five miles from Oak Ridge. Using the intensity test, observed effects might include loose bricks, stones and tiles falling, masonry cracks and small earth slides.

A new research project at the University of Tennessee states Oak Ridge is in the area known as the East Tennessee Seismic Zone, which is the second most active area for earthquake activity in the eastern US

According to assessments by the Nuclear Regulatory Agency, the two reactors at TVA's Sequoyah Nuclear Plant in Soddy-Daisy have the nation's fourth-highest earthquake risk.

## **PNNL to help Ukraine with radiation detection (TRICITYH)**

Tri-City Herald (WA), April 11, 2011

**RICHLAND** – Pacific Northwest National Laboratory in Richland will be providing support as new radiation detection equipment is commissioned at the Kharkiv International Airport in the Ukraine.

The National Nuclear Security Administration and the Administration of the State Border Guard Service of Ukraine announced the project this week.

The US has been working with Ukraine since 2005 to provide radiation detection at more than 80 international crossing points in the country.

Ukraine is a potential transit country for illicit radioactive and nuclear materials moving between Europe and Asia.

PNNL also provides support for sites already equipped in Ukraine.

Read more: <http://www.tri-cityherald.com/2011/04/10/1444689/pnnl-to-help-ukraine-with-radiation.html#ixzz1JCufPfwM>

## **US helps Kharkiv airport with radiation detection equipment Read more: <http://www.kyivpost.com/news/nation/detail/102028/#ixzz1JCuhP8oo> (KYIVPOST)**

Kyiv Post (Ukraine), April 11, 2011

**WASHINGTON, D.C.** – The National Nuclear Security Administration (NNSA) and the Administration of the State Border Guard Service of Ukraine (ASBGS) today announced the commissioning of radiation detection equipment at the Kharkiv International Airport, a significant milestone in their shared effort to combat nuclear terrorism. Under a 2005 agreement between the US and Ukraine, NNSA's Second Line of Defense (SLD) Program has been working with ASBGS to provide radiation detection equipment at more than 80 international crossing points of all types throughout Ukraine.

This latest milestone reflects the ongoing cooperation between the US and Ukraine in preventing the illicit trafficking of nuclear and radioactive materials, one of President Obama's national security goals. As a potential transit country for illicit nuclear and radiological materials moving between Europe and Asia, the radiation detection systems installed at the Kharkiv airport and across Ukraine will improve global security by enhancing Ukraine's ability to detect, deter, and interdict nuclear smuggling.

"We appreciate Ukraine's commitment to advancing our shared effort to prevent dangerous nuclear materials from falling into the hands of terrorists, smugglers and proliferators," said NNSA Deputy Administrator for Defense Nuclear Nonproliferation Anne Harrington. "By preventing terrorists or would-be proliferators from smuggling nuclear materials across international borders, we are working to implement President Obama's unprecedented nuclear security agenda while promoting peace and security around the world. We look forward to our continued work with our Ukrainian partners to make the world safer and free of WMD threats."

The FY 2012 budget request submitted to Congress requests \$2.5 billion in FY 2012 and \$14.2 billion over the next five years to reduce the global nuclear threat by detecting, securing, safeguarding, disposing and controlling nuclear and radiological material, as well as promoting the responsible application of nuclear technology and science. It includes \$263.8 million for the Second Line of Defense Program, highlighting the critical role NNSA and its nonproliferation programs play in implementing the President's nuclear security agenda.

NNSA's Second Line of Defense program works collaboratively with foreign governments at land border crossings, airports and seaports to install specialized radiation detection equipment, mobile radiation detection equipment, and associated communications equipment. Through its SLD program, NNSA also provides training to host government law enforcement officers and other personnel to detect smuggled nuclear and other radioactive materials. NNSA has provided similar equipment to five other Central and Southeastern European countries

For a fact sheet on NNSA's Second Line of Defense Program, [click here](#).

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Established by Congress in 2000, NNSA is a semi-autonomous agency within the US Department of Energy responsible for enhancing national security through the military application of nuclear science in the nation's national security enterprise. NNSA maintains and enhances the safety, security, reliability, and performance of the US nuclear weapons stockpile without nuclear testing; reduces the global danger from weapons of mass destruction; provides the US Navy with safe and effective nuclear propulsion; and responds to nuclear and radiological emergencies in the US and abroad.

## **PNNL Marks Project Finish At April 19 Event (TRICITYH)**

Tri-City Herald (WA), April 11, 2011

**RICHLAND** – A celebration of the completion of the largest construction project in Pacific Northwest National Laboratory's 46-year history is planned April 19.

The Capability Replacement Laboratory project included the construction of several new building on PNNL's main campus in north Richland and work to extend the operating life of four buildings on the Hanford nuclear reservation just north of Richland.

The new and renovated buildings cost more than \$300 million and house 750 PNNL staff members.

Speakers at the celebration will include officials from the Department of Energy, the National Nuclear Security Administration, Department of Homeland Security and PNNL.

The event is planned for 9 a.m. at the Physical Sciences Facility courtyard at PNNL off Horn Rapids Road.

Read more: <http://www.tri-cityherald.com/2011/04/10/1444691/pnnl-marks-project-finish-at-april.html#ixzz1JCt7wVB>

## **Pay Increases Still Available At PNNL, Hanford (TRICITYH)**

By Annette Cary

Tri-City Herald (WA), April 11, 2011

**RICHLAND** — Some Hanford contractors and Pacific Northwest National Laboratory employees should be getting larger paychecks than expected this year, despite a declared pay freeze.

Energy Secretary Steven Chu announced in December that he was freezing the salaries and bonus pool increases for 75,000 federal contractor employees, including those at Hanford and PNNL.

The freeze was intended to be in line with a two-year pay freeze for workers employed directly by the federal government, including workers at the Department of Energy's Hanford Office of River Protection and Richland Operations Office.

However, federal employees continue to get "step" increases, which are described by DOE as percentage increases on a predetermined schedule tied to increased experience for employees with good performance.

DOE said last week that Chu would allow the same standard to be applied to DOE contractor employees.

Money equal to 1.5 percent of the total payroll for each facility would be available for the pay increases. The money would be retroactive to Jan. 1, the start of the pay freeze, according to DOE.

"Each individual site is formulating plans about how to implement" the new funding, DOE spokesman Tom Reynolds, in Washington, D.C., said in a statement.

DOE Hanford officials were talking with DOE officials in Washington, D.C., last week about how they would implement the new direction, said DOE Hanford spokesman Geoff Tyree. They will be talking with contractors in the next few days, he said.

An estimated 12,000 workers are employed on projects related to environmental cleanup of the Hanford nuclear reservation. But the pay freeze did not include thousands of workers, including those at Hanford's vitrification plant, those working for subcontractors and those covered by a collective bargaining agreement.

At PNNL, which employs about 4,500 people in Richland, the money will be used to make some targeted salary adjustments, such as bringing some staff salaries in line with what is common in the marketplace for a particular field, said PNNL spokesman Greg Koller.

The money cannot be used for merit raises or cost of living increases, he said.

Although some contractor workers now will see some relief from the pay freeze, it remains in effect for two years.

"As our nation continues to recover from these challenging economic times, and we work to address the massive deficits we inherited, I am asking our contractor staff, who represent the best and brightest in their fields, to join the federal work force in playing a part," Chu wrote in a memo to employees in December.

At Hanford, savings from the pay freeze are planned to be used for additional environmental cleanup work.

Annette Cary: 582-1533; [acary@tricityherald.com](mailto:acary@tricityherald.com); More Hanford news at [hanfordnews.com](http://hanfordnews.com).

Read more: <http://www.tri-cityherald.com/2011/04/10/1444530/new-money-for-pay-increases-available.html#ixzz1JCuyoYn5>

## **NSA Chief To Speak At RI Cyber Security Forum (AP)**

Associated Press, April 10, 2011

**WARWICK, R.I.**—The director of the federal National Security Agency and members of Rhode Island's congressional delegation are set to discuss the impending threat of a cyber attack at a symposium in Warwick.

The symposium is scheduled to take place Monday at the University of Rhode Island. Organizers say it will address the need for partnerships between government, academia and industry in anticipating and preventing cyber attacks and other issues related to the growing threat of such attacks. They say speakers will include professors from the university, federal officials and industry specialists.

Gen. Keith Alexander, head of the NSA, will deliver the keynote address at the symposium, and Rep. James Langevin and Sen. Sheldon Whitehouse, Democrats from Rhode Island, will deliver opening remarks.

## **INTERNATIONAL NUCLEAR NEWS:**

### **Somber Ceremonies Mark 1 Month Since Japan Tsunami (AP)**

By Koji Ueda And Shino Yuasa, Associated Press

Associated Press, April 11, 2011

**RIKUZENTAKATA, Japan** – Somber ceremonies and moments of silence were planned Monday to mark one month since a massive earthquake and tsunami devastated Japan's northeast coast, killing as many as 25,000 people.

But with thousands of bodies yet to be found, a tsunami-flooded nuclear power plant still spewing radiation and more than 150,000 people living in shelters, there was little time for reflection on Japan's worst disaster since World War II.

"We offer our deepest condolences to those who lost their loved ones," Chief Cabinet Secretary Yukio Edano said Monday at a brief news conference where he pledged the government would do whatever it could to help survivors and end the nuclear crisis. "We are sorry for causing inconvenience and difficulties to those who still live in shelters."

The 9.0-magnitude earthquake and the tsunami it generated flattened communities along hundreds of miles (kilometers) of coastline. The government has estimated the cost of damages from the disaster could grow to \$310 billion.

Frustrations are running particularly high among people like Atsushi Yanai, a 55-year-old construction worker forced to live in a shelter not because his home was destroyed but because it is within a 12-mile (20-kilometer) evacuation zone around the crippled Fukushima Dai-ichi nuclear plant. Government officials have ordered people out of the zone because of radiation concerns, and those farther from the plant may also be told to leave as the crisis drags on.

"We have no future plans. We can't even start to think about it because we don't know how long this will last or how long we will have to stay in these shelters," Yanai said. "This is what is so hard for us."

Ahead of the anniversary, nuclear safety official Hidehiko Nishiyama apologized for the worry and inconvenience caused by the radiation spilling from the plant, where cooling systems disabled by the March 11 tsunami still have not been restored and likely won't be for several months.

"We've done all we could to come this far," Nishiyama said Sunday. "Unfortunately, we still cannot give any timeline for when we can move on to the next phase, but we are hoping to achieve a sustainable cooling system, contain radiation and bring the situation under control as soon as possible."

Plant operator Tokyo Electric Power Co. reiterated Sunday that it is not considering entombing the hot reactors in concrete, as was done at Chernobyl in 1986 when a reactor fire burned out of control. Japan's nuclear crisis is the world's worst since then.

The crisis has sparked several anti-nuclear protests, but one of the largest took place Sunday in a Tokyo neighborhood where many students live. Thousands of people carrying "No nukes" signs gathered for a rally and then marched through the streets chanting and beating drums.

Elsewhere in the capital, about 140 miles (220 kilometers) southwest of Fukushima Dai-ichi, protesters demanding the closure of a different plant chanted "No more Fukushima" as they marched through government headquarters and past the Nuclear and Industrial Safety Agency.

Sunday also saw Japanese and US troops fan out along the coast for another all-out search for bodies by land, air and sea.

Television news showed them using heavy equipment to lift a boat washed inland by the tsunami so they could search a crushed car underneath. No one was inside.

The Japanese military said Monday that US and Japanese troops found 103 bodies during the one-day operation, more than the 70 they located during a three-day push with even more troops a week ago.

Just 13,000 deaths have been confirmed so far, and many bodies have likely washed out to sea and will never be found.

Some families who had been living in shelters were able to take a tentative step toward normalcy over the weekend, moving into boxy, gray temporary houses lined up in a junior high school parking lot in the port city of Rikuzentakata.

Each unit is just 320 square feet (30 square meters), but replete with modern comforts such as televisions, refrigerators, microwaves and washing machines — a welcome upgrade for the homeless, many of whom have slept on the floors of school gyms for a month.

So far there are 36 houses — just one for every 50 applicants. A lottery decided who got to move in.

"It's a mystery how we were lucky enough to be chosen. It's like a dream," said Sakai Sasaki, 80, who had been living with relatives.

The city hopes to complete 400 units in eight different locations by mid-May, although that will still cover only about one-quarter of the families in need. Other areas have similar plans, but Rikuzentakata's units are the first to be completed.

"When you think of the feelings of the evacuees, we want to build them even a day faster, or make just one unit more," said Saeki Suga, an official in charge of the housing plan for the city.

## **In Japan, New Attention For Longtime Anti-Nuclear Activist (WP)**

By Michael Alison Chandler

Washington Post, April 11, 2011

Long before the ghostly images of Fukushima's nuclear workers in white suits and gas masks appeared in newspapers and magazines around the world, photographer Kenji Higuchi was recording the lives and risks of the industry's front-line laborers.

The 74-year-old, with longish gray hair, published some of the first images of nuclear workers toiling inside a reactor in 1977. He documented the struggles of radiation victims and, over a half-century, wrote 19 books, including "The Truth About Nuclear Plants" and "Erased Victims." But in this energy-hungry nation, his no-nukes message did not carry very far. "I was the least popular photographer in Japan," he said.

Everything changed after the meltdowns in the tsunami-stricken reactors. His schedule filled with invitations for interviews and speaking engagements; his book sales went up; and a 15-year-old British documentary featuring his research on "nuclear gypsies," subcontractors hired to do the riskiest jobs at plants, is enjoying a revival on YouTube.

"I never imagined I would have so many people interested in helping me," he said recently.

In the midst of the radiation crisis, in which miles of ocean and farmland have been contaminated and 80,000 people have been evicted from their homes, there lies a seed of hope for the people who warned that this day would come.

Until now, anti-nuclear activists here have counted some local victories, preventing plants from moving in or quashing the use of plutonium-laced nuclear fuel in their neighborhoods. But they say their national influence has been virtually nil.

They describe a block of pro-nuclear scholars, politicians and businessmen who have brought more than 50 reactors online in the past 35 years, making Japan the world's third-largest producer of nuclear power.

But in the past few weeks, former chiefs of key nuclear safety commissions and government agencies have apologized for overlooking important safety concerns. And aging activists, who got involved in local battles opposing reactors in the 1970s or were inspired after the 1986 Chernobyl accident, are getting re-inforcements.

A wave of younger people are checking daily Geiger-counter readings online and carrying "No Nukes" signs up and down the streets of trendy Tokyo neighborhoods. Two separate protests in the capital on Sunday attracted more than 10,000 people, who called for a moratorium on nuclear power.

"The times are changing," said Yukio Yamaguchi, co-director of the Citizen's Nuclear Information Center, Japan's most prominent anti-nuclear organization, at a meeting attended by nearly 300 people, including some who traveled more than 500 miles.

Higuchi is more optimistic that a moratorium on nuclear power production is possible. "The economic giants may still be saying, 'We will not stop nuclear power,' but the people, I think, will rise up."

His inspiration

The son of a poor rice farmer in Nagano, Higuchi came of age in rapidly industrializing post-war Japan. He left the farm at age 22 for Tokyo, where he found a job as a heavy machine operator in a steel plant. At first he was happy. "I will be able to eat for the rest of my life," he recalled thinking. But the job was dull and the fumes made him dizzy.

A few years later, he was inspired by a documentary photo exhibit and enrolled in a photojournalism program. Since then, he has worked as a freelance writer and photographer, recording how the environment and common laborers suffered during Japan's economic boom.

In 1973, he photographed the clenched fingers and distorted features of a girl born with Minamata disease, a neurological disorder caused by mercury poisoning. Two years later, he waded into waters inked black from an oil spill in the Seto Inland Sea, and in 1984 captured the mass funeral for 86 coal miners who died in a fire in Kyushu.

Higuchi focused much of his attention on the growing nuclear power industry. He documented the 16-year legal battle of Kazuyuki Iwasa, the first subcontracted nuclear worker to seek compensation for radiation exposure. Doctors diagnosed his radiation burns, but the courts never affirmed that his illness was work-related.

While researching that story, Higuchi captured one of his most defining photographs, taken during his lone visit to a power plant.

The tour at the Tsuruga Nuclear Power Plant, where Iwasa had worked, took months to arrange. After his initial requests were denied, he moved into a cheap hotel room near the plant and stood at the front gate every day for a week. When that didn't work, Higuchi asked the power company if he could photograph their oft-touted security measures. That worked.

He arrived at the plant one day in July 1977 with three cameras and 15 rolls of film. He took pictures of the workers' safety routines, changing out of street clothes into bright orange coveralls and masks, and stripping down to their underwear at the end of their shifts and putting their hands and feet into machines that test their exposure.

He also took photos of the men doing their jobs, including one that he has published many times since, of three workers emerging from a dark hole near the center of the reactor, wearing heavy boots and gas masks, pushing a dolly.

The images he brought back were revelatory to many who had thought that nuclear workers sat in control rooms.

"I was always told these plants were an assembly line of super-modern machines," said Hideyuki Ban, the other co-director of Citizen's Nuclear Information Center. "In reality, pipes leak and workers have to go in and clean up with a rag."

Higuchi said he wanted to show that the latest nuclear technology still relies on pre-modern labor force: "the sweat and the sacrifice of human beings."

The photos were published in two prominent Japanese magazines that year.

Renewed interest

Higuchi received awards from anti-nuclear activists at home and abroad. But over time, it became increasingly difficult to sell his photos in Japan. He supplemented his freelance income by managing an apartment building. Occasionally Japanese tabloid magazines would publish his controversial images of sick workers, running them in between pages of lingerie-clad women.

But since the accident on March 11, he said, his work is getting more attention than ever.

When the Fukushima disaster struck, Higuchi did not grab his camera and drive to the plant; he was exposed to radiation during his last visit to an evacuation zone. But he went to a shelter at an arena outside Tokyo and sneaked past a barricade to interview the families. When a security guard caught him and erased all his photos, the elderly man got into a brief pushing match with the guard.

Higuchi said he is still trying to recover the images on his memory card. He wants to share them with the world.

## **Giving Comfort To The Youngest Quake Survivors (USAT)**

By Mary Brophy Marcus, Usa Today

USA Today, April 11, 2011

Affection.

That's what the traumatized children of Japan need in the wake of a massive earthquake and subsequent tsunami that rocked the country one month ago, pediatric experts say.

Just back from Japan, after three weeks caring for the youngest survivors, critical care pediatrician Kozue Shimabukuro tells the story of a boy she met in Yamada, one of the towns heavily damaged after the catastrophic magnitude-9.0 quake.

"There was nothing wrong with him on the outside," Shimabukuro says of the boy about 8 years old. "He just wanted to be with us."

From the time she arrived in Yamada on March 21, the child showed up at the medical clinic every day. "Days go by and I realize he was alone," she says.

A native of Okinawa, Shimabukuro has studied and practiced medicine in the United States for the past 15 years and has worked in other disaster-struck countries, including Burma and Thailand.

Initially in Yamada, she says she treated some children for asthma and mild skin infections, but most of the youngsters who survived were fairly healthy. Her greatest concern is for their mental health, she says, because many, like the young boy, appeared to have lost family.

"I kept asking the boy, 'So who are you staying with?' And he wouldn't say anything. He was like the master at folding origami. I asked him, 'Who taught you this?' " He told her that his grandmother used to say that kids nowadays play too many video games.

"He said she told him, 'If you do origami, you'll be smarter.' But I never saw his grandmother," Shimabukuro says. She says after the aftershocks — which were frequent — the boy would grab onto her and ask if he was going to be OK.

The organization Save the Children estimates about 100,000 children are among the displaced population in Japan. That figure is still growing, says Irwin Redlener, president and co-founder of the Children's Health Fund and the director of the National Center for Disaster Preparedness at Columbia University's Mailman School of Public Health. "We have an increasing number of people being evacuated from varying distances from the Fukushima Dai-ichi nuclear power plant," Redlener says. The plant was damaged and is still vulnerable to aftershocks.

He says the displaced children will need water, food, a place to sleep, toys and schooling. Children with chronic health conditions such as asthma and diabetes are especially vulnerable. But equally at risk is their mental health, he says.

"They'll require a lot of support from parents and community, but if parents are themselves stressed and community resources are limited, you've removed critical buffers that protect children under stress," Redlener says.

He says that a well thought out recovery plan that involves getting schools operating again is key — that studies show ongoing disruption to a child's education adds to anxiety and can lead to long term disabilities, such as depression.

The acute phase — stretching from days after the event to about three months — is hardest on children, says Henri Ford, a surgeon at the Children's Hospital Los Angeles.

"The good thing is children are resilient," Ford says. "Get them beyond the acute phase and shower them with hope and they will come out OK in the end."

Wealthy countries tend to recover from disasters faster than poor countries, says Steven Berkowitz, associate professor of clinical psychiatry and director of the Penn Center for Youth and Family Trauma Response and Recovery.

Japan also has a close-knit society with a strong sense of family that Berkowitz says he hopes will help it mend.

"They're more likely to do the kinds of things for kids that need to be done as a society and as a nation," he says.

Shimabukuro says one 7-year-old girl really left a mark on her heart.

"She said since yesterday she can't walk," Shimabukuro says. "She's feeling really weak in the knees. So I checked her and neurologically everything was fine. I told her she is a little bit dehydrated. Nothing is wrong.

"But she kept crying and crying for 30 minutes," Shimabukuro says. "I hugged her. She was sobbing and then she told me, 'I want my daddy to give me a piggyback ride again. I want him to carry me on his back because I can't walk.' "

The child's father had died.

"I felt like I was so useless," Shimabukuro says.

Later, Shimabukuro says, she saw what the best medicine for the child was:

"I saw the grandpa. He carried her on his back."

## **Fukushima's Radiation Fallout (WSJ)**

**The dangers are tiny outside Japan. But we need to study further the long-term effects of low doses.**

By David J. Brenner

Wall Street Journal, April 11, 2011

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## **Too Much Trauma (NSWK)**

**Another massive earthquake shook Japan last week. How much can one nation take?**

By George A. Bonanno

Newsweek, April 11, 2011

First Japan was hit by a triple whammy. The country of 127 million has just endured one of the largest earthquakes in recorded history, followed by a shockingly voracious tsunami. Together, these two brutes of nature wreaked havoc on the towns and villages of the northern Japanese coastline. If only the damage had stopped there. When the deadly combo of earthquake and tsunami breached the protective barriers and engulfed one of Japan's oldest nuclear-power plants, a nuclear nightmare began, one that at this point has shown no clear signs of ending.

Then last Thursday a 7.4 quake hit, knocking out power for more than 3 million, and again shaking the country to its core. How could any nation bear so much?



The simple fact is that the Japanese archipelago is no stranger to cataclysmic events. Over time, the Japanese have endured more than their share of devastating natural disasters. As a people, they have always coped remarkably well—so well, in fact, we are left wondering if there isn't something especially resilient about them. In fact, the Japanese are the only people on this planet to fully confront the horror of nuclear destruction, and to survive it. The bombing of Hiroshima and Nagasaki near the end of World War II has become the archetypal nightmare of our time. Strangely, those events share some striking similarities with the recent compound disaster.

The sun shone brightly in Hiroshima on the morning of Aug. 6, 1945. Its citizens were just beginning their day when at 7 a.m. an air-raid siren sounded. It was wartime, so bombing was hardly unexpected. Most people were not especially worried. By 8 a.m. the all-clear was given, and people went back to their business. Minutes later the first nuclear weapon ever dropped on a civilian population exploded in a blinding, noiseless flash. Some 40,000 people were killed instantly. Many others were burned beyond recognition. The power of the blast was so strong it literally tore people's clothing off and flattened buildings as if they were made of cardboard. As the stunned nation began to dig itself out, sporadic fires appeared. At first the fires were isolated—one here, one there. But soon the heat and air movement whipped the flames into a consuming blaze. It was a scene straight out of hell, and it still wasn't over. Thousands more perished in the days that followed. Many of those who survived the initial blast later succumbed to nightmarish afflictions: bleeding, ulceration, and worst of all the ghastly consequences of radiation sickness.

Psychological trauma was not a familiar concept in those days. After a disaster, scientists did not rush in to collect data. Mental-health professionals did not flood the area offering crisis counseling. However, many survivors kept diaries. And surprisingly, because of the unknowns surrounding nuclear weaponry, the US military conducted a large-scale survey. The resulting information offers a resounding portrait of the resilience of the Japanese people.

The city of Nagasaki was also bombed. Military journalist George Weller was there soon afterward. His dispatches, recently discovered, tell us that within a month of the blast the incoming trains were already jam-packed with returning survivors. Few had any possessions to speak of. Yet they were returning to their shattered city en masse—to stake out their former homes, to plant gardens, and to begin life anew.

A remarkable tenacity, but is it unique to the Japanese? In fact, overwhelming evidence from natural and man-made disasters shows that all peoples—not just the Japanese—seem to be able to endure just about anything nature throws their way. There is a cost, to be sure. Disasters cause trauma reactions. They cause depression and grief and anxiety, and they increase the prevalence of illness and physical problems. But this harm is not nearly as pervasive as you might expect. My colleagues Chris Brewin, Krys Kaniasty, and Annette La Greca and I recently concluded that, at their maximum impact, no more than 30 percent of a population exposed to disaster will suffer enduring psychological problems. That's still a lot, but most of the time the totals are considerably lower. Some people struggle for a period and then recover. Sometimes people struggle but only keep getting worse. In almost every case, however, wherever adequate research evidence was available, we found that the most common response to disaster was a speedy recovery and no lasting psychological harm.

In short, resilience.

How do we do it? The science is not all there yet, but the best explanation is that we are wired for it. Because disasters are so hugely threatening, they activate our most primitive brain regions. We can't help but experience intense fear and distress. We panic. We focus. We flee, or we go numb. These reactions are natural. We are designed to have them, and they are wonderfully effective in helping us mobilize our defenses and deal with threat. The initial jolt usually lasts anywhere from a few minutes to a few hours to a few days. Once it subsides, most of us can begin to take stock. We assess the danger and the damage, and we regroup. Most of the time we find we are going to be OK.

Even after the most earth-shattering disasters this holds true. Although the 9/11 attacks stunned New York City, the psychological trauma there was relatively short-lived. Of course, there were cases of posttraumatic stress disorder and other severe reactions after the attack. But by the time several months had passed, the prevalence of psychological trauma was surprisingly low. New Yorkers were busy pulling the city back together. The same was true in London after the Blitz of World War II, in Southeast Asia after the terrible tsunami of 2004, and in countless other disasters for as long as we've been enduring them.

Is that all there is to it, then, for the Japanese? Unfortunately, no. One of the looming difficulties in the crisis in Japan is that it just doesn't seem to want to end. The problems at the nuclear-power plant have continued. There have also been repeated aftershocks and smaller earthquakes that have compounded recovery efforts and inflicted even more damage.

A different kind of problem is the growing mistrust of the government. The administration in Tokyo has consistently failed its people by providing confusing and often inaccurate information about the extent of the damage. They have also been frustratingly vague about the possible dangers of radiation contamination. This does not help. Studies of the SARS epidemic of 2004, for example, demonstrated that providing the public with realistic information about both risk and recovery helps reduce worry and fear and promotes community action. When the opposite happens, when the chips are down and a nation feels

betrayed by its leaders, the results can be caustic. Government mistrust after disaster erodes morale, disintegrates community, and, as Dutch trauma researcher Berthold Gersons and his colleagues have observed, leads to a sense of "collective secondary victimization" that if unchecked can create a "second disaster."

How long can the Japanese endure? Relief and recovery have been slow. The Japanese have survived earthquakes and tsunamis. They have survived Hiroshima and Nagasaki. Humans are inherently resilient, and the Japanese just may be among the most resilient of all. But the sobering fact is that there are limits to human endurance. When adversity is relentless, when we are confronted with repeated casualties, repeated emergencies, endless streams of bad news, our ability to respond does begin to break down.

Let's hope that doesn't happen in Japan. Let's hope for some good news and fast.

Bonanno is a professor of clinical psychology at Columbia University. This essay is adapted from his book *The Other Side of Sadness*.

## **Japan Orders Nuclear Plant Operators To Obtain More Emergency Generators (NYT)**

By Andrew Pollack, Matthew L. Wald

New York Times, April 10, 2011

Radiation readings spiked sharply in one reactor at the stricken Fukushima Daiichi nuclear plant after a powerful aftershock late Thursday, according to data released by the government, a development that might indicate new damage to the already compromised reactor.

But the plant owner, the Tokyo Electric Power Company, said the gauge used to measure radiation was most likely broken.

The high radiation was measured in the drywell of Reactor No. 1, directly below the reactor pressure vessel and part of the primary containment that is a crucial barrier preventing the escape of radioactive materials. The drywell reading raised the worrisome possibility that highly radioactive water had escaped, and perhaps even material from the nuclear core, although this was far less likely.

Experts said, however, that keeping water in the drywell could limit the damage from any leak.

On Tuesday the United States Nuclear Regulatory Commission set off alarms when it said that such a leak might have happened in the No. 2 reactor at the plant, based on a high radiation reading in its drywell. But the agency has since appeared to step back slightly from that theory, emphasizing that its judgment was based on speculation because no one can get close enough to the reactor to judge what is really happening.

And on Saturday, Eliot Brenner, a spokesman for the commission, agreed with the power company's assessment that the high reading in the No. 1 reactor was most likely in error because there had not been a sharp increase in pressure or temperature in the drywell.

The radiation readings, while still quite high, were down Friday from the highest level, which was recorded a half-hour after the 7.1- magnitude aftershock.

The Nuclear Regulatory Commission had expressed concern in a recent report that the damaged nuclear power plant could prove unusually vulnerable to aftershocks.

Peter Yanev, a longtime consultant specializing in the earthquake resistance of nuclear power plants, said that the aftershock late Thursday had not been strong enough to cause new damage to previously undamaged equipment. But the Japanese authorities have not released detailed information on the extent of damage from the initial earthquake nearly a month ago, he cautioned. "If you have something severely damaged, teetering, it can fall over" in a later shock, Mr. Yanev said.

The Japanese government, meanwhile, ordered reactor operators on Saturday to bring in additional emergency diesel generators, as the aftershock again demonstrated the potential for such events to shut down portions of the power grid.

The new government order came after problems were reported at two other nuclear power plants, both run by the Tohoku Electric Power Company. The plants suffered temporary losses of cooling to spent fuel pools, electricity cutoffs and problems with backup diesel generators after Thursday's aftershock.

The Higashidori plant lost all outside power. Although it had three backup diesel generators, two were out of service for periodic maintenance. The remaining one worked for a while, but later, after some outside power was restored, it stopped because some of its oil spilled out.

At the Onagawa plant, three out of four outside power lines went down, but the plant continued to operate on the fourth line. Although diesel backup was not needed, it was discovered that one of the plant's two diesel generators had been out of order since April 1.

"There was no problem this time," said Hidehiko Nishiyama, deputy director general of the Nuclear and Industrial Safety Agency, which regulates the atomic energy industry, at a news conference. However, he said, nuclear plant operators will now be required to have more backup diesel generators available and working.

Mr. Nishiyama said his agency was also trying to find the causes for the loss of cooling to spent fuel pools. The cause of one stoppage seemed to be essentially a blown fuse, Mr. Nishiyama said.

Loss of cooling can allow spent fuel to heat up, which can lead to the release of radioactive materials.

The government also moved to ban the planting of rice in soil containing too much radioactive material, which has been released from the Fukushima Daiichi plant in the weeks since a catastrophic earthquake and tsunami. Sales of some milk, vegetables and fish have been prohibited because of contamination, but the new measures affect the nation's staple crop, a foundation of its culture as well as its diet.

The new policy on rice will ban planting of the crop in soil that has more than 5,000 becquerels of cesium-137 per kilogram of soil.

So far, radiation testers have found only two spots in northeastern Japan, both in the town of Iitate, 25 miles from the Fukushima Daiichi plant, that has had cesium levels that high. Cesium-137 can damage cells and lead to an increased risk of cancer.

The national and prefectural governments are now hurriedly performing broader soil surveys to identify which areas would be off limits to planting.

With planting about to begin, "we don't have so much time," said Sumito Yasuoka, an official in the Ministry of Agriculture, Forestry and Fisheries, who said farmers pressed the government to let them know if they could plant their crop. The government also wants to assure consumers that the rice they eat will be safe.

The level of 5,000 becquerels per kilogram was chosen because rice grown in such soil would be expected to end up with about 500 becquerels of cesium 137 in the rice. That is the existing limit for vegetables and some other foods, Mr. Yasuoka said.

Fukushima Prefecture is the nation's fourth-largest rice producer, and rice is its biggest crop, so any ban on planting would cause financial hardship.

"It hurts terribly," said Yoshinori Sato, an official of an agricultural cooperative in Fukushima Prefecture with 13,000 households as members. Mr. Sato said that about half the rice acres his co-op's members hoped to plant this year might be off limits, either because of radiation or because of tsunami damage.

Mindful of the sensitivities, Michihiko Kano, the minister of agriculture, visited Iitate on Saturday and promised that farmers who were not allowed to grow rice because of soil contamination would be compensated.

## **Japan, In Wake Of Nuclear Crisis, Orders Summer Energy Cutbacks (WP)**

By David Nakamura, Kyoko Tanaka

Washington Post, April 10, 2011

The Japanese government ordered businesses and residents last week to cut their energy use by as much as 25 percent this summer to avoid power outages after the crisis at the Fukushima Daiichi nuclear plant, a decision lawmakers acknowledged could have economic ramifications.

Since the March 11 earthquake and tsunami that destroyed the Daiichi facility, large swaths of Japan's main island, including Tokyo, have endured rolling blackouts as the Tokyo Electric Power Co. (Tepco) rations electricity. Government leaders say they would like to end the blackouts but remain concerned about overtaxing the electrical grid during the summer months, when energy consumption spikes because of air-conditioning usage.

Under the government's plan, large businesses would be required to reduce consumption by 25 percent or face financial penalties, said Renho, a member of the ruling Democratic Party of Japan (DPJ) who goes by one name. Lawmakers will ask smaller businesses to cut back voluntarily by 20 percent and residential households by 15 percent, she added.

"Cutting the normal energy capacity by 25 percent will make a difference in the way factories are run, and the productivity might decrease and lead to a lessening in terms of international competition for Japan," Renho, who heads an energy task force, said in an interview Thursday at her office, where the lights were turned off in the hallways.

The announcement has set off a scramble in the industrial sector to figure out how businesses can comply. Japan's powerful business lobby, the Keidanren, said it will consider measures such as flexible schedules, extended holidays and four-day workweeks, along with the installation of in-house power generators.

Hidetoshi Nakagami, chairman of a government energy advisory committee, suggested that department stores remain closed one day a week and that companies housed in the same skyscrapers coordinate their vacations so entire buildings can go

dark. The Japan Automobile Manufacturers Association is exploring a rotating schedule in which companies in various sectors — such as automobiles, electrical appliances and steel — would take turns operating their factories.

And for the first time in more than 60 years, Japan is considering implementing daylight saving time, according to Banri Kaieda, head of the Ministry of Economy, Trade and Industry. Although Renho said the measure is unlikely to be adopted this year, the fact that Kaieda raised the idea illustrates the scope of the power emergency.

Rebecca Green, an American environmental consultant working in Tokyo, said her clients, who include large Japanese and multinational manufacturers, are exploring the feasibility of shifting production schedules. Japan already had strict manufacturing efficiency standards, she added, so finding ways to cut back even further will be challenging.

"The biggest question is how to shift production in a way that you can meet the business demand and also keep workers happy," Green said.

According to the Economy, Trade and Industry Ministry, Tepco's nuclear plants have been producing 31 million kilowatts of power since the earthquake, down 40 percent from the 52 million kilowatts available before the disasters. Officials think they can boost output to 45 million kilowatts through the use of thermal power generation, but that would still be well below the 60 million kilowatts customers used this past summer, when temperatures were unusually high.

Most Japanese companies and residents have already begun conserving energy in modest ways, such as turning off lights more frequently. In Tokyo's Shibuya shopping district, the huge Times Square-style neon billboards have gone dark.

Maruhan, owner of a chain of 269 pachinko gambling parlors, has cut its energy consumption by 38 percent by setting the air conditioning to a higher temperature, turning off some of the electronic signs and shortening operating hours, a spokeswoman said. Bic Camera, a large electronics retailer, has turned off 70 to 80 percent of its television displays and half the lights in the lamp section, a company official said.

The challenge has been more difficult for other corporations such as Oriental Land, operator of Tokyo Disneyland and Tokyo DisneySea, which use 570,000 kilowatt-hours of electricity a day. Both amusement parks have been closed since the earthquake because of the rolling blackouts. Oriental Land officials said they are considering using power generators or reopening with shorter operating hours.

The emergency has even called into question Japan's ability to achieve its international pledge to cut greenhouse gas emissions by 25 percent by 2020, Chief Cabinet Secretary Yukio Edano said.

Renho, the DPJ lawmaker, argued that Japan's industrial sector could use this situation to take the lead in producing revolutionary green-energy technology. She pulled out a brochure from a company that produces a special white exterior paint that uses sunlight to help make buildings more energy-efficient.

"Companies must change the way they work, using less energy while creating something of equal quality," she said. "Our government stance is to support that, and it's a challenge worth taking on."

## **Japanese, US Troops Launch Another All-out Search For Victims Of Earthquake And Tsunami (AP)**

Associated Press, April 10, 2011

The Japanese and US militaries are launching another all-out search for the bodies of earthquake and tsunami victims along Japan's ravaged coast.

About 22,000 Japanese troops, along with 110 from the US, will search by land, air and sea on Sunday. They'll skip the evacuation zone around the damaged nuclear complex that is spewing radiation. Troops and police officers have also been searching within the evacuation zone, but it is dangerous, painstaking work.

As many as 25,000 people are feared dead in the March 11 disaster, but only 13,000 deaths have been confirmed. Many bodies have likely been washed out to sea and will never be found.

Defense ministry spokesman Norikazu Muratani says the troops want to do their best to find bodies for the families.

## **Clinton To Visit Quake-hit Areas Of Japan: Report (AFP)**

AFP, April 9, 2011

US Secretary of State Hillary Clinton will go to the disaster zone to meet American troops helping with relief efforts when she visits quake-hit Japan next week, Jiji Press said Friday.

Clinton would be the first foreign dignitary to travel to northeastern Japan, where entire towns and villages were destroyed by the 9.0-magnitude quake and massive tsunami that struck on March 11.

More than 12,600 people have been confirmed dead and around 15,000 remain unaccounted for in the country's worst disaster since World War II.

Jiji said Clinton would visit Japan for two days, arriving on March 17, citing government officials. A foreign ministry official told AFP he was not aware of the plans.

The United States has deployed thousands of troops to help with the relief effort in northeast Japan, which was devastated by a powerful earthquake and tsunami on March 11.

It mobilised around a dozen ships to bring in relief after the disaster and has 15,000 troops engaged in round-the-clock relief operations since the quake as part of a mission dubbed Operation Tomodachi, or "friend".

There are around 47,000 American troops stationed in Japan, a close US ally which lies near the tense Taiwan Strait and Korean peninsula.

Clinton's visit to Japan would be the second by a foreign dignitary since French President Nicolas Sarkozy last month met with officials grappling with an atomic crisis at its tsunami-hit Fukushima Daiichi nuclear plant.

Last week, the US military said it was also deploying a Marine unit specialising in emergency nuclear response to Japan to help address the crisis at the Daiichi plant.

## **Japan Cargo Is Screened At US Ports (NYT)**

By Verne G. Kopytoff

New York Times, April 9, 2011

OAKLAND, Calif. — Radiation detectors originally intended to thwart terrorists smuggling nuclear bombs into the country have been put to another use at this sprawling port across the bay from San Francisco.

