

**Thorp, John**

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**From:** NEWS Automated Mailer [ContactPointNEWS@iaea.org]  
**Sent:** Friday, March 18, 2011 5:15 AM  
**To:** NEWS.Contact-Point@iaea.org  
**Subject:** New ERF on NEWS, INES Rating: 3, Japan, Power Reactor

Dear NEWS User,

This is to notify you as a registered user of the NEWS Web site that an Event Rating Form (ERF) for the Event titled:

"Loss of the cooling function to the ultimate heat sink due to the big tsunami"

has as of today, Friday, 18 March 2011, 10:12:38 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan  
Location/Facility: FUKUSHIMA-DAINI-1  
Event Type: Power Reactor  
Event Date: 2011.03.11

Rating Date: 2011.03.18  
ERF Version: Provisional  
INES Rating Level: 3

For more detailed information about the ERF, including the related Event and press releases as well as on-site participation in forum discussions, please visit the NEWS Web site at:

<http://www-news.iaea.org/news/>

NEWS Administration

M-223

**Sigmon, Rebecca**

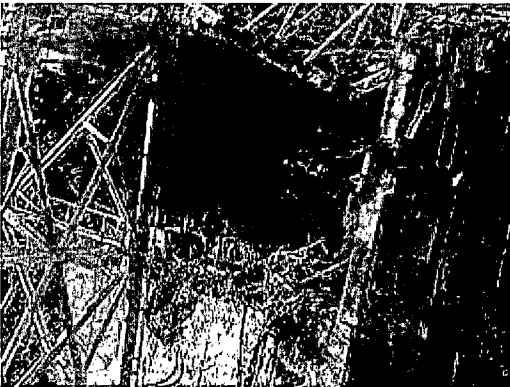
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**From:** Sigmon, Rebecca  
**Sent:** Friday, March 18, 2011 8:53 AM  
**To:** Giantelli, Joseph  
**Subject:** RE: what unit is it?

I'm guessing 3? They're the ones spewing steam, right? Or is that the magic picture that proves there's water in the 4 SFP?

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**From:** Giantelli, Joseph  
**Sent:** Friday, March 18, 2011 8:22 AM  
**To:** Sigmon, Rebecca; King, Mark  
**Subject:** what unit is it?



Joe Giantelli  
Reactor Systems Engineer  
Operating Experience Branch  
NRR/ADRO/DIRS/IOEB  
301-415-0504  
[joseph.giantelli@nrc.gov](mailto:joseph.giantelli@nrc.gov)

n-224

**Weaver, Tonna**

**From:** Flory, Shirley *RES*  
**Sent:** Friday, March 18, 2011 8:53 AM  
**To:** Gray, Kathy; Dudes, Laura; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William  
**Cc:** Holian, Brian; Hiland, Patrick; Thorp, John; Thomas, Eric; Cunningham, Liza  
**Subject:** RE: Confirmation is requested for RST Director Schedule - 3/18-3/25

Kathy/Liza:

I just spoke with Jennifer Uhle and she confirms she can work the below schedule.

Thanks – Shirley 301-251-7400

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**From:** Gray, Kathy *RR*  
**Sent:** Thursday, March 17, 2011 3:30 PM  
**To:** Dudes, Laura; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William  
**Cc:** Holian, Brian; Hiland, Patrick; Thorp, John; Thomas, Eric; Cunningham, Liza; Flory, Shirley; Gray, Kathy  
**Subject:** Confirmation is requested for RST Director Schedule - 3/18-3/25  
**Importance:** High

Please confirm that you are able to provide coverage in the Ops Center, as the RST Director, as follows:

**March 18 – March 25, 2011**

Shift	3/18 (Fri)	3/19 (Sat)	3/20 (Sun)	3/21 (Mon)	3/22 (Tues)	3/23 (Wed)	3/24 (Thur)	3/25 (Fri)
7am–3pm	(Laura Dudes)	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Pat Hiland
3pm– 11pm	(Bill Ruland)	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen	Bill Ruland	Bill Ruland	Bill Ruland
11pm– 7am	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian	Brian Holian	Brian Holian	Brian Holian

Pat Hiland and Brian Holian – already confirmed - no response needed.

Thanks very much.

*Kathy A. Gray*

Information Management Asst.  
Operating Experience Branch, DIRS/NRR  
Rm. O-7F04, Phone: 301-415-1166  
[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)

## Weaver, Tonna

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**From:** Givvines, Mary *MR*  
**Sent:** Friday, March 18, 2011 8:54 AM  
**To:** Givvines, Mary; Muessle, Mary  
**Cc:** Evans, Michele; Grobe, Jack; Ruland, William; Leeds, Eric  
**Subject:** RE: UPDATE- Additional Staff Requirements Outside Ops Center Long Term Staffing

Michele,

Sorry I missed your calls, here are a few additional names.

**April BeBault** – help in OIP

**Allison Travers** – help in OIP

**Dan Doyle** - some experience with answering questions from the press

**Andy Imboden** -some experience with answering questions from the press

**Louise Lovell** - worked as an IT Specialist in NSIR. She is very familiar with the systems that support the Operations Center. Additionally, she was an evaluator for the Liaison Team during one of the drills and she believes she can also assist in coordination and execution of support activities. Also worked to support the operations center as a member of the Operations Team and as the Emergency Telecommunications Coordinator while working in OIS. It's been several years however, she has basic knowledge of the design of the communications systems including the PBX.

Mary/Michele

Here is what we have so far from NRR. I sent another reminder this afternoon and hope to have more names tomorrow in the am.

- **Dave Beaulieu** – has Resident Inspector experience, including being the resident for Three Mile Island Unit 2
- **Laura Gerke** – 15 years of Op Center Liaison experience from when I was in Congressional Affairs
- **Karen Zeleznock** - bachelor's degree in International Relations from Johns Hopkins University and completed a rotation to OIP about a year ago where she filled in for desk officers for Japan, Lithuania, and Vietnam
- **Jeremy Susco** - starting next week.
- **Jim Vail**
- **Matthew Mitchell** - already listed as Technical Experts - on call to Ops Center
- **Kenneth Karwoski** - already listed as Technical Experts - on call to Ops Center

PMDA staff willing to provide general-type support with no specialized experience:

- **Cynthia Dorsey**– nights; and weekends
- **Caroline Nguyen** – weekdays between 8pm to midnight; anytime on weekends
- **Gary Tharpe** – evenings; and weekends
- **Sylvia Valencia** – weekends (prefer AM shifts)
- **Hong Le** – weekends (anytime)
- **Ilyne Miller**

Thanks





Mary

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Friday, March 18, 2011 2:30 PM  
**To:** Lee, Erika  
**Subject:** RE: DORL Staff Supporting Japanese Events

I got an error message.

NELSON

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**From:** Lee, Erika *NR*  
**Sent:** Friday, March 18, 2011 2:29 PM  
**To:** NRR\_DORL\_DO Distribution  
**Subject:** DORL Staff Supporting Japanese Events  
**Importance:** High

DORL's website now has a link listing the DORL staff supporting the Japanese events as well as their respective responsibilities.

<http://nrr10.nrc.gov/nrr-office/dorl/dorlhome.html>

This link will be updated as necessary.

Erika Lee, Administrative Assistant  
U.S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation  
Division of Operating Reactor Licensing  
Plant Licensing Branch LPL1-2  
301-415-0373  
[erika.lee@nrc.gov](mailto:erika.lee@nrc.gov)

*m-227*

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Friday, March 18, 2011 1:47 PM  
**To:** Roberts, Darrell; Kennedy, Kriss; Lara, Julio; Croteau, Rick  
**Cc:** West, Steven; Shear, Gary; Hay, Michael  
**Subject:** FYI: FEMA EPZ Info

[http://portal.nrc.gov/edo/nrr/NRR TA/FAQ Related to Events Occuring in Japan/Emergency Planning Zones.pdf](http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Emergency%20Planning%20Zones.pdf)

Supplied by FEMA & publicly releasable.

NELSON

**Nelson, Robert**

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**From:** Nelson, Robert *NRK*  
**Sent:** Friday, March 18, 2011 12:24 PM  
**To:** Leeds, Eric  
**Subject:** RE: Need your help! - NRO Assistance

Thanks for your prompt support!