Three Customs and Border Protection officers used the equipment to screen Japanese cargo plucked by cranes as high as 24-story buildings from the NYK Aquarius, a massive cargo ship. Semi trucks hauling the containers passed slowly between two government trucks mounted with radiation detectors that resembled white cabinets.

If the lights flashed, it would mean the equipment detected unusual levels of radioactivity in the cargo. A white light means gamma radiation was detected; a red light indicates neutron radiation.

But on this day, like every day thus far, no dangerous cargo was found.

Although the government agency, part of the Department of Homeland Security, checks every cargo container coming from Japan since radiation began escaping from a damaged nuclear power plant in Fukushima, its officers have found no radioactively contaminated seafood, auto parts or electronics. The officers waved the Aquarius's cargo through.

"To date, we have not held one container for contamination," said Richard F. Vigna, a director of field operations for Customs and Border Protection. "There hasn't been anything."

The federal government operates a vast web of radiation screening at the nation's seaports, airports and border crossings. Originally installed after the Sept. 11 attacks, the system is now also being used to make sure no contaminated Japanese imports reach store shelves.

The agency expects to keep working at the nation's ports despite a government shutdown, if one occurs.

The heightened scrutiny increased for Japanese products immediately after the Fukushima nuclear plant's troubles started. Typically, ship cargo goes through at least one round of radiation screening before being cleared to leave the port. But as a precaution, containers from Japan now get multiple checks.

The radiation screening program, which cost billions of dollars to put into effect, is operated by Customs and Border Protection. Radiation is just one concern for the agency, which also seizes drugs, detains illegal immigrants and eradicates invasive insects that stow away on incoming ships and airplanes.

But these days, attention is focused on the lights of the radiation detector. Should any contaminated products slip through, they could pose a health hazard, and would more than likely set off a panic among consumers, some of whom are already skittish about eating Japanese sushi. Only dairy products and produce from near the Fukushima plant have been banned outright by the Food and Drug Administration.

Scanning imports is a huge undertaking because of the volume of goods involved. Japan alone ships \$120 billion in cars, electronics and other products to the United States annually.

Customs and Border Protection also has to balance the potential impact on commerce. Delays could mean lost money for shippers and the businesses that depend on supplies from Japan.

Michael Zampa, spokesman for APL, a container shipping company, said there were some initial backlogs in Los Angeles because of the expanded inspections, but they seemed to have eased.

"There was some delay, but it's what you would expect with any new process," he said.

The biggest excitement at the Port of Oakland came one day last week when a trucker ran over a traffic cone that then became stuck between his vehicle's tires. The officers had to stop him to pull it out. Another driver balked at driving through the

detectors because she feared that she would be subjected to radioactivity, as if she were going through an X-ray machine. The machines, in fact, do not emit radiation; they only measure it. Another driver took her place.

The offloaded containers get a second inspection when they leave the port. All trucks, no matter the origin of their cargo, must drive through radiation detectors resembling yellow gates at each terminal's exit.

Earlier that day, in a nearby booth where officers monitor the port's gate, an automated voice barked "gamma alert, gamma alert." The equipment detected abnormal radiation on a passing truck. Although ominous sounding, such alerts are actually routine.

An officer carrying two hand-held detectors, one resembling a pager and other the size of an old tape recorder, circled the suspicious truck, which carried an empty container that originated in Thailand. The measurements showed the presence of cesium and another unknown isotope, but the level was only slightly above normal.

The officer radioed the reading to a colleague in the booth, where officers can send the information by computer to an agency lab for analysis. The process usually takes about 15 minutes.

In this case, they determined that an analysis was unnecessary. Their records showed that the container had previously set off a similar alarm at the dock, and that the lab had cleared it after determining there was no safety risk. They let the truck leave.

Nationwide, Customs and Border Protection responds to hundreds of thousands of alerts at the ports annually, Mr. Vigna said. Bananas, cat litter, dinnerware, ceramics, smoke alarms and some electronics normally have elevated levels of radiation. Although usually safe, these can set off the detectors.

Even so, officers are not supposed to open containers to inspect what is inside because of the potential danger. "If we get an alert, the last thing we want to do is open a container," Mr. Vigna said. The message did not appear to have reached everyone because one officer did, in fact, climb into a container.

Oakland largely avoids one step of radiation screening — checking onboard ships — because few ships make Oakland their first port of call in the United States. They usually stop beforehand in Long Beach, Calif., Los Angeles or Seattle, where officers board with hand-held devices to test the public areas, the catwalks and crew.

Air cargo facilities have their own radiation detection equipment, although some are operating with only hand-held or mobile detectors. An upgrade is supposed to bring all air cargo facilities permanent detectors by 2014.

Longshoremen, who would come in closest contact with any contaminated cargo, initially raised concerns with Mr. Vigna about the safety of handling cargo. After noticing the expanded screening, they asked " 'Whoa, why are you doing this? What's going on?' " he recalled.

But after he explained that there was no "apparent threat," he said the outcry died down.

"It's calmed down a lot," Mr. Vigna said.

## **How Much Of A Threat? (NYT)**

New York Times, April 9, 2011

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

As part of that struggle, authorities have been venting limited amounts of radioactive water into the ocean and radioactive gases into the air, and leaks exacerbated by explosions have spewed radioactive materials. People in Japan and in this country are rightly concerned. But, as of now, potential health risks appear to be limited in Japan and virtually nonexistent in the United States.

We stress "as of now." Operators have still not been able to restore emergency cooling systems for the reactor cores and spent fuel pools. Nuclear fuel could still melt and release huge amounts of radioactive materials. Aftershocks pose a continuing threat. But the radioactive material that has been released so far — deliberately or accidentally — seems too small to pose a present danger.

Top officials from American health agencies said this week that Americans are in no danger from the trace amounts of radiation being detected in this country's air, water or food supplies. Thomas Frieden, the director of the Centers for Disease Control and Prevention, said emphatically: "There is no threat to health in the US from radiation coming from Japan."

That means there is no reason for anyone here to take potassium iodide pills or any nostrums being peddled as protective. The Food and Drug Administration is testing food imports from Japan for traces of radiation just to be safe, and the Japanese government is banning or monitoring various food exports before they leave that country.

In Japan, the biggest radiation doses have hit workers within the plant. Beyond the plant boundaries, small amounts of radioactive material have fallen on land, but not enough to be an immediate health hazard. Much bigger amounts of radiation have been detected just off shore, although the levels appear to be diminishing and a major leak has been plugged.

The ocean should disperse and dilute radioactive materials to safe levels. However, a fish caught dozens of miles away from the plant was found to contain high levels of radioactive iodine, showing the potential for radiation to concentrate in marine life. Officials in Japan and around the globe will need to keep monitoring the air and water and the fish supply for many months, if not longer.

## **Iran Confirms Factory Producing Centrifuge Parts (AP)**

By Ali Akbar Dareini

Associated Press, April 10, 2011

Iran's foreign minister on Saturday confirmed claims by an exiled Iranian opposition group that a factory west of Tehran is manufacturing centrifuge parts, but said the facility was no secret and that many other factories in the country were making components for Iran's nuclear program.

The comments by Ali Akbar Salehi came two days after the Mujahedeen-e Khalq announced at a press conference in Washington that its spies identified the factory, called the TABA facility, saying workers there produced centrifuge casings, molecular pumps, tubes and bellows for the centrifuges.

Iran has long said it is producing its own centrifuges for its uranium enrichment program. Enrichment can produce either fuel for a nuclear reactor or the material for a nuclear warhead.

Salehi said the factory referred to by the Mujahedeen "is not a new discovery ... we are manufacturing parts there and this is nothing confidential."

"There are plenty of factories in the country that supply the equipment needed by ... the Atomic Energy Organization of Iran," he said Saturday, according to the state news agency IRNA.

Tehran contends its nuclear program is intended only for a civilian nuclear power program. The United States and its allies suspect it seeks the capacity to build nuclear bombs, and the United Nations has demanded Iran halt enrichment.

## **Iran Nuclear Power Plant To Resume Work 'Early May' (AFP)**

AFP, April 10, 2011

Iran said on Saturday that its first nuclear power plant will resume work early May, a day after the facility's Russian contractor acknowledged reloading the fuel in the plant.

"We hope that the Bushehr power plant reaches critical phase between May 5 and 10," Iranian Foreign Minister Ali Akbar Salehi, who previously headed the Islamic republic's atomic body, was quoted as saying by Fars news agency.

He said the fuel supplied by Moscow was "removed from the reactor's core, was washed... and as of yesterday it was reloaded".

Engineers had begun removing the fuel in late February due to an apparent technical fault.

Russia's Atomstroyexport agency which oversaw the Bushehr plant's construction said in a statement on Friday that the refuelling operation began after the plant had been re-checked and its various pieces "washed through".

It was not immediately clear from the statement when the Bushehr plant would be commissioned.

The plant's connection to the electric grid of Iran was initially scheduled for the end of 2010, but was then postponed to April 9 due to technical problems.

Russia last month blamed the latest delay on internal wear-and-tear at the plant, whose construction had initially started in the 1970s with the help of Germany's Siemens company.

Russia also blamed Iran for forcing its engineers to work with outdated parts in the plant.

## **Israel Ruled Out Iran Strike In 2005: Wikileaks (AFP)**

AFP, April 11, 2011

JERUSALEM (AFP) – Israeli defence officials ruled out a strike on Iran's nuclear facilities as early as 2005, US diplomatic cables leaked to whistleblower site WikiLeaks show, an Israeli newspaper said Sunday.

The documents given to the Haaretz newspaper by WikiLeaks detail conversations between US diplomats and Israeli defence officials, which suggested the Jewish state did not plan to target Iran's controversial nuclear programme.

One December 2005 cable said Israeli officials had indicated there was "no chance of a military attack being carried out on Iran," Haaretz reported.



Another telegram a month later, detailing talks between a US congressman and the then deputy chief of Israel's Atomic Energy Commission, Ariel Levite, offered a stronger suggestion that Israel considered a strike on Iran's facilities unfeasible.

Levite "said that most Israeli officials do not believe a military solution is possible," Haaretz quoted the telegram as saying.

"They believe Iran has learned from Israel's attack on Iraq's Osirak reactor (in 1981) and has dispersed the components of its nuclear programme throughout Iran, with some elements in places that Israel does not know about."

Israel, which has the Middle East's sole if undeclared nuclear arsenal, regards Iran as its number one enemy after repeated predictions by President Mahmoud Ahmadinejad that the Jewish state is doomed to collapse.

Along with much of the international community, Israel accuses Iran of using its nuclear energy programme to mask a weapons drive. Iran denies the charge, saying the programme is purely for civilian energy and medical purposes.

**From:** Lu, Shanlai  
**To:** Ulises, Anthony  
**Cc:** Donoghue, Joseph; Mendiola, Anthony; Ader, Charles; Lombard, Mark; Ruland, William; Bahadur, Sher  
**Subject:** Japan Nuclear Power Plant Spent Fuel Pool Heat Up Mitigation Strategy  
**Date:** Tuesday, March 15, 2011 10:58:57 AM

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Tony,

Hope you can see this e-mail from Japan.

Based on CNN and news from internet, the spent fuel pools of Unit 1, 2 and 3 started to boil without cooling. The following are my own thoughts about what needs to be done before the situation becomes even worse.

1. Need to establish cooling with whatever means to prevent the dry out of stored fuel. This include, if not limited to, using fire hydrants to directly spray Boric Acid water on top of all three spent fuel pools. If the radiation level is too high to establish continuous water supply, use helicopters to dump boric acid water from the air as frequently as possible.
2. For Unit 4, if the spent fuel pool cooling is lost, we need to have an access to allow fire hydrant reaching the pool. It may be feasible to open the top of the reactor building right above the pool. In this way, if the operator can not introduce water supply from the ground, helicopters can still dump Boric Acid water from the air.
3. It would be nice that similar measures like these be established before the spent fuel dry out occurs. If the water is dumped on top of the pool with fuel dry out already occurred and the fuel surface temperature is already high enough, sever Zr-Water reaction will happen and cause fire and explosion. Before this happens, dump sand mixed with dry Boric acid right on top of the pools from the air. This will prevent the wide spread fire and explosion and provide the heat conduction to transfer the decay heat to the ground.

Hope these can be of help if they have not been considered.

We heard that radiation level has gone up even in Tokyo. We pray for your safety and safe return.

Take care.

Shanlai

LLLL/26

**From:** [Shapiro, Nicholas S.](#)  
**To:** [McIntyre, David](#)  
**Cc:** [Brenner, Eliot](#)  
**Subject:** RE: DFW Plane  
**Date:** Wednesday, March 16, 2011 3:06:18 PM

---

Im trying to learn like you are. Dot/faa/dhs are your best bets. Sorry but im not sure what is happening, on a call now. that other chain I added eliot to, which im on would be best to reply to.

As for context of rad levels, that's ALWAYS important to do I think

I'll add you to that chain now

---

**From:** McIntyre, David [mailto:David.McIntyre@nrc.gov]  
**Sent:** Wednesday, March 16, 2011 3:05 PM  
**To:** Shapiro, Nicholas S.  
**Cc:** Brenner, Eliot  
**Subject:** DFW Plane

Nick – can you send us a little more info on this? I could ask our protective measures team for context on the rad levels.


Dave McIntyre  
NRC OPA

LLLL/27

**From:** LIA05 Hoc  
**Sent:** Wednesday, March 16, 2011 9:13 AM  
**To:** LIA04 Hoc  
**Subject:** Emailing: Retired engineer in Greencastle says Japan's nuclear plant poses little threat to Franklin County - Chambersburg Public Opinion  
**Attachments:** image001.gif; image002.gif; image003.gif; image004.gif; image005.gif; image006.gif; image007.gif; image008.gif; image009.gif; image010.gif; image011.gif; image012.png; image013.png; image014.jpg; image015.jpg; image016.jpg; image017.jpg; image018.jpg; image019.jpg; image020.jpg; image021.jpg; image022.png; image023.jpg; image024.jpg; image025.png; image026.jpg; image027.gif; image028.jpg; image029.gif; image030.jpg

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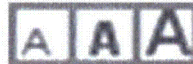
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## Retired engineer in Greencastle says Japan's nuclear plant poses little threat to Franklin County

Public Opinion Online

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Just to be sure: Sheldon Schwartz, a retired engineer who served on the Nuclear Regulatory Commission, says testing milk for radiation is a step that should be taken in an effort to allay Americans' fear over what may happen at a nuclear power plant in Japan in the wake of the earthquake and tsunami. He was on the teams that worked through the crises at Three Mile Island and Chernobyl.



By ROSCOE BARNES III

Staff writer

GREENCASTLE -- In light of the nuclear power plant crisis in Japan, it wouldn't be a bad idea to have the milk in this area tested for radiation, according to a retired engineer who served on the Nuclear Regulatory Commission.

"I don't want to come across as an alarmist," said Sheldon Schwartz, who lives in Greencastle. "The prognosis of it happening is slim to none, and I don't mean to cause panic. Sampling the milk or taking air samples would be a way to relieve people of their fears and concerns."

Schwartz retired in 1994 as a mechanical engineer after 22 years in the field. He has memories of working with the Three

Mile Island disaster in 1979, and with helping to create two international treaties in 1986 after the nuclear crisis in Chernobyl.

The crisis of the nuclear power plants in Japan following last week's tsunami and earthquake have made people wonder about the possible impact on the United States, Schwartz said.

"My wife asked if we should be worried here," he said. "I said, 'No.' There are enough miles around us and Japan that the radiation would be dissipated. It would just go into the atmosphere, but we will trace it, and stay on top of it."

If there is a problem, it would likely be detected in the food sources and crops, the first things that come to mind, he said.

On Monday, Schwartz called the Pennsylvania Department of Environmental Protection and left a message regarding the

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prudence of doing some radiological environmental sampling.

"Doing some radiation monitoring by sampling milk is being prudent," he said. "The milk from Pennsylvania is a major resource for us. It would be prudent to do some sampling right now, and do it for the next 30 or 60 days to make sure you can show there is no change."

Milk is preferred for the testing because fallout gets into the grass, which is eaten by cows. If there is a threat, the cows can be brought in and given stored feed, he said.

According to The Associated Press, a second hydrogen explosion in three days rocked a Japanese nuclear reactor Monday as authorities tried to avert any catastrophic release of radiation in the tsunami zone.

Fearful talks about the disaster reminded Schwartz of the TMI disaster.

#### Three Mile Island

"It was March 29, 1979. I remember it like it was yesterday," he said. "I was in Bethesda, Md., and worked as part of the emergency response team."

As he recalled, his office received a phone call from the plant operator at TMI that said, "We have a problem."

Everybody was deeply concerned about the impact of the disaster, and wanted to know what was going on, Schwartz said. "We got organized. As an emergency develops, it's a really fluid situation until you get all the details."

People tend to make a lot of assumptions and projections, he said.

"That lack of information is what gets people nervous," Schwartz said.

In the heat of the TMI crisis, Schwartz and his team got little sleep for the first few days. He spent a significant amount of time on the phone talking to people at the TMI site, and to the head of the state's radiation control program.

"We were asking, 'What do we do with the general public?'" he said. "I was talking to people making assessments in the operation center in Bethesda, and on the site at TMI, and various operation centers involved with making decisions."

"We wanted to know the best ways to provide protection, and whether we should evacuate people if necessary. The working environment was very hectic, and pretty stressful."



During the early stages of the crisis, Schwartz and other officials had to rely on "other people's eyes and hands." That meant the information was coming in pieces, and likely to change with time.

In the end, he said, the systems worked as designed. The containers held to the point where the off-site radiation release was minimal. People living in the affected area showed up at various places and registered, Schwartz said.

For the last 30 years, epidemiologists have followed up with the people exposed to the radiation leakage. The research has shown no differences in their health as compared to other populations, Schwartz said.

## Chernobyl

After working with the TMI crisis, Schwartz said he was put on loan to the Federal Emergency Management Agency. He later got involved with government policies that followed the accident in Chernobyl.

In Chernobyl, there was a massive release of radiation. Unfortunately, the Russians did not immediately report it, and they did not want anyone to know about it, he said.

"It was not found until a plane landed. Someone noticed some radiation coming off the plane," Schwartz said. "The radiation was found to be airborne. They back tracked and found it coming from Russia."

In 1986, he got involved with a number of [U.S. government](#) agencies and attended a meeting in Vienna, Austria, with the International Atomic Energy Agency and other international government organizations.

"We put two worldwide treaties together," Schwartz said. "The first one was for the notification of an accident at a nuclear power plant; and the second one was for the mutual cooperation and assistance if you do have an event."

In recent days, people may have asked why certain information was coming from IAEA, and not directly from Japanese officials, he said. The reason is that Japan is following the international protocol.

It helps to have one agency in the world as the central focal point, he said.

As a result of following this protocol, the mutual assistance is happening in an incredible way, Schwartz said.

"We were hoping we would never need the treaties," he said. "Having those treaties in effect today is making the necessary and immediate help available. You don't have to figure out who's in charge. It's all worked out now."

As the world comes together to assist Japan, people can learn from the situation, and they can do so without fear or being in a state of panic, Schwartz said.

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Roscoe Barnes III can be reached at 262-4762 or [rbarnes@publicopinionnews.com](mailto:rbarnes@publicopinionnews.com).



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**To:** Wisongo, Serge; Hincke, John  
**Cc:** Reyes, Debra; Turner, Joseph  
**Subject:** Update to Japan User Asset List

I am attaching a copy of the spreadsheet that I made and updated based on my information (put a light blue back. Jean Trefethen's laptop and air card do not belong on this list as they are her personal work anywhere laptop and air card and not related to the Japanese response. Also I'm unclear why Jack Grobe's laptop is listed because he is not a member of the Japan Site Team (he was in Vienna last week but not associated with the Japan Site Team); however, I did find out the Jack Grobe is part of the Japan Lessons Learned Working Group based here in HQ. The other items are for clarification.

Also, Kirk Foggie indicated that two laptops (tags 209159 and 215067) were left in Japan when he returned but I don't see those numbers on the list. Can you let me know the status of these laptops – added those to the bottom of the list?

If you have any questions, please contact me.

LL4/29

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**From:** LIA05 Hoc  
**Sent:** Wednesday, March 16, 2011 4:43 PM  
**To:** Andrew Seward; Harry Sherwood; Michelle Ralston; Steve Horwitz; Tim Greten; Vanessa E. Quinn  
**Subject:** Passive Monitoring of Aircraft, Passengers and Luggage

FYI,

Just left an HHS EOC Conference Call and it was explained that at the 19 International Airports and there is more focus on aircraft coming from Japan that Customs and Border Patrol Officers monitor aircraft, passengers (passively) and luggage. They have detected low levels of contamination on an aircraft at DFW Airport today as well as contamination on a couple items in shrink wrap. If you have questions, contact Ms. Helen Sterling (202) 297-3316 or [Helen.sterling@dhs.gov](mailto:Helen.sterling@dhs.gov). Be mindful that their procedures and protocols are law enforcement sensitive.

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

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**From:** LIA05 Hoc  
**Sent:** Wednesday, March 16, 2011 12:16 PM  
**To:** Andrew Seward; Harry Sherwood; Michelle Ralston; Steve Horowitz; Tim Greten;  
Vanessa E. Quinn  
**Cc:** bonnie.sheffield@dhs.gov  
**Subject:** Contact Information

FYI,

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**From:** Giitter, Joseph  
**To:** Leeds, Eric; Howe, Allen; Ruland, William; Boger, Bruce; Grobe, Jack  
**Cc:** Brown, Frederick; McGinty, Tim; Hiland, Patrick  
**Subject:** RE: Brain-storming upcoming Commish meeting  
**Date:** Wednesday, March 16, 2011 7:47:40 PM  
**Attachments:** Eric Leeds Remarks.docx

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Eric - I took a stab and putting some thoughts together. It needs a lot of work, but it is a start.

---

**From:** Leeds, Eric  
**Sent:** Wednesday, March 16, 2011 1:34 PM  
**To:** Howe, Allen; Ruland, William; Boger, Bruce; Grobe, Jack  
**Cc:** Brown, Frederick; McGinty, Tim; Giitter, Joseph; Hiland, Patrick  
**Subject:** Brain-storming upcoming Commish meeting

Allen/all -

I will undoubtedly need your help in crafting the staff's messages for the upcoming Commission meeting on the Japanese event. If there is a public part of this meeting, and there probably will be, it will be a good opportunity for us to get out the message that we have requirements in place for severe accident management, 50.63 SBO, flooding, 50.54hh(2), Mark I containment improvements, etc. Please brainstorm how we can make that part of our message to the Commission. A lot of what I think we need to do with our licensees, at least in the near term, is to verify what they are already required to do. It might make a good message for the public.

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

LLLL/32

## Draft Remarks for Eric in Preparation for the upcoming Commission Meeting on the event at the Fukushima Daiichi Plant in Japan

There will undoubtedly be many lessons learned in the months to come as we learn more about the tragic events at the Fukushima Daiichi plant in Japan. However, one of the early lessons is that events can occur that you didn't anticipate—either in the deterministic design basis of the plant or through probabilistic risk assessment models. That is why the fundamental approach to defense in depth is crucial to ensuring that safety is achieved, even under extreme circumstances, such as those experienced at the Fukushima Daiichi plant.

Of course, defense in depth starts with the design of the reactor. In the 1980s the NRC undertook a program to determine if any actions needed to be taken, on a generic basis, to reduce the vulnerability of designs to severe accident challenges. As part of this effort, the NRC looked specifically at the BWR Mark I containment design and identified a number of plant modifications that substantially enhance the ability of the design to prevent and mitigate the consequences of severe accidents. These recommendations included installation of a hardened vent that allows operators, in accordance with their emergency procedures, to relieve pressure from the containment to avoid exceeding the containment pressure limit. At this time the NRC also concluded that continued reliance on pre-existing capability—which was a non-pressure-bearing vent path—could jeopardize access to vital plant areas or other equipment and create an impediment to implementing a successful accident management strategy. Furthermore, the NRC determined that implementation of reliable venting capability and procedures can reduce the likelihood of core melt from accident sequences involving loss of long-term decay heat removal, such as a station blackout event. Finally, it was concluded that the hardened vent provides assurance of a pressure relief path with significant scrubbing of fission products which would result in lower releases, even for containment failure modes not associated with pressurization, such as liner meltthrough. All U.S. BWRs with the Mark I containment design have installed hardened vents (need to verify).

The NRC also identified certain containment performance improvements that licensees should “seriously consider” individual plant examinations in addition to the implementation of a hardened vent. These improvements included an alternate source of water injection into the reactor vessel to reduce the likelihood of core melt due to a station blackout or a loss of long-term decay heat removal, and an enhanced reactor pressure vessel depressurization system that could be operated in an extended station blackout after station batteries have been depleted. (Need to say something about the extent to which licensees have implemented this).

- 2 -

Also, in the 1980s--specifically in 1988-- the NRC concluded that additional regulatory requirements were justified in order to provide further assurance that a loss of both offsite and onsite emergency ac power systems—a station blackout condition--would not adversely affect public health and safety. Studies conducted by the NRC have shown that the hardware and procedures that have been implemented to meet the station blackout requirements have resulted in significant risk reduction and have further enhanced defense in depth. However, we plan to carefully evaluate the lessons learned from the events in Japan to determine if enhancements to the station blackout rule are warranted.

One of the most significant lessons learned from the Three Mile Island Accident in 1979 was that operating procedures need to be symptom based and less prescriptive. Procedures that previously directed operators to take a series of actions based on a pre-established accident were replaced with procedures that directed operators to maintain the critical safety functions-- such as keeping the core



covered and cooled. Emergency procedure guidelines that address conditions well beyond design basis accidents and can be used for severe accident management were also developed. Operators routinely practice these procedures on a plant specific simulator to ensure that they can be implemented for a wide range of accident scenarios, including a station blackout scenario.

More recently, since the 9/11 terrorist attack, NRC has required licensees to implement procedures and pre-stage equipment that would allow operators to ensure critical safety functions are met even under extreme conditions involving fires and explosions. NRC routinely evaluates the ability of licensees to implement these strategies. (Need more detail here.)

Mention steps that INPO has taken in their level 1 directive and our corresponding regulatory footprint—whatever it might be.

**From:** Cherry, Ronald C  
**To:** JapanEmbassy, TaskForce; NITOPS  
**Cc:** Alan Remick; Aleshia Duncan; Duncan, Aleshia D; Trapp, James; James Trapp (BB); Mears, Jeremy M; Morales, Russell A; Ulises, Anthony; OConnor, Rod; Bryan, William; Williams, Melvin; Hurlbut, Brandon; Anderson, Margot; Mueller, Stephanie; LaVera, Damien; Reynolds, Tom; Hunsaker, Christopher; Koontz, Thomas; Leistikow, Dan; Zubarev, Jill E; Koichi Uchida; Uchida, Koichi  
**Subject:** FW: Status Report : Daiichi ~ 3 Hours Old  
**Date:** Wednesday, March 16, 2011 10:34:49 AM  
**Attachments:** 031611\_fukushima\_20110316\_042811.jpg

---

Forwarding status report from the NRC team earlier today.

This email is UNCLASSIFIED.

**From:** Brown, Eva [<mailto:Eva.Brown@nrc.gov>]  
**Sent:** Wednesday, March 16, 2011 6:35 PM  
**To:** Cherry, Ronald C  
**Cc:** Trapp, James  
**Subject:** Status Report : Daiichi ~ 3 Hours Old

Ron,

Jim Trapp requested that I provide the following status to you. This information is about 5 hours old and I have included a photo we pulled off the internet of the 4 sites.

This is the status with an update from the IAEA (16 March 0355 GTM):

Daiichi Unit 1  
Primary : Intact - Believed RCS Breach  
Secondary: Lost  
SFP Status: Unknown

Daiichi Unit 2  
Primary : Intact- Believed RCS Breach  
Secondary: Lost  
SFP Status: Unknown

Daiichi Unit 3  
Primary : Intact - Believed RCS Breach  
Secondary: Lost  
SFP Status: Unknown

Daiichi Unit 4  
Primary : Intact; core offloaded (~107 days ago)  
Secondary: Lost  
SFP Status: Fuel reported uncovered

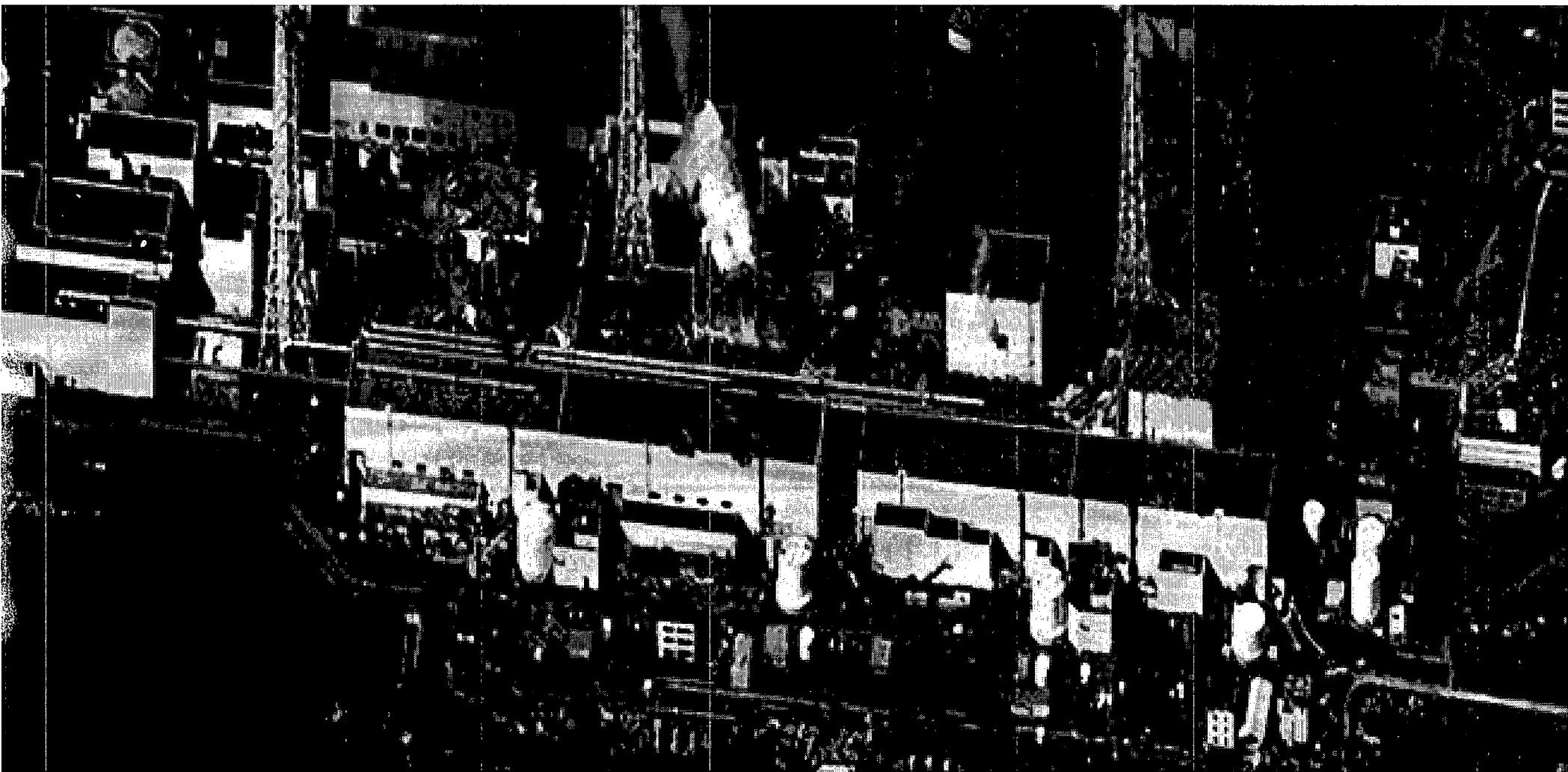
Daiichi Unit 5 ( Shutdown January 3, 2011)  
Primary : Intact  
Secondary: Intact  
SFP Status: Increasing temperature (80 degrees C); RPV level down 40 cm in last 5 hours 0700-1200 GMT 3/15. Unit 6 operational diesel being used to provide water to Unit 5 (IAEA 16 March 0355GMT)

Daiichi Unit 6 (Shutdown August 14, 2010)  
Primary : Intact  
Secondary: Intact

LLLL/33

SFP Status: Increasing temperature (80 degrees C)

Eva Brown, RST BWR Systems and Ops Analyst  
Nuclear Regulatory Commission  
(301) 816-5516



## **Murphy, Andrew**

---

**From:** Kammerer, Annie  
**Sent:** Wednesday, March 16, 2011 12:18 PM  
**To:** RES Distribution  
**Cc:** Karas, Rebecca  
**Subject:** FW: Calls for answering questions on earthquakes, etc, in support of Japanese event activities  
**Attachments:** Seismic Questions for Incident Response 3-16-11 3am.pdf

All,

Please read Becky's email below and follow the procedures she laid out to NRO staff.

It is important that we keep the NRC's message consistent and moving through appropriate channels. I have added the latest version of the seismic Q&As for the convenience of those of you who are getting in-house questions related to your projects and responsibilities. Currently we are updating this daily with the questions (and answers) we collect each day.

Thanks,  
Annie

---

**From:** Karas, Rebecca  
**Sent:** Wednesday, March 16, 2011 12:05 PM  
**To:** NRO\_DSER Distribution  
**Cc:** Chokshi, Niles; Kammerer, Annie; Munson, Clifford  
**Subject:** Calls for answering questions on earthquakes, etc, in support of Japanese event activities

All,

Based on what just happened, individuals within NRC appear to be either randomly calling geologists/geophysicists/hydrologists or people they happen to know to answer questions.

For callers who are NRC staff who ask you a question, please direct them to call the Ops Center and ask to be connected to the RST seismologist (Cliff on day shift, Annie on evening shift). That person will coordinate all question responses (if Cliff or Annie call you, provide any support they need to help answer these questions).

For callers who are NOT NRC staff (including people from other agencies), please continue to follow the direction of the EDO here:

### **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 the 301-415-8200 number.**

The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response to the events in Japan. The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC's Headquarters Operations Center in Rockville, MD has been stood up since the beginning of the emergency in Japan and is operating on a 24-hour basis.

- NRC Incident Responders at Headquarters have spoken with the agency's counterpart in Japan and offered the assistance of U.S. technical experts. NRC representatives with expertise on boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team. USAID is the Federal government agency primarily responsible for providing assistance to countries recovering from disasters.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive 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 in account the most severe natural phenomena historically estimated for the site and surrounding area.

The NRC will **not** provide information on the status of Japan's nuclear power plants. For the latest information on NRC actions see the NRC's web site at [www.nrc.gov](http://www.nrc.gov) or blog at <http://public-blog.nrc-gateway.gov>.

**Two important reminders:**

It is possible that some of us will be requested by colleagues in another country to provide technical advice and assistance during this emergency. It is essential that all such communications be handled through the NRC Operations Center. Any assistance to a foreign government or entity must be coordinated through the NRC Operations Center and the U.S. Department of State (DOS). If you receive such a request, contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) immediately.

If you receive information regarding this or any emergency (foreign or domestic) and you are not certain that the NRC's Incident Response Operations Officer is already aware of that information, you should contact the NRC Operations Officer (301-816-5100 or via the NRC Operator) and provide that information.

**Other Sources of Information:**

USAID – [www.usaid.gov](http://www.usaid.gov)

U.S. Department 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)

No response to this message is required.

**THIS IS NOT A DRILL**

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

**From:** OST02 HOC

**To:** Dyer, Jim; Layton, Michael; Holonich, Joseph; Burkhalter, Cornelia; Bailey, Marissa; Rivers, Joseph; Noonan, Amanda; Rivera, Alison; MorganButler, Kimyata; Goetz, Sujata; Schneider, Stewart; Tomon, John; LaVera, Ronald; Richards, Stuart; Kavanagh, Kerri; Starefos, Joelle; Belen, Aixa; Wong, See-Meng; Ivengar, Raj; Criscione, Lawrence; Beasley, Benjamin; Caruso, Mark; Zoulis, Antonios; Phan, Hanh; Ghosh, Tina; Ramadan, Liliana; Flanagan, Michelle; Abrams, Charlotte; Abu-Eid, Bobby; Adams, John; Afshar-Tous, Muegh; Ahn, Hosung; Alemu, Bezakulu; Algama, Don; Alter, Peter; Anderson, Brian; Anderson, James; Arndt, Steven; Arribas-Colon, Maria; Ashkebousi, Nima; Athey, George; Baker, Stephen; Ballam, Nick; Barnhurst, Daniel; Barr, Cynthia; Barss, Dan; Bazian, Samuel; Benner, Eric; Bensl, Michelle; Bergman, Thomas; Berry, Rollic; Bhachu, Ujagar; Bloom, Steven; Blount, Tom; Boger, Bruce; Bonnette, Cassandra; Borchardt, Bill; Bowers, Anthony; Bowman, Gregory; Boyce, Tom (RES); Brandon, Lou; Brandt, Philip; Brenner, Eliot; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Brown, Michael; Bukharin, Oleg; Burnell, Scott; Bush-Goddard, Stephanie; Campbell, Stephen; Camper, Larry; Carlson, Donald; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheng, May; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Chung, Donald; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coe, Doug; Coggins, Angela; Collins, Frank; Cool, Donald; Correia, Richard; Corson, James; Costa, Arlon; Couret, Ivonne; Craffey, Ryan; Crutchley, Mary Glenn; Cruz, Zahira; Cuadrado, Leira; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Dimmick, Lisa; Doane, Margaret; Dorman, Dan; Dorsey, Cynthia; Dozier, Jerry; Drake, Margaret; Droggitis, Spiros; Dube, Donald; Dudes, Laura; Eads, Johnny; Easson, Stuart; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Evans, Michele; Faria-Ocasio, Carolyn; Figueroa, Roberto; Fiske, Jonathan; Flanders, Scott; Flannery, Cindy; Floyd, Daphene; Foggie, Kirk; Foster, Jack; Fragoyannis, Nancy; Franovich, Rani; Frazier, Alan; Freshman, Steve; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Gardocki, Stanley; Gartman, Michael; Gibson, Kathy; Glitter, Joseph; Gilmer, James; Glenn, Nichole; Gordon, Dennis; Gott, William; Grant, Jeffery; Gray, Anita; Gray, Kathy; Greenwood, Carol; Grimes, Kelly; Grobe, Jack; Gross, Allen; Gulla, Gerald; Hackett, Edwin; Hale, Jerry; Hardesty, Duane; Hardin, Kimberly; Hardin, Leroy; Harrington, Holly; Harris, Tim; Harrison, Donnie; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Hayden, Elizabeth; Helton, Donald; Henderson, Karen; Hiland, Patrick; Hipschman, Thomas; Holahan, Patricia; Holahan, Vincent; Holian, Brian; HOO Hoc; Horn, Brian; Howard, Arlette; Howard, Tabitha; Howe, Allen; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Imboden, Andy; Isom, James; Jackson, Karen; Jacobson, Jeffrey; Jerve, Richard; Jessie, Janelle; Johnson, Don; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Jones, Henry; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; Kauffman, John; Khan, Omar; Kolb, Timothy; Kotzalas, Margie; Kowalczyk, Jeffrey; Kratchman, Jessica; Kugler, Andrew; Lamb, Christopher; Lane, John; Larson, Emily; Laur, Steven; LaVie, Steve; Lewis, Robert; Li, Yong; Lichtaz, Taylor; Lising, Jason; Lombard, Mark; Lovell, Louise; Lubinski, John; Lui, Christiana; Lukes, Kim; Lynch, Jeffery; Ma, John; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Masao, Nagai; Maupin, Cardelia; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McGovern, Denise; McIntyre, David; McMurtray, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Miranda, Samuel; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Musico, Bruce; Nerret, Amanda; Nguyen, Caroline; Norris, Michael; Norton, Charles; Nosek, Andrew; Opara, Stella; Ordaz, Vonna; Orr, Mark; Owens, Janice; Padovan, Mark; Parillo, John; Patel, Jay; Patel, Pravin; Patrick, Mark; Perin, Vanice; Popè, Tia; Powell, Amy; Purdy, Gary; Quinlan, Kevin; Raddatz, Michael; Ragland, Robert; Ralph, Melissa; Ramsey, Jack; Reed, Elizabeth; Reed, Sara; Reed, Wendy; Reeves, Rosemary; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Roach, Edward; Robinson, Edward; Rodriguez-Luccioni, Hector; Roggenbrodt, William; Ropon, Kimberly; Rosales-Cooper, Cindy; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Russell, Tonya; Ryan, Michelle; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; Santos, Daniel; Scarbrough, Thomas; Schaperow, Jason; Schmidt, Duane; Schmidt, Rebecca; Schoenebeck, Greg; Schrader, Eric; Schwartzman, Jennifer; Seber, Dogan; See, Kenneth; Shane, Raeann; Shea, James; Shepherd, Jill; Sheron, Brian; Skarda, Raymond; Skeen, David; Sloan, Scott; Smioldo, Elizabeth; Smith, Brooke; Smith, Stacy; Smith, Theodore; Solorio, Dave; Stahl, Eric; Stang, Annette; Stark, Johnathan; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Summers, Robert; Sun, Casper; Susco, Jeremy; Takacs, Michael; Tappert, John; Tegeler, Bret; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tiruneh, Nebiyu; Tobin, Jennifer; Trefethen, Jean; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Velazquez-Lozada, Alexander; Vick, Lawrence; Virgilio, Martin; Virgilio, Rosetta; Ward, Leonard; Ward, William; Wastler, Sandra; Watson, Bruce; Webber, Robert; Weber, Michael; White, Bernard; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williams, Tamera; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Jacob; Zimmerman, Roy

**Subject:** REVISED: Apr 10-16 Watchbill for Japan Response

**Date:** Saturday, April 09, 2011 4:11:32 PM

**Attachments:** Apr 10 - 16 2011 Watchbill HOC new.pdf

**Importance:** High

All,

The Chairman has approved a reduced staffing roster for this upcoming week. The reduced staffing will begin on Monday morning at 7am and will only include 6 positions, and as such, many of the previously staffed shifts will not be staffed. Please be aware that many of the positions on the

LLLL/35



attached list were changed to "N/A". While we appreciate your continued support, if your name was changed to "N/A", you will not be needed in the Operations Center.