NELSON

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**From:** Leeds, Eric *NRK*  
**Sent:** Friday, March 18, 2011 11:34 AM  
**To:** Johnson, Michael  
**Cc:** Holahan, Gary; Nelson, Robert; Markley, Michael  
**Subject:** Need your help! - NRO Assistance

Mike/Gary –

NRR has established a communications team to deal with all the Q&As and help prepare the regions for EOC meetings next week. They're also handling all the Congressional correspondence that's arriving by the boatload. Do you have any PMs/generalists that are good communicators that can help the team, either part or full-time?

If you can help, please provide a contact name to Bob Nelson/ Mike Marley - they're leading our team. Thanks so much!

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

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Friday, March 18, 2011 9:05 AM  
**To:** Mahoney, Michael  
**Cc:** Glitter, Joseph; Howe, Allen; Markley, Michael; Meighan, Sean  
**Subject:** ACTION: FOIA 2011-0119  
**Attachments:** Foia-2011-0119.pdf; How to respond to a FOIA request.pdf; new-foia-procedures1.pdf  
**Importance:** High

Please take for action & coordinate DORL response.

NELSON

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**From:** Craver, Patti *NR*  
**Sent:** Thursday, March 17, 2011 5:57 PM  
**To:** Titus, Brett; Cusumano, Victor; Scales, Kerby; Heida, Bruce; Susco, Jeremy; Meighan, Sean; Cartwright, William; Valentine, Nicholee; Nguyen, Quynh  
**Cc:** Ruland, William; Bahadur, Sher; Lubinski, John; Hiland, Patrick; Wilson, George; Cheok, Michael; Lee, Samson; Holian, Brian; Galloway, Melanie; Glitter, Joseph; Nelson, Robert; Howe, Allen; Brown, Frederick; Blount, Tom; Quay, Theodore; McGinty, Tim; Boger, Bruce; Grobe, Jack; Leeds, Eric; Craver, Patti  
**Subject:** ACTION: FOIA 2011-0119  
**Importance:** High

NRR along with EDO, NSIR, OIP, OPA, RES and SECY have been assigned this FOIA request from the Associated Press seeking copies of all internal communications within the NRC (including its Chairman, four Commissioners and their staff members) pertaining to the Japanese Nuclear incidents caused by the March 11 earthquake and tsunami.

No estimates are needed. Please begin processing.

This request has been granted expedited processing. It must be processed ahead of all, others except for requests already determined to warrant expedition.

Any documents that you feel should be withheld must have an FOIA exemption applied and a harm statement attached.

I will type up the appendices to help save some time, so please provide me your division's response as soon as you can.

Let me know if you have any questions.

Thanks,  
Patti  
FOIA Coordinator  
Infrastructure Services Branch  
Program Management, Policy Development  
and Analysis Staff  
Office of Nuclear Reactor Regulation  
(301) 415-1513  
[patti.craver@nrc.gov](mailto:patti.craver@nrc.gov)

*m-230*

## Nelson, Robert

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**From:** Nelson, Robert *NRK*  
**Sent:** Friday, March 18, 2011 8:13 AM  
**To:** Meighan, Sean; Nguyen, Quynh; Leeds, Eric; Markley, Michael  
**Subject:** Concern: Development of Qs & As

My assessment is that our progress is slow if not non-existent. We need to regroup as soon as we can this AM. In addition, I have a high priority Q from the region that needs answered.

I'll get a meeting scheduled.

NELSON

## Weaver, Tonna

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**From:** Leeds, Eric *inck*  
**Sent:** Friday, March 18, 2011 1:19 PM  
**To:** Craver, Patti; Ruland, William; Grobe, Jack; Boger, Bruce; Rothschild, Trip  
**Cc:** Boyce, Thomas (OIS); Johnson, Michael; Sheron, Brian; Haney, Catherine; Wiggins, Jim; Miller, Charles; Moore, Scott; Uhle, Jennifer; Holahan, Gary; Schaeffer, James  
**Subject:** FW: Need your help: FOIA Request

Thanks for your help, Trip!

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

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**From:** Rothschild, Trip *1066*  
**Sent:** Friday, March 18, 2011 12:53 PM  
**To:** Leeds, Eric  
**Cc:** Wiggins, Jim; Weber, Michael; Virgilio, Martin; Burns, Stephen; Nichols, Russell; Sealing, Donna  
**Subject:** RE: Need your help: FOIA Request

I told both NRO and the FOIA office that the NRC would not be meeting regular schedules on this. The emergency response activities take precedence and we will get to the FOIA request as soon as we can. The requests are quite broad in scope and I hope the AP will narrow the scope. As of this morning, the FOIA office had a called AP to discuss the requests, but their call had not been returned.

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**From:** Leeds, Eric  
**Sent:** Friday, March 18, 2011 11:39 AM  
**To:** Burns, Stephen; Rothschild, Trip  
**Cc:** Wiggins, Jim; Weber, Michael; Virgilio, Martin  
**Subject:** Need your help: FOIA Request

Steve/Trip –

We've received a rather intrusive and broad FOIA from the Associated Press. As you're aware, the agency is in full event response mode, as well as sending key staff to Japan to assist in the emergency response activities there. Is there some relief in terms of schedule or scope that OPC can help us with? See below for more details.

Thanks for your consideration!

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

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**From:** Holzle, Catherine *066*  
**Sent:** Thursday, March 17, 2011 4:40 PM  
**To:** Leeds, Eric  
**Cc:** Meighan, Sean; Craver, Patti; Grobe, Jack; Boger, Bruce; Sealing, Donna; Nichols, Russell; Williamson, Edward; Hirsch, Patricia  
**Subject:** RE: FOIA Request

It's still very early in the process, so OGC is not involved in the review end of this yet. But earlier today, I spoke with the FOIA Section Chief, Donna Sealing, who mentioned that we had received three FOIA requests on Japan, and that these had asked for "expedited treatment" under our FOIA regulations. We rarely grant these requests for special processing, but in this case, it was considered necessary. This will certainly put a strain on everyone who needs to provide records, but we need to do our best to comply. Your FOIA Coordinator, Patti Craver, is a seasoned FOIA expert and she will have no trouble working with the FOIA Office on the response. Naturally, OGC stands ready to provide legal support, as needed, but there won't be much for us to do in that respect until information is gathered and provided to the FOIA Office. Please let me know if I may be of further assistance.

**From:** Williamson, Edward *OGC*  
**Sent:** Thursday, March 17, 2011 3:50 PM  
**To:** Leeds, Eric  
**Cc:** Meighan, Sean; Craver, Patti; Grobe, Jack; Boger, Bruce; Hirsch, Patricia; Holzle, Catherine  
**Subject:** RE: FOIA Request

Hi Eric,

OGC's FOIA legal advice comes from Pat Hirsch (AGC for LC) and her OGC Division. I think in particular --- Cathy Holzle is the key OGC Senior Attorney that works on providing advice regarding FOIA. I have cc both of them in the hopes that they can directly give you and your staff some timely legal advice that takes into account the current NRR focus and extensive efforts in support of Operations Center and other assistance relating to Japan.

Ed

Edward L. Williamson  
Assistant General Counsel for Operating Reactors  
Office of the General Counsel  
U.S. Nuclear Regulatory Commission

Phone 301 -415-1143

*Official Use Only* --- Attorney-Client Privileged / Attorney Work Product Rule

**From:** Leeds, Eric *NRR*  
**Sent:** Thursday, March 17, 2011 3:30 PM  
**To:** Williamson, Edward  
**Cc:** Meighan, Sean; Craver, Patti; Grobe, Jack; Boger, Bruce  
**Subject:** FOIA Request

Ed -

NRR has received a FOIA request from the AP requesting all emails and internal communications with regard to the Japanese event. This will take each staff members hours for response, at a time where we are already stretched thin to support the OP Center, Japan, etc, etc.

Any advice on how to proceed. Is there an OGC POC we can work with on this? Our POC is Sean Meighan.

As always, thanks for your help!

Eric J. Leeds, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission





**Weaver, Tonna**

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**From:** Lyon, Warren *ML*  
**Sent:** Friday, March 18, 2011 8:10 AM  
**To:** Parks, Benjamin  
**Subject:** RE: My start of a GL

Thank you for the feedback. I'll work it in. And I haven't been told anything about working on this with the exception that I'm premature and should not do it yet.

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**From:** Parks, Benjamin *ML*  
**Sent:** Thursday, March 17, 2011 9:39 PM  
**To:** Lyon, Warren  
**Subject:** RE: My start of a GL

I have a few very simple initial comments; attached for your consideration.

I wasn't aware that the POTUS had ordered such an activity until my commute home.

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**From:** Lyon, Warren  
**Sent:** Thursday, March 17, 2011 6:09 PM  
**To:** Parks, Benjamin  
**Subject:** My start of a GL

*M-233*

**Thadani, Mohan**

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**From:** Thadani, Mohan *MR*  
**Sent:** Friday, March 18, 2011 7:24 AM  
**To:** Hayden, Elizabeth  
**Subject:** FW: questions about containment testing

Beth:

Yesterday's email said that enquiries from State officials should be forwarded to OPA. Therefore, I am forwarding the email traffic below for OPA's information.

Mohan

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**From:** Thadani, Mohan *MR*  
**Sent:** Thursday, March 17, 2011 11:18 AM  
**To:** 'Cowley, Richard (DOH)'  
**Subject:** RE: questions about containment testing

"Overall integrated leakage rate" means the leakage rate which obtains from a summation leakage through all potential leakage paths. Including containment welds, valves, fittings, and components that penetrate containment.

"Type A Test" means tests intended to measure the primary reactor containment overall integrated leakage rate, after the containment is first ready for operation and at periodic intervals thereafter.

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**From:** Cowley, Richard (DOH) [<mailto:Richard.Cowley@DOH.WA.GOV>]  
**Sent:** Wednesday, March 16, 2011 8:05 PM  
**To:** Thadani, Mohan  
**Subject:** questions about containment testing

Mohan,

It's been too long for me to remember but what are the differences between Integrated Leak Rate Testing and Containment Type A testing and what are the frequencies for this type of testing?

I see that Columbia had to complete a Type A test by July of 2009 and I assume they did that during the 2009 outage. The Wall Street Journal article about the German reactors has prompted these questions in attempt to address the "stress testing" mentioned in that article.

Thanks for your help on this.

*Richard Cowley*

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Richard Cowley

Nuclear Engineer

*m-234*

Office of Radiation Protection

PO Box 47827

Olympia, WA 98504-7827

(360) 236-3272

[richard.cowley@doh.wa.gov](mailto:richard.cowley@doh.wa.gov)

*"This message may be confidential. If you received it by mistake, please notify the sender and delete this message. All messages to and from the Department of Health may be disclosed to the public."*

**Weaver, Tonna**

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**From:** Lyon, Warren *in/168*  
**Sent:** Friday, March 18, 2011 9:20 AM  
**To:** Collins, Timothy  
**Subject:** GL  
**Attachments:** GL 03-18-2011.docx

Minor update to what I gave you yesterday. I don't have a go-ahead to give this a priority.

*m-235*

March 18, 2011

OMB Control No.: 3150-0011

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, DC 20555-0001

NRC GENERIC LETTER 2011-XX: ADDRESSING LESSONS LEARNED FROM THE  
JAPANESE NUCLEAR POWER PLANT ACCIDENTS  
CAUSED BY THE MARCH 11, 2011 EARTHQUAKE

**ADDRESSEES**

All holders of operating licenses for nuclear power reactors, including those who have permanently ceased operations but have irradiated nuclear fuel stored onsite, and all applicants for construction permits for new nuclear power reactors.

**PURPOSE**

The U.S. Nuclear Regulatory Commission (NRC) is issuing this generic letter (GL) to address issues identified as a result of the Japanese nuclear power plant accidents caused by the March 11, 2011 earthquake and subsequent tsunami. Specifically, the NRC is issuing this GL for three purposes:

- (1) to request addressees to submit information that describes the realistic capability of their nuclear power plants and fuel storage facilities to withstand an earthquake and potential associated phenomena
- (2) to request addressees to describe plans for enhancing their capability
- (3) to collect the requested information to determine if additional regulatory action is required

Pursuant to Title 10 Section 50.54(f) of the *Code of Federal Regulations* (10 CFR 50.54(f)), addressees are required to submit a written response to this GL.

**TAXXXXXXXXXX**

## **BACKGROUND**

Brief discussion of the accident and purpose.

## **APPLICABLE REGULATORY REQUIREMENTS**

Look at backfit rule and anything else that takes us beyond the design basis and Appendices A and B. Ditto 10 CFR 50.63 and whether it should be re-interpreted?

## **DISCUSSION**

Start with ultimate heat sink and walk through the heat removal paths. Include need for electricity.

Include discussion about differences between BWR and PWR containments, as well as differences between BWR/PWR SBO mitigation strategies.

Examine potential mechanisms that could cause loss-of-fuel storage pool water inventory such as when a fuel storage pool is configured for fuel transfer.

The enclosure to this GL, "Technical Considerations for Enhancing Capability to Withstand Seismic Events," provides additional information. Addressees should consider this information when preparing responses to this GL. Furthermore, the NRC staff plans to use this information during activities that are being planned as a follow-up to this GL.

## **REQUESTED ACTIONS**

The NRC requests that each addressee (1) realistically evaluate the ability of its nuclear power plants and nuclear fuel storage facilities to withstand a seismic event and potential ensuing phenomena such as a tsunami, dam rupture, seiche, or debris that affects water intake structures and dry fuel cask cooling and, (2) suggest practical means to enhance response to seismic events.

## **REQUESTED INFORMATION**

The NRC requests that each addressee provide the following information: (a) A description of the results of evaluations that were performed pursuant to the above requested actions; (b) a description of all corrective actions that you identified, including plant, programmatic, procedure, and modifications ; (c) a statement regarding which corrective actions were completed and the schedule for completing corrective actions that you plan to complete; and (d) a brief discussion of identified corrective actions that you do not plan to pursue that includes the reasons for not pursuing that action further.

## **REQUIRED RESPONSE**

In accordance with 10 CFR 50.54(f), an addressee must respond as described below.

Within three months of the date of this GL, each addressee is requested to submit a written response consistent with the requested actions and information.

The required written response should be addressed to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, 11555 Rockville Pike, Rockville, MD 20852, under oath or affirmation under the provisions of Section 182a of the Atomic Energy Act of 1954, as amended, and 10 CFR 50.54(f). In addition, addressees should submit a copy of the response to the appropriate regional administrator.

### **REASONS FOR INFORMATION REQUEST**

The NRC is requesting this information to support an NRC reexamination of the capability of United States nuclear facilities to withstand seismic events in light of the experience related to the seismic-related nuclear power plant accidents in Japan that initiated on March 11, 2011.

### **BACKFIT DISCUSSION**

Under the provisions of Section 182a of the Atomic Energy Act of 1954, as amended, this GL requests information applicable to establishing the realistic capability of withstanding seismic events and preventing a release of radioactive material that would be detrimental to public health and safety. No backfit is either intended or approved by the issuance of this GL. Therefore, the NRC staff has not performed a backfit analysis.

### **FEDERAL REGISTER NOTIFICATION**

A notice of opportunity for public comment on this GL was published in the *Federal Register* (xx FR xxxxx) on XXXX. The NRC received XX sets of comments. The NRC staff considered all comments that were received. The NRC staff's evaluation of the comments is publicly available through the NRC's ADAMS under Accession No. TAXXXXXXXXXX.

### **CONGRESSIONAL REVIEW ACT**

The NRC has determined that this action is not subject to the Congressional Review Act.

### **PAPERWORK REDUCTION ACT STATEMENT**

This GL contains an information collection that is subject to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). The Office of Management and Budget approved this information collection under clearance number 3150-0011 which expires on June 30, 2010.

The burden to the public for this mandatory information collection is estimated to average 200 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the information collection.

Send comments on any aspect of this information collection, including suggestions for reducing the burden, to the Records and FOIA/Privacy Services Branch (T5-F52), U.S. Nuclear



Regulatory Commission, Washington, DC 20555-0001, or by Internet electronic mail to [infocollects@nrc.gov](mailto:infocollects@nrc.gov); and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202 (3150-0011), Office of Management and Budget, Washington, DC 20503.

#### Public Protection Notification

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid OMB control number.