If you have any questions, please contact your team coordinator and the following cognizant individuals:

Liaison Team: Jeff Temple

Reactor Safety Team: Rick Hasselberg / Peter Alter

Protective Measures Team: Lou Brandon

Executive Support Team: please reply to this email

Thank you,

OST02

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

| Position   | Date      | Time       | Staff             |
|--|-----------|------------|-------------------|
| <b>Executive Team</b>                              |           |            |                   |
| <b>ET Director</b>                                 |           |            |                   |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Jennifer Uhle     |
| Sun  | 10-Apr    | 7am - 3pm  | Jim Dyer          |
| Sun  | 10-Apr    | 3pm-11pm   | Cynthia Carpenter |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Jennifer Uhle     |
| Mon  | 11-Apr    | 7am - 3pm  | Jim Dyer          |
| Mon  | 11-Apr    | 3pm-11pm   | Cynthia Carpenter |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Jim Wiggins       |
| Tue  | 12-Apr    | 7am - 3pm  | Jim Dyer          |
| Tue  | 12-Apr    | 3pm-11pm   | Cynthia Carpenter |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Jim Wiggins       |
| Wed  | 13-Apr    | 7am - 3pm  | Jim Dyer          |
| Wed  | 13-Apr    | 3pm-11pm   | Bruce Boger       |
| Wed-Thur   | 4/13-4/14 | 11pm - 7am | Mike Johnson      |
| Thur   | 14-Apr    | 7am - 3pm  | Roy Zimmerman     |
| Thur   | 14-Apr    | 3pm-11pm   | Bruce Boger       |
| Thur-Fri   | 4/14-4/15 | 11pm - 7am | Mike Johnson      |
| Fri  | 15-Apr    | 7am - 3pm  | Roy Zimmerman     |
| Fri  | 15-Apr    | 3pm-11pm   | Bruce Boger       |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Mike Johnson      |
|  |           |            |                   |
| <b>ET Response Advisor</b>                         |           |            |                   |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Mark Thaggard     |
| Sun  | 10-Apr    | 7am - 3pm  | Mike Layton       |
| Sun  | 10-Apr    | 3pm-11pm   | Tom Blount        |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Joe Holonich      |
| Mon  | 11-Apr    | 7am - 3pm  | N/A               |
| Mon  | 11-Apr    | 3pm-11pm   | N/A               |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A               |
| Tue  | 12-Apr    | 7am - 3pm  | N/A               |
| Tue  | 12-Apr    | 3pm-11pm   | N/A               |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A               |
| Wed  | 13-Apr    | 7am - 3pm  | N/A               |
| Wed  | 13-Apr    | 3pm-11pm   | N/A               |
| Wed-Thur   | 4/13-4/14 | 11pm - 7am | N/A               |
| Thur   | 14-Apr    | 7am - 3pm  | N/A               |
| Thur   | 14-Apr    | 3pm-11pm   | N/A               |
| Thur-Fri   | 4/14-4/15 | 11pm - 7am | N/A               |
| Fri  | 15-Apr    | 7am - 3pm  | N/A               |
| Fri  | 15-Apr    | 3pm-11pm   | N/A               |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A               |
|  |           |            |                   |
| <b>ET Rx Prot Measures &amp; State Coordinator</b> |           |            |                   |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | N/A               |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|          |           |            |     |
|----------|-----------|------------|-----|
| Sun      | 10-Apr    | 7am - 3pm  | N/A |
| Sun      | 10-Apr    | 3pm-11pm   | N/A |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A |
| Mon      | 11-Apr    | 7am - 3pm  | N/A |
| Mon      | 11-Apr    | 3pm-11pm   | N/A |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A |
| Tue      | 12-Apr    | 7am - 3pm  | N/A |
| Tue      | 12-Apr    | 3pm-11pm   | N/A |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A |
| Wed      | 13-Apr    | 7am - 3pm  | N/A |
| Wed      | 13-Apr    | 3pm-11pm   | N/A |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A |
| Thur     | 14-Apr    | 7am - 3pm  | N/A |
| Thur     | 14-Apr    | 3pm-11pm   | N/A |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A |
| Fri      | 15-Apr    | 7am - 3pm  | N/A |
| Fri      | 15-Apr    | 3pm-11pm   | N/A |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A |
|          |           |            |     |

**Executive Briefing Team****EBT Admin. Assistant****Email: OST04**

|          |           |            |                |
|----------|-----------|------------|----------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | N/A            |
| Sun      | 10-Apr    | 7am - 3pm  | N/A            |
| Sun      | 10-Apr    | 3pm-11pm   | Andrea Wimbush |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A            |
| Mon      | 11-Apr    | 7am - 3pm  | N/A            |
| Mon      | 11-Apr    | 3pm-11pm   | N/A            |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A            |
| Tue      | 12-Apr    | 7am - 3pm  | N/A            |
| Tue      | 12-Apr    | 3pm-11pm   | N/A            |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A            |
| Wed      | 13-Apr    | 7am - 3pm  | N/A            |
| Wed      | 13-Apr    | 3pm-11pm   | N/A            |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A            |
| Thur     | 14-Apr    | 7am - 3pm  | N/A            |
| Thur     | 14-Apr    | 3pm-11pm   | N/A            |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A            |
| Fri      | 15-Apr    | 7am - 3pm  | N/A            |
| Fri      | 15-Apr    | 3pm-11pm   | N/A            |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A            |
|          |           |            |                |

**EBT Coordinator****Email: LIA07**

|         |           |            |              |
|---------|-----------|------------|--------------|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | Jim Anderson |
| Sun     | 10-Apr    | 7am - 3pm  | N/A          |
| Sun     | 10-Apr    | 3pm-11pm   | Jeremy Susco |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | Yen Chen     |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|          |           |            |     |
|----------|-----------|------------|-----|
| Mon      | 11-Apr    | 7am - 3pm  | N/A |
| Mon      | 11-Apr    | 3pm-11pm   | N/A |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A |
| Tue      | 12-Apr    | 7am - 3pm  | N/A |
| Tue      | 12-Apr    | 3pm-11pm   | N/A |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A |
| Wed      | 13-Apr    | 7am - 3pm  | N/A |
| Wed      | 13-Apr    | 3pm-11pm   | N/A |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A |
| Thur     | 14-Apr    | 7am - 3pm  | N/A |
| Thur     | 14-Apr    | 3pm-11pm   | N/A |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A |
| Fri      | 15-Apr    | 7am - 3pm  | N/A |
| Fri      | 15-Apr    | 3pm-11pm   | N/A |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A |
|          |           |            |     |

**Executive Support Team****EST Support (New Position)**

|          |           |            |                  |
|----------|-----------|------------|------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | N/A              |
| Sun      | 10-Apr    | 7am - 3pm  | N/A              |
| Sun      | 10-Apr    | 3pm-11pm   | N/A              |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A              |
| Mon      | 11-Apr    | 7am - 3pm  |                  |
| Mon      | 11-Apr    | 3pm-11pm   | Andrea Wimbush   |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Rebecca Stone    |
| Tue      | 12-Apr    | 7am - 3pm  | Annette Stang    |
| Tue      | 12-Apr    | 3pm-11pm   | Andrea Wimbush   |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am |                  |
| Wed      | 13-Apr    | 7am - 3pm  | Michelle Manahan |
| Wed      | 13-Apr    | 3pm-11pm   | Andrea Wimbush   |
| Wed-Thur | 4/13-4/14 | 11pm - 7am |                  |
| Thur     | 14-Apr    | 7am - 3pm  | Annette Stang    |
| Thur     | 14-Apr    | 3pm-11pm   | Michelle Manahan |
| Thur-Fri | 4/14-4/15 | 11pm - 7am |                  |
| Fri      | 15-Apr    | 7am - 3pm  | Emily Larson     |
| Fri      | 15-Apr    | 3pm-11pm   | Kelly Grimes     |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   |                  |

**EST Status Officer****Email: ET07**

|         |           |            |               |
|---------|-----------|------------|---------------|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | Jeff Grant    |
| Sun     | 10-Apr    | 7am - 3pm  | Jane Marshall |
| Sun     | 10-Apr    | 3pm-11pm   | Bill Gott     |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | Jeff Grant    |
| Mon     | 11-Apr    | 7am - 3pm  | N/A           |
| Mon     | 11-Apr    | 3pm-11pm   | N/A           |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|                            |           |                     |                |
|----------------------------|-----------|---------------------|----------------|
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am          | N/A            |
| Tue                        | 12-Apr    | 7am - 3pm           | N/A            |
| Tue                        | 12-Apr    | 3pm-11pm            | N/A            |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am          | N/A            |
| Wed                        | 13-Apr    | 7am - 3pm           | N/A            |
| Wed                        | 13-Apr    | 3pm-11pm            | N/A            |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am          | N/A            |
| Thur                       | 14-Apr    | 7am - 3pm           | N/A            |
| Thur                       | 14-Apr    | 3pm-11pm            | N/A            |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am          | N/A            |
| Fri                        | 15-Apr    | 7am - 3pm           | N/A            |
| Fri                        | 15-Apr    | 3pm-11pm            | N/A            |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am            | N/A            |
|                            |           |                     |                |
| <b>EST Actions Officer</b> |           | <b>Email: ET05</b>  |                |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am          | N/A            |
| Sun                        | 10-Apr    | 7am - 3pm           | N/A            |
| Sun                        | 10-Apr    | 3pm-11pm            | N/A            |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am          | N/A            |
| Mon                        | 11-Apr    | 7am - 3pm           | N/A            |
| Mon                        | 11-Apr    | 3pm-11pm            | N/A            |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am          | N/A            |
| Tue                        | 12-Apr    | 7am - 3pm           | N/A            |
| Tue                        | 12-Apr    | 3pm-11pm            | N/A            |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am          | N/A            |
| Wed                        | 13-Apr    | 7am - 3pm           | N/A            |
| Wed                        | 13-Apr    | 3pm-11pm            | N/A            |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am          | N/A            |
| Thur                       | 14-Apr    | 7am - 3pm           | N/A            |
| Thur                       | 14-Apr    | 3pm-11pm            | N/A            |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am          | N/A            |
| Fri                        | 15-Apr    | 7am - 3pm           | N/A            |
| Fri                        | 15-Apr    | 3pm-11pm            | N/A            |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am            | N/A            |
|                            |           |                     |                |
| <b>EST Coordinator</b>     |           | <b>Email: OST01</b> |                |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am          | Clyde Ragland  |
| Sun                        | 10-Apr    | 7am - 3pm           | Melissa Ralph  |
| Sun                        | 10-Apr    | 3pm-11pm            | Tony McMurtray |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am          | Cynthia Dorsey |
| Mon                        | 11-Apr    | 7am - 3pm           | N/A            |
| Mon                        | 11-Apr    | 3pm-11pm            | N/A            |
| Mon-Tue                    | 4/11-4/12 | 11pm - 7am          | N/A            |
| Tue                        | 12-Apr    | 7am - 3pm           | N/A            |
| Tue                        | 12-Apr    | 3pm-11pm            | N/A            |
| Tue-Wed                    | 4/12-4/13 | 11pm - 7am          | N/A            |

Japan Earthquake ERO Staffing Roster  
 April 10-16, 2011  
 Pay Period 9 - Week 1

|   |           |            |                             |
|---|-----------|------------|-----------------------------|
| Wed                                       | 13-Apr    | 7am - 3pm  | N/A                         |
| Wed                                       | 13-Apr    | 3pm-11pm   | N/A                         |
| Wed-Thur                                  | 4/13-4/14 | 11pm - 7am | N/A                         |
| Thur                                      | 14-Apr    | 7am - 3pm  | N/A                         |
| Thur                                      | 14-Apr    | 3pm-11pm   | N/A                         |
| Thur-Fri                                  | 4/14-4/15 | 11pm - 7am | N/A                         |
| Fri                                       | 15-Apr    | 7am - 3pm  | N/A                         |
| Fri                                       | 15-Apr    | 3pm-11pm   | N/A                         |
| Fri-Sat                                   | 4/15-4/16 | 11pm-7am   | N/A                         |
| <b>EST Chronology Officer Email: ET02</b> |           |            |                             |
| Sat-Sun                                   | 4/9-4/10  | 11pm - 7am | Nick Ballam                 |
| Sun                                       | 10-Apr    | 7am - 3pm  | Cornelia Burkhalter         |
| Sun                                       | 10-Apr    | 3pm-11pm   | Rebecca Karas               |
| Sun-Mon                                   | 4/10-4/11 | 11pm - 7am | Nick Ballam                 |
| Mon                                       | 11-Apr    | 7am - 3pm  | N/A                         |
| Mon                                       | 11-Apr    | 3pm-11pm   | N/A                         |
| Mon-Tue                                   | 4/11-12/5 | 11pm - 7am | N/A                         |
| Tue                                       | 12-Apr    | 7am - 3pm  | N/A                         |
| Tue                                       | 12-Apr    | 3pm-11pm   | N/A                         |
| Tue-Wed                                   | 4/12-13/6 | 11pm - 7am | N/A                         |
| Wed                                       | 13-Apr    | 7am - 3pm  | N/A                         |
| Wed                                       | 13-Apr    | 3pm-11pm   | N/A                         |
| Wed-Thur                                  | 4/13-4/14 | 11pm - 7am | N/A                         |
| Thur                                      | 14-Apr    | 7am - 3pm  | N/A                         |
| Thur                                      | 14-Apr    | 3pm-11pm   | N/A                         |
| Thur-Fri                                  | 4/14-4/15 | 11pm - 7am | N/A                         |
| Fri                                       | 15-Apr    | 7am - 3pm  | N/A                         |
| Fri                                       | 15-Apr    | 3pm-11pm   | N/A                         |
| Fri-Sat                                   | 4/15-4/16 | 11pm-7am   | N/A                         |
| <b>EST Response Ops Mgr Email: ET03</b>   |           |            |                             |
| Sat-Sun                                   | 4/9-4/10  | 11pm - 7am | NA                          |
| Sun                                       | 10-Apr    | 7am - 3pm  | Karen Jackson               |
| Sun                                       | 10-Apr    | 3pm-11pm   | Sandra Valencia/Nick Ballam |
| Sun-Mon                                   | 4/10-4/11 | 11pm - 7am | Cris Brown                  |
| Mon                                       | 11-Apr    | 7am - 3pm  | N/A                         |
| Mon                                       | 11-Apr    | 3pm-11pm   | N/A                         |
| Mon-Tue                                   | 4/11-12/5 | 11pm - 7am | N/A                         |
| Tue                                       | 12-Apr    | 7am - 3pm  | N/A                         |
| Tue                                       | 12-Apr    | 3pm-11pm   | N/A                         |
| Tue-Wed                                   | 4/12-13/6 | 11pm - 7am | N/A                         |
| Wed                                       | 13-Apr    | 7am - 3pm  | N/A                         |
| Wed                                       | 13-Apr    | 3pm-11pm   | N/A                         |
| Wed-Thur                                  | 4/13-4/14 | 11pm - 7am | N/A                         |
| Thur                                      | 14-Apr    | 7am - 3pm  | N/A                         |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|                             |           |            |               |
|-----------------------------|-----------|------------|---------------|
| Thur                        | 14-Apr    | 3pm-11pm   | N/A           |
| Thur-Fri                    | 4/14-4/15 | 11pm - 7am | N/A           |
| Fri                         | 15-Apr    | 7am - 3pm  | N/A           |
| Fri                         | 15-Apr    | 3pm-11pm   | N/A           |
| Fri-Sat                     | 4/15-4/16 | 11pm-7am   | N/A           |
| <b>EST Admin. Assistant</b> |           |            |               |
| <b>Email: OST02</b>         |           |            |               |
| Sat-Sun                     | 4/9-4/10  | 11pm - 7am | N/A           |
| Sun                         | 10-Apr    | 7am - 3pm  | N/A           |
| Sun                         | 10-Apr    | 3pm-11pm   | N/A           |
| Sun-Mon                     | 4/10-4/11 | 11pm - 7am | N/A           |
| Mon                         | 11-Apr    | 7am - 3pm  | N/A           |
| Mon                         | 11-Apr    | 3pm-11pm   | N/A           |
| Mon-Tue                     | 4/11-4/12 | 11pm - 7am | N/A           |
| Tue                         | 12-Apr    | 7am - 3pm  | N/A           |
| Tue                         | 12-Apr    | 3pm-11pm   | N/A           |
| Tue-Wed                     | 4/12-13/6 | 11pm - 7am | N/A           |
| Wed                         | 13-Apr    | 7am - 3pm  | N/A           |
| Wed                         | 13-Apr    | 3pm-11pm   | N/A           |
| Wed-Thur                    | 4/13-4/14 | 11pm - 7am | N/A           |
| Thur                        | 14-Apr    | 7am - 3pm  | N/A           |
| Thur                        | 14-Apr    | 3pm-11pm   | N/A           |
| Thur-Fri                    | 4/14-4/15 | 11pm - 7am | N/A           |
| Fri                         | 15-Apr    | 7am - 3pm  | N/A           |
| Fri                         | 15-Apr    | 3pm-11pm   | N/A           |
| Fri-Sat                     | 4/15-4/16 | 11pm-7am   | N/A           |
| <b>Liaison Team</b>         |           |            |               |
| <b>LT Director</b>          |           |            |               |
| <b>Email: LIA06</b>         |           |            |               |
| Sat-Sun                     | 4/9-4/10  | 11pm - 7am | N/A           |
| Sun                         | 10-Apr    | 7am - 3pm  | Mark Lombard  |
| Sun                         | 10-Apr    | 3pm-11pm   | Andy Campbell |
| Sun-Mon                     | 4/10-4/11 | 11pm - 7am | N/A           |
| Mon                         | 11-Apr    | 7am - 3pm  | N/A           |
| Mon                         | 11-Apr    | 3pm-11pm   | N/A           |
| Mon-Tue                     | 4/11-12/5 | 11pm - 7am | N/A           |
| Tue                         | 12-Apr    | 7am - 3pm  | N/A           |
| Tue                         | 12-Apr    | 3pm-11pm   | N/A           |
| Tue-Wed                     | 4/12-13/6 | 11pm - 7am | N/A           |
| Wed                         | 13-Apr    | 7am - 3pm  | N/A           |
| Wed                         | 13-Apr    | 3pm-11pm   | N/A           |
| Wed-Thur                    | 4/13-4/14 | 11pm - 7am | N/A           |
| Thur                        | 14-Apr    | 7am - 3pm  | N/A           |
| Thur                        | 14-Apr    | 3pm-11pm   | N/A           |
| Thur-Fri                    | 4/14-4/15 | 11pm - 7am | N/A           |
| Fri                         | 15-Apr    | 7am - 3pm  | N/A           |



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|   |           |            |                         |
|---|-----------|------------|-------------------------|
| Fri   | 15-Apr    | 3pm-11pm   | N/A                     |
| Fri-Sat   | 4/15-4/16 | 11pm-7am   | N/A                     |
| <b>LT Coordinator</b> <b>Email: LIA08</b>           |           |            |                         |
| Sat-Sun   | 4/9-4/10  | 11pm - 7am | Rani Franovich          |
| Sun   | 10-Apr    | 7am - 3pm  | Lisa Wright             |
| Sun   | 10-Apr    | 3pm-11pm   | Milt Murray             |
| Sun-Mon   | 4/10-4/11 | 11pm - 7am | Jeff Temple             |
| Mon   | 11-Apr    | 7am - 3pm  | Lisa Wright             |
| Mon   | 11-Apr    | 3pm-11pm   | Clyde Ragland           |
| Mon-Tue   | 4/11-12/5 | 11pm - 7am | Jeff Temple             |
| Tue   | 12-Apr    | 7am - 3pm  | Lisa Wright             |
| Tue   | 12-Apr    | 3pm-11pm   | Clyde Ragland           |
| Tue-Wed   | 4/12-13/6 | 11pm - 7am | Jeff Temple             |
| Wed   | 13-Apr    | 7am - 3pm  | Joe Rivers              |
| Wed   | 13-Apr    | 3pm-11pm   | Lisa Wright             |
| Wed-Thur  | 4/13-4/14 | 11pm - 7am | Jeff Temple             |
| Thur  | 14-Apr    | 7am - 3pm  | Joe Rivers              |
| Thur  | 14-Apr    | 3pm-11pm   | Rani Franovich          |
| Thur-Fri  | 4/14-4/15 | 11pm - 7am | Janelle Jessie          |
| Fri   | 15-Apr    | 7am - 3pm  | Milt Murray             |
| Fri   | 15-Apr    | 3pm-11pm   | Jeff Temple             |
| Fri-Sat   | 4/15-4/16 | 11pm-7am   | Rani Franovich          |
| <b>LT State Liaison</b> <b>Email: LIA04/OST05</b>   |           |            |                         |
| Sat-Sun   | 4/9-4/10  | 9pm-7am    | Amanda Noonan (On Call) |
| Sun   | 10-Apr    | 7am-2pm    | Amanda Noonan (On Call) |
| Sun   | 10-Apr    | 2pm-9pm    | Amanda Noonan (On Call) |
| Sun-Mon   | 4/10-4/11 | 9pm-7am    | Amanda Noonan (On Call) |
| Mon   | 11-Apr    | 7am-2pm    | N/A                     |
| Mon   | 11-Apr    | 2pm-9pm    | N/A                     |
| Mon-Tue   | 4/11-4/12 | 9pm-7am    | N/A                     |
| Tue   | 12-Apr    | 7am-2pm    | N/A                     |
| Tue   | 12-Apr    | 2pm-9pm    | N/A                     |
| Tue-Wed   | 4/12-4/13 | 9pm-7am    | N/A                     |
| Wed   | 13-Apr    | 7am-2pm    | N/A                     |
| Wed   | 13-Apr    | 2pm-9pm    | N/A                     |
| Wed-Thur  | 4/13-4/14 | 9pm-7am    | N/A                     |
| Thur  | 14-Apr    | 7am-2pm    | N/A                     |
| Thur  | 14-Apr    | 2pm-9pm    | N/A                     |
| Thur-Fri  | 4/14-4/15 | 9pm-7am    | N/A                     |
| Fri   | 15-Apr    | 7am-2pm    | N/A                     |
| Fri   | 15-Apr    | 2pm-9pm    | N/A                     |
| Fri-Sat   | 4/15-4/16 | 9pm-7am    | N/A                     |
| <b>LT Federal Liaison</b> <b>Email: LIA01/LIA11</b> |           |            |                         |

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|          |           |            |              |
|----------|-----------|------------|--------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Scott Sloan  |
| Sun      | 10-Apr    | 7am - 3pm  | Russ Chazell |
| Sun      | 10-Apr    | 3pm-11pm   | Jeff Lynch   |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Ned Wright   |
| Mon      | 11-Apr    | 7am - 3pm  | N/A          |
| Mon      | 11-Apr    | 3pm-11pm   | N/A          |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A          |
| Tue      | 12-Apr    | 7am - 3pm  | N/A          |
| Tue      | 12-Apr    | 3pm-11pm   | N/A          |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A          |
| Wed      | 13-Apr    | 7am - 3pm  | N/A          |
| Wed      | 13-Apr    | 3pm-11pm   | N/A          |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A          |
| Thur     | 14-Apr    | 7am - 3pm  | N/A          |
| Thur     | 14-Apr    | 3pm-11pm   | N/A          |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A          |
| Fri      | 15-Apr    | 7am - 3pm  | N/A          |
| Fri      | 15-Apr    | 3pm-11pm   | N/A          |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A          |

**LT Congressional Liaison (2)**

**Email: LIA12**

|      |        |           |                           |
|------|--------|-----------|---------------------------|
| Sat  | 9-Apr  | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Sat  | 9-Apr  | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Sun  | 10-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Sun  | 10-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Mon  | 11-Apr | 7am - 2pm | N/A                       |
| Mon  | 11-Apr | 2pm-9pm   | N/A                       |
| Tue  | 12-Apr | 7am - 2pm | N/A                       |
| Tue  | 12-Apr | 2pm-9pm   | N/A                       |
| Wed  | 13-Apr | 7am - 2pm | N/A                       |
| Wed  | 13-Apr | 2pm-9pm   | N/A                       |
| Thur | 14-Apr | 7am - 2pm | N/A                       |
| Thur | 14-Apr | 2pm-9pm   | N/A                       |
| Fri  | 15-Apr | 7am - 2pm | N/A                       |
| Fri  | 15-Apr | 2pm-9pm   | N/A                       |

**LT International Liaison (2)**

**Email: LIA02/LIA03/LIA10**

|         |           |            |                  |
|---------|-----------|------------|------------------|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | Danielle/Lauren  |
| Sun     | 10-Apr    | 7am - 3pm  | Eric/Mugeh       |
| Sun     | 10-Apr    | 3pm-11pm   | Jen S./Charlotte |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | Danielle/Lauren  |
| Mon     | 11-Apr    | 7am - 3pm  | N/A              |
| Mon     | 11-Apr    | 3pm-11pm   | N/A              |
| Mon-Tue | 4/11-12/5 | 11pm - 7am | N/A              |
| Tue     | 12-Apr    | 7am - 3pm  | N/A              |
| Tue     | 12-Apr    | 3pm-11pm   | N/A              |

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|          |           |            |     |
|----------|-----------|------------|-----|
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A |
| Wed      | 13-Apr    | 7am - 3pm  | N/A |
| Wed      | 13-Apr    | 3pm-11pm   | N/A |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A |
| Thur     | 14-Apr    | 7am - 3pm  | N/A |
| Thur     | 14-Apr    | 3pm-11pm   | N/A |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A |
| Fri      | 15-Apr    | 7am - 3pm  | N/A |
| Fri      | 15-Apr    | 3pm-11pm   | N/A |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A |

**Protective Measures Team****PMTR Director****Email: PMT12**

|          |           |            |     |
|----------|-----------|------------|-----|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | N/A |
| Sun      | 10-Apr    | 7am - 3pm  | N/A |
| Sun      | 10-Apr    | 3pm-11pm   | N/A |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A |
| Mon      | 11-Apr    | 7am - 3pm  | N/A |
| Mon      | 11-Apr    | 3pm-11pm   | N/A |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A |
| Tue      | 12-Apr    | 7am - 3pm  | N/A |
| Tue      | 12-Apr    | 3pm-11pm   | N/A |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A |
| Wed      | 13-Apr    | 7am - 3pm  | N/A |
| Wed      | 13-Apr    | 3pm-11pm   | N/A |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A |
| Thur     | 14-Apr    | 7am - 3pm  | N/A |
| Thur     | 14-Apr    | 3pm-11pm   | N/A |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A |
| Fri      | 15-Apr    | 7am - 3pm  | N/A |
| Fri      | 15-Apr    | 3pm-11pm   | N/A |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A |

**PMTR Coordinator****Email: PMT09**

|         |           |            |                      |
|---------|-----------|------------|----------------------|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | Kimyata MorganButler |
| Sun     | 10-Apr    | 7am - 3pm  | N/A                  |
| Sun     | 10-Apr    | 3pm-11pm   | N/A                  |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | N/A                  |
| Mon     | 11-Apr    | 7am - 3pm  | N/A                  |
| Mon     | 11-Apr    | 3pm-11pm   | N/A                  |
| Mon-Tue | 4/11-12/5 | 11pm - 7am | N/A                  |
| Tue     | 12-Apr    | 7am - 3pm  | N/A                  |
| Tue     | 12-Apr    | 3pm-11pm   | N/A                  |
| Tue-Wed | 4/12-13/6 | 11pm - 7am | N/A                  |
| Wed     | 13-Apr    | 7am - 3pm  | N/A                  |
| Wed     | 13-Apr    | 3pm-11pm   | N/A                  |

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|                                   |           |            |                        |
|-----------------------------------|-----------|------------|------------------------|
| Wed-Thur                          | 4/13-4/14 | 11pm - 7am | N/A                    |
| Thur                              | 14-Apr    | 7am - 3pm  | N/A                    |
| Thur                              | 14-Apr    | 3pm-11pm   | N/A                    |
| Thur-Fri                          | 4/14-4/15 | 11pm - 7am | N/A                    |
| Fri                               | 15-Apr    | 7am - 3pm  | N/A                    |
| Fri                               | 15-Apr    | 3pm-11pm   | N/A                    |
| Fri-Sat                           | 4/15-4/16 | 11pm-7am   | N/A                    |
| <b>PMTR Prot Actions Asst Dir</b> |           |            |                        |
| <b>Email: PMT12</b>               |           |            |                        |
| Sat-Sun                           | 4/9-4/10  | 11pm - 7am | Jessica Kratchman      |
| Sun                               | 10-Apr    | 7am - 3pm  | Kathy Brock            |
| Sun                               | 10-Apr    | 3pm-11pm   | Stacey Rosenberg       |
| Sun-Mon                           | 4/10-4/11 | 11pm - 7am | Greg Casto             |
| Mon                               | 11-Apr    | 7am - 3pm  | Kathy Brock            |
| Mon                               | 11-Apr    | 3pm-11pm   | Stacey Rosenberg       |
| Mon-Tue                           | 4/11-12/5 | 11pm - 7am | Greg Casto             |
| Tue                               | 12-Apr    | 7am - 3pm  | Kathy Brock            |
| Tue                               | 12-Apr    | 3pm-11pm   | Stacey Rosenberg       |
| Tue-Wed                           | 4/12-13/6 | 11pm - 7am | Greg Casto             |
| Wed                               | 13-Apr    | 7am - 3pm  | Kathy Brock            |
| Wed                               | 13-Apr    | 3pm-11pm   | Sandra Wastler         |
| Wed-Thur                          | 4/13-4/14 | 11pm - 7am | Greg Casto             |
| Thur                              | 14-Apr    | 7am - 3pm  | Kathy Brock            |
| Thur                              | 14-Apr    | 3pm-11pm   | Stacey Rosenberg       |
| Thur-Fri                          | 4/14-4/15 | 11pm - 7am |                        |
| Fri                               | 15-Apr    | 7am - 3pm  | Sandra Wastler         |
| Fri                               | 15-Apr    | 3pm-11pm   | Stacey Rosenberg       |
| Fri-Sat                           | 4/15-4/16 | 11pm-7am   |                        |
| <b>PMTR RAAD</b>                  |           |            |                        |
| <b>Email: PMT05</b>               |           |            |                        |
| Sat-Sun                           | 4/9-4/10  | 11pm - 7am | Mike Norris            |
| Sun                               | 10-Apr    | 7am - 3pm  | Don Johnson            |
| Sun                               | 10-Apr    | 3pm-11pm   | Stephanie Bush-Goddard |
| Sun-Mon                           | 4/10-4/11 | 11pm - 7am | Mike Norris            |
| Mon                               | 11-Apr    | 7am - 3pm  | N/A                    |
| Mon                               | 11-Apr    | 3pm-11pm   | N/A                    |
| Mon-Tue                           | 4/11-12/5 | 11pm - 7am | N/A                    |
| Tue                               | 12-Apr    | 7am - 3pm  | N/A                    |
| Tue                               | 12-Apr    | 3pm-11pm   | N/A                    |
| Tue-Wed                           | 4/12-13/6 | 11pm - 7am | N/A                    |
| Wed                               | 13-Apr    | 7am - 3pm  | N/A                    |
| Wed                               | 13-Apr    | 3pm-11pm   | N/A                    |
| Wed-Thur                          | 4/13-4/14 | 11pm - 7am | N/A                    |
| Thur                              | 14-Apr    | 7am - 3pm  | N/A                    |
| Thur                              | 14-Apr    | 3pm-11pm   | N/A                    |
| Thur-Fri                          | 4/14-4/15 | 11pm - 7am | N/A                    |

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|         |           |           |     |
|---------|-----------|-----------|-----|
| Fri     | 15-Apr    | 7am - 3pm | N/A |
| Fri     | 15-Apr    | 3pm-11pm  | N/A |
| Fri-Sat | 4/15-4/16 | 11pm-7am  | N/A |

**PMTR Dose Assessment (RASCAL) - Need 2 people/day****Email: PMT02/PMT11**

|          |           |            |                          |
|----------|-----------|------------|--------------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Ed Roach                 |
| Sun      | 10-Apr    | 7am - 3pm  | John Tomon               |
| Sun      | 10-Apr    | 3pm-11pm   | Fritz Sturz              |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | John Parillo/Doris Lewis |
| Mon      | 11-Apr    | 7am - 3pm  | N/A                      |
| Mon      | 11-Apr    | 3pm-11pm   | N/A                      |
| Mon-Tue  | 4/11-4/12 | 11pm - 7am | N/A                      |
| Tue      | 12-Apr    | 7am - 3pm  | N/A                      |
| Tue      | 12-Apr    | 3pm-11pm   | N/A                      |
| Tue-Wed  | 4/12-4/13 | 11pm - 7am | N/A                      |
| Wed      | 13-Apr    | 7am - 3pm  | N/A                      |
| Wed      | 13-Apr    | 3pm-11pm   | N/A                      |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A                      |
| Thur     | 14-Apr    | 7am - 3pm  | N/A                      |
| Thur     | 14-Apr    | 3pm-11pm   | N/A                      |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A                      |
| Fri      | 15-Apr    | 7am - 3pm  | N/A                      |
| Fri      | 15-Apr    | 3pm-11pm   | N/A                      |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A                      |

**PMTR GIS Analyst****Email: GIS**

|          |           |            |              |
|----------|-----------|------------|--------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | N/A          |
| Sun      | 10-Apr    | 7am - 3pm  | ON CALL ONLY |
| Sun      | 10-Apr    | 3pm-11pm   | N/A          |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A          |
| Mon      | 11-Apr    | 7am - 3pm  | N/A          |
| Mon      | 11-Apr    | 3pm-11pm   | N/A          |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A          |
| Tue      | 12-Apr    | 7am - 3pm  | N/A          |
| Tue      | 12-Apr    | 3pm-11pm   | N/A          |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A          |
| Wed      | 13-Apr    | 7am - 3pm  | N/A          |
| Wed      | 13-Apr    | 3pm-11pm   | N/A          |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A          |
| Thur     | 14-Apr    | 7am - 3pm  | N/A          |
| Thur     | 14-Apr    | 3pm-11pm   | N/A          |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A          |
| Fri      | 15-Apr    | 7am - 3pm  | N/A          |
| Fri      | 15-Apr    | 3pm-11pm   | N/A          |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A          |

| <b>PMTR Meteorologist</b> |           | <b>Email: PMT01</b> |              |
|---------------------------|-----------|---------------------|--------------|
| Sat-Sun                   | 4/9-4/10  | 11pm - 7am          | N/A          |
| Sun                       | 10-Apr    | 7am - 3pm           | ON CALL ONLY |
| Sun                       | 10-Apr    | 3pm-11pm            | N/A          |
| Sun-Mon                   | 4/10-4/11 | 11pm - 7am          | N/A          |
| Mon                       | 11-Apr    | 7am - 3pm           | N/A          |
| Mon                       | 11-Apr    | 3pm-11pm            | N/A          |
| Mon-Tue                   | 4/11-12/5 | 11pm - 7am          | N/A          |
| Tue                       | 12-Apr    | 7am - 3pm           | N/A          |
| Tue                       | 12-Apr    | 3pm-11pm            | N/A          |
| Tue-Wed                   | 4/12-13/6 | 11pm - 7am          | N/A          |
| Wed                       | 13-Apr    | 7am - 3pm           | N/A          |
| Wed                       | 13-Apr    | 3pm-11pm            | N/A          |
| Wed-Thur                  | 4/13-4/14 | 11pm - 7am          | N/A          |
| Thur                      | 14-Apr    | 7am - 3pm           | N/A          |
| Thur                      | 14-Apr    | 3pm-11pm            | N/A          |
| Thur-Fri                  | 4/14-4/15 | 11pm - 7am          | N/A          |
| Fri                       | 15-Apr    | 7am - 3pm           | N/A          |
| Fri                       | 15-Apr    | 3pm-11pm            | N/A          |
| Fri-Sat                   | 4/15-4/16 | 11pm-7am            | N/A          |

**Reactor Safety Team**

| <b>RST Director</b>    |           | <b>Email: RST01</b>  |               |
|------------------------|-----------|----------------------|---------------|
| Sat-Sun                | 4/9-4/10  | 11pm - 7am           | Fred Brown    |
| Sun                    | 10-Apr    | 7am - 3pm            | Ed Hackett    |
| Sun                    | 10-Apr    | 3pm-11pm             | Allen Howe    |
| Sun-Mon                | 4/10-4/11 | 11pm - 7am           | Fred Brown    |
| Mon                    | 11-Apr    | 7am - 3pm            | N/A           |
| Mon                    | 11-Apr    | 3pm-11pm             | N/A           |
| Mon-Tue                | 4/11-12/5 | 11pm - 7am           | N/A           |
| Tue                    | 12-Apr    | 7am - 3pm            | N/A           |
| Tue                    | 12-Apr    | 3pm-11pm             | N/A           |
| Tue-Wed                | 4/12-13/6 | 11pm - 7am           | N/A           |
| Wed                    | 13-Apr    | 7am - 3pm            | N/A           |
| Wed                    | 13-Apr    | 3pm-11pm             | N/A           |
| Wed-Thur               | 4/13-4/14 | 11pm - 7am           | N/A           |
| Thur                   | 14-Apr    | 7am - 3pm            | N/A           |
| Thur                   | 14-Apr    | 3pm-11pm             | N/A           |
| Thur-Fri               | 4/14-4/15 | 11pm - 7am           | N/A           |
| Fri                    | 15-Apr    | 7am - 3pm            | N/A           |
| Fri                    | 15-Apr    | 3pm-11pm             | N/A           |
| Fri-Sat                | 4/15-4/16 | 11pm-7am             | N/A           |
|                        |           |                      |               |
| <b>RST Coordinator</b> |           | <b>Email: RST01B</b> |               |
| Sat-Sun                | 4/9-4/10  | 11pm - 7am           | Oleg Bukharin |