#### CONTACT

Please direct any questions about this matter to the technical contacts or the Lead Project Manager listed below, or to the appropriate Office of Nuclear Reactor Regulation (NRR) or Office of New Reactors (NRO) project managers.

Timothy McGinty, Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

David Matthews, Director??  
Division of New Reactor Licensing  
Office of New Reactors

Technical Contacts: Warren C. Lyon, NRR/DSS, 301-415-2897  
Benjamin T. Parks, NRR/DSS, 301-415-6472  
Kent Wood, NRR/DSS, 301-415-4120  
NRO??

Lead Project Managers: Sheldon D. Stuchell, NRR/DPR, 301-415-1847  
NRO??

Enclosure:

"Technical Considerations for Enhancing Capability to Withstand Seismic Events,"

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

### **Technical Considerations for Enhancing Capability to Withstand Seismic Events**

One objective of this generic letter (GL) is to identify practical improvements that may be implemented in operating or advanced reactors and on-site irradiated fuel storage facilities. The NRC believes this can be accomplished by reasonable practice and in many cases by not requiring criteria as typically applied to safety related equipment or the single failure requirement.

The NRC has identified several potential candidates that it suggests addressees consider when responding to this GL. This list is not complete, some of the candidates may not be practical, some of the candidates may not apply to individual addresses, and addressees will likely identify other candidates.

1. Alternate alternating current (AC) source defined in 10 CFR 50.2
  - a. Location with respect to protection from seismic and tsunami events
  - b. Capability to move and connect the alternate AC source assuming sufficient damage to the plant and environment to cause a station blackout due to a seismic event followed by a tsunami
  - c. Post-event refueling and other maintenance of the alternate AC source
2. Modifications to buildings containing equipment useful or required for long-term cooling
  - a. Improvements in seismic response capability
  - b. Improvements in resistance to short term flooding associated with a tsunami
    - (1) Elevate building ventilation openings
    - (2) Elevate diesel engine intake and exhaust openings
    - (3) Provide water resistant doors and seals
3. Install battery driven ignitors in the upper level of boiling water reactor (BWR) secondary containments and pressurized water reactor (PWR) fuel storage pool buildings. Install such ignitors in any other locations where hydrogen may accumulate in sufficient quantity to be of potential concern.
4. Install fuel storage pool water makeup capability via an external connection similar to the Sizewell Unit 3 installation.
5. Install a spray system to cool fuel in the fuel storage pool if the pool is damaged and water level cannot be maintained above the top of the stored fuel.
6. Provide in-depth fuel storage pool cooling and makeup capability.
7. Provide additional dry storage facility protection against loss of natural circulation cooling due to debris or flooding.
8. Provide 72 hour standby battery power to extend station blackout capability.

**Valentine, Nicholee**

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**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 1:33 PM  
**To:** Shuaibi, Mohammed  
**Cc:** McGinty, Tim; Frye, Timothy; Quay, Theodore; Rosenberg, Stacey; Copeland, Douglas; Dixon-Herrity, Jennifer; Chokshi, Niles; Holahan, Gary; Johnson, Michael; Tappert, John; Dudes, Laura  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

Mohammed,

The sites that have ceased operations and certified removal of fuel from the RV, but with fuel remaining in SFPs were excluded from the ICM Order, subsequent license conditions, and 10 CFR 50.54(hh)(2) because of the long decay time of the fuel that had been removed. We may wind up addressing them in a future generic comm., but the intent here had been to rapidly get the word out to current operating licensees on the events and their current requirements. We had included the chronology for the mitigating strategies requirements in order to clarify that they cover natural phenomena. I'll check again w/ the folks here to see if they feel a change to the purpose is warranted.

Thanks!

Eric

---

**From:** Shuaibi, Mohammed  
**Sent:** Friday, March 18, 2011 1:22 PM  
**To:** Bowman, Eric  
**Cc:** Frye, Timothy; Copeland, Douglas; Rosenberg, Stacey; McGinty, Tim; Quay, Theodore; Dixon-Herrity, Jennifer; Chokshi, Niles; Matthews, David; Holahan, Gary; Johnson, Michael; Tappert, John; Dudes, Laura  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

Eric,

A few comments/questions:

1. In the addressee list, we are excluding those who have permanently ceased operations and have certified that they have permanently removed fuel from the reactor vessel. What if the sites still have fuel in the SFPs, shouldn't they be included?
2. The purpose is incomplete (or the paper is disconnected). It states that the purpose is to inform addressees of the earthquake and review the information for applicability to their facilities and consider actions. But, it goes beyond that in reporting out on what was done in response to 9/11 and doesn't really connect that to the purpose. The two need to be more directly connected. This could be done with an additional sentence or statement in the purpose. For example, add something along the lines of: "A description of those actions previously taken by the agency and industry in response to similar concerns brought out as a result of the terrorist events of September 11, 2001, is provided."

Lastly, the division's name (DCIP), please delete the comma after construction.

I'm ready to sign once these are addressed.

Also, this is not needed for concurrence, but if you haven't done so already, it would be good to have the info checked with the latest info the Op Center has, as information continues to be updated.

Thanks,  
Mohammed

m236

**Valentine, Nicholee**

---

**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 1:21 PM  
**To:** Taylor, Robert  
**Cc:** McGinty, Tim; Quay, Theodore; Rosenberg, Stacey  
**Subject:** RE: IN

Rob,

IRT your question on the exclusion of decommissioned reactors w/SFPs, it was based on the length of decay time since the fuel was moved to the SFPs when they decommissioned and their parallel exclusion from coverage under mitigating strategies requirements of the ICM Order, subsequent license conditions and 10 CFR 50.54(hh)(2), the latter group being a primary focus of the IN.

Thanks!

Eric

---

**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 12:14 PM  
**To:** Taylor, Robert  
**Subject:** IN

As requested.

Thanks!

*Eric E. Bowman*  
Sr. Project Manager  
Generic Communications & Power Uprate Branch  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
301-415-2963  
[Eric.Bowman@nrc.gov](mailto:Eric.Bowman@nrc.gov)

m-237

Valentine, Nicholee

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**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 12:35 PM  
**To:** Shuaibi, Mohammed  
**Cc:** McGinty, Tim; Quay, Theodore; Rosenberg, Stacey  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

Thanks. We have the 2:00 All Hands meeting and I have a 3:00 meeting in preparation for the Commission meeting on Monday, so hope to get this done before then. I believe Tim Frye had already sought input from the other technical Branches there.

Eric

---

**From:** Shuaibi, Mohammed  
**Sent:** Friday, March 18, 2011 12:24 PM  
**To:** Bowman, Eric  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

Thanks Eric. I've sent it to a few people here....so give me a chance to get the okay from them.

---

**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 12:15 PM  
**To:** Shuaibi, Mohammed  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

The latest version is attached. I'll be heading over there after I give it a quick once over.

Thanks!

Eric

---

**From:** Shuaibi, Mohammed  
**Sent:** Friday, March 18, 2011 12:00 PM  
**To:** Bowman, Eric  
**Cc:** Frye, Timothy; Copeland, Douglas; Rosenberg, Stacey  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

Yes...I will wait in my office for you.

---

**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 11:23 AM  
**To:** Shuaibi, Mohammed  
**Cc:** Frye, Timothy; Copeland, Douglas; Rosenberg, Stacey  
**Subject:** RE: IN for Power Reactor Licensees on Japanese Earthquake

Mo,

I still need to run the final version by Eric Leeds, then get Tim McGinty to sign it. The directory shows your room number as 10E63. Is that accurate so I can find you with the final version?

Thanks!

V/R Eric

M-238

Valentine, Nicholee

---

**From:** Bowman, Eric  
**Sent:** Friday, March 18, 2011 4:56 PM  
**To:** Taylor, Robert; Rosenberg, Stacey  
**Cc:** McGinty, Tim; Burnell, Scott; Akstulewicz, Brenda  
**Subject:** RE: Press Release for Information Notice

It's just been declared and is going on the internet site now.

Thanks!

Eric

---

**From:** Taylor, Robert  
**Sent:** Friday, March 18, 2011 4:44 PM  
**To:** Rosenberg, Stacey; Bowman, Eric  
**Subject:** RE: Press Release for Information Notice

Any word on the IN status?

---

**From:** Rosenberg, Stacey  
**Sent:** Friday, March 18, 2011 3:30 PM  
**To:** Taylor, Robert  
**Subject:** RE: Press Release for Information Notice

Thanks so much Rob!!

---

**From:** Taylor, Robert  
**Sent:** Friday, March 18, 2011 3:27 PM  
**To:** Bowman, Eric  
**Cc:** Rosenberg, Stacey; McGinty, Tim; Burnell, Scott; Akstulewicz, Brenda  
**Subject:** FW: Press Release for Information Notice  
**Importance:** High

Eric,

You are a go for issuing the IN. Please reply to all when the IN is out to let us know we can go with the press release. Thanks for your patience.

Regards,  
Rob

---

**From:** Burnell, Scott  
**Sent:** Friday, March 18, 2011 3:24 PM  
**To:** Taylor, Robert; Brenner, Eliot; Akstulewicz, Brenda  
**Subject:** FW: Press Release for Information Notice  
**Importance:** High

Rob;

We're good with ET approval, so tell NRR to push its buttons.

Brenda, please make this final and we'll wait for Rob to tell us NRR has sent the IN out. Thanks.

Scott

---

**From:** Taylor, Robert  
**Sent:** Friday, March 18, 2011 2:04 PM  
**To:** Brenner, Eliot  
**Cc:** Burnell, Scott  
**Subject:** Press Release for Information Notice

Eliot,

Attached in the press release Scott drafted last night. It has been blessed by Ops Center ET and is ready for the next step (your review?). NRR is still driving to issue the IN today.

Regards,  
Rob

## Weaver, Tonna

---

**From:** Clifford, Paul *inr*  
**Sent:** Friday, March 18, 2011 9:06 AM  
**To:** Ruland, William  
**Cc:** Attard, Anthony; Bahadur, Sher; Mendiola, Anthony  
**Subject:** RE: Proposal to handle dried Spent fuel pool.docx

The idea of filling the pool with Argonne is good for the reasons that Bob explains.

For the release of fission product radionuclides when the rods fail, most of the volatiles should have decayed away based on the half-lives listed below. The nuclides shown in red should all but decayed assuming the rods have been in the spent fuel pool for longer than 6 months. This means that distributing K-I pills provides little benefit for the releases associated with SFP (does provide benefit for core releases).

Nuclide	Half-Life
Xe-133	5.243d
Xe-135	9.10h
Xe-135m	15.3m
Xe-137	3.82m
Xe-138	14.1m
Xe-139	39.7s
Kr-85	10.76y
Kr-85m	4.48h
Kr-87	1.27h
Kr-88	2.84h
Kr-89	3.15m
Kr-90	32.3s
I-131	8.04d
I-132	2.28h
I-133	20.8h
I-134	52.6m
I-135	6.57h
Cs-134	2.07y
Cs-137	30.1y

---

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

A realistic proposal given the current situation?

Bill

---

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



Laura,

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

Thanks,  
Vonna

## Weaver, Tonna

---

**From:** Harrison, Donnie *NRR*  
**Sent:** Friday, March 18, 2011 10:46 AM  
**To:** Harrison, Donnie; Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

I've been corrected on one item, so you will get a fix in the next 5 minutes.

---

**From:** Harrison, Donnie  
**Sent:** Friday, March 18, 2011 10:40 AM  
**To:** Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

See attached a slide that explains SAMGs. Let me know if you need more or less.

---

**From:** Gratton, Christopher *NRR*  
**Sent:** Friday, March 18, 2011 9:50 AM  
**To:** Harrison, Donnie; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

Thanks Donnie, to meet our schedule, we need the info to support the 2 pm EDO brief, so we need it in the next hour to prep the slides.

Cg

---

**From:** Harrison, Donnie  
**Sent:** Friday, March 18, 2011 9:47 AM  
**To:** Scott, Michael; Gratton, Christopher; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

I am looking to put together some high level material today on SAMGs.

Donnie

---

**From:** Scott, Michael *RES*  
**Sent:** Thursday, March 17, 2011 5:23 PM  
**To:** Gratton, Christopher; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Harrison, Donnie; Tate, Travis; Boska, John  
**Subject:** FW: Help with Commission brief

Chris/Allen:

My folks tell me that SAMG, as a licensing activity, is best addressed in NRR. Specifically, that Donnie Harrison or Travis Tate are good sources. If they are unable to provide, Tina Ghosh of the RES staff is knowledgeable and can provide the talking points tomorrow morning. But I would ask that you check with Donnie/Travis first (copied this note).

Mike

**From:** Gratton, Christopher  
**Sent:** Thursday, March 17, 2011 4:28 PM  
**To:** Howe, Allen; Collins, Timothy; Tinkler, Charles; Scott, Michael  
**Cc:** Bahadur, Sher; Boska, John; Ruland, William  
**Subject:** RE: Help with Commission brief

What we are looking for is talking points. High level points to support the slide bullet. If you need a copy of the current version of the slides (they are evolving), let me know. The current version as of 4 pm is attached

CG

---

**From:** Howe, Allen *nrk*  
**Sent:** Thursday, March 17, 2011 4:23 PM  
**To:** Collins, Timothy; Tinkler, Charles; Scott, Michael  
**Cc:** Bahadur, Sher; Gratton, Christopher; Boska, John; Ruland, William  
**Subject:** RE: Help with Commission brief

Tim – first of all thanks. Can you get with Chris to talk specifics?

Mike/Scott – can you help with the SAMGs? We are on a very tight timeline here, so high level bullets is what is needed and someone to respond to Qs Monday. Note that this meeting will have media coverage.

Thanks - Allen

---

**From:** Collins, Timothy *nrk*  
**Sent:** Thursday, March 17, 2011 4:19 PM  
**To:** Howe, Allen; Ruland, William  
**Cc:** Bahadur, Sher  
**Subject:** RE: Help with Commission brief

I can help with Mark I containments improvements ... we probably need some help from RES (Charlie Tinkler most likely) for SAMGs

---

**From:** Howe, Allen  
**Sent:** Thursday, March 17, 2011 4:05 PM  
**To:** Ruland, William; Collins, Timothy  
**Cc:** Bahadur, Sher  
**Subject:** Help with Commission brief  
**Importance:** High

Bill – need someone who can work with Chris Gratton/John Boska on one line talking points for Bill Borchardt. Topic areas are SAMGs and Mark 1 containment improvements.

Thanks - Allen

**Weaver, Tonna**

---

**From:** Harrison, Donnie *nrk*  
**Sent:** Friday, March 18, 2011 11:03 AM  
**To:** Boska, John; Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis  
**Subject:** RE: Help with Commission brief

All plants have them, but I do not recall a specific requirement that mandates them (this may come out of the TMI action items way back when). I would have to check. That being said, new reactors must address severe accidents in Chapter 19.

---

**From:** Boska, John *nrk*  
**Sent:** Friday, March 18, 2011 10:52 AM  
**To:** Harrison, Donnie; Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis  
**Subject:** RE: Help with Commission brief

Donnie, are the SAMGs mandatory, do all plants have them? If so, what NRC directive requires the SAMGs?

John Boska  
Indian Point Project Manager, NRR/DORL  
U.S. Nuclear Regulatory Commission  
301-415-2901  
email: [john.boska@nrc.gov](mailto:john.boska@nrc.gov)

---

**From:** Harrison, Donnie *nrk*  
**Sent:** Friday, March 18, 2011 10:40 AM  
**To:** Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

See attached a slide that explains SAMGs. Let me know if you need more or less.

---

**From:** Gratton, Christopher *nrk*  
**Sent:** Friday, March 18, 2011 9:50 AM  
**To:** Harrison, Donnie; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

Thanks Donnie, to meet our schedule, we need the info to support the 2 pm EDO brief, so we need it in the next hour to prep the slides.

Cg

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**From:** Harrison, Donnie  
**Sent:** Friday, March 18, 2011 9:47 AM  
**To:** Scott, Michael; Gratton, Christopher; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
**Subject:** RE: Help with Commission brief

I am looking to put together some high level material today on SAMGs.