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|                            |           |            |                  |
|----------------------------|-----------|------------|------------------|
| Sun                        | 10-Apr    | 7am - 3pm  | Rick Hasselberg  |
| Sun                        | 10-Apr    | 3pm-11pm   | Kerri Kavanagh   |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am | Joelle Starfos   |
| Mon                        | 11-Apr    | 7am - 3pm  | N/A              |
| Mon                        | 11-Apr    | 3pm-11pm   | N/A              |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am | N/A              |
| Tue                        | 12-Apr    | 7am - 3pm  | N/A              |
| Tue                        | 12-Apr    | 3pm-11pm   | N/A              |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am | N/A              |
| Wed                        | 13-Apr    | 7am - 3pm  | N/A              |
| Wed                        | 13-Apr    | 3pm-11pm   | N/A              |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am | N/A              |
| Thur                       | 14-Apr    | 7am - 3pm  | N/A              |
| Thur                       | 14-Apr    | 3pm-11pm   | N/A              |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am | N/A              |
| Fri                        | 15-Apr    | 7am - 3pm  | N/A              |
| Fri                        | 15-Apr    | 3pm-11pm   | N/A              |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am   | N/A              |
| <b>Severe Accident/PRA</b> |           |            |                  |
| <b>Email: RST10</b>        |           |            |                  |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am | Velazquez-Lozada |
| Sun                        | 10-Apr    | 7am - 3pm  | SM Wong          |
| Sun                        | 10-Apr    | 3pm-11pm   | Raj Iyengar      |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am | Larry Criscione  |
| Mon                        | 11-Apr    | 7am - 3pm  | Len Ward         |
| Mon                        | 11-Apr    | 3pm-11pm   | Mark Caruso      |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am | Larry Criscione  |
| Tue                        | 12-Apr    | 7am - 3pm  | Ben Beasley      |
| Tue                        | 12-Apr    | 3pm-11pm   | Antonios Zoulis  |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am | Larry Criscione  |
| Wed                        | 13-Apr    | 7am - 3pm  | Mark Caruso      |
| Wed                        | 13-Apr    | 3pm-11pm   | Antonio Zoulis   |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am | Hanh Phan        |
| Thur                       | 14-Apr    | 7am - 3pm  | Tina Ghosh       |
| Thur                       | 14-Apr    | 3pm-11pm   | Antonios Zoulis  |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am | Ben Beasley      |
| Fri                        | 15-Apr    | 7am - 3pm  | Raj Iyengar      |
| Fri                        | 15-Apr    | 3pm-11pm   | Antonios Zoulis  |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am   | Larry Criscione  |
| <b>BWR Expertise</b>       |           |            |                  |
| <b>Email: RST11</b>        |           |            |                  |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am | Greg Cranston    |
| Sun                        | 10-Apr    | 7am - 3pm  | Larry Vick       |
| Sun                        | 10-Apr    | 3pm-11pm   | Chuck Norton     |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am | Tim Kolb         |
| Mon                        | 11-Apr    | 7am - 3pm  | Mike Brown       |



## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|   |           |            |                  |
|---|-----------|------------|------------------|
| Mon                                     | 11-Apr    | 3pm-11pm   | Chuck Norton     |
| Mon-Tue                                 | 4/11-12/5 | 11pm - 7am | Tim Kolb         |
| Tue                                     | 12-Apr    | 7am - 3pm  | Mike Brown       |
| Tue                                     | 12-Apr    | 3pm-11pm   | Chuck Norton     |
| Tue-Wed                                 | 4/12-13/6 | 11pm - 7am | Tim Kolb         |
| Wed                                     | 13-Apr    | 7am - 3pm  | Mike Brown       |
| Wed                                     | 13-Apr    | 3pm-11pm   | Chuck Norton     |
| Wed-Thur                                | 4/13-4/14 | 11pm - 7am | Tim Kolb         |
| Thur                                    | 14-Apr    | 7am - 3pm  | Mike Brown       |
| Thur                                    | 14-Apr    | 3pm-11pm   | Chuck Norton     |
| Thur-Fri                                | 4/14-4/15 | 11pm - 7am |                  |
| Fri                                     | 15-Apr    | 7am - 3pm  | Greg Cranston    |
| Fri                                     | 15-Apr    | 3pm-11pm   | Chuck Norton     |
| Fri-Sat                                 | 4/15-4/16 | 11pm-7am   |                  |
| <b>RST Comm/ERDS Operator</b>           |           |            |                  |
| <b>Email: RST16</b>                     |           |            |                  |
| Sat-Sun                                 | 4/9-4/10  | 11pm - 7am | Liliana Ramadan  |
| Sun                                     | 10-Apr    | 7am - 3pm  | Jim Isom         |
| Sun                                     | 10-Apr    | 3pm-11pm   | Bill Roggenbrodt |
| Sun-Mon                                 | 4/10-4/11 | 11pm - 7am | Margie Kotzalas  |
| Mon                                     | 11-Apr    | 7am - 3pm  | N/A              |
| Mon                                     | 11-Apr    | 3pm-11pm   | N/A              |
| Mon-Tue                                 | 4/11-12/5 | 11pm - 7am | N/A              |
| Tue                                     | 12-Apr    | 7am - 3pm  | N/A              |
| Tue                                     | 12-Apr    | 3pm-11pm   | N/A              |
| Tue-Wed                                 | 4/12-13/6 | 11pm - 7am | N/A              |
| Wed                                     | 13-Apr    | 7am - 3pm  | N/A              |
| Wed                                     | 13-Apr    | 3pm-11pm   | N/A              |
| Wed-Thur                                | 4/13-4/14 | 11pm - 7am | N/A              |
| Thur                                    | 14-Apr    | 7am - 3pm  | N/A              |
| Thur                                    | 14-Apr    | 3pm-11pm   | N/A              |
| Thur-Fri                                | 4/14-4/15 | 11pm - 7am | N/A              |
| Fri                                     | 15-Apr    | 7am - 3pm  | N/A              |
| Fri                                     | 15-Apr    | 3pm-11pm   | N/A              |
| Fri-Sat                                 | 4/15-4/16 | 11pm-7am   | N/A              |
| <b>RST Support (Seismology Q&amp;A)</b> |           |            |                  |
| Sat-Sun                                 | 4/9-4/10  | 11pm - 7am | (On Call)        |
| Sun                                     | 10-Apr    | 7am - 3pm  | (On Call)        |
| Sun                                     | 10-Apr    | 3pm-11pm   | (On Call)        |
| Sun-Mon                                 | 4/10-4/11 | 11pm - 7am | (On Call)        |
| Mon                                     | 11-Apr    | 7am - 3pm  | (On Call)        |
| Mon                                     | 11-Apr    | 3pm-11pm   | (On Call)        |
| Mon-Tue                                 | 4/11-12/5 | 11pm - 7am | (On Call)        |
| Tue                                     | 12-Apr    | 7am - 3pm  | (On Call)        |
| Tue                                     | 12-Apr    | 3pm-11pm   | (On Call)        |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|                                 |           |            |                        |
|---------------------------------|-----------|------------|------------------------|
| Tue-Wed                         | 4/12-13/6 | 11pm - 7am | (On Call)              |
| Wed                             | 13-Apr    | 7am - 3pm  | (On Call)              |
| Wed                             | 13-Apr    | 3pm-11pm   | (On Call)              |
| Wed-Thur                        | 4/13-4/14 | 11pm - 7am | (On Call)              |
| Thur                            | 14-Apr    | 7am - 3pm  | (On Call)              |
| Thur                            | 14-Apr    | 3pm-11pm   | (On Call)              |
| Thur-Fri                        | 4/14-4/15 | 11pm - 7am | (On Call)              |
| Fri                             | 15-Apr    | 7am - 3pm  | (On Call)              |
| Fri                             | 15-Apr    | 3pm-11pm   | (On Call)              |
| Fri-Sat                         | 4/15-4/16 | 11pm-7am   | (On Call)              |
|                                 |           |            |                        |
| <b>RST Support (Structural)</b> |           |            |                        |
| Sat-Sun                         | 4/9-4/10  | 11pm - 7am | (On Call) Pravin Patel |
| Sun                             | 10-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Sun                             | 10-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Sun-Mon                         | 4/10-4/11 | 11pm - 7am | (On Call) Pravin Patel |
| Mon                             | 11-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Mon                             | 11-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Mon-Tues                        | 4/11-12/5 | 11pm - 7am | (On Call) Pravin Patel |
| Tues                            | 12-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Tues                            | 12-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Tues-Wed                        | 4/12-13/6 | 11pm - 7am | (On Call) Pravin Patel |
| Wed                             | 13-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Wed                             | 13-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Wed-Thur                        | 4/13-4/14 | 11pm - 7am | (On Call) Pravin Patel |
| Thur                            | 14-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Thur                            | 14-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Thur-Fri                        | 4/14-4/15 | 11pm - 7am | (On Call) Pravin Patel |
| Fri                             | 15-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Fri                             | 15-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Fri-Sat                         | 4/15-4/16 | 11pm-7am   | (On Call) Pravin Patel |

**Wagner, Katie**

---

**From:** Wagner, Katie  
**Sent:** Thursday, March 17, 2011 1:50 PM  
**To:** Schaperow, Jason  
**Subject:** RE: Use of sand/water for 1F4 SFP

Jason,

I apologize for the delay in forwarding the email, I just read it. In the future if something that looks this urgent comes in please feel free to add the "High Priority" designation for the email or call me.

Thanks,  
Katie

---

**From:** Schaperow, Jason  
**Sent:** Thursday, March 17, 2011 11:03 AM  
**To:** Wagner, Katie  
**Subject:** FW: Use of sand/water for 1F4 SFP

Hi Katie,  
Kathy Gibson directed me to send the question below to you. Tony Nakanishi is an NRC employee who is now assigned to be in Tokyo. My understanding is that you will be forwarding this email with the question below to the NRC Operations Center for them to address. Please send me an email to confirm that you have done this.

Thanks,  
Jason

---

**From:** Nakanishi, Tony  
**Sent:** Thursday, March 17, 2011 8:44 AM  
**To:** Schaperow, Jason  
**Cc:** Tinkler, Charles; Chang, Richard  
**Subject:** Re: Use of sand/water for 1F4 SFP

It's 9:40 pm Thursday. I could call you if you'd like.

---

**From:** Schaperow, Jason  
**To:** Nakanishi, Tony  
**Cc:** Tinkler, Charles; Chang, Richard  
**Sent:** Thu Mar 17 08:19:55 2011  
**Subject:** RE: Use of sand/water for 1F4 SFP

We are thinking about your question. What time and day is it now in Tokyo?

---

**From:** Nakanishi, Tony  
**Sent:** Thursday, March 17, 2011 7:11 AM  
**To:** Schaperow, Jason  
**Subject:** Use of sand/water for 1F4 SFP

Hi Jason,  
I am in Tokyo as a part of the the NRC delegation. I spoke with Eva Brown earlier. Please send me any info on the evaluating the use of sand/water for the Unit 4 SFP.  
Thanks,

Tony

## OST04 Hoc

---

**From:** LIA07 Hoc  
**Sent:** Thursday, March 17, 2011 5:07 PM  
**To:** OST04 Hoc  
**Subject:** FW: Remarks by the President on the Situation in Japan  
**Attachments:** FW: Japan Embassy pt. 2

For books ...  
Also for go books

---

**From:** RMTFACTSU\_ELNRC [mailto:RMTFACTSU\_ELNRC@ofda.gov]  
**Sent:** Thursday, March 17, 2011 4:41 PM  
**To:** LIA11 Hoc; LIA01 Hoc; LIA07 Hoc; LIA02 Hoc; LIA08 Hoc; LIA12 Hoc; ET07 Hoc; Marshall, Jane; Harrington, Holly; McIntyre, David; Grant, Jeffery  
**Subject:** Remarks by the President on the Situation in Japan

**Subject:** FW: Remarks by the President on the Situation in Japan

Please see the President's remarks below

Below is the POTUS statement on Japan. He also visited the Japanese Embassy this afternoon to offer condolences (pool reports are attached for color)

---

**From:** White House Press Office [mailto:noreply@messages.whitehouse.gov]  
**Sent:** Thursday, March 17, 2011 4:12 PM  
**To:** Trienens, Lillian (E&E.AA)  
**Subject:** Remarks by the President on the Situation in Japan

THE WHITE HOUSE  
Office of the Press Secretary

---

For Immediate Release

March 17, 2011

REMARKS BY THE PRESIDENT  
ON THE SITUATION IN JAPAN

Rose Garden

3:35 P.M. EDT

THE PRESIDENT: Good afternoon, everyone. Over the last several days, the American people have been both heartbroken and deeply concerned about the developments in Japan.

We've seen an earthquake and tsunami render unimaginable -- an unimaginable toll of death and destruction on one of our closest friends and allies in the world. And we've seen this powerful natural disaster cause even more catastrophe through its impact on nuclear reactors that bring peaceful energy to the people of Japan.

Today, I wanted to update the American people on what we know about the situation in Japan, what we're doing to support American citizens and the safety of our own nuclear energy, and how we are helping the Japanese people contain the damage, recover and rebuild.

LLLL/37

First, we are bringing all available resources to bear to closely monitor the situation, and to protect American citizens who may be in harm's way. Even as Japanese responders continue to do heroic work, we know that the damage to the nuclear reactors in Fukushima Daiichi plant poses a substantial risk to people who are nearby. That is why yesterday, we called for an evacuation of American citizens who are within 50 miles of the plant. This decision was based upon a careful scientific evaluation and the guidelines that we would use to keep our citizens safe here in the United States, or anywhere in the world.

Beyond this 50-mile radius, the risks do not currently call for an evacuation. But we do have a responsibility to take prudent and precautionary measures to educate those Americans who may be endangered by exposure to radiation if the situation deteriorates. That's why last night I authorized the voluntary departures of family members and dependents of U.S. officials working in northeastern Japan.

All U.S. citizens in Japan should continue to carefully monitor the situation and follow the guidance of the U.S. and Japanese governments. And those who are seeking assistance should contact our embassy and consulates, which continue to be open and operational.

Second, I know that many Americans are also worried about the potential risks to the United States. So I want to be very clear: We do not expect harmful levels of radiation to reach the United States, whether it's the West Coast, Hawaii, Alaska, or U.S. territories in the Pacific. Let me repeat that: We do not expect harmful levels of radiation to reach the West Coast, Hawaii, Alaska, or U.S. territories in the Pacific. That is the judgment of our Nuclear Regulatory Commission and many other experts.

Furthermore, the Centers for Disease Control and Prevention and public health experts do not recommend that people in the United States take precautionary measures beyond staying informed. And going forward, we will continue to keep the American people fully updated -- because I believe that you must know what I know as President.

Here at home, nuclear power is also an important part of our own energy future, along with renewable sources like wind, solar, natural gas and clean coal. Our nuclear power plants have undergone exhaustive study, and have been declared safe for any number of extreme contingencies. But when we see a crisis like the one in Japan, we have a responsibility to learn from this event, and to draw from those lessons to ensure the safety and security of our people.

That's why I've asked the Nuclear Regulatory Commission to do a comprehensive review of the safety of our domestic nuclear plants in light of the natural disaster that unfolded in Japan.

Finally, we are working aggressively to support our Japanese ally at this time of extraordinary challenge. Search and rescue teams are on the ground in Japan to help the recovery effort. A disaster assistance and response team is working to confront the aftermath of the earthquake and tsunami. The U.S. military, which has helped to ensure the security of Japan for decades, is working around the clock.

To date, we've flown hundreds of missions to support the recovery efforts, and distributed thousands of pounds of food and water to the Japanese people. We've also deployed some of our leading experts to help contain the damage at Japan's nuclear reactors. We're sharing with them expertise, equipment, and technology so that the courageous responders on the scene have the benefit of American teamwork and support.

And the American people have also opened up their hearts. Many have given generously to support the ongoing relief efforts. The Red Cross is providing assistance to help meet the immediate needs of those who've been displaced. And I would encourage anybody who wants to lend a hand to go to [usaid.gov](http://usaid.gov) to learn more -- that's [usaid.gov](http://usaid.gov) -- to find out how you can be helpful.

As I told Prime Minister Kan last night, and reaffirmed at the Japanese embassy here in Washington today, the Japanese people are not alone in this time of great trial and sorrow. Across the Pacific, they will find a hand of support extended from the United States as they get back on their feet. After all, we have an alliance that was forged more than a half century ago, and strengthened by shared interests and democratic values. Our people share ties of family, ties of culture, and ties of commerce. Our troops have served to protect Japan's shores, and our citizens have found opportunity and friendship in Japan's cities and towns.

Above all, I am confident that Japan will recover and rebuild because of the strength and spirit of the Japanese people. Over the last few days, they've opened up their homes to one another. They've shared scarce resources of food and water. They've organized shelters, provided free medical care, and looked out for their most vulnerable citizens. One man put it simply: "It's a Japanese thing. When hard times hit, we have to help each other."

In these hard times, there remains, nevertheless, hope for the future. In one small town that had been flattened by the tsunami, emergency workers rescued a four-month-old baby who had been swept out of her parents' arms and stranded for days among the debris. No one can say for certain just how she survived the water and the wreckage around her. There is a mystery in the course of human events.

But in the midst of economic recovery and global upheaval, disasters like this remind us of the common humanity that we share. We see it in the responders who are risking their lives at Fukushima. We show it through the help that has poured into Japan from 70 countries. And we hear it in the cries of a child, miraculously pulled from the rubble.

In the coming days, we will continue to do everything we can to ensure the safety of American citizens and the security of our sources of energy. And we will stand with the people of Japan as they contain this crisis, recover from this hardship, and rebuild their great nation.

Thanks very much.

END

3:42 P.M. EDT



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The White House · 1600 Pennsylvania Avenue, NW · Washington DC 20500 · 202-456-1111

## OST04 Hoc

---

**From:** White House Press Office [noreply@messages.whitehouse.gov]  
**Sent:** Thursday, March 17, 2011 3:17 PM  
**To:** Trienens, Lillian (E&E.AA) [USAID]  
**Subject:** FW: Japan Embassy pt. 2

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

From: [Leary@sptimes.com](mailto:Leary@sptimes.com) [mailto:[Leary@sptimes.com](mailto:Leary@sptimes.com)]  
Sent: Thursday, March 17, 2011 3:01 PM  
To: Finkenbinder, Benjamin N.; Hughes, Caroline E.  
Subject: Japan Embassy pt. 2

President Obama visited the Japan Embassy, in an unannounced trip, and signed a condolence book.

POTUS sat at a table covered in white cloth with the book before him. He sat for about 4 minutes 30 seconds. In front of him, on another table, were flowers and handwritten cards. "We are thinking of you," one read. "Sorry," read another.

POTUS wrote: "My heart goes out to the people of Japan during this enormous tragedy. Please know that America will always stand by one of its greatest allies during this time of need. Because of the strength and wisdom of its people, we know that Japan will recover, and indeed will emerge stronger than ever. And as it recovers, the memory of those who have been lost will remain in our hearts, and will serve only to strengthen the relationship between our two countries. May God bless the people of Japan." He signed his name and wrote "March 2011" after his signature.

Then POTUS addressed the pool saying the purpose was to communicate how "heartbroken," America is over the tragedy. "We are doing everything we can to stand by our great friend and ally, Japan, in this hour of need," he said. He offered sympathy for lives lost and those who are now displaced.

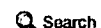
POTUS said he was "confident" Japan will rebuild, praising its "strong" and "dedicated" people.

Said Ambassador of Japan Ichiro Fujisaki: "We are so grateful to the president and the people of the United States."

-----  
Alex Leary  
Staff Writer  
St. Petersburg Times  
(202) 306-4807 cell  
[leary@sptimes.com](mailto:leary@sptimes.com)

-----  
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## Press Releases

Press Release (Mar 17, 2011)

Plant Status of Fukushima Daiichi Nuclear Power Station (as of 0:00 pm Mar 17th)

All 6 units of Fukushima Daiichi Nuclear Power Station have been shut down.

### Unit 1 (Shut down)

- Reactor has been shut down. However, the explosive sound and white smoke were confirmed after the big quake occurred at 3:36PM Mar 12th. It was assumed to be hydrogen explosion and currently under the investigation.
- We have been injecting sea water into the reactor pressure vessel.

### Unit 2 (Shut down)

- Reactor has been shut down and Reactor Core Isolation Cooling System has been injecting water to the reactor. However, reactor pressure has increased because the system stopped, causing reactor water level to drop. Following the instruction by the government and with fully securing safety, measure to lower the pressure level within the reactor containment vessel and injection of sea water were taken, reactor pressure and water level resumed.
- We are continuing the injection of sea water into the reactor.
- At approximately 6:00am, an abnormal noise began emanating from nearby Pressure Suppression Chamber and the pressure within this chamber decreased.
- While we continue sea water injection operations, the temporary transfer of TEPCO employees and workers from other companies not directly involved in this work has begun.

### Unit 3 (Shut down)

- Reactor has been shut down. However, the explosive sound and white smoke were confirmed at 11:01AM Mar 14th. It was assumed to be hydrogen explosion and currently under the investigation.
- We confirmed fog like steam from reactor building at 8:30AM on March 16th.
- As it was reported that the pressure of the Suppression Chamber temporarily increased at around 6:15AM on March 17th, we will continue monitoring.
- In order to cool spent fuel pool of Unit 3 we conducted water spray by helicopters of Self-Defense force at approximately 9:48 am. We are continuously monitoring the spent fuel pool and plan to conduct water spray to other Units.
- We have been injecting sea water into the reactor pressure vessel.

### Unit 4 (shut down due to regular inspection)

- Reactor has been shut down. However, we have confirmed the sustained damage around the 5th floor rooftop area of the Nuclear Reactor Building.
- Afterwards, we confirmed the outbreak of fire at the northwestern part of Nuclear Reactor Building. We immediately reported this matter to the fire department and the related authorities.
- However, at approximately 11:00am, when TEPCO employee arrived at the scene to confirm, the fire had already died down. At 5:45AM on March 16th, we confirmed the outbreak of the fire again but could not confirm it at 6:15AM. We will continue to monitor the situation carefully.

### Unit 5 (outage due to regular inspection)

- Reactor has been shut down and sufficient level of reactor coolant to ensure safety is maintained.
- Currently, we do not believe there is any reactor coolant leakage inside the reactor containment vessel.

### Unit 6 (outage due to regular inspection)

- Reactor has been shut down and sufficient level of reactor coolant to ensure safety is maintained.
- Currently, we do not believe there is any reactor coolant leakage inside the reactor containment vessel.

### Casualty

- 2 workers of cooperative firm were injured at the occurrence of the earthquake, and were transported to the hospital.
- 1 TEPCO employee who was not able to stand by his own with his hand holding left chest was transported to the hospital by an ambulance.
- 1 subcontract worker at important earthquake-proof building was unconscious and transported to the hospital by an ambulance.
- The radiation exposure of 1 TEPCO employee, who was working inside the reactor building, exceeded 100mSv and was transported to the hospital.
- 2 TEPCO employees felt bad during their operation in the central control rooms of Unit 1 and 2 while wearing full masks, and were transferred to Fukushima Daiichi Power Station for consultation with a medical advisor.
- 4 workers were injured and transported to the hospital after explosive sound and white smoke were confirmed around the Unit 1.
- 11 workers were injured and transported to Fukushima Daiichi Nuclear Power

Station after explosive sound and white smoke were confirmed around the Unit 3. One of the injured workers got medical treatment on March 16th, but the worker reported a flank pain. We required to the offsite center that the worker should be transported to the hospital. After that, the helicopter of JSDF arrived and transported the worker to the FUKUSHIMA Medical University Hospital at 10:56AM

- Presence of 2 TEPCO employees at the site is not confirmed.

#### Others

- We are currently coordinating with the relevant authorities and departments as to how to secure the cooling water to cool down the water in the spent nuclear fuel pool of the plant.
- We measured radioactive materials inside of the nuclear power station area (outdoor) by monitoring car and confirmed that radioactive materials level is getting higher than ordinary level. As listed below, we have determined that specific incidents stipulated in article 15, clause 1 (Abnormal increase in radiation dose measured at site boundary) have occurred.
  - \*Determined at 4:17 pm Mar 12th (Around Monitoring Post 4 )
  - \*Determined at 8:56 am Mar 13th (Around Monitoring Post 4 )
  - \*Determined at 2:15 pm Mar 13th (Around Monitoring Post 4 )
  - \*Determined at 3:50 am Mar 14th (Around Monitoring Post 6 )
  - \*Determined at 4:15 am Mar 14th (Around Monitoring Post 2 )
  - \*Determined at 9:27 am Mar 14th (Around Monitoring Post 3 )
  - \*Determined at 9:37 pm Mar 14th (Around main entrance )
  - \*Determined at 6:51 am Mar 15th (Around main entrance )
  - \*Determined at 8:11 am Mar 15th (Around main entrance )
  - \*Determined at 4:17 pm Mar 15th (Around main entrance )
  - \*Determined at 11:05 pm Mar 15th (Around main entrance )
- We will continue to make announcements when it was determined that a specific incident stipulated in article 15, clause 1 has occurred.
- The national government has instructed evacuation for those local residents within 20km radius of the periphery and evacuation to inside for those residents from 20km to 30km radius of the periphery, because it's possible that radioactive materials are discharged.
- Today, at approximately 10am, we observed 400mSv/h at the inland side of the Unit 3 reactor building and 100mSv/h at the inland side of the Unit 4 reactor building.
- We will continue to take all measures to restore the security of the site and to monitor the environment of the site periphery.

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## Press Releases

### Press Release (Mar 17, 2011) Plant Status of Fukushima Daiichi Nuclear Power Station (as of 0:00 pm Mar 17th)

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- We are continuing the injection of sea water into the reactor.
- At approximately 6:00am, an abnormal noise began emanating from nearby Pressure Suppression Chamber and the pressure within this chamber decreased.
- While we continue sea water injection operations, the temporary transfer of TEPCO employees and workers from other companies not directly involved in this work has begun.

##### Unit 3 (Shut down)

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- Currently, we do not believe there is any reactor coolant leakage inside the reactor containment vessel.

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- 2 workers of cooperative firm were injured at the occurrence of the earthquake, and were transported to the hospital.
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#### Others

- We are currently coordinating with the relevant authorities and departments as to how to secure the cooling water to cool down the water in the spent nuclear fuel pool of the plant.
- We measured radioactive materials inside of the nuclear power station area (outdoor) by monitoring car and confirmed that radioactive materials level is getting higher than ordinary level. As listed below, we have determined that specific incidents stipulated in article 15, clause 1 (Abnormal increase in radiation dose measured at site boundary) have occurred.
  - Determined at 4:17 pm Mar 12th (Around Monitoring Post 4 )
  - Determined at 8:56 am Mar 13th (Around Monitoring Post 4 )
  - Determined at 2:15 pm Mar 13th (Around Monitoring Post 4 )
  - Determined at 3:50 am Mar 14th (Around Monitoring Post 6 )
  - Determined at 4:15 am Mar 14th (Around Monitoring Post 2 )
  - Determined at 9:27 am Mar 14th (Around Monitoring Post 3 )
  - Determined at 9:37 pm Mar 14th (Around main entrance )
  - Determined at 6:51 am Mar 15th (Around main entrance )
  - Determined at 8:11 am Mar 15th (Around main entrance )
  - Determined at 4:17 pm Mar 15th (Around main entrance )
  - Determined at 11:05 pm Mar 15th (Around main entrance )
- We will continue to make announcements when it was determined that a specific incident stipulated in article 15, clause 1 has occurred.
- The national government has instructed evacuation for those local residents within 20km radius of the periphery and evacuation to inside for those residents from 20km to 30km radius of the periphery, because it's possible that radioactive materials are discharged.
- Today, at approximately 10am, we observed 400mSv/h at the inland side of the Unit 3 reactor building and 100mSv/h at the inland side of the Unit 4 reactor building.
- We will continue to take all measures to restore the security of the site and to monitor the environment of the site periphery.

[Back to page top](#)

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**From:** LIA05 Hoc  
**Sent:** Thursday, March 17, 2011 5:39 PM  
**To:** Andrew Seward; Harry Sherwood; Michelle Ralston; Steve Horwitz; Tim Greten; Vanessa E. Quinn  
**Subject:** Latest Status Updates  
**Attachments:** Talking Points from DHS 3.16.11.pdf; Talking Points 8.pdf; Daiichi Status as of 3-17-11-1200.pptx

FYI,

In case you did not get this earlier.

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

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# OPA

## TALKING POINTS

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### JAPAN NUCLEAR SITUATION

As of 3/16/2011 7:15 p.m. EDT

#### Update: Addition of bullet on status of SFPs

- Based on calculations performed by NRC experts, we now believe that it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Our recommendation is based on NRC guidelines for public safety that would be used in the United States under similar circumstances.
- Given the results of the monitoring and distance between Japan and Hawaii, Alaska, U.S. Pacific Territories and the U.S. West Coast, the NRC expects the U.S. to avoid any harmful levels of radioactivity. The NRC is aware of various internet postings depicting modeled radiation plumes for the ongoing events at the nuclear power plants in Japan. All of the models the NRC has seen are based on generic assumptions regarding the potential radiation release from the plants and as such are unable to predict actual radiation levels away from the site. The NRC is working closely with our federal partners to monitor radiation releases from the Japanese nuclear power plants.
- The NRC continues to believe, based on all available information, that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

- [Status as of 7:00pm on 3/16] The NRC is closely monitoring the condition of the spent fuel pools at the Japanese nuclear power plants. Our current understanding, which is based on the best available information provided to NRC reactor experts in Japan, is the following:
  - Unit 4 – The SFP is likely dry and the integrity of the spent fuel pool is in question.
  - Units 2 & 3 – Steam is escaping which indicates that boiling is likely occurring in the spent fuel pool. The current water level of the pool is uncertain.
  - Unit 1 – The status of the SFP is unknown.
- In accordance with established protocols, U.S. Customs and Border Protection (CBP) employs several types of radiation detection equipment in its operations at both air and sea ports, and uses this equipment, along with specific operational protocols, to resolve any security or safety risks that are identified with inbound travelers and cargo. Out of an abundance of caution, CBP has issued field guidance reiterating its operational protocols and directing field personnel to specifically monitor maritime and air traffic from Japan. CBP will continue to evaluate the potential risks posed by radiation contamination on inbound travelers and cargo and will adjust its detection and response protocols, in coordination with its interagency partners, as developments warrant.
- The Japanese government has formally asked for U.S. assistance in responding to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. The NRC has eleven staff on the ground in Japan as part of the USAID team.
- The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center was activated at the beginning of the event and has been monitoring the situation on a 24-hour basis ever since.

- The NRC is always looking to learn information that can be applied to U.S. reactors and we will analyze the information that comes from this incident.
- The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path.
- U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive 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 the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the limitations on historical data. In other words, U.S. nuclear power plants are designed to be safe based on historical data to predict the area's maximum credible earthquake.

**Talking Points Provided by DHS – NATIONAL JIC**  
**2:54pm, March 16, 2011**

**IF ASKED about any questions about harmful radiation headed towards the US: NRC Chairman Jaczko continues to say the following: "You just aren't going to have any radiological material that, by the time it traveled those large distances, could present any risk to the American public."**

**Topline Points**

- 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.
- USAID is coordinating the overall U.S. government efforts in support of the Japanese government's response and are currently directing individuals to [www.usaid.gov](http://www.usaid.gov) for information about response donations.
- The President is being kept up to date and is constantly being briefed by his national security staff. The National Security staff in the White House is also coordinating a large interagency response with experts meeting around the clock to monitor the latest information coming out of Japan.
- 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.
- In response to the deteriorating situation at the Fukushima Nuclear Power Plant, 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. Consistent with the NRC guidelines that would 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 radius or the possibility of lower-level radioactive materials reaching greater distances.
- 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 Japan. 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).

As I said earlier, we have offered our Japanese friends disaster response experts, search and rescue teams, technical advisers with nuclear expertise and logistical support from the United States military.

- Secretary Chu announced that DOE offered and Japan accepted an Aerial Measuring System capability, including detectors and analytical equipment used to provide assessments of contamination on the ground. In total, the DOE team includes 34 people.
- USAID set up a Response Management Team in DC and sent a Disaster Assistance Response Team to Tokyo, which includes people with nuclear expertise from the Departments of Energy and Health and Human Services as well the Nuclear Regulatory Commission (NRC). The NRC members are experts in boiling water nuclear reactors and are available to assist their Japanese counterparts.
- Two Urban Search and Rescue Teams (LA County and Fairfax County teams) which total 144 members plus 12 search and rescue canines and up to 45 metric tons of rescue equipment have begun searching for survivors.
- The Department of Defense has the USS Reagan on station off the coast of Japan and is currently using an air facility in Misawa as a forward operating base.
- The American Red Cross (ARC) International Services team is supporting the Japanese Red Cross Society (JRCS) to assess the impact, determine response efforts, and assist the people of Japan.
- USAID is hosting a daily conference call with Congressional staff, including participation from DoD, DoS, NRC, DoE, and HHS. The U.S. officials will continue to provide a brief overview of each agency's efforts in the response to Japan and respond to questions from the Congressional staff regarding humanitarian assistance, military assistance, and the nuclear plant situation.
- Currently nearly 5300 US military members are supporting the disaster relief efforts. There are 8 ships, including the aircraft carrier USS Ronald Reagan, transport aircraft and more than 100 military helos are being repositioned to northern Japan to support the efforts.
- The US military has flown reconnaissance flights and provided the Japanese government with images of the areas affected by the earthquake and tsunami. Search and rescue flights and missions along the coast continue, relief operations including delivery of food, water and other relief supplies also continue.
- Yokota Air Base is serving as a humanitarian relief operations staging area and Misawa Air Base is serving as both a logistical hub for humanitarian relief and rescue workers as well as an operating base for U.S., Japanese and other international helos and aircraft.

Here at home, the government is doing a number of things as well.

- The US Government will be studying every aspect of the Japanese disaster and the Japanese government's response, with the goal of learning as much as possible from that review.
- As the Nuclear Regulatory Commission has said, we do not expect to see radiation at harmful levels reaching the U.S. from damaged Japanese nuclear power plants. As part of the federal government's continuing effort to make our activities and science transparent and available to the public, the Environmental Protection Agency (EPA) will continue to keep all RadNet data available in the current online database. In addition, EPA plans to work with its federal partners to deploy additional monitoring capabilities to parts of the western U.S. and U.S. territories.
- As always, EPA is utilizing this existing nationwide radiation monitoring system, RadNet, which continuously monitors the nation's air and regularly monitors drinking water, milk and precipitation for environmental radiation. The RadNet online searchable database contains historical data of environmental radiation monitoring data from all fifty states and U.S. territories.
- The FDA and USDA continues to ensure all our imported food remains safe as they do everyday
- If there were to be a nuclear accident here, we are prepared to respond and FEMA and the Department of Homeland Security exercise these preparedness plans with the rest of the government and state and local officials as well. Release of radioactive materials can be accidental or intentional and we have a detailed plan to respond regardless of the cause. The Nuclear/Radiological Incident Annex to the National Response Framework outlines which department or agency would have the lead for the Federal response depending on the source and type of release. For example, the Nuclear Regulatory Commission (NRC) would coordinate a response to a release at nuclear power facilities licensed by the NRC. The Department of Energy would coordinate a response to a release involving nuclear weapons in DOE custody. The Department of Homeland Security would coordinate a response to a deliberate attack using improvised nuclear devices or radiological dispersal devices.
- Given the range of potential causes, from an earthquake to a terrorist attack, the plan provides the flexibility and agility we need to respond aggressively and effectively. In addition, state and local officials and nuclear facilities have detailed emergency plans that include specific protective actions, evacuation routes, and methods to alert the public of actions to take in the event of an emergency. There is a robust and active nuclear power plant accident exercise program that includes Federal, State, and local involvement to test plans and keep them current, and just last year we conducted such an exercise. Federal protective action guides are used at all nuclear power plants and are widely accepted and used in planning and exercises, and we will continue our efforts to plan and prepare for the safety and security of the American people.