Donnie

---

**From:** Scott, Michael *MS*  
**Sent:** Thursday, March 17, 2011 5:23 PM  
**To:** Gratton, Christopher; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Harrison, Donnie; Tate, Travis; Boska, John  
**Subject:** FW: Help with Commission brief

Chris/Allen:

My folks tell me that SAMG, as a licensing activity, is best addressed in NRR. Specifically, that Donnie Harrison or Travis Tate are good sources. If they are unable to provide, Tina Ghosh of the RES staff is knowledgeable and can provide the talking points tomorrow morning. But I would ask that you check with Donnie/Travis first (copied this note).

Mike

---

**From:** Gratton, Christopher  
**Sent:** Thursday, March 17, 2011 4:28 PM  
**To:** Howe, Allen; Collins, Timothy; Tinkler, Charles; Scott, Michael  
**Cc:** Bahadur, Sher; Boska, John; Ruland, William  
**Subject:** RE: Help with Commission brief

What we are looking for is talking points. High level points to support the slide bullet. If you need a copy of the current version of the slides (they are evolving), let me know. The current version as of 4 pm is attached

CG

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**From:** Howe, Allen *ner*  
**Sent:** Thursday, March 17, 2011 4:23 PM  
**To:** Collins, Timothy; Tinkler, Charles; Scott, Michael  
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**Subject:** RE: Help with Commission brief

Tim – first of all thanks. Can you get with Chris to talk specifics?

Mike/Scott – can you help with the SAMGs? We are on a very tight timeline here, so high level bullets is what is needed and someone to respond to Qs Monday. Note that this meeting will have media coverage.

Thanks - Allen

---

**From:** Collins, Timothy *ner*  
**Sent:** Thursday, March 17, 2011 4:19 PM  
**To:** Howe, Allen; Ruland, William  
**Cc:** Bahadur, Sher  
**Subject:** RE: Help with Commission brief

I can help with Mark I containments improvements ... we probably need some help from RES (Charlie Tinkler most likely) for SAMGs

---

**From:** Howe, Allen

**Sent:** Thursday, March 17, 2011 4:05 PM

**To:** Ruland, William; Collins, Timothy

**Cc:** Bahadur, Sher

**Subject:** Help with Commission brief

**Importance:** High

Bill – need someone who can work with Chris Gratton/John Boska on one line talking points for Bill Borchardt. Topic areas are SAMGs and Mark 1 containment improvements.

Thanks - Allen

## Weaver, Tonna

---

**From:** Harrison, Donnie *inRR*  
**Sent:** Friday, March 18, 2011 11:04 AM  
**To:** Ghosh, Tina; Boska, John; Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Santiago, Patricia; Ruland, William; Tate, Travis  
**Subject:** RE: Help with Commission brief

I believe Tina is correct.

---

**From:** Ghosh, Tina *RES*  
**Sent:** Friday, March 18, 2011 10:57 AM  
**To:** Boska, John; Harrison, Donnie; Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Santiago, Patricia; Ruland, William; Tate, Travis  
**Subject:** RE: Help with Commission brief

All US plants have SAMGs.

To my knowledge (and Donnie can correct me if I'm wrong), the development and deployment of SAMGs ended up as an industry voluntary initiative.

We do not regulate SAMGs – i.e., NRC never reviewed final SAMGs, we don't inspect them (though we did a couple of pilot plant reviews), and I'm not sure to what extent/how often licensees train their staff on SAMGs. The notable exception of course is that set of SAMGs that became part of b5b measures that are now regulated.

Best,  
Tina

S. Tina Ghosh, Ph.D.  
Senior Program Manager  
Division of Systems Analysis  
Office of Nuclear Regulatory Research  
U.S. Nuclear Regulatory Commission  
Mail Stop: C-3A07M  
Washington, DC 20555  
Phone: 301-251-7984

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**From:** Boska, John *inRR*  
**Sent:** Friday, March 18, 2011 10:52 AM  
**To:** Harrison, Donnie; Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis  
**Subject:** RE: Help with Commission brief

Donnie, are the SAMGs mandatory, do all plants have them? If so, what NRC directive requires the SAMGs?

John Boska  
Indian Point Project Manager, NRR/DORL  
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301-415-2901  
email: [john.boska@nrc.gov](mailto:john.boska@nrc.gov)

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**Sent:** Friday, March 18, 2011 10:40 AM  
**To:** Gratton, Christopher; Scott, Michael; Howe, Allen  
**Cc:** Ghosh, Tina; Santiago, Patricia; Ruland, William; Tate, Travis; Boska, John  
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See attached a slide that explains SAMGs. Let me know if you need more or less.

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**From:** Gratton, Christopher *MDR*  
**Sent:** Friday, March 18, 2011 9:50 AM  
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Bill – need someone who can work with Chris Gratton/John Boska on one line talking points for Bill Borchardt. Topic areas are SAMGs and Mark 1 containment improvements.

Thanks - Allen

## Weaver, Tonna

---

**From:** Kokajko, Lawrence | *NMSS*  
**Sent:** Friday, March 18, 2011 11:24 AM  
**To:** Ruland, William  
**Cc:** Haney, Catherine; Dorman, Dan; Leeds, Eric; Mohseni, Aby; Davis, Jack; Cao, Tianqing; Hill, Brittain; McCartin, Timothy; Compton, Keith; Rubenstone, James  
**Subject:** Specialized support for Japanese event

Bill:

Cathy asked me to provide you names of those who have specialized expertise that might be useful in responding to the Japanese event on an as needed bases. These names are also on the list provided to the offices by Beth Doolittle earlier.

Dr. Tianqing Cao – formerly a State of California seismologist, and currently is NMSS/HLWRS senior seismologist. He resides in CA, but is an NRC employee. He could be consulted for seismology and earthquake hazards.

Dr. Brittain Hill – formerly of SwRI, and currently is NMSS/HLWRS SLS for Repository Science. He has experience in plume modeling, GIS analysis, knowledge of seismology and extreme natural events.

Mr. Timothy McCartin – NMSS/HLWRS SLS for total system performance assessment, including movement of radioactive material in the environment and dose assessment.

Dr. Keith Compton – NMSS/HLWRS senior performance assessment analyst with environmental radiation dose assessment experience.

Dr. James Rubenstone – NMSS/HLWRS branch chief who is an earth science specialist with GIS analysis and earthquake and natural hazards expertise.

Lawrence Kokajko, Director, HLWRS/NMSS

## Weaver, Tonna

---

**From:** Khanna, Meena *NRR*  
**Sent:** Friday, March 18, 2011 12:11 PM  
**To:** Scales, Kerby; Titus, Brett; Nguyen, Quynh  
**Cc:** Hiland, Patrick; Skeen, David; Wilson, George; Thomas, George; Farzam, Farhad  
**Subject:** RE: Eric's Question regarding Safety/Improvements of Containments (Structural)

**Importance:** High

Kerby, Brett, and Quynh,

Pls. contact Bob Dening for details regarding the Mark I containment modifications.

To our knowledge, there have not been any structural modifications made to the U.S. containments. However, the staff has assurance of the structural integrity of containments. Details of the basis of our assurance that the containments are safe are provided below:

- Containment structures are designed and constructed to stringent regulatory requirements and quality standards.
- Containment structures are designed to accommodate worst-case accident pressures and temperatures, without exceeding the design leakage rate, and with sufficient margin to account for uncertainties.
- Throughout the service life, the structural and leak-tight integrity of containment structures are monitored and managed through preservice structural integrity test, periodic leakage-rate testing, and periodic inservice inspection programs.
- Degradation issues identified are communicated to industry through generic communications.
- Some licensees of operating reactors have undertaken voluntary evaluations of ultimate capacity of containment structures under severe accidents, which indicates reasonable margins above design basis. This ultimate capacity assessment and aircraft impact assessment are mandatory for new reactors.

Additional details are provided below regarding regulations associated with containment integrity:

- During the original licensing of the plant, the containment undergoes a structural integrity test using 1.15 times the accident design pressure. The basic purpose of a structural proof test is to substantiate that the structure can, in fact, carry the pressure load for which it is designed. By subjecting the structure to some degree of overpressure, the test can show that the containment structure has that margin over design pressure.
- In accordance with the requirements of Part 50, Appendix J, the containment structures are subjected to periodic pressure tests to ensure containment leak-tight integrity.
- In accordance with 10 CFR 50.55a requirements, the containment concrete and metal components are subjected to periodic visual inspections and surveillance in accordance with ASME Code Section XI, subsections IWE and IWL.

Pls. contact us if you need any further information.

Thanks,  
Meena

**From:** Scales, Kerby *NRR*  
**Sent:** Friday, March 18, 2011 10:59 AM

*m-245*

**To:** Khanna, Meena  
**Cc:** Wilson, George; Hiland, Patrick; Skeen, David  
**Subject:** FW:  
**Importance:** High

FYI.

---

**From:** Titus, Brett *mr*  
**Sent:** Friday, March 18, 2011 10:53 AM  
**To:** Nguyen, Quynh; Scales, Kerby; Heida, Bruce  
**Cc:** Cusumano, Victor; Meighan, Sean  
**Subject:** RE:  
**Importance:** High

The GL 88-20 is all about SAMGs which is DRA's side of the house. The other 89-16 document we believe is also a GL, NOT an IN. IN 89-16 is about Voltage Drops in DC Systems... GL 89-16 deals with hardened vents for Mark I containments which is primarily a structural issue.

We've gone through our records for other examples that would help your cause in Containment space, but nothing fits the bill.

Brett Titus  
301-415-3075

---

**From:** Nguyen, Quynh *mr*  
**Sent:** Friday, March 18, 2011 10:20 AM  
**To:** Titus, Brett; Scales, Kerby  
**Cc:** Cusumano, Victor; Meighan, Sean  
**Subject:**

<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/gen-letters/1988/gl88020.html>

GL 88-20

Supplements 1 and 3 in particular?

Need to know what improvements (or features?) that make the Containments better/safer? Don't know how big these are, but summarize for Eric (feel free to write a key bullet and then mark up like "See Paragraph A" or whatever for details.

Make sense?

Thanks,  
Q

PS Eric says... "more hands make lighter work" or something?

**Weaver, Tonna**

---

**From:** Glitter, Joseph *mgk*  
**Sent:** Friday, March 18, 2011 12:29 PM  
**To:** Ruland, William  
**Cc:** Meighan, Sean  
**Subject:** Names of people to consider from DORL

Category 1: People skills + specialized engineering expertise: Pete Bamford (extensive reactor engineering/ops experience), John Hughey (cooling water systems expert: pumps, valves, and pipes)  
Category 2: People skills + general engineering background: James Polickoski, Rich Guzman, Chris Gratton, Stephen Campbell (SRI at Fermi for 7 years)  
Category 3: HP/protective measures: Sean Meighan  
Category 4: Structural: Kaly Kalyanam  
Category 5: Bomb damage:

Joseph G. Glitter  
Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation

*m-246*

## Weaver, Tonna

**From:** Ruland, William, *WR*  
**Sent:** Friday, March 18, 2011 1:42 PM  
**To:** Flory, Shirley  
**Cc:** Gray, Kathy; Holian, Brian; Cunningham, Liza  
**Subject:** RE: Confirmation is requested for RST Director Schedule - 3/18-3/25

I can do all the days I'm assigned.

Brian Holian asked if I could swap with him. I can't swap.

Bill Ruland

---

**From:** Flory, Shirley, *RS*  
**Sent:** Friday, March 18, 2011 8:53 AM  
**To:** Gray, Kathy; Dudes, Laura; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William  
**Cc:** Holian, Brian; Hiland, Patrick; Thorp, John; Thomas, Eric; Cunningham, Liza  
**Subject:** RE: Confirmation is requested for RST Director Schedule - 3/18-3/25

Kathy/Liza:

I just spoke with Jennifer Uhle and she confirms she can work the below schedule.

Thanks – Shirley *RS* 301-251-7400

---

**From:** Gray, Kathy, *WR*  
**Sent:** Thursday, March 17, 2011 3:30 PM  
**To:** Dudes, Laura; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William  
**Cc:** Holian, Brian; Hiland, Patrick; Thorp, John; Thomas, Eric; Cunningham, Liza; Flory, Shirley; Gray, Kathy  
**Subject:** Confirmation is requested for RST Director Schedule - 3/18-3/25  
**Importance:** High

Please confirm that you are able to provide coverage in the Ops Center, as the RST Director, as follows:

### March 18 – March 25, 2011

Shift	3/18 (Fri)	3/19 (Sat)	3/20 (Sun)	3/21 (Mon)	3/22 (Tues)	3/23 (Wed)	3/24 (Thur)	3/25 (Fri)
7am–3pm	(Laura Dudes)	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Pat Hiland
3pm– 11pm	(Bill Ruland)	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen	Bill Ruland	Bill Ruland	Bill Ruland
11pm– 7am	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian	Brian Holian	Brian Holian	Brian Holian

Pat Hiland and Brian Holian – already confirmed - no response needed.

Thanks very much.

*Kathy A. Gray*

Information Management Asst.

Operating Experience Branch, DIRS/NRR

Rm. O-7F04, Phone: 301-415-1166

[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)

**Weaver, Tonna**

---

**From:** Meighan, Sean *MSK*  
**Sent:** Friday, March 18, 2011 2:18 PM  
**To:** Jones, Steve  
**Cc:** Ruland, William  
**Subject:** RE: Spent Fuel Pool Drainage Mitigation (OUO-Security Related Information)

Steve:

Thank you very much for this information. I honestly appreciate your willingness to get this info together to support Japan efforts.

Very Respectfully  
Sean

---

**From:** Jones, Steve *MSK*  
**Sent:** Friday, March 18, 2011 1:10 PM  
**To:** Meighan, Sean  
**Subject:** Spent Fuel Pool Drainage Mitigation (OUO-Security Related Information)

Sean,

Here are two reports on spent fuel pool drainage mitigation. The Sandia Report is much more detailed, but it is OUO-Security Related Information. The public executive summary of the NAS study is also attached. A full public (redacted) report is available for purchase at:

<http://www.nap.edu/openbook.php?isbn=0309096472>

However, the complete report is classified.

Both documents focus on preplanned actions to mitigate events that partially or fully drain a spent fuel pool. The only applicable mitigative action for the situation in Japan is again spray. The Sandia Report provides detail on spray characteristics and how effective it would be in cooling fuel of various ages.

Steve

Steven R. Jones  
Sr. Reactor Systems Engineer  
NRR/DSS/SBPB  
301-415-2712

*m-248*



**From:** Nuclear Plant Journal [anu@goinfo.com]  
**Sent:** Friday, March 18, 2011 2:52 PM  
**To:** Purciarello, Gerard  
**Subject:** NPJ March 18, 2011 Japan Update

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## Nuclear Plant Journal

An International Publication  
Published in the United States

### Nuclear Plant Journal E-News

**Japan Update**  
**March 18, 2011**

Dear GERARD,

In this issue of NPJ E-News you'll find an update of the Fukushima Nuclear Plants in Japan. Information is current as of March 18, 2011, 13:00 CDT. All items are directly quoted, without any editing.

#### In this issue

Chief Cabinet Secretary

TEPCO

JAIF

#### Chief Cabinet Secretary's Update

Operation for filling the spent fuel pool with water at Unit-3 was conducted yesterday. It seems that water reached the pool. However, how much is unknown. Same operation will be conducted today.

- Operation for filling the spent fuel pool with water from the ground will be conducted at unit-1 also, if it doesn't affect the operation for unit-3.
- Operation for installing cables and distribution system to the power plant to provide AC power from the grid is going on.
- [Click for more...](#)

#### Status Updates of TEPCO Facilities

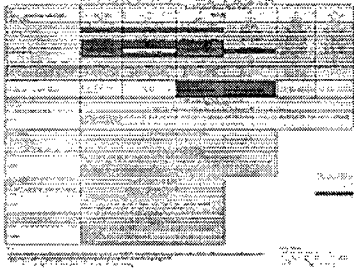
On March 18th, regarding the spent fuel in the common spent fuel pool, we have confirmed that the water level of the pool is secured. A detailed inspection is under preparation.

On March 17th, we patrolled buildings for dry casks and found no signs of abnormal situation for the casks by visual observation. A detailed inspection is under preparation.

M-249

Since March 12th, we had been preparing measures for reducing the pressure of reactor containment vessels (partial discharge of air containing radioactive materials to outside), but on March 17th, we released such preparation in all Units.