## Fukushima Daiichi Summary

| Priority | Unit | STATUS AS OF 1200 EDT, 03/17/2011 - (0100 JDT)   |
|----------|------|--|
| 1        | 3    | <b>Core Status</b> Damaged, fuel 1/2 covered (JAIF). Radiation released. Sea water injection sufficient to cool core. (WANO)   |
|          |      | <b>Containment</b> Primary Containment, some damage. Secondary Containment lost (visual).  |
|          |      | <b>Spent Fuel Pool</b> 514 Bundles in SFP (GEH) Low Level (JAIF), Dumping water with helicopter suspended (Casto 0420 EDT)   |
| 2        | 4    | <b>Spent Fuel Pool</b> 1201 Bundles in SFP (GEH) Low level (JAIF), Damage to fuel rods suspected (JAIF) dumping water from helicopter suspended (Casto 0420 EDT)                       |
| 3        | 2    | <b>Core Status</b> damaged, fuel 2/3 covered (JAIF). Sea water inject enough to cool core (WANO)   |
|          |      | <b>Containment</b> Primary Containment, some damage. Secondary Containment , Hole cut to reduce H2 buildup, steam coming from hole (visual).   |
|          |      | <b>Spent Fuel Pool</b> 587 Bundles in SFP (GEH) No information on SFP status (JAIF).   |
| 4        | 1    | <b>Core Status</b> damaged, 1/2 fuel covered (JAIF). Sea water inject enough to cool core (WANO)   |
|          |      | <b>Containment</b> Primary Containment functional (JAIF) Secondary Containment lost (visual)   |
|          |      | <b>Spent Fuel Pool</b> 292 Bundles in SFP (GEH) SFP Level unknown (JAIF).  |
| 5        | 5    | <b>Shutdown since 1/3/11.</b> Core in RPV. SFP 950 Bundles (GEH), level down 40 cm in 5 hrs (0800, 3/15/2011, IAEA) TEPCO plans to use operable DG @ Unit 6 to provide water to Unit 5 |
| 6        | 6    | <b>Shutdown since 8/14/10.</b> Core in RPV. SFP 876 Bundles (GEH), level lower than normal. SFP reported to be heating up. (NHK) Unit EDG available.                                   |
| 7        | N/A  | <b>Common Spent Fuel Pool:</b> 6,000 spent fuel bundles (GEH) Located on land side of Unit 4 (visual)  |



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**From:** LIA03 Hoc  
**Sent:** Thursday, March 17, 2011 12:15 AM  
**To:** LIA06 Hoc; LIA08 Hoc  
**Subject:** Emailing: ENGNEWS01\_1300322727P.pdf  
**Attachments:** ENGNEWS01\_1300322727P.pdf

0900 March 17 report attached.



|  |                         |                               |                                      |   |                       |      |
|--|-------------------------|-------------------------------|--------------------------------------|---|-----------------------|------|
|  | Not Damaged             | Damage Suspected              | Damage Suspected                     | Not Damaged   | Not Damaged           |      |
| er   | Not Functional          | Not Functional                | Not Functional                       | Not necessary   | Not necessary         | N    |
| power  | Not Functional          | Not Functional                | Not Functional                       | Not necessary   | Not necessary         | N    |
|  | Severely Damaged        | Slightly Damaged              | Severely Damaged                     | Severely Damaged  | Not Damaged           |      |
| ssel   | Around half of the Fuel | Recovering after Dried-up     | Around half of the Fuel              | Safe  | Safe                  |      |
| el   | Stable                  | Unknown (run out of battery)  | Stable                               | Safe  | Safe                  |      |
|  | Stable                  | D/W: Unknown, S/P: Atmosphere | Stable                               | Safe  | Safe                  |      |
| ent Management)  | Continuing (Seawater)   | Continuing(Seawater)          | Continuing(Seawater)                 | Not necessary   | Not necessary         | N    |
| t Vessel (AM)  | Continuing(Seawater)    | to be decided(Seawater)       | Continuing(Seawater)                 | Not necessary   | Not necessary         | N    |
|  | Continuing              | Preparing                     | Continuing                           | Not necessary   | Not necessary         | N    |
| pool   | (No info )              | (No info )                    | Level Low, Preparing Water Injection | Level Low, Preparing Water Injection<br>Damage to Fuel Rods Suspected | Pool Temp. Increasing | Pool |
| NPS border: 1472 $\mu$ Sv/h at 16:20, Mar. 16  |                         |                               |                                      |   |                       |      |
| 20km from NPS  |                         |                               |                                      |   |                       |      |
| * People who live between 20km to 30km from the Fukushima #1NPS are to stay indoors.   |                         |                               |                                      |   |                       |      |
| <p>A fire broke on the 4th floor of the Unit-4 Reactor Building around 6AM, Mar. 15, and the radiation monitor readings increased outside of the building: 30mSv between Unit-2 and Unit-3, 400mSv beside Unit-3, 100mSv beside Unit-4 at 10:22, Mar. 15.</p> <p>It is estimated that spent fuels stored in the spent fuel pit heated and hydrogen was generated from these fuels, resulting in explosion. TEPCO later announced the fire was been burned out. Another fire was observed at 5:45, Mar. 16, and then disappeared later.</p> <p>Other staff and workers than fifty TEPCO employees who are engaged in water injection operation have been evacuated.</p> <p>White smoke was seen rising from the vicinity of Unit-3 at around 8:30, Mar. 16. TEPCO estimates that failing to cool the SFP has resulted in evaporatio generating steam.</p> |                         |                               |                                      |   |                       |      |

|   | Fukushima #2 Nuclear Power Station |                  |                  |                  |
|---|------------------------------------|------------------|------------------|------------------|
|   | 1                                  | 2                | 3                | 4                |
| ut (MW)                                       | 1100 / 3293                        |                  |                  |                  |
| quake occurred                                | BWR-5<br>Service                   | BWR-5<br>Service | BWR-5<br>Service | BWR-5<br>Service |
|   | Not Damaged                        | Not Damaged      | Not Damaged      | Not Damaged      |
|   | Not Damaged                        | Not Damaged      | Not Damaged      | Not Damaged      |
| er  | Functioning                        | Functioning      | Functioning      | Functioning      |
| power   | Not necessary                      | Not necessary    | Not necessary    | Not necessary    |
|   | Not Damaged                        | Not Damaged      | Not Damaged      | Not Damaged      |
| ssel  | (No info )                         | (No info )       | (No info )       | (No info )       |
| el  | (No info )                         | (No info )       | (No info )       | (No info )       |
|   | (No info )                         | (No info )       | (No info )       | (No info )       |
| ent Management)                               | Not necessary                      | Not necessary    | Not necessary    | Not necessary    |
| t Vessel (AM)                                 | Not necessary                      | Not necessary    | Not necessary    | Not necessary    |
|   | Not necessary                      | Not necessary    | Not necessary    | Not necessary    |
| pool  | (No Info)                          | (No Info)        | (No Info)        | (No Info)        |
| NPS border: 28.6 $\mu$ Sv/h at 19:50, Mar. 16 |                                    |                  |                  |                  |
| 10km from NPS                                 |                                    |                  |                  |                  |
| All the units are in cold shutdown.           |                                    |                  |                  |                  |

All the other NF  
normal operation



**Wagner, Katie**

---

**From:** Wagner, Katie  
**Sent:** Thursday, March 17, 2011 1:20 PM  
**To:** Jimenez, Juan  
**Attachments:** Status\_of\_Requests\_from\_External\_Orgs\_16Mar2011.docx

Juan,

Here is the sheet I have so far for your reference, I will update it and put it up on the G drive as soon as I learn how to pass-word protect the file (or I guess I could just convert it to pdf).

Thanks,

Katie Wagner  
General Engineer  
U.S. Nuclear Regulatory Commission  
(301) 251.7917  
[Katie.Wagner@nrc.gov](mailto:Katie.Wagner@nrc.gov)

LLLL/40

# Status of Requests from External Organizations Made to DSA Personnel

| Date | Requestor       | Contact Information                           | Scope of Request                        | Deliverable | Staff Contact   | Status of Fulfilling Request  |
|------|-----------------|---|---|-------------|-----------------|---|
| 3/15 | Larry Humphries | Sandia on behalf of GRS                       | To obtain the MELCOR Peach Bottom deck. |             | Hossein Esmaili | The deck contains proprietary information therefore the request was denied. Loop completed. |
| 3/16 | Victor Frid     | Swedish Emer. Response Center<br>468-799-4295 | To discuss Mark-1 liner failure.        |             | Sud Basu        |   |
|      |                 |   |   |             |                 |   |
|      |                 |   |   |             |                 |   |

## Schaperow, Jason

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**From:** Schaperow, Jason  
**Sent:** Wednesday, March 30, 2011 12:10 PM  
**To:** 'Gauntt, Randall O'  
**Subject:** your availability

Hi Randy,

I understand that you are on your way to Japan today. If we need to discuss any issues, how can we reach you? Via email? Via cell phone?

Also, any idea how long you will be there? A few days? A week or two?

Thanks,  
Jason

LLLL/41

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**From:** LIA05 Hoc  
**Sent:** Thursday, March 17, 2011 6:39 PM  
**To:** Andrew Seward; Harry Sherwood; Michelle Ralston; Steve Horwitz; Tim Greten; Vanessa E. Quinn  
**Subject:** Try Again  
**Attachments:** Talking Points 8.pdf; NRC Status Update 3-16.11--1400pm.pdf

Some of these are in Adobe.

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LLL4/42

# OPA

## TALKING POINTS

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### JAPAN NUCLEAR SITUATION

**As of 3/16/2011 7:15 p.m. EDT**

**Update: Addition of bullet on status of SFPs**

- Based on calculations performed by NRC experts, we now believe that it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Our recommendation is based on NRC guidelines for public safety that would be used in the United States under similar circumstances.
- Given the results of the monitoring and distance between Japan and Hawaii, Alaska, U.S. Pacific Territories and the U.S. West Coast, the NRC expects the U.S. to avoid any harmful levels of radioactivity. The NRC is aware of various internet postings depicting modeled radiation plumes for the ongoing events at the nuclear power plants in Japan. All of the models the NRC has seen are based on generic assumptions regarding the potential radiation release from the plants and as such are unable to predict actual radiation levels away from the site. The NRC is working closely with our federal partners to monitor radiation releases from the Japanese nuclear power plants.
- The NRC continues to believe, based on all available information, that the type and design of the Japanese reactors, combined with how events have unfolded, will prevent radiation at harmful levels from reaching U.S. territory.

- [Status as of 7:00pm on 3/16] The NRC is closely monitoring the condition of the spent fuel pools at the Japanese nuclear power plants. Our current understanding, which is based on the best available information provided to NRC reactor experts in Japan, is the following:
  - Unit 4 – The SFP is likely dry and the integrity of the spent fuel pool is in question.
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- The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center was activated at the beginning of the event and has been monitoring the situation on a 24-hour basis ever since.



- The NRC is always looking to learn information that can be applied to U.S. reactors and we will analyze the information that comes from this incident.
- The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path.
- U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive 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 the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the limitations on historical data. In other words, U.S. nuclear power plants are designed to be safe based on historical data to predict the area's maximum credible earthquake.

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**From:** LIA05 Hoc  
**Sent:** Thursday, March 17, 2011 7:00 AM  
**To:** Vanessa E. Quinn; Andrew Seward; Harry Sherwood; Michelle Ralston; Steve Horwitz; Tim Greten  
**Subject:** FW: FYI - Recommendation for high prioritization of Aerial Measurement System

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

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**From:** Weber, Michael  
**Sent:** Wednesday, March 16, 2011 7:03 PM  
**To:** LIA05 Hoc; PMT01 Hoc  
**Cc:** ET01 Hoc  
**Subject:** FYI - Recommendation for high prioritization of Aerial Measurement System

For our records in responding...

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**From:** Miller, Chris  
**Sent:** Wednesday, March 16, 2011 12:59 PM  
**To:** McDermott, Brian; Weber, Michael  
**Subject:** Fw: Recommendation for high prioritization of Aerial Measurement System

---

**From:** Cherry, Ronald C <CherryRC@state.gov>  
**To:** Miller, Chris; Alan Remick <DartDOELiaison1@OFDA.gov>  
**Cc:** LIA08 Hoc; nitops@nnsa.doe.gov <nitops@nnsa.doe.gov>; Lyons, Peter <Peter.Lyons@Nuclear.Energy.gov>; Koichi Uchida <cogito@gol.com>; Connery, Joyce <Joyce.Connery@hq.doe.gov>; Aoki, Steven <Steven.Aoki@nnsa.doe.gov>; Poneman, Daniel <Daniel.Poneman@hq.doe.gov>; DAgostino, Thomas <Thomas.DAgostino@nnsa.doe.gov>; Mustin, Tracy <Tracy.Mustin@nnsa.doe.gov>; Carlson, Nicholas <Nicholas.Carlson@nnsa.doe.gov>; Alldridge, David <David.Alldridge@NNSA.Doe.Gov>; Hoffman, Patricia <Pat.Hoffman@hq.doe.gov>; Koonin, Steven <Steven.Koonin@science.doe.gov>; Miller, Neile <Neile.Miller@NNSA.doe.gov>; Krol, Joseph <Joseph.Krol@nnsa.doe.gov>; Johnson, Shane <SHANE.JOHNSON@nuclear.energy.gov>; Kelly, John E (NE) <JohnE.Kelly@Nuclear.Energy.Gov>; McGinnis, Edward <Edward.McGinnis@Nuclear.Energy.Gov>; Duncan, Aleshia <Aleshia.Duncan@nuclear.energy.gov>; OConnor, Rod <Rod.OConnor@hq.doe.gov>; Bryan, William <william.bryan@hq.doe.gov>; Williams, Melvin <Melvin.Williams@Hq.Doe.Gov>; Hurlbut, Brandon <Brandon.Hurlbut@hq.doe.gov>; Anderson, Margot <Margot.Anderson@hq.doe.gov>; Mueller, Stephanie <Stephanie.Mueller@hq.doe.gov>; LaVera, Damien <Damien.LaVera@nnsa.doe.gov>; Reynolds, Tom <Tom.Reynolds@hq.doe.gov>; Hunsaker, Christopher <Christopher.Hunsaker@nnsa.doe.gov>; Koontz, Thomas <Thomas.Koontz@nnsa.doe.gov>; Leistikow, Dan <Dan.Leistikow@hq.doe.gov>; Zubarev, Jill E <ZubarevJE@state.gov>  
**Sent:** Wed Mar 16 11:37:20 2011  
**Subject:** RE: Recommendation for high prioritization of Aerial Measurement System

Current schedule is the AMS will fly Thursday, March 17, at 9 am Japan time.

This email is UNCLASSIFIED.

---

**From:** Miller, Chris [mailto:Chris.Miller@nrc.gov]  
**Sent:** Wednesday, March 16, 2011 4:38 PM  
**To:** Cherry, Ronald C  
**Cc:** LIA08 Hoc; 'nitops@nnsa.doe.gov'  
**Subject:** Recommendation for high prioritization of Aerial Measurement System

Ron,

Below is USNRC rationale for deployment of the DOE aerial measurement system. We believe this is a high priority to enable gathering essential data for the determination of informed protective action recommendations, including those for US citizens. We would appreciate your action to help expedite this system's deployment.

DOE aerial measurement system can provide useful information that helps officials understand the event that has occurred, refine protective actions, and characterize the nature of the radioactive release.

Fixed wing aircraft aerial measuring system:

- Can rapidly map residual fall out pattern and intensity of contaminated materials that may have deposited after plume passage
- Can define expanded evacuation and sheltering areas for both plume and post plume phase
- Can obtain isotopic information which also helps to refine the source term as well as protective action guidelines.
- Can identify areas of concern for agricultural products and potential food embargos
- Dose rate values over the Fukushima site and offsite

Please let us know if you need additional information regarding this rationale. Thank you very much for your assistance in this matter.

Chris Miller  
USNRC  
301-816-5100

**From:** Trapp, James  
**To:** Uchida, Koichi  
**Subject:** RE: Fukushima-1 (F-1) Reactor No.6  
**Date:** Thursday, March 17, 2011 11:03:48 PM

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Thank you very much - we really appreciate this. *ml*

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**From:** Uchida, Koichi [UchidaKX@state.gov]  
**Sent:** Thursday, March 17, 2011 4:49 AM  
**To:** Tamada, Yoshimi; Cherry, Ronald C; Alan Remick; Aleshia Duncan; Duncan, Aleshia D; Trapp, James; James Trapp (BB); Mears, Jeremy M; Morales, Russell A; Nesheiwat, Julia; Ulses, Anthony; NITOPS  
**Subject:** Fukushima-1 (F-1) Reactor No.6

You must have seen these, but just in case.

Mainichi News reported (at 11:42 today ) that at the press conference of NISA it was informed that 91cm of reactor water level of F-1, Reactor No.6 was decreased during a day until 04:00 today. NISA commented that even the steam release from the reactor, water injection might not be sufficient and they would observe the situation carefully.

Also,

Fukushima Minpo News reported today (11:49) that the Fukushima's Offsite Center in Okumachi (where is about 5km from Fukushima NPP) was unable to activate due to damages made by the earthquake.

NISA set the Local Disaster Management HQs at the Offsite Center on March 11. However, the center has lost power , TV communication lines connecting with Prefectural government and other information lines to local authorizes and the center only had the satellite communication line with Fukushima NPPs.

Therefore, NISA moved the HQs to Fukushima Prefectural Government Main Building in Fukushima City (where is about 60 km from Fukushima NPP) on March 16.

Uchida  
DOE

This email is UNCLASSIFIED.

*LLLL/44*

**From:** Devercelly, Richard  
**To:** RST01 Hoc  
**Cc:** Casto, Chuck; Kolb, Timothy; Devercelly, Richard; Cook, William; Nakanishi, Tony; Foster, Jack; Monninger, John; Trapp, James; Smith, Brooke; Foggie, Kirk  
**Subject:** SFP's Reflood or Leave them alone  
**Date:** Thursday, March 17, 2011 8:25:39 PM

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Good Morning/Afternoon Team

Something to ponder:

We have been discussing the possibility that adding water to a dried out fuel pool may aggravate the radiological release scenario beyond that which may result from just leaving it alone. Coincidentally, I came across the below e-mail from another team member. Given the following assumptions, we seek your evaluation on the best course of action.

**Problem Statement:** With respect to releases and public risk, at what point is the better course of action to:

- remain status quo and allow existing heat transfer mechanisms be the only means of cooling the fuel in the spent fuel pools vs.
- risk the radiological releases and fuel damage resulting from initiating quench cooling with any of the strategies currently being pursued.

SFP loading assumptions for units 1-4:

- Last fresh discharge of a 25% core offload occurred 1 month ago.
- The pools contain plant life refueling discharges since commercial operation started as follows based upon a 12 month refuel cycle:
  - Unit 1-March 1971
  - Unit 2-July 1974
  - Unit 3-March 1976
  - Unit 4-October 1978
- 100% CTP is:
  - Unit 1-493 MWe with a 400 bundle core
  - Unit 2 through 4 is 760 MWe with a 548 bundle core
  - All fuel has been dry for the last 50+ hours.
  - 9 X 9 fuel equivalent to GE-9 at 3 to 5% enrichment
  - Open air environment at 50 degrees F (no roof on building) for all but unit 2) Assume building temperature of 150 degrees F for Unit 2.

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**From:** Nakanishi, Tony  
**Sent:** Thursday, March 17, 2011 7:21 PM  
**To:** Devercelly, Richard; Foster, Jack  
**Subject:** Fw: Re-establish reactor cooling when offsite AC power is available - Do not rush to inject water quickly

---

**From:** Lu, Shanlai  
**To:** Ulses, Anthony; Nakanishi, Tony  
**Sent:** Thu Mar 17 12:02:35 2011  
**Subject:** Re-establish reactor cooling when offsite AC power is available - Do not rush to inject water quickly

Tony,

LLL4/45

Hope that you see this e-mail as well.

Again, they are just my thoughts for your consideration.

With offsite AC power becoming available in the near future, there may be an urge for the plant operator to start the cooling immediately. A sudden injection of large amount of cold water into reactors with a molten core will cause devastating explosion and hydrogen fire because of violent steaming and Zr-water reaction. At this stage, any further explosion or fire will cause further damage on the reactor vessel and containment, and, more release of radiation. We need to minimize the risk of having this situation. Therefore, my recommendation is the following,

Once the AC power is available, pump the cold water into the reactor in a pulsing mode.

1. First pulse – 50 to 100 gallons. Then, stop the pump, wait to see the steam coming out from the containment and watch the vessel internal pressure for 20 minutes or more if instrumentation is still available. By then, these water should have been vaporized and hydrogen will be generated.
2. After 20 minutes, start another pulse of injection, repeat step one.
3. Repeat these steps for 4 hours.
4. Then, shorten the 20 minutes wait time to 10 minutes for another 3 hours.
5. Then, evaluate the situation and make the decision regarding continuous injection of water into the reactor.

Be safe.

Shanlai

---

**From:** Lu, Shanlai  
**Sent:** Tuesday, March 15, 2011 10:59 AM  
**To:** Ulses, Anthony  
**Cc:** Donoghue, Joseph; Mendiola, Anthony; Ader, Charles; Lombard, Mark; Ruland, William; Bahadur, Sher  
**Subject:** Japan Nuclear Power Plant Spent Fuel Pool Heat Up Mitigation Strategy

Tony,

Hope you can see this e-mail from Japan.

Based on CNN and news from internet, the spent fuel pools of Unit 1, 2 and 3 started to boil without cooling. The following are my own thoughts about what needs to be done before the situation becomes even worse.

1. Need to establish cooling with whatever means to prevent the dry out of stored fuel. This include, if not limited to,

using fire hydrants to directly spray Boric Acid water on top of all three spent fuel pools. If the radiation level is too high to establish continuous water supply, use helicopters to dump boric acid water from the air as frequently as possible.

2. For Unit 4, if the spent fuel pool cooling is lost, we need to have an access to allow fire hydrant reaching the pool. It may be feasible to open the top of the reactor building right above the pool. In this way, if the operator can not introduce water supply from the ground, helicopters can still dump Boric Acid water from the air.
3. It would be nice that similar measures like these be established before the spent fuel dry out occurs. If the water is dumped on top of the pool with fuel dry out already occurred and the fuel surface temperature is already high enough, severe Zr-Water reaction will happen and cause fire and explosion. Before this happens, dump sand mixed with dry Boric acid right on top of the pools from the air. This will prevent the wide spread fire and explosion and provide the heat conduction to transfer the decay heat to the ground.

Hope these can be of help if they have not been considered.

We heard that radiation level has gone up even in Tokyo. We pray for your safety and safe return.

Take care.

Shanlai



## Lee, Richard

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**From:** Skeen, David  
**Sent:** Saturday, April 30, 2011 3:29 PM  
**To:** Correia, Richard; Marksberry, Don; Tracy, Glenn  
**Cc:** Coe, Doug; Demoss, Gary; Lee, Richard; Jackson, Karen; Hogan, Rosemary  
**Subject:** RE: Question from NISA on reporting to the IAEA

I agree we shouldn't just pass along Don's notes as written below.

I will assign a tasker to the LT to provide a final response by Wednesday evening. On Monday, the LT could work with Don and glean the essential information from Don's notes to pass along to Steve Reynolds whatever we know as interim information. They can also reach out to IAEA via OIP.

---

**From:** Correia, Richard  
**Sent:** Saturday, April 30, 2011 3:16 PM  
**To:** Marksberry, Don; Skeen, David; Tracy, Glenn  
**Cc:** Coe, Doug; Demoss, Gary; Lee, Richard; Jackson, Karen; Hogan, Rosemary  
**Subject:** Re: Question from NISA on reporting to the IAEA

Thanks Don. This information is very useful.

Dave, Glenn. I would propose to have OIP reach out to IAEA and ask them what historical information that have relative to TMI. It may be faster than searching around NRC for someone that might have different information than what Don has found thus far. I would also recommend we send Steve Reynolds what Don has provided here only as "this is what we know to date but we are continuing to search for more information". Steve can advise NISA as he feels is prudent but I would be careful not to give NISA Don's notes as written.

Thoughts?  
Rich

Rich  
Richard Correia, Director  
Division of Risk Analysis  
RES

Sent from a Blackberry

---

**From:** Marksberry, Don  
**To:** Correia, Richard  
**Cc:** Coe, Doug; Demoss, Gary; Skeen, David; Lee, Richard; Jackson, Karen; Hogan, Rosemary  
**Sent:** Sat Apr 30 10:01:02 2011  
**Subject:** RE: Question from NISA on reporting to the IAEA

Rich

I don't remember that IAEA was into incident notification and response until post Chernobyl. After TMI-2, an IAEA expert group was formed and establishes international guidelines on emergency planning and response. After Chernobyl, the Convention on Early Notification of a Nuclear Accident and the Convention on Assistance in the Case of Nuclear Accident or Radiological Emergency were established.

LLLL/46

Neither the Kemeny Commission nor the Rogovin reports mention "IAEA" or "international," except for the routine (annual) exchange of operating experience information via IAEA and the international media response to the accident. (Kemeny Commission - Report Of The Public's Right To Information Task Force quoted: "Instead of a regional story, TMI quickly became a national and international story which attracted a worldwide press corps numbering at any one time from 300 to 500 journalists, including reporters from Japan, France, Sweden, West Germany, Italy, Spain, and Great Britain.") In addition, none of the NRC investigations and actions NUREGs (e.g., 0578, 0585, 0600, 0616, 0660, 0737) mentioned IAEA or international.

Ops Center transcripts for the first 6 days of Executive Management Team meetings (Commission meetings were recorded in the Ops Center and H-Street) did not mention IAEA or international.

Daily Preliminary Notifications (PNs) were issued (see attached), but I'm not sure about the distribution (I've never seen any NRC press releases). I believe that International programs was part of state programs at the time.

The two people who may remember what happened in the Op Center during TMI-2 are Karen Jackson (NSIR) and Tom McKenna (retired NRC, IAEA response manager--- Tom was mentioned in a recent e-mail from IAEA working on a RASCAL run). Rosemary Hogan was the liaison team coordinator for awhile following Chernobyl. Bob Senseney (retired a few months ago from the DOS) was the OIP guy during TMI and Chernobyl.

Don

(I also found one of the early public statements of core melt at TMI-2---seven year later).

---

**From:** Correia, Richard  
**Sent:** Saturday, April 30, 2011 7:35 AM  
**To:** Marksberry, Don; Demoss, Gary; Coe, Doug  
**Cc:** Skeen, David  
**Subject:** Fw: Question from NISA on reporting to the IAEA

Don. Can you assist with the Nisa questions below? Don't start answering them but just let me know if you feel you have the information to answer it or you know who would have the information. We'll decide who will answer after that. Many thanks. Rich  
Richard Correia, Director  
Division of Risk Analysis  
RES

Sent from a Blackberry

---

**From:** Reynolds, Steven  
**To:** RST01 Hoc; LIA08 Hoc; LIA07 Hoc  
**Cc:** Casto, Chuck; Mitchell, Matthew; Young, Francis; Skeen, David; Tracy, Glenn; Correia, Richard  
**Sent:** Fri Apr 29 22:05:12 2011  
**Subject:** Question from NISA on reporting to the IAEA

We received the following question from NISA.

After the TMI accident, what was reported to the IAEA about the accident, who reported it (e.g., NRC, TMI operator, other US government agency), when was it reported (how long after the accident), and how was it reported?

Can you have someone get back to us with the answer?

Thanks,  
Steve

---

**From:** LIA05 Hoc  
**Sent:** Friday, March 18, 2011 10:16 AM  
**To:** Michelle Ralston

Call me

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

~~\*\*\*\*\*FOR OFFICIAL USE ONLY\*\*\*\*\*~~  
~~DO NOT RELEASE OUTSIDE OF THE FEDERAL FAMILY~~

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**From:** LIA05 Hoc  
**Sent:** Friday, March 18, 2011 8:05 PM  
**To:** Andrew Seward; Harry Sherwood; Michelle Ralston; Steve Horwitz; Tim Greten; Vanessa E. Quinn  
**Attachments:** NRCSummary110318.doc

Please find the attached NRC In the News Summary.

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



# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

FRIDAY, MARCH 18, 2011 7:00 AM EDT

[WWW.BULLETINNEWS.COM/NRC](http://WWW.BULLETINNEWS.COM/NRC)

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## NRC NEWS:

### Obama Says "Harmful Levels" Of Radiation Unlikely To Reach US.

Crises in two nations far from US borders continue to dominate domestic media coverage, as the US and the world cope with the disaster in Japan and the UN -- and the US -- gear up for possible military action in Libya. The Japan story, and related reports on the possibility of radiation reaching the US, was by far the bigger story on Thursday evening's three broadcast network newscasts, taking up more than 51 minutes of time between the three. Though the Libya story received just four minutes and 40 seconds of cumulative coverage, it was the only other story to get any significant airtime, and the only other story to be covered by all three networks.

President Obama's comments on radiation reaching the US are generally portrayed as effective and reassuring. The AP (3/18) 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 (3/17, story 3, 2:00, Couric, 6.1M) 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." CBS (Reid) added, "He's trying to do all three of those things at the same time. But in Japan today, the Administration's top priority was clearly helping Americans to get out."

AFP (3/17, Collinson) 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." Speaking from the White House Rose Garden, the President "offered heartfelt sympathy to Japan's people faced with triple challenges after a mammoth earthquake and tsunami badly damaged several nuclear power reactors." He also "assured Americans there

was no reason to think harmful radiation from Japan could reach US shores."

ABC World News (3/17, story 4, 1:55, Sawyer, 8.2M) reported Obama "went out of his way to stress there is no need for alarm here at home." President Obama: "I want to be very clear. We do not expect harmful levels of radiation to reach the United States, whether it's the West Coast, Hawaii, Alaska, or US territories in the Pacific." NBC Nightly News (3/17, story 3, 0:45, Williams, 8.37M) 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. Later he spoke from the Rose Garden at the White House about the situation in Japan for the first time since Friday."

Bloomberg News (3/17, Runnigen, Johnston) 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 (3/18, Parsons, Muskal, 681K) 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 (3/18, Sternberg, 1.83M) reports the Food and Drug Administration warns that "many of the ads for 'anti-radiation' potassium iodide pills flooding the Internet may be scams."

The Wall Street Journal (3/18, Favole, 2.09M) reports the President's efforts at reassurance came amid growing global skepticism about Japan's efforts to cool the reactors. Politico (3/18, Samuelsohn, 25K), The Hill (3/17, Geman, Youngman, 21K) "E2 Wire" blog, and the Christian Science Monitor (3/18, Grier, 48K) also report on the President's remarks.

On ABC World News (3/17, story 6, 1:30, Sawyer, 8.2M), ABC health and medical editor Dr. Richard Besser said, "I am reassured. When I listened to the President, when I talk to people all day throughout government in terms of what's being done to prepare what they've learned from Chernobyl and other events, I'm reassured we're not going to see in this country harmful levels of radiation here. That doesn't mean they won't measure any, but harmful levels is very different."

However, the Washington Post (3/18, Maese, Stein, 605K) reports that as the President "tried to reassure the American public about the safety of nuclear power plants" here at home, International Atomic Energy Agency Special Adviser on Scientific and Technical Affairs Graham Andrew "cautioned at a news conference: 'It is still possible that it could get worse.'" And the Los Angeles Times (3/18, Lin,

681K) reports NRC Chairman Gregory Jaczko said the Fukushima Daiichi power plant crisis "could last for weeks."

USA Today (3/18, Eisler, Vergano, 1.83M) 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."

Portions of Chairman Jaczko's and DOE's Daniel Poneman's White House press briefing appeared on MSNBC's "Andrea Mitchell Reports" (3/17, 1:04pm). Jaczko was asked to detail how he received his information and told the reporters, "I think the team we have in place is providing us with good and reliable information and, you know, we continue to do what we can to support the people of Japan and to provide assistance and recommendations where we can. You know, this is a very difficult situation and there will be a lot of work continuing, as we go forward, to deal with continuing to cool the reactors and to provide cooling to the spent fuel pools. So as we go forward, we'll continue that dialogue and discussion."

The AP (3/18) reports that President Obama, sought to "reassure a worried nation," Thursday, declaring 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 AP (3/18) reports NRC Chairman Gregory Jaczko "told reporters at a White House briefing it could be some time before the crisis is brought under control as crews work to cool spent-fuel rods and get the damaged Japanese reactors under control. The activity could continue for days and 'possibly weeks,' Jaczko said." Meanwhile, "Daniel B. Poneman, deputy secretary of energy, told the briefing that a 'very dangerous situation' remains in Japan. Information at the nuclear plant is 'genuinely complex and genuinely confusing,' he said." Reuters (3/18, Mason, Zengerle) also covered the press avail.

On its "Oval" blog, USA Today (3/18, Hall, 1.83M) says NRC Chairman "Jaczko declines to speculate on how the nuclear crisis in Japan might end. 'I really don't want to speculate on where this could go,' he said." Jaczko and DOE's Dan Poneman, "outlined US efforts to help the Japanese cope with the crisis, determine the extent of the leaked radiation, safeguard and advise Americans living and working in Japan and ensure that nuclear power plants in the USA are safe."

US News and World Report (3/17) noted that NRC Chairman Jaczko "said there is no radiation risk to the United States from Japan's nuclear power plant. 'Basic science tells us there really can't be any risk to any of us here in the

United States,' he said at a White House press conference Thursday."

The Omaha (NE) World-Herald (3/18, Gaarder) reports, "Despite concerns that weather patterns might blow radioactive particles from Japan's stricken nuclear reactors to the United States, Midlands emergency officials say they've been assured that residents have nothing to fear." Iowa Homeland Security and Emergency Management Stefanie Bond, said, "We do not expect to see radiation at harmful levels reaching the US from damaged Japanese nuclear power plants."

The AP (3/18) also noted Chairman Jaczko gave "assurances during a briefing Thursday at the White House, saying that basic science says there can't be any risk."

**Chairman Jaczko Says NRC Will Do "Systematic Review" Of Oversight Policies.** Bloomberg News (3/18, Goldman, Johnston) reports, "The head of the Nuclear Regulatory Commission said there is no immediate need for special inspections of US nuclear plants in the wake of the breakdown in a group of reactors in Japan following an earthquake and tsunami." Chairman Jaczko "said US policy is to continually review plant safety and standards, taking into account incidents and accidents elsewhere in the world." Jaczko said the NRC will certainly "look at what happened," make a "systematic and methodical review of the information, and if we need to make changes to our program, we'll make changes." Jaczko said it was "too early to begin an assessment" of the US plant fleet, but said once the data about the Japanese accident was in, the NRC would take a "very thorough look at what happened and what changes we could make."

Bloomberg's "Final Word" (3/17, 3:06) reported, "The challenge is to reassure the American public that our nuclear facilities are safe and while being sure not to be too critical of what is happening in Japan, because they want to keep the lines of communication open. It's Gregory Jaczko, the head of the Nuclear Regulatory Commission, who is doing a lot of the [liaising] on the technical level, but they want to be able to take a step back and say 'here are the dangers' and protect American citizens and US Interests." National Journal (3/18, Kaplan, 12K), Reuters (3/18, Eckert) and Milwaukee Journal Sentinel (3/18, Content, 206K) also covered the story.

**Poneman Says Facts "Genuinely Complex," But US Analyzing Information.** In its coverage of President Obama's comments Thursday, the Los Angeles Times (3/18, Lin, 681K) reports that during the briefing at the White House, Daniel B. Poneman, deputy secretary of energy, "alluded to the fast-paced series of events at the nuclear power plant," saying, "The facts on the ground are genuinely complex. They are genuinely confusing."

The AP (3/18) adds that the DOE said it has conducted two separate aerial tests to measure the amount of radioactive material in Japan, and "those data, Poneman

said, were consistent with the recommendation for Americans to evacuate a 50-mile radius around the plant." Said Poneman, "We're analyzing the information, and we're sharing it with the Japanese...The preliminary look has indicated that the measures that have been taken (by the Japanese) have been prudent ones. And we have no reason to question the assessment that has been made or the recommendation that has been made by the Japanese authorities."

The National Journal (3/18, Brownstein, 12K) says that both Poneman and Nuclear Regulatory Commission Chairman Greg Jaczko "stressed the complexity of the situation on the ground and refused to condemn the Japanese for being secretive about the extent of the problem." Said Poneman, "You know Americans: We always want more information, and we're constantly trying to find out whatever we can." He added, "The preliminary indications suggest that all the measures that have been recommended either by the government of Japan or the government of the US have been prudent and appropriate."

**French Nuclear Security Regulators Dispute Jaczko's Claim On Reactor Spent Fuel Pool.** On its "Washington Wire" blog, the Wall Street Journal (3/18, Weisman, 2.09M) says French nuclear security officials countered NRC Chairman Jaczko's public assertion Wednesday that there was no water in the spent fuel pool at Japan's Fukushima Dai Ichi Number 4 reactor. The blog says that in two statements, the French regulators insist Japanese helicopter crews saw there was yet water in the cooling pool. In fact, according to the Institut de Radioprotection et de Surete Nucleaire, there was enough water so that at least one water flight was diverted to drop its load on reactor number 3. The blog says Chairman Jaczko's assertion about the cooling ponds raised alarms across the globe and notes that while he did not retract the comments, neither were they repeated.

The Wall Street Journal (3/18, Weisman, Power, 2.09M) adds that Chairman Jaczko said NRC information about the Fukushima plant's spent fuel pools "was really one of the major changes that led us to re-evaluate...and come up with a recommendation, and we did." When the water comments were challenge Thursday by French and Japanese regulators, DOE Deputy Energy Secretary Poneman defended the NRC recommendation, saying evacuation was justified. Jaczko said the "bottom line is that there clearly appears to be a challenge keeping that spent fuel filled with sufficient water." A spokesman with the NRC said Thursday "the evidence is so far inconclusive" on the condition of the number 4 reactor spent fuel pool. However, he said, "we have to err on the side of caution."

**Bloomberg Offers Brief Profile Of Chairman Jaczko.** On Bloomberg News' "On the Economy" (3/17, 2:12) journalist Peter Cook said of Jaczko, "I think it is clear that he



will become a public face of this crisis, at least in the United States, much the way Thad Allen did after the BP oil spill." He "was the – he has been the NRC commissioner since 2005. He is a scientist. It is one reason the White House is looking to him for so many answers to inform the American public about what is going on." In an AOL News (3/18) item, Steven Hoffer offers "5 Facts of the Nuclear Regulatory Commission Chairman."

**Former GE Engineer Faults Mark 1 Reactor Containment System.** McClatchy (3/18, Hotakainen, Gordon) reports, "Safety questions about the Mark I model nuclear reactors that are burning out of control in Japan were first raised years ago in the US, by the nation's top nuclear safety official and by the General Electric engineers who helped design them." Three GE engineers, including Dale Bridenbaugh, resigned in 1976 "over concerns that the reactors' containment vessels couldn't withstand the massive steam pressure that would build if a major accident disabled the cooling system. In interviews with McClatchy on Thursday, Bridenbaugh said that the steel containment system wasn't strong enough and the inner, light bulb-shaped reactor vessel was too small – 'It was 10 pounds in a five-pound bag' -- to contain all that pressure in such an event." McClatchy adds, "Similar concerns regarding the performance of the Mark I reactors were raised in 1979 by Harold Denton, President Jimmy Carter's pick as head of the Nuclear Regulatory Commission."

**Little Progress Made On Cooling Plant.** The New York Times (3/18, Sanger, Broad, 1.01M) reports, "The first readings from American data-collection flights" over the Fukushima Daiichi plant in "show that the worst contamination has not spread beyond the 19-mile range of highest concern established by Japanese authorities." But "another day of frantic efforts to cool nuclear fuel in the troubled reactors and in the plant's spent-fuel pools resulted in little or no progress," according to US officials.

The Los Angeles Times (3/18, Demick, King, Hall, 681K) says "there was no obvious sign of progress in the battle to take control" of the plant early Friday, "as blustery winds and fluctuating radiation levels hampered efforts to douse hot nuclear equipment with water from helicopters and firetrucks." The "official toll of dead and missing in last Friday's massive earthquake and tsunami topped 15,000."

AFP (3/17, Ito) says "teams of Japanese workers and troops Friday battled to prevent meltdown...as alarm over the disaster grew with more foreign governments advising their citizens to flee." Fire engines were "put into action to douse fuel rods inside reactors and in containment pools to stop them from degrading due to exposure to the air and emitting dangerous radioactive material."

The Washington Times (3/18, Johnson, 77K) says plant officials "believed workers were making headway with efforts to complete an emergency power line to restart the plant's

own electric cooling systems," but they are "not sure the cooling systems will still function. If they don't, electricity won't help."

The New York Times (3/18, Bradsher, Tabuchi, 1.01M) says data from Tokyo Electric Power "show that most of the dangerous uranium at the power plant is actually in the spent fuel rods, not the reactor cores themselves. The electric utility said that a total of 11,125 spent fuel rod assemblies were stored at the site. That is about four times as much radioactive material as in the reactor cores combined."

**Japan Offers Little Response To Jaczko.** The New York Times (3/18, Onishi, 1.01M) reports a day after Jaczko portrayed the situation "in graver terms than the government in Japan, United States' most important Asian ally, Japanese officials attributed the diverging accounts on Thursday to a 'delay' in sharing information. But, in public at least, they offered no sharp rebuttals" to Jaczko's remarks.

**US, Other Nations Helping To Evacuate Their Citizens.** The Wall Street Journal (3/18, Hodge, Weisman, Morse, 2.09M) says the US embassy is helping to evacuate US citizens in a sign of distrust of official Japanese reports on the danger. The Financial Times (3/18, Soble, Nakamoto, Robinson, 448K) says European governments are taking similar steps.

And even Japanese nationals are wary. The New York Times (3/18, Fackler, 1.01M) says about 10,000 people outside the evacuation zone have fled due to "distrust that the government is telling the full truth about the nuclear accidents and how widespread the danger is." ABC World News (3/17, story 2, 2:10, Sawyer, 8.2M) reported that the "more about the 140,000 Japanese people that are living in that ring between 12 and 19 miles from the plant. They have been told to stay inside and to seal the windows of their homes -- but is that enough to keep them safe?"

**Workers May Need To Be Rotated Out Of Plant.** The Los Angeles Times (3/18, Zarembo, 681K) reports, "Bursts of radiation being released at the stricken Fukushima nuclear plant could mean workers there will have to be quickly rotated out, and some could rapidly reach their annual exposure limit, complicating efforts to contain Japan's continuing nuclear crisis." Reports on Thursday "indicated that at times radiation was intense enough to exceed even Japan's newly raised annual limit in as little as an hour."

ABC World News (3/17, story 3, 2:50, Sawyer, 8.2M) reported that a "band of brothers in Japan is being asked to make the ultimate sacrifice. More Japanese workers being asked to go inside that plant, an almost certain death sentence. It is that last ditch effort to save their countrymen." The Wall Street Journal (3/18, Hayashi, 2.09M) says there are currently about 300 people working at the plant, down from the normal 800.

**Survivors Of 1945 Particularly Nervous About Radiation.** The Washington Post (3/18, Harlan, 605K)

reports, "Millions in Japan are worrying about the particles in the air, where they might spread and what might happen if they come too close. At least 20 million Japanese are old enough to remember the A-bomb attacks" on 1945, "and the worry resonates in particular with survivors, who have spent decades grappling with the inherent uncertainty of radiation exposure."

**China Experiencing Run On Iodized Salt.** The Los Angeles Times (3/18, Pierson, 681K) reports, "China tried to quell panic buying of iodized salt Thursday after grocery stores across the country were emptied of the seasoning by hordes of people hoping to ward off radiation poisoning."

**G7 To Intervene To Bolster Yen.** Bloomberg News (3/18, Fujioka, Otsuna) reports the Group of Seven major industrialized nations "will jointly intervene in the foreign exchange market for the first time in more than a decade after Japan's currency soared." Japanese Finance Minister Yoshihiko Noda said "each of the G-7 members will sell yen as their markets open," and Japan's central bank said it will "pursue 'powerful monetary easing' as policy makers sought to reduce the threat the world's third-largest economy sinks into a recession."

The Washington Post (3/18, Schneider, Irwin, 605K) says the G7 leaders "pledged 'solidarity' with Japan and said that a recent run-up in the value of the yen led them to decide on a 'concerted intervention in exchange markets' to try to stabilize the value of the currency." The New York Times (3/18, Appelbaum, 1.01M) says the "rising value of the yen threatened to undermine demand for Japanese exports at the same time that a series of disasters has damaged the domestic economy." The Wall Street Journal (3/18, Paletta, Wessel, 2.09M) says the G7 last took a similar action in 2000 to bolster the sagging euro. The Financial Times (3/18, Harding, Cookson, 448K) says news of the plan boosted Japan's Nikkei 225 average.

On NBC Nightly News (3/17, story 7, 2:00, Williams, 8.37M), John Yang said, "Economists say the spiraling crisis threatens the US economic recovery."

**DHS Screens Air Passengers Arriving From Japan For Radiation.** The CBS Evening News (3/17, story 8, 2:00, Couric, 6.1M) reported, "The Department of Homeland Security today began screening passengers in the US arriving from Japan for radiation. Some who flew to Chicago's O'Hare Airport tested positive but at levels too low to cause any health concern." The Chicago Tribune (3/18, Johnsson, 488K) says the "false alarms signaled that officials are concerned about the effects of radiation spewing into the atmosphere from Japan's crippled nuclear reactors." The Chicago Sun-Times (3/18, Spielman, 256K) says city officials "declined to say what happened to the passengers, referring all questions" to DHS.

**Union Of Concerned Scientists Report Criticizes NRC.** Meanwhile, the New York Times (3/18, Zeller, 1.01M)

reports "critics of nuclear power" are "increasingly shining a spotlight on American regulators and power companies" in the wake of the Japan crisis. The Union of Concerned Scientists issued a report accusing the NRC "of allowing companies that operate plants to ignore, or delay repairs to, leaky pipes, electrical malfunctions and other problems that could escalate into something more serious." The San Francisco Chronicle (3/18, Baker, 245K) says the report "lists 14 recent 'near misses' -- instances in which serious problems at a plant required federal regulators to respond." The New York Daily News (3/18, Sisk, 527K) also has a story on the report.

According to the Union of Concerned Scientists report, NRC regulators "failed to enforce their own rules aimed at preventing Oyster Creek and many other nuclear plants from illegally releasing radiation into the environment," reports the Asbury Park (NJ) Press (3/18, Bates). When, in 2009, the Oyster Creek plant "leaked an estimated 200,000 gallons" of tritium contaminated water, the NRC issued no fine against the plant. Indeed, the UCS says many plants have "released unmonitored amounts of radiation into the environment in the last decade" and 14 had "'near-misses,' or an increased risk of core damage," according to the report.

USA Today (3/18, Koch, 1.83M) reports, "US nuclear power plants operate with known safety problems because of inadequate federal inspections, faulty maintenance and poor design, concludes a report Thursday by US scientists." The NRC "investigated 14 safety lapses at these plants last year, an error rate that's 'high for a mature industry,' according to the Union of Concerned Scientists, an environmental and nuclear watchdog group." The incidents took place "at plants operated by Progress Energy Inc; Constellation Energy Group; Duke Energy Corp; First Energy; Pacific Gas & Electric Corp; Southern Nuclear; Omaha Public Power District; Dominion Generation; and Wolf Creek Nuclear."

Reuters (3/18, Malone) adds that the UCS faulted the NRC for spotty inspections and allowing safety system flaws to persist. Report author David Lochbaum said plant operators and the NRC have allowed problems to persist. "A common trap to fall into is what's called normalization of deviance," said Lochbaum. "You can get sucked in to the false belief that it will never get any worse, and because I've experienced it in the past ... I don't have to do anything to fix it because it's annoying but it's not mission critical."

**UCS Faults NRC For Call For 50-Mile Evacuation Zone.** On its "Green" blog, the New York Times (3/18, Zeller, 1.01M) says Edwin Lyman, a senior scientist at the UCS, said during a conference call with reporters that the NRC recommendation that Americans in Japan remain at 50 miles away from the Fukushima Daiichi plant, "exceeds the official evacuation zone" surrounding US nuclear plants by 40 miles. Lyman said at "plants like the Indian Point nuclear site north of New York City," it is "'utterly unrealistic' to expect that an

effective evacuation could be undertaken should a disaster like the earthquake and tsunami that hit Japan last week occur in this country." Lyman said the NRC "should not be using different standards for Americans abroad than it does at home." NRC PAO David McIntyre, "said that the commission continued to believe that a 10-mile evacuation zone — required as part of the emergency protection plant at every nuclear facility in the United States — was adequate for what would be an 'anticipated event.'"

The AP (3/18) reports, "Jaczek said the US recommendation for the 50-mile evacuation zone was based on the 'possibility of scenarios that we haven't seen yet.' He also said it was based on 'prudent assumptions and prudent assessments about what could happen.'"

**Japan Disaster Said To Be Changing Few Minds About New Reactor Plans.** USA Today (3/18, Copeland, 1.83M) reports, "A nuclear plant disaster in Japan has done little to change the thinking about nuclear energy in Waynesboro, Ga.," where Southern Company plans to build the country's first new nuclear power plants in decades. However, the "Japan disaster is reverberating across other communities in the USA where nuclear power plants are planned or under consideration." In Iowa, "Democratic state Sen. Sen. Matt McCoy says legislators should consider waiting until next session to take up bills that would make it easier for energy companies to build nuclear plants." And executives "at the Tennessee Valley Authority, which operates six nuclear reactors in east Tennessee and north Alabama and has another under construction, say they are in areas not prone to frequent or extremely large earthquakes and are equipped with numerous safety features."

**UAVs Helping Cooling Efforts At Fukushima Reactor.** Popular Science (3/18, Dillow, 1.32M) reports on the air support being used to try to cool the Fukushima Daiichi nuclear reactor. Along with helicopters dropping water onto the reactors, a Global Hawk UAV has been dispatched "to gather high-resolution images of the situation at Japan's nuclear facilities and perhaps even peer into the damaged reactors and cooling pools from above." It also has been used to image other areas to help with relief efforts. The article notes it is the Global Hawk's "first attempt to assist in the ongoing nuclear crisis," but it reports the UAV is "well suited" to the task. "The UAV can gather imagery showing where the hot spots are, what parts of the reactors may be closest to rupture or other damage, whether or not fires have been completely extinguished, and, over time, the effectiveness of different methods of cooling."

**More Commentary.** The New York Times (3/18, 1.01M) editorializes, "As Japan's nuclear crisis unfolds, nations around the world are looking at the safety of their nuclear reactors — as they should. But most are also waiting until all the facts are in before deciding whether or how to change their nuclear plans. The Obama administration has

vowed to learn from the Japanese experience and incorporate new safety approaches if needed. That makes sense to us — so long as there is rigorous follow-through." US regulators "must ensure that all nuclear plants have enough mobile generators or other backup power in place if their first two lines of defense are disabled."

In his Washington Post (3/18, 605K) column, Eugene Robinson writes, "The most urgent focus of Japan's worsening nuclear crisis is the threat from radioactive fuel that has already been used in the Fukushima Daiichi reactors and awaits disposal." In the US, "the nuclear industry has amassed about 70,000 tons of such potentially deadly waste material — and we have nowhere to put it."

In a New York Times (3/18, 1.01M) op-ed, nuclear engineer Michael Friedlander writes that the situation facing the "workers left at Fukushima is a nuclear operator's worst nightmare. Fortunately, despite harrowing situations like mine, almost none of us will ever deal with anything like it. But the knowledge that a nuclear crisis could occur, and that we might be the only people standing in the way of a meltdown, defines every aspect of an operator's life."

### **Support Expressed Support For Nuclear Power.**

In continuing coverage of the impact of the nuclear crisis in Japan and its impact on the nuclear power industry in the United States, the Washington (DC) Examiner (3/18, Sherfinski, 93K) reports, "Virginia Gov. Bob McDonnell wants to push forward with nuclear power in Virginia, including a proposed third reactor at the Lake Anna Power Station in Louisa County, despite the current turmoil in Japan." Currently, Dominion Virginia Power "has a third reactor in the works at Lake Anna." McDonnell said, "I think nuclear is a huge part of America's future. ... They're expensive to build, but they're relatively inexpensive to operate because the fuel cost is virtually nothing, there's no carbon footprint, so this is a strategy we ought to pursue."

The Staunton News Leader (3/18) reports, "McDonnell reiterated his support for nuclear power and concerns about the nation's energy sources in a closed door meeting with Virginia's congressional delegation on Thursday." According to press secretary Jeff Caldwell the governor "believes state, local and utility officials have strong plans in place to deal with potential disaster."

The Fredericksburg Free Lance-Star/AP (3/18) reports, "Dominion Power has an application pending with the Nuclear Regulatory Commission to build a third nuclear reactor at its North Anna Power Station, on Lake Anna near Mineral." The agency "is expected to make a decision on the application sometime in 2013. Dominion has not yet decided whether to build Unit 3." An article on the WTOP Radio (3/18) website reports, "The Nuclear Regulatory Commission recently placed North Anna seventh on its list of the country's 10 most earthquake-prone nuclear sites, according to an MSNBC."

A blog on the Fredericksburg Free Lance Star (3/17, Hall) continues its coverage of the confusion over the iodide pills the Virginia Department of Health said they would provide to residents earlier in the week.

The Central Virginian (3/18, Dorazio, 9K) reports, "Dominion Virginia Power officials say that's no reason to believe that the nuclear disaster unfolding on the Japanese coast could happen on the shores of Lake Anna." Dominion Richard Zuercher said, "From time to time, we experience very minor tremors [at North Anna], but nothing that would cause us to shut the plant down. ... The plant has been designed to meet seismic standards in the region."

The Christian Broadcasting Network (3/18, Martin) reports, "The concrete domes at the Surry power station define the containment buildings. They protect the entire nuclear power generation system." According to Zuercher "the nuclear industry and other experts believe these structures provide protection from not only nature's fury, but also from terrorist attacks."

**More coverage.** In an editorial supportive of nuclear power the La Crosse (WI) Tribune (3/18, 30K) writes, "Unless we're prepared to rely exclusively on wind and solar energy, there's no such thing as a foolproof, 100 percent guaranteed safe form of energy."

An article by the South County Independent (3/18, Wilson) of Rhode Island reports that Dr. Bahram Nasserharif of the University of Rhode Island said that "a meltdown at the Millstone Power Station in Waterford, Conn., could affect people within a 50-mile radius, including some residents in South County. The two reactors at Millstone generate about 2,000 megawatts, but even they are not the same models that exploded in Japan over the weekend."

**Groups Hit Safety Of Nuclear Plants In Wake Of Japanese Crisis.** In continuing coverage of the impact of the nuclear crisis in Japan and its impact on the nuclear power industry in the United States, the Syracuse Post-Standard (3/18, Hannagan) reports, "A coalition of Syracuse peace and environmental groups today called on federal and state leaders to halt the spread of nuclear power plants in the United States in light of the nuclear disaster in Japan." According to Linda A. DeStefano of the Iroquois Chapter of the Sierra Club "the Syracuse groups are concerned because the Oswego nuclear power plants are of a similar design." She contends "the Oswego plants could be affected by Central New York-type natural disasters, such as tornados, ice storms, or power loss that could cut off electricity to pumps that cool the reactors."

Because of fears of radiation, the Syracuse Post Standard (3/18, Smith) reports, there is "a run on potassium iodide...in Central New York" despite "public health officials cautioning against serious side effects." The Post-Standard

notes, "Stores that usually carry the compound are sold out and turning away would-be customers seeking the pills or liquid."

However, WSYR-TV Syracuse (3/18) reports, the Oswego County Emergency Management Office has "sent a reminder to people that potassium iodide pills are available to residents who live within 10 miles of the nuclear power plants at Nine Mile Point."

The Messenger Post (3/18) reports, "Although scientists have found a fault line running through Lake Ontario, the Ginna Nuclear Power Plant in Ontario is not in danger of being damaged by the magnitude of the quakes that shook Japan last week, said Maria Hudson, senior analyst for communications at the plant." Hudson adds, "All of our plants are outside of high-hazard earthquake zones. ... So an event like the one happening in Japan is unlikely given the plant's locations." The Rochester Democrat & Chronicle (3/18, Blackwell, 133K) also reports on the safety of the Ginna Nuclear Power Plant. An article titled "Nuclear Power Creates At Least 28% Of Local Electricity" by the Poughkeepsie Journal (3/18, Wolf) reports on nuclear power's impact in New York State.

On its website WAMU-FM Washington, DC (3/18) reports, "As concern grows over the endangered Fukushima nuclear power plant in Japan, questions are being raised about a proposed expansion for Maryland's only nuclear power plant." Four years ago "officials of the Calvert Cliffs nuclear power plant in Lusby, Md., filed an application to add a third reactor to the facility" but "plans for the expansion have stalled due to economic concerns, and some expect the crisis in Japan could cast more doubt on those plans and the future of nuclear energy." Areva COO Mike Rencheck "says local industry analysts are watching the crisis, and learning."

In an article about how Baltimore-area companies are contributing to the relief effort in Japan the Baltimore Business Journal (3/17, Jackson) reports, "Baltimore-based McCormick & Co. Inc. and Constellation Energy each donated \$50,000 and said they would match employee contributions made through employee donation programs they have set up."

**Authorities Say Fault Lines Near US Nuclear Plants May Pose Unknown Risks.** The AP (3/17) reports, "Two years before an immense coastal earthquake plunged Japan into a nuclear crisis, a geologic fault was discovered about a half-mile from a California seaside reactor -- alarming regulators who say not enough has been done to gauge the threat to the nation's most populous state." According to AP, "the situation of the Diablo Canyon plant is not unique. Across the country, a spider's web of faults in the Earth's crust raises questions about earthquakes and safety at aging nuclear plants." About Diablo, the article says "the recently discovered fault is close to, and might intersect with, another bigger crack three miles offshore, and the fear is the two

faults could begin shaking in tandem, creating a larger quake than either fault would be capable of producing on its own."

"The combination of earthquake and tsunami could not happen in Alabama, but similar double disasters could, said David Lochbaum, a nuclear engineer who worked at Browns Ferry," according to the Decatur (AL) Daily (3/17, Fleischauer). The paper said "a tornado could disrupt the power grid and compromise Browns Ferry. An earthquake could damage both Browns Ferry and, by disabling dams on the Tennessee River, cause flooding." In addition, "either an earthquake or tornado could cause a fire at Browns Ferry, potentially damaging backup power supply."

**Quake Faults Could Affect Sequoyah, Watts Bar.** Chattanooga Times Free Press (3/17, Sohn, 80K) reported, "The two reactors at TVA's Sequoyah Nuclear Plant in Soddy-Daisy [TN] have the nation's fourth-highest earthquake risk, according to assessments by the Nuclear Regulatory Agency." The article said "understanding of the risk at TVA nuclear plants at Sequoyah, Watt's Bar in Spring City, Tenn., and Browns Ferry in Athens, Ala., has grown in recent decades as knowledge has increased about earthquake research and fault mapping." Notably, at Sequoyah, the risk of an "earthquake causing core damage at each reactor are 1 in 19,608, according to an MSNBC analysis of new NRC risk assessments."

**Columnist Warns Of Potential Nuclear Risk In Alabama.** The Birmingham Weekly (3/17, 12K) columnist Courtney Haden wrote that the nuclear disaster in Japan "mirrors possible disaster right here in Alabama." Haden cited problems faced by the "Browns Ferry nuclear plant, operated by TVA near Athens," saying it "was the first in the nation with a capacity for generating a billion watts of electricity. Unfortunately, it may be better known for catching fire in 1975." The article said that "Unit One returned to full service in 2007, but the Nuclear Information and Resource Service claimed TVA still hasn't addressed the safety issues that shut the reactor down in 1975."

**Editor Says Japan Quake Must Not Spark Nuclear Hysteria.** In an opinion piece in Roll Call (3/17, 19K), the paper's executive editor, Morton M. Kondracke, wrote: "I never agree with Rush Limbaugh about anything, but here's an exception: The mainstream media habitually spreads panic in the population -- right now, about the safety of nuclear power." Kondracke said that "the danger of a meltdown at Japan's Fukushima Daiichi reactors is real, but the media made it a 'crisis' from the get-go." For instance, "the New York Times said the crisis had 'veered toward catastrophe.'"

**US Urged To Not Let Japan Nuclear Problem Hinder Nuclear Energy Development.** In an editorial, the Miami Herald (3/17, 175K) wrote that the "crisis in Japan should not deter development of safe nuclear energy" in the US. The paper said: "Based on existing technology, nuclear power

has a critical role to play in devising a climate solution. It's a form of clean energy." The paper said that "the Tennessee Valley Authority is the only utility actively building a new nuclear plant in America, the Watts Bar Unit, but ground on that project was broken decades ago, before the episode at Three Mile Island that brought new nuclear-power development to a standstill."

**Bradford Says Nuclear Renaissance Is "Pretty Much Out The Window".** Peter Bradford appearing on Bloomberg's "On the Economy" (3/17, 2:13pm) to discuss NRC reviews of nuclear plants. Bradford was asked about the economic impact on the nuclear industry in the wake of the Japanese plant problems. Bradford said, "There are several respects in which their costs are inevitably going to go up, in particular the complying with new regulations and the perception of risk by investors and lenders. That will result in higher costs to them." He said as well, that the "concept of nuclear renaissance, which was essentially on the rocks even before this accident because it is so expensive in relation to alternatives, is pretty much out the window."

**Coal's Fortunes Rise In Earthquake's Aftermath.** The Wall Street Journal (3/18, Peaple, 2.09M) reports that concerns over nuclear power safety in the aftermath of Japan's earthquake could lead to a boost in coal usage. Higher demand for coal could also lead to significant price fluctuations. For instance, Deutsche estimates that European prices could rise to \$145 per ton in 2012 from the current price of about \$122. The Journal also mentions that the EPA appears to be taking a less aggressive approach on coal-fired plants, referring to the agency's recently proposed rules on cutting emissions. While some analysts forecasted that the EPA's standards would require large-scale shutdowns of coal-fired plants, the agency now estimates that only less than 10GW of capacity will have to close. However, the Journal also notes that there is still some uncertainty over coal's prospects; citing for example, that natural gas could prove to be a better replacement for nuclear power.

The Financial Times (3/18, Blas, 448K) also reports on the implications of Japan's recent nuclear crisis on coal. The Times says that although there will be a short term decline of coal, the commodity will ultimately benefit from Japan's disaster. According to the report, the effects of the crisis will most significantly impact Europe, where coal prices are rapidly increasing. It notes that the price of coal in the Atlantic basin has increased almost 10 per cent since Japan's earthquake. Additionally, coal appears to be a more attractive energy source as gas prices continue to increase. The Financial Times concludes that some view recent events

as a sign that coal is reemerging as a dominant commodity in the raw materials market.

### **NRC Responds To Seismic Risk To US Plants'**

**Story.** In a letter to the editor of the Phoenixville Patch (3/17), NRC spokesman Neil Sheehan, wrote in response to the 'NRC: Risk of quake event at Limerick plant third highest in US' story. "The MSNBC [msnbc.com] story has to do with a seismic risk ranking it created. It is not the result of an NRC review. The NRC does not rank plants by seismic risk." Sheehan says the NRC efforts were directed at creating a "conservative, screening-level assessment of earthquake risk" and its results should not be "interpreted as definitive estimates of seismic risk."

### **NRC Cancels Meeting With Progress Because Of Ongoing Repairs.**

The AP (3/18) reports, "Federal regulators have canceled a scheduled meeting about a Florida nuclear plant because of ongoing repairs at the facility." On Thursday, the NRC said "that Progress Energy's Crystal River plant appears to have a new gap in the concrete containment which would prevent it from reopening anytime soon. Because of that, next week's meeting to discuss the reopening of the plant was nixed." The Orlando Sentinel (3/18, Spear, 206K) is also covering this story.

### **Entergy To Conduct Review At Indian Point.**

The Poughkeepsie Journal (3/18) is reporting, "A nuclear crisis nearly 10,000 miles from Poughkeepsie has got Hudson Valley residents debating the safety" of Indian Point nuclear power plant "less than 50 miles from Poughkeepsie." An Entergy spokesman "said the plant is built to safely shut down in the event of an earthquake of magnitude 6.0 or greater on the Richter scale, but can handle a much more severe quake." According to Entergy's Jerry Nappi, "Indian Point is neither susceptible to the type of earthquake that occurred in Japan, nor the tsunami that followed that ultimately removed the cooling capability of the Japanese plant. Nevertheless, over the next 30 days as part of an industry initiative, Indian Point will be performing a comprehensive review of the plant's ability to respond to catastrophic events." The Dow Jones Newswires (3/18, Malik) and Reuters (3/18) are also reporting that Entergy will conduct a review.

### **Oyster Creek Plant Closing Prudent Business Plan, Says Exelon Executive.**

The Asbury Park (NJ) Press (3/17, Moore) reported, "Exelon Corp. executives saw their deal with the Christie administration to close the Oyster Creek nuclear plant by 2019 purely as a prudent business plan, given the age of the reactor and New Jersey's movement toward requiring cooling towers as a condition for continued long-term operation, Exelon chief operating officer

Charles G. 'Chip' Pardee said today." Pardee said Thursday on National Public Radio's Diane Rehm Show that "it was apparent state officials would demand a major new investment in the nation's oldest commercial nuclear plant." Exelon Chairman John W. Rowe earlier this month had said that "cheap and abundant natural gas supplies in North America will likely make construction of new reactors uncompetitive for years to come."

**US Nuclear Output Up 0.7%.** Bloomberg News (3/18, McClelland) reports, "US nuclear-power output rose 0.7 percent after rates increased at the Calvert Cliffs 2 reactor in Maryland and Entergy Corp. boosted its Palisades unit on Lake Michigan, the Nuclear Regulatory Commission said." Bloomberg notes, "Constellation Nuclear Energy Group LLC, a joint venture of Constellation Energy Group Inc. (CEG, 711K) and Electricite de France SA, boosted its 867-megawatt Calvert Cliffs 2 reactor to 83 percent of capacity from 56 percent yesterday."

### **Progress Leads List Of Nuclear Missteps.**

Bloomberg News (3/18, Polson, Van Loon) reports Progress Energy "led a list of 14 near-misses by US nuclear plant operators last year, the Union of Concerned Scientists, a watchdog group," said yesterday in a report. The power company "suffered four accidents at three reactors," according to the group "in a report written by its chief of nuclear safety, David Lochbaum, a former safety instructor for the US Nuclear Regulatory Commission." The group says, "Progress was responsible for the most costly event, damage to concrete walls containing the reactor at the Crystal River plant in Florida, which has been shut down for more than a year." The Raleigh News & Observer (3/18, Murawski, 146K) is also covering this story.

**Exelon's Rowe To Review Nuclear Policies.** The Chicago Tribune (3/18, Wernau, 488K) reports, "Exelon Chief Executive John Rowe acknowledged that the universe has changed and said all of the company's nuclear activities are under review, including a multibillion-dollar 'power uprate' program to wring more power from the company's aging reactor fleet." On Wednesday, Rowe said, "I believe we will be able to add some capacity to our different plants. We will, of course, give that a fresh look in the wake of this event." The Tribune notes, "Though the comment might appear vague, it stands in contrast to Rowe's record until now on the company's nuclear power strategy."

### **Iowa Republicans Support Nuclear Power Plans.**

The Des Moines Register (3/17, 115K) reported, "Republican leaders today expressed support for the continued study of expanding nuclear power in Iowa but acknowledged the discussion has changed due to the recent



events in Japan." Republican House Leader Kraig Paulsen said, "I think the legislature is taking the appropriate steps to make sure what happened in Japan doesn't happen here." Paulsen "said the nuclear plants in Japan are far different from those that would likely be built in Iowa." He said what is similar is that both use nuclear power, otherwise, "they're entirely different technologies. They're entirely different designs.... It is solid, reliable power."

**MidAmerican CEO Urges Iowa Lawmakers To Approve Nuclear Power Bill.** The Sioux City (IA) Journal (3/18, Boshart) reports, "The leader of MidAmerican Energy said Thursday that a delay by" Iowa "lawmakers in approving the company's request for legislation this session that would help attract potential private investors needed to build a nuclear power plant in Iowa likely would hurt and slow the process but would not kill the project." MidAmerican Energy President William Fehrman said following the Japan crisis, "We have a lot more to assess and a lot more to understand before those decisions are made." Still, he said, "We have concluded that the state of Iowa can be a host for a new nuclear power plant." Fehrman appeared before a Senate Commerce subcommittee hearing Thursday in support of the bill.

**Nebraska Nuclear Owners Say Atomic Plants Safe.** The AP (3/17) reported, "Owners Nebraska's two nuclear power plants tried to reassure the public Wednesday that their facilities are safe and designed to handle any likely natural disaster." AP said "representatives of the Omaha and Nebraska public power districts responded to questions related to the nuclear disaster unfolding in Japan, where officials have been fighting to prevent a nuclear meltdown at a power plant damaged by last week's earthquake and tsunami."

**Illinois Governor Plans To Raise Fees On Nuclear Generators.** The AP (3/18) reports, "Gov. Pat Quinn says he plans to seek higher fees on power generator Exelon Corp. to ensure the safety of Illinois nuclear power plants in the aftermath of Japan's nuclear crisis." Quinn says the situation in Japan shows the necessity of conducting a safety review of the plants.

**Virginia Uranium Mining Opponents Want Study To Consider Japan Problem.** The AP (3/18) reports, "Groups opposed to tapping a rich uranium deposit in Southside Virginia want members of a National Academy of Sciences study committee to consider the catastrophic events in Japan as they weigh the consequences of uranium mining in the state." According to AP, "the five groups said committee members should examine the potential that the nuclear power crisis in Japan after an earthquake and a

tsunami will ultimately depress global uranium prices, potentially making the Coles Hill site unsustainable after mining has begun."

**NNSA, National Labs Play Role In Radiation Analysis.** The AP (3/18) explains that the US is gathering information from radiation detectors deployed by the EPA, in addition to samples that numerous federal agencies are collecting on the ground and in the air in Japan, "will be sent to the Department of Energy's atmospheric radioactivity monitoring center in California, where teams are creating sophisticated computer models to predict how radioactive releases at Fukushima could spread into the atmosphere. Inside Lawrence Livermore National Laboratory near San Francisco, scientists, engineers, and meteorological experts were analyzing those charts and maps to help policymakers predict where radioactive isotopes could travel."

**Layoffs, Budget Among Issues Discussed At Hanford Meeting.** The Tri-City (WA) Herald (3/18, Cary) reports that almost 100 people attended the Tri-Cities Hanford State of the Site meeting Wednesday night, where "issues from layoffs to the Japan nuclear crisis to Hanford's safety culture" were discussed. DOE officials told those gathered that "Hanford will have to be innovative as it faces the likely loss of young workers in job cuts related to budget challenges," as nearly 25 percent of the current work force may be gone by the time projects are ramping up after stimulus funding is spent. The DOE also said at the meeting that "under the proposed Hanford budget for fiscal 2012, environmental cleanup work would stop at the Plutonium Finishing Plant."

Drawing coverage from the Tri-City (WA) Herald, the AP (3/18) reports that DOE officials said "the Hanford nuclear reservation will need \$2.9 billion in the 2013 budget to keep environmental cleanup work on schedule" -- \$1.5 billion for the Office of River Protection and \$1.4 billion for the Richland Operations Office. "The \$2.9 billion compares with \$2.2 billion in this year's budget proposal and \$2.4 billion for next year."

## **INTERNATIONAL NUCLEAR NEWS:**

**UN: One-Fifth Of World's Nuclear Plants In Earthquake Zones.** AOL News (3/17, Frayer) reported, "A staggering one-fifth of the world's nuclear power stations sit on potentially shaky ground in earthquake zones, raising the specter that what's happening in Japan could come to a community near you." AOL said "two of the world's biggest nuclear plants located in seismically active areas are in

California: the San Onofre plant near San Diego and Diablo Canyon near San Luis Obispo." Notably, those two are "among 88 of the world's 442 nuclear power stations built in earthquake zones, according to the UN's International Atomic Energy Agency."

**Polish People, Government At Odds Over Nuclear Plant.** Reuters (3/18, Jones) reports that Polish people living near the potential site of their nation's first nuclear plant are concerned about the facility in view of the Japan crisis. The government of Poland, however, is unmoved and says it will go ahead with the plans because the plant is safe. Reuters says the government hasn't yet chosen a site but the Zarnowiec near the Baltic coast could be the final site.

**Japan Nuclear Problems Prompt Nuclear Rethink In Germany, Italy.** Reuters (3/18, Stamp, Jewkes) reports the ongoing atomic crisis in Japan has prompted a review of nuclear policies in Germany and Italy. German Chancellor Angela Merkel promised to move faster away from nuclear energy, while the Italian government said it was time to pause and think over nuclear plans, just months before a referendum on reintroducing nuclear power.

**Greenpeace Asks Turkey To Abandon Nuclear Plans Due To Quake-Prone Location.** The Reuters/REU (3/17, Yackley) reported that environmental group Greenpeace Thursday urged Turkey to give up its plans for building nuclear power plants because its location – in earthquake-prone zone – raises risk of Japan-type nuclear disaster. On Wednesday, Prime Minister Tayyip Erdogan said the country won't abandon plans for atomic plants on Turkey's Mediterranean coast and on the Black Sea coast.

**South Africa Approves Nuclear Energy Plan.** BusinessWeek (3/17 Cohen, 921K) reported, "South Africa, the continent's largest electricity producer, approved a 20-year plan that will see an increased reliance on nuclear energy even as Japan battles to prevent a meltdown at one of its plants and China halts all atomic-power expansion plans." BusinessWeek, citing Collins Chabane, a minister in the presidency, said, "South Africa needs to 'diversify the energy mix' away from coal." Under the country's "so-called Integrated Resource Plan, 23 percent of newly generated power should come from nuclear sources by 2031," compared with 2.1 percent in 2009.

**Indonesia Sticks With Nuclear Power Plans.** The New York Times (3/18, B5, Belford, 1.01M) reports, "While the world looks on with trepidation at the nuclear crisis touched off by the earthquake and tsunami in Japan, officials in Indonesia, one of the world's most seismically active

countries, are pushing ahead with plans to build the country's first nuclear power plants." The Times says "the nuclear plans, which are still in the early stages, are part of an ambitious proposal by Indonesia...to triple its electricity output by 2025," even as it cuts its dependence on imported oil. The paper says plans "to build plants have been floated despite years of protests by environmentalists and community activists who" say the country sits "on a number of major fault lines."

**India's Parliament Erupts Over WikiLeaks Disclosure Detailing Bribes.** Several news outlets report on a WikiLeaks disclosure from a July 2008 cable that created "outrage" Thursday in India's Parliament, as the New York Times (3/18, A4, Yardley, Polgreen, 1.01M) reports. The cable "described insiders in the governing Congress Party showing off chests of money and boasting of paying bribes to wavering lawmakers to secure passage of a critical 2008 vote on a landmark civilian nuclear deal between India and the United States." The cable also said "a political assistant to an influential Congress Party lawmaker told a United States Embassy diplomat that one small regional political party had already been paid millions of dollars in bribes for support." The Times points out that the WikiLeaks disclosure "comes as the Congress Party has been besieged for months over allegations of corruption."

According to the Washington Post (3/18, Lakshmi, 605K), India's Parliament was "rocked" by the disclosure, and "opposition parties demanded the resignation of Prime Minister Manmohan Singh." The cables were "published in The Hindu newspaper" and "laimed that Singh's government used cash to win a crucial vote" on the agreement with the US. "The cable quoted an American diplomat, Steven White, saying a Congress Party aide showed an embassy staffer the cash available for the payoffs."

The Wall Street Journal (3/18, Agarwal, 2.09M) also reports the story and says White wrote that one political figure said "Ajit Singh's Rashtriya Lok Dal had been paid about \$2.5 million for each of their four MPs to support the government," although they did not when the vote was taken. Ajit Singh denied the payments, the Journal notes. The Financial Times (3/18, Lamont, 448K) also reports the uproar caused by the cable's release.

**Malaysia: Seized Nuclear Weapon Parts Bound For Iran.** The AP (3/18) reports authorities in Malaysia "say a ship smuggling equipment that possibly could be used to make nuclear weapons had been headed to Iran." National police chief Ismail Omar told the AP Friday "the Malaysian-registered ship was traveling from China to Tehran." According to Malaysia's The Sun newspaper, "the equipment was declared as two agitating mixer machines and a



stainless steel storage tank," but "investigations showed they required a special permit under a law Malaysia passed last year to curb the trafficking of nuclear weapon components."

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**From:** Maier, Bill  
**Sent:** Friday, March 18, 2011 2:02 PM  
**To:** LIA04 Hoc; OST05 Hoc  
**Subject:** FW: FW: Commission Meeting: Briefing on NRC Response to Recent NuclearEvents in Japan

Rich,

FYI.

Bill

---

**From:** Jim Boyd [mailto:Jboyd@energy.state.ca.us]  
**Sent:** Friday, March 18, 2011 12:42 PM .  
**To:** Maier, Bill  
**Cc:** Barbara Byron  
**Subject:** Re: FW: Commission Meeting: Briefing on NRC Response to Recent NuclearEvents in Japan

Thanks Bill -- FYI -- A committee of our Senate has called a hearing on earthquake issues and our 2 nuclear plants for Noon Monday PDT. They have summoned me, the utilities and others. Will try to forward you the leg file page with an agenda.  
Jim

JAMES D. BOYD, Commissioner  
Vice-Chairman  
California Energy Commission  
1516 9th Street, MS 34  
Sacramento, CA 95814  
916-654-3787 / FAX 916-653-1279  
[jboyd@energy.state.ca.us](mailto:jboyd@energy.state.ca.us)  
[www.energy.ca.gov](http://www.energy.ca.gov)

>>> "Maier, Bill" <[Bill.Maier@nrc.gov](mailto:Bill.Maier@nrc.gov)> 3/18/2011 10:36 AM >>>

Dear FEMA RAC Chairs and State Liaison Officers,

The following weblink could be used to access a Nuclear Regulatory Commission public meeting scheduled for 9am EDT on Monday, March 21<sup>st</sup>. The meeting will be a presentation by the NRC staff of what actions the agency has taken in response to the reactor event in Japan. This meeting may provide more answers to some of your most lingering questions regarding the NRC's actions in response to the event.

I am trying to get this out quickly, so I have only sent it to RAC chairs and SLOs. If you would please spread the word among your RACs or State Organizations, I would be grateful.

Bill Maier  
Regional State Liaison Officer  
USNRC Region IV

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**From:** LIA04 Hoc

**Sent:** Friday, March 18, 2011 9:19 AM

**To:** Barker, Allan; Browder, Rachel; Erickson, Randy; Logaras, Harral; Maier, Bill; McNamara, Nancy; Tifft, Doug; Trojanowski, Robert; Woodruff, Gena; Flannery, Cindy; LIA04 Hoc; Lukes, Kim; Noonan, Amanda; OST05 Hoc; Rautzen, William; Rivera, Alison; Ryan, Michelle; Turtill, Richard; Virgilio, Rosetta; Collins, Elmo; Dean, Bill; Heck, Jared; McCree, Victor; Pederson, Cynthia; Satorius, Mark

**Cc:** Piccone, Josephine; Jackson, Deborah

**Subject:** Commission Meeting: Briefing on NRC Response to Recent Nuclear Events in Japan

All,

A Commission meeting will be held on Monday, March 21, 2011 at 9:00 am. This is a public meeting and can be viewed via webcast.

Please use the following link to access the webcast.

<http://www.nrc.gov/public-involve/public-meetings/webcast-live.html>

Feel free to notify interested stakeholders.

Thanks,

Cindy Flannery

State Liaison – Liaison Team

NRC Incident Response Center

**From:** Cherry, Ronald C  
**To:** Alan Remick; Aleshia Duncan; Cook, William; Smith, Brooke; Casto, Chuck; Damian Peko; Duncan, Aleshia D; Howard, E. Bruce; Foster, Jack; Trapp, James; James Trapp (BB); Joe Hughart; Joe Hughart (DART); Monninger, John; Johnstone, Gregg M; Foggie, Kirk; Mears, Jeremy M; Morales, Russell A; Devercelly, Richard; Kolb, Timothy; Nakanishi, Tony; Uises, Anthony  
**Subject:** FW: AMB Recurring Meetings.docx  
**Date:** Friday, March 18, 2011 11:02:49 AM  
**Attachments:** AMB Recurring Meetings.docx

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All:

Please note the attached daily schedule, starting with 9:30 am "nuclear reactor update" meeting.

I understand Damian will forward the updated reactor matrix. Please cc me, Aleshia, and Bruce. If there is no updated information, please indicate that.

Thanks.

Ron

This email is UNCLASSIFIED.

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**From:** Angelov, Bonnie A  
**Sent:** Friday, March 18, 2011 10:43 PM  
**To:** 'DartDOELiaison1@OFDA.gov'; Cherry, Ronald C; Tong, Kurt W; Luke, Robert S; Young, Joseph M; Chang, Benjamin; Kelley, Karen D (IO/Tokyo); Cooper, Justin D; Berger, William (RDMA/OFDA); Beed, John A; Beed, John; Fitzgerald, Paul M; JapanEmbassy, TaskForce  
**Cc:** Basalla, Suzanne I; Fuller, Matthew G; Hinds, Lynda J; Alexander, Kathleen J; Zumwalt, James P  
**Subject:** AMB Recurring Meetings.docx

Dear All,

Attached is the list of recurring meetings on the Ambassador's schedule, including participants for each meeting. Please review and note on your calendars as appropriate. This will be the daily schedule including Saturday and Sunday, unless you are notified otherwise.

See you tomorrow,

Bonnie

This email is UNCLASSIFIED.

LL4/50

## PROPOSED SCHEDULE FOR AMBASSADOR

0800 -- Bonnie receives email updates for AMB's Read Book; prepares book

- Military update – Action: DATT
- Press package – Action: PAS
- Reactor update matrix – Action: DOE
- State Department SITREPS – Action: None – Bonnie on distro
- Embassy JECC SITREPS – Action: None – Bonnie on distro

0900 – EAC (as needed)

0930 – Nuclear Reactor Update – Ambassador's Office

- Chuck Casto
- Alan Remick
- DOE rep
- Kurt Tong
- Rob Luke/Joe Young
- Others as required

1000 – Press Strategy Session – Ambassador's Office

- Ben Chang
- Karen Kelley
- Kurt Tong
- Others from PAS as required

1330 - Tandberg with General Field and JTF 505 leadership – 9<sup>th</sup> Floor VTC "Bubble"

- CAPT Cooper
- Bill Berger/John Beed
- JTF 505 Liaison officer
- Kurt Tong

1400 – Press Prep

- CG
- Bill Berger/John Beed
- NRC
- PAS

- Kurt Tong

1500 - Press availability (as needed)

1800 - Daily Round Up - 9<sup>th</sup> Floor Conference Room

- DCM
- Kurt Tong
- Head of Task Force
- Paul Fitzgerald
- Karen Kelley
- Ben Chang
- Bill Berger
- John Beed
- Justin Cooper
- Rob Luke
- Chuck Casto & Alan Remick (radiation monitoring and health effects expert)

2030 OR 2100 – DC meeting on Japan (SVTC)

- DCM, Kurt Tong
- Bill Berger, John Beed

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**From:** LIA01 Hoc  
**Sent:** Friday, March 18, 2011 7:19 PM  
**To:** LIA04 Hoc  
**Subject:** RE: Request for emergency/temporay std for surveying passengers/baggage.

OK,

I read the thread.

I'd like to see it cleaned up a little before forwarding to DHS,—has it been vetted by PMT? Also, we should make sure LT Dir is OK with that approach.

T

---

**From:** LIA04 Hoc  
**Sent:** Friday, March 18, 2011 6:42 PM  
**To:** LIA01 Hoc; LIA11 Hoc; LIA05 Hoc  
**Subject:** FW: Request for emergency/temporay std for surveying passengers/baggage.

Federal Liaison and Ken:

I'm still awaiting a fact or summary sheet (as promised by Helen Sterling of DHS/CBP) on baggage/passenger screening for rad isotopes. It has not yet arrived, and I have left her a message.

Any thoughts on the following...

Richard Turtill  
State Liaison – Liaison Team  
Incident Response Center

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**From:** Maier, Bill  
**Sent:** Friday, March 18, 2011 5:52 PM  
**To:** LIA04 Hoc  
**Subject:** FW: Request for emergency/temporay std for surveying passengers/baggage.

Not sure how to bin this. I suppose it goes into the "suggestions from state stakeholders" pile, but is more appropriately directed to DHS/TSA/CBP, would you agree? Not sure if he has submitted it to them since only 3 addressees are on the incoming message below and none are DHS.

My recommendation:

Forward to Federal Liaison for consideration of forwarding on to DHS.

Bill

---

**From:** Aubrey Godwin [mailto:agodwin@azrra.gov]  
**Sent:** Friday, March 18, 2011 3:09 PM  
**To:** Maier, Bill; clark.marye@epa.gov; rich.boyle@dot.gov  
**Subject:** Request for emergency/temporay std for surveying passengers/baggage.

Please see attached.

Thanks  
Aubrey Godwin  
AZ Radiation Regulatory Agency

<<Contamination.doc>>



**From:** Cherry, Ronald C  
**To:** JapanEmbassy, TaskForce; NITOPS  
**Cc:** Alan Remick; Aleshia Duncan; Cook, William; Smith, Brooke; Casto, Chuck; Damian Peko; Duncan, Aleshia D; Howard, E. Bruce; Foster, Jack; Trapp, James; James Trapp (BB); Joe Hughart; Joe Hughart (DART); Monninger, John; Johnstone, Gregg M; Foggie, Kirk; Mears, Jeremy M; Morales, Russell A; Devercelly, Richard; Kolb, Timothy; Nakanishi, Tony; Ulses, Anthony  
**Subject:** FW: Radiation data by MEXT  
**Date:** Friday, March 18, 2011 11:45:35 PM  
**Attachments:** 20110319 01.pdf

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Please see attached data for readings taken by sources including NUSTEC, JAEA, and TEPCO.

This email is UNCLASSIFIED

LLLL/52

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

As of 10:00 March 19, 2011

Ministry of Education, Culture, Sports, Science

1. Monitoring Outputs by MEXT (reverse chronological order) \*Boldface and underlined readings are new.

\* 1 measured by Geiger-Müller counter

\* 2 measured by ionization chamber type survey meter

\* 3 measured by NaI scintillator detector

| Monitoring Post<br>(length from NPP)            | Monitoring Time | Reading (unit : $\mu$ Sv / h ) | Weather | Reading by                                |
|---|-----------------|--------------------------------|---------|---|
| Reading Point <b>[1]</b> (About60KmNorth/West)  | 2011/3/18 18:05 | 8.0 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point <b>[1]</b> (About60KmNorth/West)  | 2011/3/18 10:08 | 8.5 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point <b>[4]</b> (About50KmNorth/West)  | 2011/3/18 16:00 | 4.8 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point <b>[4]</b> (About50KmNorth/West)  | 2011/3/18 10:55 | 5.7 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point <b>[5]</b> (About45Km North)      | 2011/3/18 13:40 | 3.5 *2                         | No rain | MEXT                                      |
| Reading Point <b>[5]</b> (About45Km North)      | 2011/3/18 12:40 | 3.2 *2                         | No rain | MEXT                                      |
| Reading Point <b>[5]</b> (About45KmNorth)       | 2011/3/18 11:40 | 7.5 *2                         | No rain | MEXT                                      |
| Reading Point <b>[6]</b> (About45KmNorth)       | 2011/3/18 14:10 | 3.0 *2                         | No rain | MEXT                                      |
| Reading Point <b>[6]</b> (About45KmNorth)       | 2011/3/18 13:10 | 3.5 *2                         | No rain | MEXT                                      |
| Reading Point <b>[6]</b> (About45KmNorth)       | 2011/3/18 12:15 | 7.5 *2                         | No rain | MEXT                                      |
| Reading Point <b>[7]</b> (About45KmNorth)       | 2011/3/18 14:18 | 2.4 *2                         | No rain | MEXT                                      |
| Reading Point <b>[7]</b> (About45KmNorth)       | 2011/3/18 13:18 | 3.0 *2                         | No rain | MEXT                                      |
| Reading Point <b>[7]</b> (About45KmNorth)       | 2011/3/18 12:22 | 4.1 *2                         | No rain | MEXT                                      |
| Reading Point <b>[10]</b> (About40KmNorth/West) | 2011/3/18 15:45 | 3.3 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point <b>[10]</b> (About40KmNorth/West) | 2011/3/18 11:29 | 4.0 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point <b>[11]</b> (About40KmNorth/West) | 2011/3/18 15:28 | 4.8 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |

- \* 1 measured by Geiger-Müller counter  
 \* 2 measured by ionization chamber type survey meter  
 \* 3 measured by NaI scintillator detector

| Monitoring Post<br>(length from NPP)            | Monitoring Time | Reading (unit : $\mu$ Sv / h ) | Weather | Reading by                                |
|---|-----------------|--------------------------------|---------|---|
| Reading Point 【11】 (About40KmNorth/West)        | 2011/3/18 11:39 | 5.0 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【12】 (About40KmWest)              | 2011/3/18 15:32 | 0.6 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【12】 (About40KmWest)              | 2011/3/18 12:00 | 1.0 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【13】 (About40KmWest)              | 2011/3/18 14:09 | 0.8 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【13】 (About40KmWest)              | 2011/3/18 13:09 | 0.7 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【13】 (About40KmWest)              | 2011/3/18 12:09 | 0.8 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【14】 (About35KmWest)              | 2011/3/18 14:22 | 0.8 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【14】 (About35KmWest)              | 2011/3/18 13:22 | 0.5 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【14】 (About35KmWest)              | 2011/3/18 12:22 | 0.7 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【15】 (About35KmWest)              | 2011/3/18 14:36 | 2.0 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【15】 (About35KmWest)              | 2011/3/18 13:36 | 1.6 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【15】 (About35KmWest)              | 2011/3/18 12:36 | 1.6 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【20】 (About45KmNorth/West)        | 2011/3/18 12:14 | 2.0 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【21】 (About30KmWest/North/West)   | 2011/3/18 14:35 | 8.7 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【21】 (About30KmWest/North/West)   | 2011/3/18 13:34 | 9.0 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【21】 (About30KmWest/North/West)   | 2011/3/18 12:35 | 8.5 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【22】 (About35KmWest/North/West)   | 2011/3/18 14:48 | 2.2 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【22】 (About35KmWest/North/West)   | 2011/3/18 13:48 | 2.3 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【22】 (About 35Km West/North/West) | 2011/3/18 12:48 | 2.0 * <sup>2</sup>             | No rain | NUSTEC (Nuclear Safety Technology Center) |

- \* 1 measured by Geiger-Müller counter  
 \* 2 measured by ionization chamber type survey meter  
 \* 3 measured by NaI scintillator detector

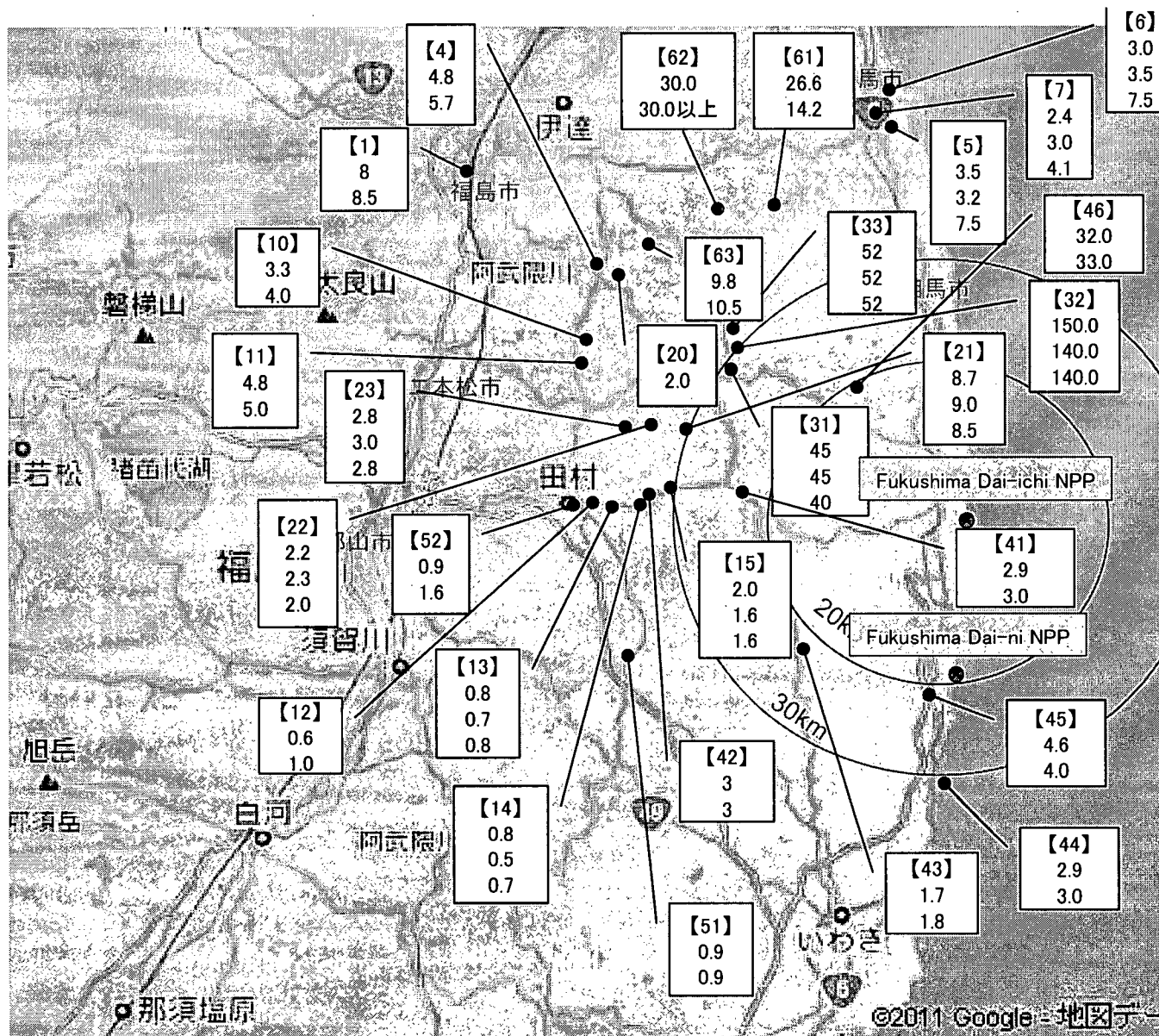
| Monitoring Post<br>(length from NPP)            | Monitoring Time | Reading (unit : $\mu$ Sv / h ) | Weather | Reading by                                |
|---|-----------------|--------------------------------|---------|---|
| Reading Point 【23】 (About35KmWest/North/West北)  | 2011/3/18 15:04 | 2.8 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【23】 (About35KmWest/North/West)   | 2011/3/18 14:04 | 3.0 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【23】 (About35KmWest/North/West)   | 2011/3/18 13:04 | 2.8 *2                         | No rain | NUSTEC (Nuclear Safety Technology Center) |
| Reading Point 【31】 (About30KmWest/North/West)   | 2011/3/18 13:20 | 45.0 *2                        | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【31】 (About 30Km West/North/West) | 2011/3/18 12:20 | 45.0 *2                        | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【31】 (About30KmWest/North/West北西) | 2011/3/18 11:20 | 40.0 *2                        | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【32】 (About 30KmNorth/West)       | 2011/3/18 13:32 | 150.0 *2                       | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【32】 (About 30KmNorth/West)       | 2011/3/18 12:33 | 140.0 *2                       | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【32】 (About 30KmNorth/West)       | 2011/3/18 11:33 | 140.0 *2                       | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【33】 (About 30KmNorth/West)       | 2011/3/18 13:45 | 52.0 *2                        | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【33】 (About 30KmNorth/West)       | 2011/3/18 12:47 | 52.0 *2                        | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【33】 (About30KmNorth/West)        | 2011/3/18 11:47 | 52.0 *2                        | No rain | JAEA (Japan Atomic Energy Agency)         |
| Reading Point 【41】 (About20KmWest)              | 2011/3/18 16:15 | 2.9 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |
| Reading Point 【41】 (About20KmWest)              | 2011/3/18 12:10 | 3.0 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |
| Reading Point 【42】 (About30KmWest)              | 2011/3/18 16:00 | 3.0 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |
| Reading Point 【42】 (About 30KmWest)             | 2011/3/18 11:40 | 3.0 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |
| Reading Point 【43】 (About20KmSouth/West)        | 2011/3/18 15:00 | 1.7 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |
| Reading Point 【43】 (About20KmSouth/West)        | 2011/3/18 11:05 | 1.8 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |
| Reading Point 【44】 (About30KmSouth)             | 2011/3/18 15:00 | 2.9 *2                         | No rain | TEPCO (Tokyo Electric Power Company)      |

- \* 1 measured by Geiger-Müller counter  
 \* 2 measured by ionization chamber type survey meter  
 \* 3 measured by NaI scintillator detector

| Monitoring Post<br>(length from NPP)      | Monitoring Time | Reading (unit : $\mu$ Sv / h ) | Weather | Reading by                           |
|---|-----------------|--------------------------------|---------|--------------------------------------|
| Reading Point 【44】 (About30Kmsouth)       | 2011/3/18 10:50 | 3.0 <sup>*2</sup>              | No rain | TEPCO (Tokyo Electric Power Company) |
| Reading Point 【45】 (About20Kmsouth)       | 2011/3/18 14:25 | 4.6 <sup>*2</sup>              | No rain | TEPCO (Tokyo Electric Power Company) |
| Reading Point 【45】 (About20Kmsouth)       | 2011/3/18 10:41 | 4.0 <sup>*2</sup>              | No rain | TEPCO (Tokyo Electric Power Company) |
| Reading Point 【46】 (About20Kmsouth/West)  | 2011/3/18 15:20 | 32.0 <sup>*2</sup>             | No rain | TEPCO (Tokyo Electric Power Company) |
| Reading Point 【46】 (About20Kmsouth/West)  | 2011/3/18 12:20 | 33.0 <sup>*2</sup>             | No rain | TEPCO (Tokyo Electric Power Company) |
| Reading Point 【51】 (About40Kmsouth/West)  | 2011/3/18 15:32 | 0.9 <sup>*3</sup>              | No rain | Fukushima Prefecture                 |
| Reading Point 【51】 (About 40Kmsouth/West) | 2011/3/18 12:32 | 0.9 <sup>*3</sup>              | No rain | Fukushima Prefecture                 |
| Reading Point 【52】 (About40Kmsouth)       | 2011/3/18 16:13 | 0.9 <sup>*3</sup>              | No rain | Fukushima Prefecture                 |
| Reading Point 【52】 (About40Kmsouth)       | 2011/3/18 11:52 | 1.6 <sup>*3</sup>              | No rain | Fukushima Prefecture                 |
| Reading Point 【61】 (About40Kmsouth/West)  | 2011/3/18 14:39 | 26.6 <sup>*3</sup>             | No rain | Fukushima Prefecture                 |
| Reading Point 【61】 (About40Kmsouth/West)  | 2011/3/18 12:45 | 14.2 <sup>*3</sup>             | No rain | Fukushima Prefecture                 |
| Reading Point 【62】 (About 40Kmsouth/West) | 2011/3/18 14:50 | 30.0 <sup>*3</sup>             | No rain | Fukushima Prefecture                 |
| Reading Point 【62】 (About40Kmsouth/West)  | 2011/3/18 12:34 | 30.0以上 <sup>*3</sup>           | No rain | Fukushima Prefecture                 |
| Reading Point 【63】 (About45Kmsouth/West)  | 2011/3/18 15:11 | 9.8 <sup>*3</sup>              | No rain | Fukushima Prefecture                 |
| Reading Point 【63】 (About45Kmsouth/West)  | 2011/3/18 11:57 | 10.5 <sup>*3</sup>             | No rain | Fukushima Prefecture                 |

2. Under construction, Reading by Ministry of Defense

# Readings at Monitoring Post out of Fukushima Dai-ichi NPP



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**From:** Reyes, Debra  
**Sent:** Wednesday, April 13, 2011 1:38 PM  
**To:** ET02 Hoc  
**Cc:** Wisongo, Serge  
**Subject:** RE: NEED TO JAPANESE LAPTOP & STATUS OF AIR CARDS RE-ACTIVATION

Hello,

The laptop should be returned to the CSC/Deskside.

Yes, please submit your request to have the air cards reactivated.

debbie

---

**From:** ET02 Hoc  
**Sent:** Wednesday, April 13, 2011 1:36 PM  
**To:** Reyes, Debra  
**Subject:** NEED TO JAPANESE LAPTOP & STATUS OF AIR CARDS RE-ACTIVATION  
**Importance:** High

Debbie:

Where/whom should I returned one of the Japan travelers' laptop to – Rob Taylor returned his to me and I have it in the Ops Center. I can deliver it to whomever / wherever you like. I couldn't remember Serge's last name in order to include him on this e-mail.

Also I wanted to check to make certain someone was going to work on re-activating the air cards that are currently still in Japan? Do I need to put in a request? Thanks for your help...karen

LLLL/53

**From:** OST02 HOC

**To:** Dyer, Jim; Layton, Michael; Holonich, Joseph; Burkhalter, Cornelia; Bailey, Marissa; Rivers, Joseph; Noonan, Amanda; Rivera, Alison; MorganButler, Kimyata; Goetz, Sujata; Schneider, Stewart; Tomon, John; LaVera, Ronald; Richards, Stuart; Kavanagh, Kerri; Starefos, Joelle; Belen, Aixa; Wong, See-Meng; Iyengar, Raj; Criscione, Lawrence; Beasley, Benjamin; Caruso, Mark; Zoulis, Antonios; Phan, Hanh; Ghosh, Tina; Ramadan, Liliana; Flanagan, Michelle; Abrams, Charlotte; Abu-Eid, Boby; Adams, John; Afshar-Tous, Mugeh; Ahn, Hosung; Alemu, Bezakulu; Algama, Don; Alter, Peter; Anderson, Brian; Anderson, James; Arndt, Steven; Arribas-Colon, Maria; Ashkebousi, Nima; Atthey, George; Baker, Stephen; Ballam, Nick; Barnhurst, Daniel; Barr, Cynthia; Barss, Dan; Bazian, Samuel; Benner, Eric; Bensl, Michelle; Bergman, Thomas; Berry, Rollic; Bhachu, Uagar; Bloom, Steven; Blount, Tom; Boger, Bruce; Bonnette, Cassandra; Borchardt, Bill; Bowers, Anthony; Bowman, Gregory; Boyce, Tom (RES); Brandon, Lou; Brandt, Philip; Brenner, Eliot; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Brown, Michael; Bukharin, Oleg; Burnell, Scott; Bush-Goddard, Stephanie; Campbell, Stephen; Camper, Larry; Carlson, Donald; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheng, May; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Chung, Donald; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coe, Doug; Coggins, Angela; Collins, Frank; Cool, Donald; Correia, Richard; Corson, James; Costa, Arlon; Couret, Ivonne; Craffey, Ryan; Crutchley, Mary Glenn; Cruz, Zahira; Cuadrado, Leira; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Dimmick, Lisa; Doane, Margaret; Dorman, Dan; Dorsey, Cynthia; Dozier, Jerry; Drake, Margaret; Droggitis, Spiros; Dube, Donald; Dudes, Laura; Eads, Johnny; Easson, Stuart; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Evans, Michele; Faria-Ocasio, Carolyn; Figueroa, Roberto; Fiske, Jonathan; Flanders, Scott; Flannery, Cindy; Floyd, Daphene; Foggie, Kirk; Foster, Jack; Fragoyannis, Nancy; Franovich, Rani; Frazier, Alan; Freshman, Steve; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Gardocki, Stanley; Gartman, Michael; Gibson, Kathy; Glitter, Joseph; Gilmer, James; Glenn, Nichole; Gordon, Dennis; Gott, William; Grant, Jeffery; Gray, Anita; Gray, Kathy; Greenwood, Carol; Grimes, Kelly; Grobe, Jack; Gross, Allen; Gulla, Gerald; Hackett, Edwin; Hale, Jerry; Hardesty, Duane; Hardin, Kimberly; Hardin, Leroy; Harrington, Holly; Harris, Tim; Harrison, Donnie; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Hayden, Elizabeth; Helton, Donald; Henderson, Karen; Hiland, Patrick; Hipschman, Thomas; Holahan, Patricia; Holahan, Vincent; Holian, Brian; HOO Hoc; Horn, Brian; Howard, Arlette; Howard, Tabitha; Howe, Allen; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Imboden, Andy; Isom, James; Jackson, Karen; Jacobson, Jeffrey; Jervey, Richard; Jessie, Janelle; Johnson, Don; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Jones, Henry; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; Kauffman, John; Khan, Omar; Kolb, Timothy; Kotzalas, Margie; Kowalczyk, Jeffrey; Kratchman, Jessica; Kugler, Andrew; Lamb, Christopher; Lane, John; Larson, Emily; Laur, Steven; LaVie, Steve; Lewis, Robert; Li, Yong; Lichatz, Taylor; Lising, Jason; Lombard, Mark; Lovell, Louise; Lubinski, John; Lui, Christiana; Lukes, Kim; Lynch, Jeffery; Ma, John; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Masao, Nagai; Maupin, Cardelia; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McGovern, Denise; McIntyre, David; McMurtray, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Miranda, Samuel; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Musico, Bruce; Nerret, Amanda; Nguyen, Caroline; Norris, Michael; Norton, Charles; Nosek, Andrew; Opara, Stella; Ordaz, Vonna; Orr, Mark; Owens, Janice; Padovan, Mark; Parillo, John; Patel, Jay; Patel, Pravin; Patrick, Mark; Perin, Vanice; Pope, Tia; Powell, Amy; Purdy, Gary; Quinlan, Kevin; Raddatz, Michael; Ragland, Robert; Ralph, Melissa; Ramsey, Jack; Reed, Elizabeth; Reed, Sara; Reed, Wendy; Reeves, Rosemary; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Roach, Edward; Robinson, Edward; Rodriguez-Luccioni, Hector; Roggenbrodt, William; Ropon, Kimberly; Rosales-Cooper, Cindy; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Russell, Tonya; Ryan, Michelle; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; Santos, Daniel; Scarbrough, Thomas; Schaperow, Jason; Schmidt, Duane; Schmidt, Rebecca; Schoenebeck, Greg; Schrader, Eric; Schwartzman, Jennifer; Seber, Dogan; See, Kenneth; Shane, Raeann; Shea, James; Shepherd, Jill; Sheron, Brian; Skarda, Raymond; Skeen, David; Sloan, Scott; Smioldo, Elizabeth; Smith, Brooke; Smith, Stacy; Smith, Theodore; Solorio, Dave; Stahl, Eric; Stang, Annette; Stark, Johnathan; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Summers, Robert; Sun, Casper; Susco, Jeremy; Takacs, Michael; Tappert, John; Tegeler, Bret; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tiruneh, Nebiyu; Tobin, Jennifer; Trefethen, Jean; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Velazquez-Lozada, Alexander; Vick, Lawrence; Virgilio, Martin; Virgilio, Rosetta; Ward, Leonard; Ward, William; Wastler, Sandra; Watson, Bruce; Webber, Robert; Weber, Michael; White, Bernard; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williams, Tamera; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Jacob; Zimmerman, Roy

**Subject:** Updated Staffing Watchbill for Japan Event (Week of 4/10-16)

**Date:** Friday, April 08, 2011 5:32:37 PM

**Attachments:** Apr 10 - 16 2011 Watchbill HOC.pdf

Attached is the response schedule through April 16<sup>th</sup>.

Please note this roster may be adjusted as staffing requirements change throughout the upcoming weeks.

If you would like to pick up additional shifts or need to change the schedule, please contact your

LLL/54



team coordinator and the following cognizant individuals:

Liaison Team: Jeff Temple

Reactor Safety Team: Rick Hasselberg / Peter Alter

Protective Measures Team: Lou Brandon

Thank you,

OST02

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

| Position   | Date      | Time       | Staff             |
|--|-----------|------------|-------------------|
| <b>Executive Team</b>                              |           |            |                   |
| <b>ET Director</b>                                 |           |            |                   |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Jennifer Uhle     |
| Sun  | 10-Apr    | 7am - 3pm  | Jim Dyer          |
| Sun  | 10-Apr    | 3pm-11pm   | Cynthia Carpenter |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Jennifer Uhle     |
| Mon  | 11-Apr    | 7am - 3pm  | Jim Dyer          |
| Mon  | 11-Apr    | 3pm-11pm   | Cynthia Carpenter |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Jim Wiggins       |
| Tue  | 12-Apr    | 7am - 3pm  | Jim Dyer          |
| Tue  | 12-Apr    | 3pm-11pm   | Cynthia Carpenter |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Jim Wiggins       |
| Wed  | 13-Apr    | 7am - 3pm  | Jim Dyer          |
| Wed  | 13-Apr    | 3pm-11pm   | Bruce Boger       |
| Wed-Thur   | 4/13-4/14 | 11pm - 7am | Mike Johnson      |
| Thur   | 14-Apr    | 7am - 3pm  | Roy Zimmerman     |
| Thur   | 14-Apr    | 3pm-11pm   | Bruce Boger       |
| Thur-Fri   | 4/14-4/15 | 11pm - 7am | Mike Johnson      |
| Fri  | 15-Apr    | 7am - 3pm  | Roy Zimmerman     |
| Fri  | 15-Apr    | 3pm-11pm   | Bruce Boger       |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Mike Johnson      |
|  |           |            |                   |
| <b>ET Response Advisor</b>                         |           |            |                   |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Mark Thaggard     |
| Sun  | 10-Apr    | 7am - 3pm  | Mike Layton       |
| Sun  | 10-Apr    | 3pm-11pm   | Tom Blount        |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Joe Holonich      |
| Mon  | 11-Apr    | 7am - 3pm  | Mike Layton       |
| Mon  | 11-Apr    | 3pm-11pm   | Tom Blount        |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Joe Holonich      |
| Tue  | 12-Apr    | 7am - 3pm  | Joe Giitter       |
| Tue  | 12-Apr    | 3pm-11pm   | Tom Blount        |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Joe Holonich      |
| Wed  | 13-Apr    | 7am - 3pm  | Joe Giitter       |
| Wed  | 13-Apr    | 3pm-11pm   | Tom Blount        |
| Wed-Thur   | 4/13-4/14 | 11pm - 7am | Scott Morris      |
| Thur   | 14-Apr    | 7am - 3pm  | Joe Giitter       |
| Thur   | 14-Apr    | 3pm-11pm   | Mark Thaggard     |
| Thur-Fri   | 4/14-4/15 | 11pm - 7am | Scott Morris      |
| Fri  | 15-Apr    | 7am - 3pm  |                   |
| Fri  | 15-Apr    | 3pm-11pm   | Mark Thaggard     |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Scott Morris      |
|  |           |            |                   |
| <b>ET Rx Prot Measures &amp; State Coordinator</b> |           |            |                   |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | N/A               |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|          |           |            |     |
|----------|-----------|------------|-----|
| Sun      | 10-Apr    | 7am - 3pm  | N/A |
| Sun      | 10-Apr    | 3pm-11pm   | N/A |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A |
| Mon      | 11-Apr    | 7am - 3pm  | N/A |
| Mon      | 11-Apr    | 3pm-11pm   | N/A |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A |
| Tue      | 12-Apr    | 7am - 3pm  | N/A |
| Tue      | 12-Apr    | 3pm-11pm   | N/A |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A |
| Wed      | 13-Apr    | 7am - 3pm  | N/A |
| Wed      | 13-Apr    | 3pm-11pm   | N/A |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A |
| Thur     | 14-Apr    | 7am - 3pm  | N/A |
| Thur     | 14-Apr    | 3pm-11pm   | N/A |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A |
| Fri      | 15-Apr    | 7am - 3pm  | N/A |
| Fri      | 15-Apr    | 3pm-11pm   | N/A |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A |
|          |           |            |     |

**Executive Briefing Team**

| EBT Admin. Assistant |           | Email: OST04 |                |
|----------------------|-----------|--------------|----------------|
| Sat-Sun              | 4/9-4/10  | 11pm - 7am   | N/A            |
| Sun                  | 10-Apr    | 7am - 3pm    | N/A            |
| Sun                  | 10-Apr    | 3pm-11pm     | Andrea Wimbush |
| Sun-Mon              | 4/10-4/11 | 11pm - 7am   | N/A            |
| Mon                  | 11-Apr    | 7am - 3pm    | N/A            |
| Mon                  | 11-Apr    | 3pm-11pm     | Louise Lovell  |
| Mon-Tue              | 4/11-12/5 | 11pm - 7am   | N/A            |
| Tue                  | 12-Apr    | 7am - 3pm    | N/A            |
| Tue                  | 12-Apr    | 3pm-11pm     | Andrea Wimbush |
| Tue-Wed              | 4/12-13/6 | 11pm - 7am   | N/A            |
| Wed                  | 13-Apr    | 7am - 3pm    | N/A            |
| Wed                  | 13-Apr    | 3pm-11pm     | Andrea Wimbush |
| Wed-Thur             | 4/13-4/14 | 11pm - 7am   | N/A            |
| Thur                 | 14-Apr    | 7am - 3pm    | N/A            |
| Thur                 | 14-Apr    | 3pm-11pm     | Louise Lovell  |
| Thur-Fri             | 4/14-4/15 | 11pm - 7am   | N/A            |
| Fri                  | 15-Apr    | 7am - 3pm    | N/A            |
| Fri                  | 15-Apr    | 3pm-11pm     | Annette Stang  |
| Fri-Sat              | 4/15-4/16 | 11pm-7am     | N/A            |
|                      |           |              |                |

| EBT Coordinator |           | Email: LIA07 |              |
|-----------------|-----------|--------------|--------------|
| Sat-Sun         | 4/9-4/10  | 11pm - 7am   | Jim Anderson |
| Sun             | 10-Apr    | 7am - 3pm    | N/A          |
| Sun             | 10-Apr    | 3pm-11pm     | Jeremy Susco |
| Sun-Mon         | 4/10-4/11 | 11pm - 7am   | Yen Chen     |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|          |           |            |                  |
|----------|-----------|------------|------------------|
| Mon      | 11-Apr    | 7am - 3pm  | N/A              |
| Mon      | 11-Apr    | 3pm-11pm   | Sara Mroz        |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am |                  |
| Tue      | 12-Apr    | 7am - 3pm  | N/A              |
| Tue      | 12-Apr    | 3pm-11pm   |                  |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am |                  |
| Wed      | 13-Apr    | 7am - 3pm  | N/A              |
| Wed      | 13-Apr    | 3pm-11pm   |                  |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Jim Anderson     |
| Thur     | 14-Apr    | 7am - 3pm  | N/A              |
| Thur     | 14-Apr    | 3pm-11pm   | Christine Steger |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | Jim Anderson     |
| Fri      | 15-Apr    | 7am - 3pm  | N/A              |
| Fri      | 15-Apr    | 3pm-11pm   |                  |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Jim Anderson     |
|          |           |            |                  |

**Executive Support Team****EST Status Officer****Email: ET07**

|          |           |            |                |
|----------|-----------|------------|----------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Jeff Grant     |
| Sun      | 10-Apr    | 7am - 3pm  | Jane Marshall  |
| Sun      | 10-Apr    | 3pm-11pm   | Bill Gott      |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Jeff Grant     |
| Mon      | 11-Apr    | 7am - 3pm  | Jane Marshall  |
| Mon      | 11-Apr    | 3pm-11pm   | Bill Gott      |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Jeff Grant     |
| Tue      | 12-Apr    | 7am - 3pm  | Jane Marshall  |
| Tue      | 12-Apr    | 3pm-11pm   | Sally Billings |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Jeff Grant     |
| Wed      | 13-Apr    | 7am - 3pm  | Jane Marshall  |
| Wed      | 13-Apr    | 3pm-11pm   | Sally Billings |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Jeff Grant     |
| Thur     | 14-Apr    | 7am - 3pm  | Jane Marshall  |
| Thur     | 14-Apr    | 3pm-11pm   | Sally Billings |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | Jeff Grant     |
| Fri      | 15-Apr    | 7am - 3pm  | Jane Marshall  |
| Fri      | 15-Apr    | 3pm-11pm   | Sally Billings |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Jeff Grant     |
|          |           |            |                |

**EST Actions Officer****Email: ET05**

|         |           |            |     |
|---------|-----------|------------|-----|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | N/A |
| Sun     | 10-Apr    | 7am - 3pm  | N/A |
| Sun     | 10-Apr    | 3pm-11pm   | N/A |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | N/A |
| Mon     | 11-Apr    | 7am - 3pm  |     |
| Mon     | 11-Apr    | 3pm-11pm   | N/A |
| Mon-Tue | 4/11-12/5 | 11pm - 7am | N/A |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|  |           |            |                     |
|--|-----------|------------|---------------------|
| Tue  | 12-Apr    | 7am - 3pm  |                     |
| Tue  | 12-Apr    | 3pm-11pm   | N/A                 |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A                 |
| Wed  | 13-Apr    | 7am - 3pm  |                     |
| Wed  | 13-Apr    | 3pm-11pm   | N/A                 |
| Wed-Thur   | 4/13-4/14 | 11pm - 7am | N/A                 |
| Thur   | 14-Apr    | 7am - 3pm  | Wendy Reed          |
| Thur   | 14-Apr    | 3pm-11pm   | N/A                 |
| Thur-Fri   | 4/14-4/15 | 11pm - 7am | N/A                 |
| Fri  | 15-Apr    | 7am - 3pm  | Don Algama          |
| Fri  | 15-Apr    | 3pm-11pm   | N/A                 |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A                 |
| <b>EST Coordinator</b> <b>Email: OST01</b>       |           |            |                     |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Clyde Ragland       |
| Sun  | 10-Apr    | 7am - 3pm  | Melissa Ralph       |
| Sun  | 10-Apr    | 3pm-11pm   | Tony McMurtray      |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Cynthia Dorsey      |
| Mon  | 11-Apr    | 7am - 3pm  | Stephen Campbell    |
| Mon  | 11-Apr    | 3pm-11pm   | Sally Billings      |
| Mon-Tue  | 4/11-4/12 | 11pm - 7am | Rebecca Stone       |
| Tue  | 12-Apr    | 7am - 3pm  | Tony Bowers         |
| Tue  | 12-Apr    | 3pm-11pm   | Cynthia Dorsey      |
| Tue-Wed  | 4/12-4/13 | 11pm - 7am | Rebecca Stone       |
| Wed  | 13-Apr    | 7am - 3pm  | Tony Bowers         |
| Wed  | 13-Apr    | 3pm-11pm   | Jeff Kowalczyk      |
| Wed-Thur   | 4/13-4/14 | 11pm - 7am | Rebecca Stone       |
| Thur   | 14-Apr    | 7am - 3pm  | Tony Bowers         |
| Thur   | 14-Apr    | 3pm-11pm   | Carolyn Faria       |
| Thur-Fri   | 4/14-4/15 | 11pm - 7am | Rebecca Stone       |
| Fri  | 15-Apr    | 7am - 3pm  | Stephen Campbell    |
| Fri  | 15-Apr    | 3pm-11pm   | Tony Bowers         |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   |                     |
| <b>EST Chronology Officer</b> <b>Email: ET02</b> |           |            |                     |
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Nick Ballam         |
| Sun  | 10-Apr    | 7am - 3pm  | Cornelia Burkhalter |
| Sun  | 10-Apr    | 3pm-11pm   | Rebecca Karas       |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Nick Ballam         |
| Mon  | 11-Apr    | 7am - 3pm  |                     |
| Mon  | 11-Apr    | 3pm-11pm   | Rebecca Karas       |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Nick Ballam         |
| Tue  | 12-Apr    | 7am - 3pm  |                     |
| Tue  | 12-Apr    | 3pm-11pm   | Rebecca Karas       |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Nick Ballam         |
| Wed  | 13-Apr    | 7am - 3pm  | Jessica Kratchman   |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|                             |           |                     |                             |
|-----------------------------|-----------|---------------------|-----------------------------|
| Wed                         | 13-Apr    | 3pm-11pm            | Rebecca Karas               |
| Wed-Thur                    | 4/13-4/14 | 11pm - 7am          | Nick Ballam                 |
| Thur                        | 14-Apr    | 7am - 3pm           |                             |
| Thur                        | 14-Apr    | 3pm-11pm            | Rebecca Karas               |
| Thur-Fri                    | 4/14-4/15 | 11pm - 7am          | Nick Ballam                 |
| Fri                         | 15-Apr    | 7am - 3pm           | Jessica Kratchman           |
| Fri                         | 15-Apr    | 3pm-11pm            | Rebecca Karas               |
| Fri-Sat                     | 4/15-4/16 | 11pm-7am            | Nick Ballam                 |
|                             |           |                     |                             |
| <b>EST Response Ops Mgr</b> |           | <b>Email: ET03</b>  |                             |
| Sat-Sun                     | 4/9-4/10  | 11pm - 7am          | Cris Brown                  |
| Sun                         | 10-Apr    | 7am - 3pm           | Karen Jackson               |
| Sun                         | 10-Apr    | 3pm-11pm            | Sandra Valencia/Nick Ballam |
| Sun-Mon                     | 4/10-4/11 | 11pm - 7am          | Cris Brown                  |
| Mon                         | 11-Apr    | 7am - 3pm           | Karen Jackson               |
| Mon                         | 11-Apr    | 3pm-11pm            | Jean Trefethen              |
| Mon-Tue                     | 4/11-12/5 | 11pm - 7am          | Omar Khan                   |
| Tue                         | 12-Apr    | 7am - 3pm           | Karen Jackson               |
| Tue                         | 12-Apr    | 3pm-11pm            | Beza Alemu                  |
| Tue-Wed                     | 4/12-13/6 | 11pm - 7am          | Omar Khan                   |
| Wed                         | 13-Apr    | 7am - 3pm           | May Cheng                   |
| Wed                         | 13-Apr    | 3pm-11pm            | Karen Jackson               |
| Wed-Thur                    | 4/13-4/14 | 11pm - 7am          | Jean Trefethen              |
| Thur                        | 14-Apr    | 7am - 3pm           | May Cheng                   |
| Thur                        | 14-Apr    | 3pm-11pm            | Omar Khan                   |
| Thur-Fri                    | 4/14-4/15 | 11pm - 7am          | Jean Trefethen              |
| Fri                         | 15-Apr    | 7am - 3pm           | Karen Jackson               |
| Fri                         | 15-Apr    | 3pm-11pm            | Omar Khan                   |
| Fri-Sat                     | 4/15-4/16 | 11pm-7am            | Jean Trefethen              |
|                             |           |                     |                             |
| <b>EST Admin. Assistant</b> |           | <b>Email: OST02</b> |                             |
| Sat-Sun                     | 4/9-4/10  | 11pm - 7am          | N/A                         |
| Sun                         | 10-Apr    | 7am - 3pm           | N/A                         |
| Sun                         | 10-Apr    | 3pm-11pm            | N/A                         |
| Sun-Mon                     | 4/10-4/11 | 11pm - 7am          | N/A                         |
| Mon                         | 11-Apr    | 7am - 3pm           | N/A                         |
| Mon                         | 11-Apr    | 3pm-11pm            | N/A                         |
| Mon-Tue                     | 4/11-4/12 | 11pm - 7am          | N/A                         |
| Tue                         | 12-Apr    | 7am - 3pm           | N/A                         |
| Tue                         | 12-Apr    | 3pm-11pm            | N/A                         |
| Tue-Wed                     | 4/12-13/6 | 11pm - 7am          | N/A                         |
| Wed                         | 13-Apr    | 7am - 3pm           | N/A                         |
| Wed                         | 13-Apr    | 3pm-11pm            | N/A                         |
| Wed-Thur                    | 4/13-4/14 | 11pm - 7am          | N/A                         |
| Thur                        | 14-Apr    | 7am - 3pm           | N/A                         |
| Thur                        | 14-Apr    | 3pm-11pm            | N/A                         |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|                       |           |                     |                |
|-----------------------|-----------|---------------------|----------------|
| Thur-Fri              | 4/14-4/15 | 11pm - 7am          | N/A            |
| Fri                   | 15-Apr    | 7am - 3pm           | N/A            |
| Fri                   | 15-Apr    | 3pm-11pm            | N/A            |
| Fri-Sat               | 4/15-4/16 | 11pm-7am            | N/A            |
| <b>Liaison Team</b>   |           |                     |                |
| <b>LT Director</b>    |           | <b>Email: LIA06</b> |                |
| Sat-Sun               | 4/9-4/10  | 11pm - 7am          | N/A            |
| Sun                   | 10-Apr    | 7am - 3pm           | Mark Thaggard  |
| Sun                   | 10-Apr    | 3pm-11pm            | Allen Howe     |
| Sun-Mon               | 4/10-4/11 | 11pm - 7am          | N/A            |
| Mon                   | 11-Apr    | 7am - 3pm           | Rich Correia   |
| Mon                   | 11-Apr    | 3pm-11pm            | Bob Webber     |
| Mon-Tue               | 4/11-12/5 | 11pm - 7am          | N/A            |
| Tue                   | 12-Apr    | 7am - 3pm           | Marissa Bailey |
| Tue                   | 12-Apr    | 3pm-11pm            | Bob Webber     |
| Tue-Wed               | 4/12-13/6 | 11pm - 7am          | N/A            |
| Wed                   | 13-Apr    | 7am - 3pm           | Rich Correia   |
| Wed                   | 13-Apr    | 3pm-11pm            | Bob Webber     |
| Wed-Thur              | 4/13-4/14 | 11pm - 7am          | N/A            |
| Thur                  | 14-Apr    | 7am - 3pm           | Rich Correia   |
| Thur                  | 14-Apr    | 3pm-11pm            | Bob Webber     |
| Thur-Fri              | 4/14-4/15 | 11pm - 7am          | N/A            |
| Fri                   | 15-Apr    | 7am - 3pm           |                |
| Fri                   | 15-Apr    | 3pm-11pm            |                |
| Fri-Sat               | 4/15-4/16 | 11pm-7am            | N/A            |
| <b>LT Coordinator</b> |           |                     |                |
| <b>LT Coordinator</b> |           | <b>Email: LIA08</b> |                |
| Sat-Sun               | 4/9-4/10  | 11pm - 7am          | Rani Franovich |
| Sun                   | 10-Apr    | 7am - 3pm           | Lisa Wright    |
| Sun                   | 10-Apr    | 3pm-11pm            | Milt Murray    |
| Sun-Mon               | 4/10-4/11 | 11pm - 7am          | Jeff Temple    |
| Mon                   | 11-Apr    | 7am - 3pm           | Lisa Wright    |
| Mon                   | 11-Apr    | 3pm-11pm            | Clyde Ragland  |
| Mon-Tue               | 4/11-12/5 | 11pm - 7am          | Jeff Temple    |
| Tue                   | 12-Apr    | 7am - 3pm           | Lisa Wright    |
| Tue                   | 12-Apr    | 3pm-11pm            | Clyde Ragland  |
| Tue-Wed               | 4/12-13/6 | 11pm - 7am          | Jeff Temple    |
| Wed                   | 13-Apr    | 7am - 3pm           | Joe Rivers     |
| Wed                   | 13-Apr    | 3pm-11pm            | Lisa Wright    |
| Wed-Thur              | 4/13-4/14 | 11pm - 7am          | Jeff Temple    |
| Thur                  | 14-Apr    | 7am - 3pm           | Joe Rivers     |
| Thur                  | 14-Apr    | 3pm-11pm            | Rani Franovich |
| Thur-Fri              | 4/14-4/15 | 11pm - 7am          | Janelle Jessie |
| Fri                   | 15-Apr    | 7am - 3pm           | Milt Murray    |
| Fri                   | 15-Apr    | 3pm-11pm            | Jeff Temple    |

Japan Earthquake ERO Staffing Roster  
April 10-16, 2011  
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|   |           |            |                           |
|---|-----------|------------|---------------------------|
| Fri-Sat   | 4/15-4/16 | 11pm-7am   | Rani Franovich            |
| <b>LT State Liaison</b> <b>Email: LIA04/OST05</b>       |           |            |                           |
| Sat-Sun   | 4/9-4/10  | 9pm-7am    | Amanda Noonan (On Call)   |
| Sun   | 10-Apr    | 7am-2pm    | Amanda Noonan (On Call)   |
| Sun   | 10-Apr    | 2pm-9pm    | Amanda Noonan (On Call)   |
| Sun-Mon   | 4/10-4/11 | 9pm-7am    | Amanda Noonan (On Call)   |
| Mon   | 11-Apr    | 7am-2pm    | Alison Rivera             |
| Mon   | 11-Apr    | 2pm-9pm    | Stuart Easson             |
| Mon-Tue   | 4/11-4/12 | 9pm-7am    | Amanda Noonan (On Call)   |
| Tue   | 12-Apr    | 7am-2pm    | Cardelia Maupin           |
| Tue   | 12-Apr    | 2pm-9pm    | Stuart Easson             |
| Tue-Wed   | 4/12-4/13 | 9pm-7am    | Alison Rivera (On Call)   |
| Wed   | 13-Apr    | 7am-2pm    | Amanda Noonan             |
| Wed   | 13-Apr    | 2pm-9pm    | Richard Turtill           |
| Wed-Thur  | 4/13-4/14 | 9pm-7am    | Alison Rivera (On Call)   |
| Thur  | 14-Apr    | 7am-2pm    | Cindy Flannery            |
| Thur  | 14-Apr    | 2pm-9pm    | Michelle Ryan             |
| Thur-Fri  | 4/14-4/15 | 9pm-7am    | Amanda Noonan (On Call)   |
| Fri   | 15-Apr    | 7am-2pm    | Kim Lukes                 |
| Fri   | 15-Apr    | 2pm-9pm    | Amanda Noonan             |
| Fri-Sat   | 4/15-4/16 | 9pm-7am    | Amanda Noonan (On Call)   |
| <b>LT Federal Liaison</b> <b>Email: LIA01/LIA11</b>     |           |            |                           |
| Sat-Sun   | 4/9-4/10  | 11pm - 7am | Scott Sloan               |
| Sun   | 10-Apr    | 7am - 3pm  | Russ Chazell              |
| Sun   | 10-Apr    | 3pm-11pm   | Jeff Lynch                |
| Sun-Mon   | 4/10-4/11 | 11pm - 7am | Ned Wright                |
| Mon   | 11-Apr    | 7am - 3pm  | Beth Reed                 |
| Mon   | 11-Apr    | 3pm-11pm   | Jerry Hale                |
| Mon-Tue   | 4/11-12/5 | 11pm - 7am | Ned Wright                |
| Tue   | 12-Apr    | 7am - 3pm  | Beth Reed                 |
| Tue   | 12-Apr    | 3pm-11pm   | Jeff Lynch                |
| Tue-Wed   | 4/12-13/6 | 11pm - 7am | Ned Wright                |
| Wed   | 13-Apr    | 7am - 3pm  | Russ Chazell              |
| Wed   | 13-Apr    | 3pm-11pm   | Jeff Lynch                |
| Wed-Thur  | 4/13-4/14 | 11pm - 7am | Susan Salter              |
| Thur  | 14-Apr    | 7am - 3pm  | Jason Lising              |
| Thur  | 14-Apr    | 3pm-11pm   | Russ Chazell              |
| Thur-Fri  | 4/14-4/15 | 11pm - 7am | Susan Salter              |
| Fri   | 15-Apr    | 7am - 3pm  | Russ Chazell              |
| Fri   | 15-Apr    | 3pm-11pm   | Jerry Hale                |
| Fri-Sat   | 4/15-4/16 | 11pm-7am   | Susan Salter              |
| <b>LT Congressional Liaison (2)</b> <b>Email: LIA12</b> |           |            |                           |
| Sat   | 9-Apr     | 7am - 2pm  | Amy Powell (ON CALL ONLY) |



## Japan Earthquake ERO Staffing Roster

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|      |        |           |                           |
|------|--------|-----------|---------------------------|
| Sat  | 9-Apr  | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Sun  | 10-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Sun  | 10-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Mon  | 11-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Mon  | 11-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Tue  | 12-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Tue  | 12-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Wed  | 13-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Wed  | 13-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Thur | 14-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Thur | 14-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |
| Fri  | 15-Apr | 7am - 2pm | Amy Powell (ON CALL ONLY) |
| Fri  | 15-Apr | 2pm-9pm   | Amy Powell (ON CALL ONLY) |

**LT International Liaison (2) Email: LIA02/LIA03/LIA10**

|          |           |            |                   |
|----------|-----------|------------|-------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Danielle/Lauren   |
| Sun      | 10-Apr    | 7am - 3pm  | Eric/Mugeh        |
| Sun      | 10-Apr    | 3pm-11pm   | Jen S./Charlotte  |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Danielle/Lauren   |
| Mon      | 11-Apr    | 7am - 3pm  | Steve Bloom/Lance |
| Mon      | 11-Apr    | 3pm-11pm   | Janice/Jenny      |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Gerri / Elizabeth |
| Tue      | 12-Apr    | 7am - 3pm  | Steve Bloom/Lance |
| Tue      | 12-Apr    | 3pm-11pm   | Janice/Jenny      |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | / Elizabeth       |
| Wed      | 13-Apr    | 7am - 3pm  | Steve Bloom/Lance |
| Wed      | 13-Apr    | 3pm-11pm   | Janice/Jenny      |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Gerri / Elizabeth |
| Thur     | 14-Apr    | 7am - 3pm  | Steve Baker/Brian |
| Thur     | 14-Apr    | 3pm-11pm   | Jill/Karen        |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | Skip/Nancy        |
| Fri      | 15-Apr    | 7am - 3pm  | Steve Baker/Brian |
| Fri      | 15-Apr    | 3pm-11pm   | Jill/Karen        |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Skip/Nancy        |

**Protective Measures Team****PMTR Director Email: PMT12**

|         |           |            |               |
|---------|-----------|------------|---------------|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | N/A           |
| Sun     | 10-Apr    | 7am - 3pm  | N/A           |
| Sun     | 10-Apr    | 3pm-11pm   | N/A           |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | N/A           |
| Mon     | 11-Apr    | 7am - 3pm  | Kathy Gibson  |
| Mon     | 11-Apr    | 3pm-11pm   | N/A           |
| Mon-Tue | 4/11-12/5 | 11pm - 7am | N/A           |
| Tue     | 12-Apr    | 7am - 3pm  | Trish Holahan |
| Tue     | 12-Apr    | 3pm-11pm   | N/A           |

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|          |           |            |               |
|----------|-----------|------------|---------------|
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A           |
| Wed      | 13-Apr    | 7am - 3pm  | Trish Holahan |
| Wed      | 13-Apr    | 3pm-11pm   | N/A           |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A           |
| Thur     | 14-Apr    | 7am - 3pm  | Kathy Gibson  |
| Thur     | 14-Apr    | 3pm-11pm   | N/A           |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A           |
| Fri      | 15-Apr    | 7am - 3pm  | Kathy Gibson  |
| Fri      | 15-Apr    | 3pm-11pm   | N/A           |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A           |

**PMTR Coordinator****Email: PMT09**

|          |           |            |                                 |
|----------|-----------|------------|---------------------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Kimyata MorganButler            |
| Sun      | 10-Apr    | 7am - 3pm  | N/A                             |
| Sun      | 10-Apr    | 3pm-11pm   | N/A                             |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | N/A                             |
| Mon      | 11-Apr    | 7am - 3pm  | Arlon Costa                     |
| Mon      | 11-Apr    | 3pm-11pm   | N/A                             |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | N/A                             |
| Tue      | 12-Apr    | 7am - 3pm  | Arlon Costa                     |
| Tue      | 12-Apr    | 3pm-11pm   | N/A                             |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | N/A                             |
| Wed      | 13-Apr    | 7am - 3pm  | Sujata Goetz/Prosanta Chowdhury |
| Wed      | 13-Apr    | 3pm-11pm   | N/A                             |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | N/A                             |
| Thur     | 14-Apr    | 7am - 3pm  | Duane Hardesty                  |
| Thur     | 14-Apr    | 3pm-11pm   | N/A                             |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | N/A                             |
| Fri      | 15-Apr    | 7am - 3pm  | Duane Hardesty                  |
| Fri      | 15-Apr    | 3pm-11pm   | N/A                             |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | N/A                             |

**PMTR Prot Actions Asst Dir****Email: PMT12**

|          |           |            |                   |
|----------|-----------|------------|-------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Jessica Kratchman |
| Sun      | 10-Apr    | 7am - 3pm  | Kathy Brock       |
| Sun      | 10-Apr    | 3pm-11pm   | Stacey Rosenberg  |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Greg Casto        |
| Mon      | 11-Apr    | 7am - 3pm  | Kathy Brock       |
| Mon      | 11-Apr    | 3pm-11pm   | Stacey Rosenberg  |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Greg Casto        |
| Tue      | 12-Apr    | 7am - 3pm  | Kathy Brock       |
| Tue      | 12-Apr    | 3pm-11pm   | Stacey Rosenberg  |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Greg Casto        |
| Wed      | 13-Apr    | 7am - 3pm  | Kathy Brock       |
| Wed      | 13-Apr    | 3pm-11pm   | Sandra Wastler    |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Greg Casto        |

## Japan Earthquake ERO Staffing Roster

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|          |           |            |                  |
|----------|-----------|------------|------------------|
| Thur     | 14-Apr    | 7am - 3pm  | Kathy Brock      |
| Thur     | 14-Apr    | 3pm-11pm   | Stacey Rosenberg |
| Thur-Fri | 4/14-4/15 | 11pm - 7am |                  |
| Fri      | 15-Apr    | 7am - 3pm  | Sandra Wastler   |
| Fri      | 15-Apr    | 3pm-11pm   | Stacey Rosenberg |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | **Donald Cool    |

**PMTR RAAD****Email: PMT05**

|          |           |            |                        |
|----------|-----------|------------|------------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Mike Norris            |
| Sun      | 10-Apr    | 7am - 3pm  | Don Johnson            |
| Sun      | 10-Apr    | 3pm-11pm   | Stephanie Bush-Goddard |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Mike Norris            |
| Mon      | 11-Apr    | 7am - 3pm  | Steve LaVie            |
| Mon      | 11-Apr    | 3pm-11pm   | Michelle Hart          |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Mike Norris            |
| Tue      | 12-Apr    | 7am - 3pm  | Leroy Hardin           |
| Tue      | 12-Apr    | 3pm-11pm   | Steve LaVie            |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Mike Norris            |
| Wed      | 13-Apr    | 7am - 3pm  | Stewart Schneider      |
| Wed      | 13-Apr    | 3pm-11pm   | Michelle Hart          |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Mike Norris            |
| Thur     | 14-Apr    | 7am - 3pm  | Leroy Hardin           |
| Thur     | 14-Apr    | 3pm-11pm   | Steve LaVie            |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | Mike Norris            |
| Fri      | 15-Apr    | 7am - 3pm  | Stewart Schneider      |
| Fri      | 15-Apr    | 3pm-11pm   | Michelle Hart          |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   |                        |

**PMTR Dose Assessment (RASCAL) - Need 2 people/day****Email: PMT02/PMT11**

|          |           |            |                           |
|----------|-----------|------------|---------------------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Ed Roach                  |
| Sun      | 10-Apr    | 7am - 3pm  | John Tomon                |
| Sun      | 10-Apr    | 3pm-11pm   | Fritz Sturz               |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | John Parillo/Doris Lewis  |
| Mon      | 11-Apr    | 7am - 3pm  | Tony Huffert/Rich Clement |
| Mon      | 11-Apr    | 3pm-11pm   | Fritz Sturz               |
| Mon-Tue  | 4/11-4/12 | 11pm - 7am | John Tomon/Doris Lewis    |
| Tue      | 12-Apr    | 7am - 3pm  | Tony Huffert/Rich Clement |
| Tue      | 12-Apr    | 3pm-11pm   | Casper Sun                |
| Tue-Wed  | 4/12-4/13 | 11pm - 7am | John Tomon/Doris Lewis    |
| Wed      | 13-Apr    | 7am - 3pm  | Tony Huffert/Rich Clement |
| Wed      | 13-Apr    | 3pm-11pm   | AJ Nosek                  |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | John Parillo              |
| Thur     | 14-Apr    | 7am - 3pm  | Tony Huffert/Rich Clement |
| Thur     | 14-Apr    | 3pm-11pm   | Kimberly Gambone          |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | John Parillo              |
| Fri      | 15-Apr    | 7am - 3pm  | Ron Lavera/ Eric Schrader |

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|                            |           |                     |              |
|----------------------------|-----------|---------------------|--------------|
| Fri                        | 15-Apr    | 3pm-11pm            | Casper Sun   |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am            | John Parillo |
|                            |           |                     |              |
| <b>PMTR GIS Analyst</b>    |           | <b>Email: GIS</b>   |              |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am          | N/A          |
| Sun                        | 10-Apr    | 7am - 3pm           | ON CALL ONLY |
| Sun                        | 10-Apr    | 3pm-11pm            | N/A          |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am          | N/A          |
| Mon                        | 11-Apr    | 7am - 3pm           | ON CALL ONLY |
| Mon                        | 11-Apr    | 3pm-11pm            | N/A          |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am          | N/A          |
| Tue                        | 12-Apr    | 7am - 3pm           | ON CALL ONLY |
| Tue                        | 12-Apr    | 3pm-11pm            | N/A          |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am          | N/A          |
| Wed                        | 13-Apr    | 7am - 3pm           | ON CALL ONLY |
| Wed                        | 13-Apr    | 3pm-11pm            | N/A          |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am          | N/A          |
| Thur                       | 14-Apr    | 7am - 3pm           | ON CALL ONLY |
| Thur                       | 14-Apr    | 3pm-11pm            | N/A          |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am          | N/A          |
| Fri                        | 15-Apr    | 7am - 3pm           | ON CALL ONLY |
| Fri                        | 15-Apr    | 3pm-11pm            | N/A          |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am            | N/A          |
|                            |           |                     |              |
| <b>PMTR Meteorologist</b>  |           | <b>Email: PMT01</b> |              |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am          | N/A          |
| Sun                        | 10-Apr    | 7am - 3pm           | ON CALL ONLY |
| Sun                        | 10-Apr    | 3pm-11pm            | N/A          |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am          | N/A          |
| Mon                        | 11-Apr    | 7am - 3pm           | ON CALL ONLY |
| Mon                        | 11-Apr    | 3pm-11pm            | N/A          |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am          | N/A          |
| Tue                        | 12-Apr    | 7am - 3pm           | ON CALL ONLY |
| Tue                        | 12-Apr    | 3pm-11pm            | N/A          |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am          | N/A          |
| Wed                        | 13-Apr    | 7am - 3pm           | ON CALL ONLY |
| Wed                        | 13-Apr    | 3pm-11pm            | N/A          |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am          | N/A          |
| Thur                       | 14-Apr    | 7am - 3pm           | ON CALL ONLY |
| Thur                       | 14-Apr    | 3pm-11pm            | N/A          |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am          | N/A          |
| Fri                        | 15-Apr    | 7am - 3pm           | ON CALL ONLY |
| Fri                        | 15-Apr    | 3pm-11pm            | N/A          |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am            | N/A          |
|                            |           |                     |              |
| <b>Reactor Safety Team</b> |           |                     |              |

Japan Earthquake ERO Staffing Roster  
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| <b>RST Director</b>        |           | <b>Email: RST01</b>  |                   |
|----------------------------|-----------|----------------------|-------------------|
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am           | Fred Brown        |
| Sun                        | 10-Apr    | 7am - 3pm            | Ed Hackett        |
| Sun                        | 10-Apr    | 3pm-11pm             | Allen Howe        |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am           | Fred Brown        |
| Mon                        | 11-Apr    | 7am - 3pm            | Stu Richards      |
| Mon                        | 11-Apr    | 3pm-11pm             | Allen Howe        |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am           | Pat Hiland        |
| Tue                        | 12-Apr    | 7am - 3pm            | Mike Case         |
| Tue                        | 12-Apr    | 3pm-11pm             | Bill Ruland       |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am           | Brian Holian      |
| Wed                        | 13-Apr    | 7am - 3pm            | Stu Richards      |
| Wed                        | 13-Apr    | 3pm-11pm             | Laura Dudes       |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am           | Brian Holian      |
| Thur                       | 14-Apr    | 7am - 3pm            | Stu Richards      |
| Thur                       | 14-Apr    | 3pm-11pm             | Laura Dudes       |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am           | Pat Hiland        |
| Fri                        | 15-Apr    | 7am - 3pm            | Fred Brown        |
| Fri                        | 15-Apr    | 3pm-11pm             | Stu Richards      |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am             | Ed Hackett        |
|                            |           |                      |                   |
| <b>RST Coordinator</b>     |           | <b>Email: RST01B</b> |                   |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am           | Oleg Bukharin     |
| Sun                        | 10-Apr    | 7am - 3pm            | Rick Hasselberg   |
| Sun                        | 10-Apr    | 3pm-11pm             | Kerri Kavanagh    |
| Sun-Mon                    | 4/10-4/11 | 11pm - 7am           | Joelle Starfos    |
| Mon                        | 11-Apr    | 7am - 3pm            | Michelle Flanagan |
| Mon                        | 11-Apr    | 3pm-11pm             | Tom Boyce         |
| Mon-Tue                    | 4/11-12/5 | 11pm - 7am           | Rollie Berry      |
| Tue                        | 12-Apr    | 7am - 3pm            | Peter Alter       |
| Tue                        | 12-Apr    | 3pm-11pm             | Aixa Belen        |
| Tue-Wed                    | 4/12-13/6 | 11pm - 7am           | Rollie Berry      |
| Wed                        | 13-Apr    | 7am - 3pm            | Joe Williams      |
| Wed                        | 13-Apr    | 3pm-11pm             | Aixa Belen        |
| Wed-Thur                   | 4/13-4/14 | 11pm - 7am           | Rollie Berry      |
| Thur                       | 14-Apr    | 7am - 3pm            | Eric Thomas       |
| Thur                       | 14-Apr    | 3pm-11pm             | Brett Rini        |
| Thur-Fri                   | 4/14-4/15 | 11pm - 7am           | Oleg Bukharin     |
| Fri                        | 15-Apr    | 7am - 3pm            | Peter Alter       |
| Fri                        | 15-Apr    | 3pm-11pm             | Brett Rini        |
| Fri-Sat                    | 4/15-4/16 | 11pm-7am             | Margie Kotzalas   |
|                            |           |                      |                   |
| <b>Severe Accident/PRA</b> |           | <b>Email: RST10</b>  |                   |
| Sat-Sun                    | 4/9-4/10  | 11pm - 7am           | Velazquez-Lozada  |
| Sun                        | 10-Apr    | 7am - 3pm            | SM Wong           |
| Sun                        | 10-Apr    | 3pm-11pm             | Raj Iyengar       |

Japan Earthquake ERO Staffing Roster  
April 10-16, 2011  
Pay Period 9 - Week 1

|          |           |            |                 |
|----------|-----------|------------|-----------------|
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Larry Criscione |
| Mon      | 11-Apr    | 7am - 3pm  | Len Ward        |
| Mon      | 11-Apr    | 3pm-11pm   | Mark Caruso     |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Larry Criscione |
| Tue      | 12-Apr    | 7am - 3pm  | Ben Beasley     |
| Tue      | 12-Apr    | 3pm-11pm   | Antonios Zoulis |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Larry Criscione |
| Wed      | 13-Apr    | 7am - 3pm  | Mark Caruso     |
| Wed      | 13-Apr    | 3pm-11pm   | Antonio Zoulis  |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Hanh Phan       |
| Thur     | 14-Apr    | 7am - 3pm  | Tina Ghosh      |
| Thur     | 14-Apr    | 3pm-11pm   | Antonios Zoulis |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | Ben Beasley     |
| Fri      | 15-Apr    | 7am - 3pm  | Raj Iyengar     |
| Fri      | 15-Apr    | 3pm-11pm   | Antonios Zoulis |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | Larry Criscione |

**BWR Expertise**

**Email: RST11**

|          |           |            |               |
|----------|-----------|------------|---------------|
| Sat-Sun  | 4/9-4/10  | 11pm - 7am | Greg Cranston |
| Sun      | 10-Apr    | 7am - 3pm  | Larry Vick    |
| Sun      | 10-Apr    | 3pm-11pm   | Chuck Norton  |
| Sun-Mon  | 4/10-4/11 | 11pm - 7am | Tim Kolb      |
| Mon      | 11-Apr    | 7am - 3pm  | Mike Brown    |
| Mon      | 11-Apr    | 3pm-11pm   | Chuck Norton  |
| Mon-Tue  | 4/11-12/5 | 11pm - 7am | Tim Kolb      |
| Tue      | 12-Apr    | 7am - 3pm  | Mike Brown    |
| Tue      | 12-Apr    | 3pm-11pm   | Chuck Norton  |
| Tue-Wed  | 4/12-13/6 | 11pm - 7am | Tim Kolb      |
| Wed      | 13-Apr    | 7am - 3pm  | Mike Brown    |
| Wed      | 13-Apr    | 3pm-11pm   | Chuck Norton  |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | Tim Kolb      |
| Thur     | 14-Apr    | 7am - 3pm  | Mike Brown    |
| Thur     | 14-Apr    | 3pm-11pm   | Chuck Norton  |
| Thur-Fri | 4/14-4/15 | 11pm - 7am |               |
| Fri      | 15-Apr    | 7am - 3pm  | Greg Cranston |
| Fri      | 15-Apr    | 3pm-11pm   | Chuck Norton  |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   |               |

**RST Comm/ERDS Operator**

**Email: RST16**

|         |           |            |                  |
|---------|-----------|------------|------------------|
| Sat-Sun | 4/9-4/10  | 11pm - 7am | Liliana Ramadan  |
| Sun     | 10-Apr    | 7am - 3pm  | Jim Isom         |
| Sun     | 10-Apr    | 3pm-11pm   | Bill Roggenbrodt |
| Sun-Mon | 4/10-4/11 | 11pm - 7am | Margie Kotzalas  |
| Mon     | 11-Apr    | 7am - 3pm  | Jim Isom         |
| Mon     | 11-Apr    | 3pm-11pm   | Andy Kugler      |
| Mon-Tue | 4/11-12/5 | 11pm - 7am | Margie Kotzalas  |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|   |           |            |                        |
|---|-----------|------------|------------------------|
| Tue                                     | 12-Apr    | 7am - 3pm  | Jim Isom               |
| Tue                                     | 12-Apr    | 3pm-11pm   | Andy Kugler            |
| Tue-Wed                                 | 4/12-13/6 | 11pm - 7am | Margie Kotzalas        |
| Wed                                     | 13-Apr    | 7am - 3pm  | Jim Isom               |
| Wed                                     | 13-Apr    | 3pm-11pm   | Bill Roggenbrodt       |
| Wed-Thur                                | 4/13-4/14 | 11pm - 7am | Joelle Starefos        |
| Thur                                    | 14-Apr    | 7am - 3pm  | Jim Isom               |
| Thur                                    | 14-Apr    | 3pm-11pm   | Andy Kugler            |
| Thur-Fri                                | 4/14-4/15 | 11pm - 7am | Joelle Starefos        |
| Fri                                     | 15-Apr    | 7am - 3pm  | Jim Isom               |
| Fri                                     | 15-Apr    | 3pm-11pm   | Andy Kugler            |
| Fri-Sat                                 | 4/15-4/16 | 11pm-7am   | Joelle Starefos        |
|   |           |            |                        |
| <b>RST Support (Seismology Q&amp;A)</b> |           |            |                        |
| Sat-Sun                                 | 4/9-4/10  | 11pm - 7am | (On Call)              |
| Sun                                     | 10-Apr    | 7am - 3pm  | (On Call)              |
| Sun                                     | 10-Apr    | 3pm-11pm   | (On Call)              |
| Sun-Mon                                 | 4/10-4/11 | 11pm - 7am | (On Call)              |
| Mon                                     | 11-Apr    | 7am - 3pm  | (On Call)              |
| Mon                                     | 11-Apr    | 3pm-11pm   | (On Call)              |
| Mon-Tue                                 | 4/11-12/5 | 11pm - 7am | (On Call)              |
| Tue                                     | 12-Apr    | 7am - 3pm  | (On Call)              |
| Tue                                     | 12-Apr    | 3pm-11pm   | (On Call)              |
| Tue-Wed                                 | 4/12-13/6 | 11pm - 7am | (On Call)              |
| Wed                                     | 13-Apr    | 7am - 3pm  | (On Call)              |
| Wed                                     | 13-Apr    | 3pm-11pm   | (On Call)              |
| Wed-Thur                                | 4/13-4/14 | 11pm - 7am | (On Call)              |
| Thur                                    | 14-Apr    | 7am - 3pm  | (On Call)              |
| Thur                                    | 14-Apr    | 3pm-11pm   | (On Call)              |
| Thur-Fri                                | 4/14-4/15 | 11pm - 7am | (On Call)              |
| Fri                                     | 15-Apr    | 7am - 3pm  | (On Call)              |
| Fri                                     | 15-Apr    | 3pm-11pm   | (On Call)              |
| Fri-Sat                                 | 4/15-4/16 | 11pm-7am   | (On Call)              |
|   |           |            |                        |
| <b>RST Support (Structural)</b>         |           |            |                        |
| Sat-Sun                                 | 4/9-4/10  | 11pm - 7am | (On Call) Pravin Patel |
| Sun                                     | 10-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Sun                                     | 10-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Sun-Mon                                 | 4/10-4/11 | 11pm - 7am | (On Call) Pravin Patel |
| Mon                                     | 11-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Mon                                     | 11-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Mon-Tues                                | 4/11-12/5 | 11pm - 7am | (On Call) Pravin Patel |
| Tues                                    | 12-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Tues                                    | 12-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Tues-Wed                                | 4/12-13/6 | 11pm - 7am | (On Call) Pravin Patel |
| Wed                                     | 13-Apr    | 7am - 3pm  | (On Call) Pravin Patel |

## Japan Earthquake ERO Staffing Roster

April 10-16, 2011

Pay Period 9 - Week 1

|          |           |            |                        |
|----------|-----------|------------|------------------------|
| Wed      | 13-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Wed-Thur | 4/13-4/14 | 11pm - 7am | (On Call) Pravin Patel |
| Thur     | 14-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Thur     | 14-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Thur-Fri | 4/14-4/15 | 11pm - 7am | (On Call) Pravin Patel |
| Fri      | 15-Apr    | 7am - 3pm  | (On Call) Pravin Patel |
| Fri      | 15-Apr    | 3pm-11pm   | (On Call) Pravin Patel |
| Fri-Sat  | 4/15-4/16 | 11pm-7am   | (On Call) Pravin Patel |



**From:** Hughart, Joe  
**To:** Berger, William (RDMA/OFDA) [USAID]; Berger, William; Trapp, James; RMTPACTSU\_ELNRC; RMTPACTSU\_LC; Kolb, Timothy  
**Subject:** Fw: Bechtel Pumping System  
**Date:** Friday, March 18, 2011 1:45:26 AM

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Response from Mr Merchant at Bechtel re pumping system.

Best,  
Joe Hughart

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

From: Merchant, Ned <cemercha@bechtel.com>

To: Hughart, Joe

Cc: James.trapp@nrc.gov. <James.trapp@nrc.gov.>; Berger, William (RDMA/OFDA) [USAID]; Berger, William; RMTPACTSU\_ELNRC; RMTPACTSU\_LC

Sent: Fri Mar 18 01:33:59 2011

Subject: RE: Bechtel Pumping System

As soon as I have it, I will provide it.

Best Regards, Ned  
"Quality is not an act, it is a habit"

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

From: Hughart, Joe [<mailto:jhughart@ofda.gov>]

Sent: Friday, March 18, 2011 12:32 AM

To: Merchant, Ned

Cc: James.trapp@nrc.gov.; Berger, William (RDMA/OFDA) [USAID]; Berger, William; RMTPACTSU\_ELNRC; RMTPACTSU\_LC

Subject: Bechtel Pumping System

Mr. Merchant, can you provide me with the cost, weight, dimensions, pickup address and POC for these goods? Trying to quickly make a decision. Thanks.

- Joe Hughart  
USAID OFDA DART  
[Joseph.hughart@foh.hhs.gov](mailto:Joseph.hughart@foh.hhs.gov)

LLLL/55

**From:** Cherry, Ronald C  
**To:** Basalla, Suzanne I; Gabor, Robert R; Angelov, Bonnie A; Fuller, Matthew G; Hinds, Lynda J; Aleshia Duncan; Cook, William; Smith, Brooke; Casto, Chuck; Damian Peko; Duncan, Aleshia D; Howard, E. Bruce; Foster, Jack; Trapp, James; James Trapp (BB); Monninger, John; Foggie, Kirk; Devercelly, Richard; Kolb, Timothy; Nakanishi, Tony; Ulses, Anthony  
**Cc:** Wall, Marc M; Cipullo, Timothy L; Howard, E. Bruce; Marks, Eriko M; Horowitz, Paul D; Duncan, Aleshia D; Zumwalt, James P; Alexander, Kathleen J  
**Subject:** RE: Bio info and points for TEPCO executives  
**Date:** Friday, March 18, 2011 2:21:20 AM

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Suzanne,

Yes, I believe that's correct.

Chuck,

What would you like the Ambassador to say to the Chairman of TEPCO? We want briefings/information, but we also want the opportunity to embed with their engineers. That is still part of the success path, correct?

Thanks.

Ron

This email is UNCLASSIFIED.

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**From:** Basalla, Suzanne I  
**Sent:** Friday, March 18, 2011 3:15 PM  
**To:** Gabor, Robert R; Angelov, Bonnie A; Fuller, Matthew G; Hinds, Lynda J  
**Cc:** Wall, Marc M; Cipullo, Timothy L; Cherry, Ronald C; Howard, E. Bruce; Marks, Eriko M; Horowitz, Paul D; Duncan, Aleshia D; Zumwalt, James P; Alexander, Kathleen J  
**Subject:** RE: Bio info and points for TEPCO executives

Thanks...pretty sure that Katsumata has attended Nikkei CEO dinners, etc. and maybe Keizai Douyukai meetings. </p>

Having the picture is perfect – he'll either remember him or not.

Isn't one of our messages for TEPCO not only about information briefings, but also about allowing us to provide help/support? Pls check with DOE/NRC team.

suzanne

SBU  
This email is UNCLASSIFIED.

LLLL/56

**From:** Cherry, Ronald C  
**To:** JapanEmbassy, TaskForce; Young, Joseph M; Alan Remick; Aleshia Duncan; Cook, William; Smith, Brooke; Casto, Chuck; Damian Peko; Duncan, Aleshia D; Howard, E. Bruce; Foster, Jack; Trapp, James; James Trapp (BB); Joe Hughart; Joe Hughart (DART); Monninger, John; Johnstone, Gregg M; Foggie, Kirk; Mears, Jeremy M; Morales, Russell A; Devercelly, Richard; Kolb, Timothy; Nakanishi, Tony; Ulses, Anthony  
**Subject:** MOD contact on nuclear issue: Yoshihisa Sato  
**Date:** Friday, March 18, 2011 4:44:23 AM

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All:

I've been informed that **Mr. Yoshihisa Sato, Major, Policy Division, MOD** will be in charge coordinating the flow of information between TEPCO and the Kantei.

This is Mr. Sato's contact info:

Mr. Yoshihisa Sato  
Major, Policy Division, The Ministry of Defense  
TEL: 03-3268-3111 (extension 21251)

This email is UNCLASSIFIED.

This email is UNCLASSIFIED.

LLLL/57

**From:** Berger, Claire  
**To:** Vizcarra, Jacquelyn K; Japan-Embassy-Task-Force-DL; Tokyo-Consular-Officers-DL; Berger, William; emagee@ofda.gov; asink@ofda.gov; Alan Remick DOE; Aleshia Duncan; Cook, William; Smith, Brooke; Cherry, Ronald C; Casto, Chuck; Damian Peko; Duncan, Aleshia D; Howard, E. Bruce; Foster, Jack; Trapp, James; James Trapp NRC; Joe Hughart HHS; Joe Hughart OFDA; Monninger, John; Foggie, Kirk; Mears, Jeremy M; Morales, Russell A; Nesheiwat, Julia; Devercelly, Richard; Russ Morales; Tamada, Yoshimi; Kolb, Timothy; Nakanishi, Tony; Ulses, Anthony; Uchida, Koichi  
**Subject:** RE: power outage -- on Sunday  
**Date:** Friday, March 18, 2011 2:46:29 AM  
**Importance:** High

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This will not/not happen today. It is scheduled for Sunday, 20<sup>th</sup>. Time is TBD.

Claire Berger

This email is UNCLASSIFIED.

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**From:** Vizcarra, Jacquelyn K  
**Sent:** Friday, March 18, 2011 11:35 AM  
**To:** Japan-Embassy-Task-Force-DL  
**Subject:** power outage to install emergency generator

FYI: We are going to be installing the emergency generator to support the Information System Center (our Server Room that supports all Unclassified and SBU IT operations).

Time of outage is planned to take place from 1600 to 1800 today.

You will still have phone service and ClassNet service during this time.

Jacquelyn K. Vizcarra  
OMS Economic Section  
U.S. Embassy Tokyo, Japan  
95-3224-6032

This email is UNCLASSIFIED.

LLLL/58