[Click for more...](#)



#### **JAIF Status Update**

A [single-page PDF document](#) provides a simple summary of each of the units at Fukushima nuclear power plants.

#### **Quick Links...**

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#### **Contact Information**

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## Weaver, Tonna

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**From:** Gardocki, Stanley *nrk*  
**Sent:** Friday, March 18, 2011 3:11 PM  
**To:** Purciarello, Gerard  
**Subject:** what I could find, a little old though

Due to the Tohoku-Taiheiyu-Oki Earthquake which occurred on March 11th 2011, TEPCO's facilities including our nuclear power stations have been severely damaged. We deeply apologize for the anxiety and inconvenience caused.

Below is the status of TEPCO's major facilities.  
\*new items are underlined

### [Nuclear Power Station]

#### Fukushima Daiichi Nuclear Power Station:

**Units 1 to 3: shutdown due to earthquake**

(Units 4 to 6: outage due to regular inspection)

\* The national government has instructed to evacuate for those local residents within 20km radius of the site periphery and to remain indoors for those local residents between 20km and 30km radius of the site periphery.

#### \* Unit 1

The explosive sound and white smoke was confirmed near Unit 1 when the big quake occurred at 3:36pm, March 12th. We have started injection of sea water at 8:20 pm and then boric acid into the reactor afterwards.

#### \* Unit 2

At 1:25 pm, March 14th, since the Reactor Core Isolation Cooling System has failed, it was determined that a specific incident stipulated in article 15, clause 1 of Act on Special Measures Concerning Nuclear Emergency Preparedness occurred (failure of reactor cooling function). At 5:17 pm, while the water level in the reactor reached the top of the fuel rod, we have restarted the water injection with the valve operation. At approximately 6:14 am, March 15th, the abnormal sound was confirmed near the suppression chamber and the pressure inside the chamber decreased afterwards. It was determined that there is a possibility that something happened in the suppression chamber. While sea water injection to the reactor continued, TEPCO employees and workers from other companies not in charge of injection work started tentative evacuation to a safe location. Sea water injection to the reactor is still under operation.

#### \* Unit 3

At 6:50 am, March 14th, while water injection to the reactor was under operation, the pressure in the reactor containment vessel increased to 530 kPa. As a result, at 7:44 am, it was determined that a specific incident stipulated in article 15, clause 1 occurred (abnormal increase of the pressure of reactor containment vessel). Afterwards, the pressure has gradually decreased (as of 9:05 am, 490 kPa).

At approximately 11:01 am, March 14th, an explosion followed by white smoke occurred near Unit 3. 4 TEPCO employees and 3 workers from other companies (all of them are conscious) have sustained injuries and they were already dispatched to the hospital by ambulances.

As the temperature of water in the spent fuel pool rose, spraying water by

helicopters with the support of the Self Defense Force was considered, however the works on March 16th was cancelled.

At 6:15 am, March 17th, the pressure of the Suppression Chamber temporally increased, but currently it is stable in a certain range. Monitoring will be continued.

In order to cool spent fuel pool, water discharge by helicopters has been conducted on March 17th with the cooperation of Self-Defense Force.

At approximately past 7:00 pm, March 17th, Self-Defense Forces and the police had started water discharge by water cannon trucks upon our request for the cooperation. At 8:09 pm, March 17th, they had finished water discharge.

\* Unit 4

At approximately 6:00 am, March 15th, an explosive sound occurred and the damage in the 5th floor roof of Unit 4 reactor building was confirmed. At 9:38 am, the fire near the north-west part of 4th floor of Unit 4 reactor building was confirmed. At approximately 11:00 am, TEPCO employee confirmed that the fire was off.

At approximately 5:45 am, a TEPCO employee discovered a fire at the northwest corner of the Nuclear Reactor Building. TEPCO immediately reported this incident to the fire department and the local government and proceeded with the extinction of fire. At approximately 6:15 am, TEPCO staff confirmed at the site that there are no signs of fire.

\* On March 18th, regarding the spent fuel in the common spent fuel pool, we have confirmed that the water level of the pool is secured. A detailed inspection is under preparation.

\* common spent fuel pool: a spent fuel pool for common use set in a separate building in a plant site in order to preserve spent fuel which are transferred from the spent fuel pool in each Unit building.

\* On March 17th, we patrolled buildings for dry casks and found no signs of abnormal situation for the casks by visual observation. A detailed inspection is under preparation.

\* dry cask: a measure to store spent fuel in a dry storage casks in storages. Fukushima Daiichi Nuclear Power Station started to utilize the measure from August 1995.

\* We will continuously endeavor to securing safety, and monitoring of the surrounding environment.

**Fukushima Daiichi Nuclear Power Station:**

**Units 1 to 4: shutdown due to earthquake**

\* The national government has instructed evacuation for those local residents within 10km radius of the periphery.

\* In order to achieve cold shutdown, reactor cooling function was restored and cooling of reactors was conducted. As a result, all reactors achieved cold shutdown: Unit 1 at 5:00 pm, March 14th, Unit 2 at 6:00 pm, March 14th, Unit 3 at 0:15 pm, March 12th, Unit 4 at 7:15 am, March 16th.

\* Since March 12th, we had been preparing measures for reducing the pressure of reactor containment vessels (partial discharge of air containing radioactive materials to outside), but on March 17th, we released such preparation in all Units.

\* (Unit 1)

As it is confirmed that the temperature of the Emergency Equipment Cooling Water System \*1 has increased, at 3:20 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure

was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 4:25 pm, March 15th, after replacing the power facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

\* (Unit 4)

As it is confirmed that the pressure at the outlet of the pumps of the Emergency Equipment Cooling Water System\*1 has been decreased, at 8:05 pm, March 15th, we stopped the Residual Heat Removal System (B) for the inspection. Subsequently, failure was detected in the power supply facility associated with the pumps of the Emergency Equipment Cooling Water System. At 9:25 pm, March 15th, after replacing the relevant facility, the pumps and the Residual Heat Removal System (B) have been reactivated.

\*1: emergency water system in which cooling water (pure water) circulates which exchanged the heat with sea water in order to cool down bearing pumps and/or heat exchangers etc.

#### **Kashiwazaki Kariwa Nuclear Power Station:**

Units 1, 5, 6, 7: normal operation

(Units 2 to 4: outage due to regular inspection)

#### **[Thermal Power Station]**

Hirono Thermal Power Station Units 2 and 4: shutdown due to earthquake

Hitachinaka Thermal Power Station Unit 1: shutdown due to earthquake

Kashima Thermal Power Station Units 2, 3, 5, 6: shutdown due to earthquake

Higashi-Ohgishima Thermal Power Station Unit 1: shutdown due to earthquake

#### **[Hydro Power Station]**

\* All the stations have been restored.

#### **[Transmission System, etc.]**

All substation failed due to the earthquake have been restored.

#### **[Blackout in TEPCO's Service Area]**

Total of approximately 2,600 households are out of power (as of 9:00PM, March 17, 2011).

Tokyo: 0

Kanagawa Pref.: 0

Tochigi Pref.: 0

Chiba Pref.: 0

Saitama Pref.: 0

Gunma Pref.: 0

Ibaraki Pref.: 2,562

Yamanashi Pref.: 0

Shizuoka Pref.: 0 (east of Fuji River)

#### **[Supply and Demand Status within TEPCO's Service Area to Secure Stable Power Supply]**

Backup supply from Shinshinano Conversion Station: 600MW

Backup supply from Sakuma Conversion Station: 300MW

Backup supply from Higashi Shimizu Conversion Station: 100MW

Backup supply from Kitahon Interconnection Facility: 600MW

Considering the critical balance of our power supply capacity and expected power demand forward, in order to avoid unexpected blackout, TEPCO has implemented rolling blackout (planned blackout alternates from one area to another) since yesterday. We will make our utmost to secure the stable power supply as early as possible.

For customers who will be subject to rolling blackout, please be prepared for the announced blackout periods. Also for customers who are not subject

to blackouts, TEPCO appreciates your continuous cooperation in reducing electricity usage by avoiding using unnecessary lighting and electrical equipment.

**[Others]**

Please do NOT touch cut-off electric wires.

In order to prevent fire, please make sure to switch off the electric appliances such as hair drier and to shut down the breaker of distribution board when you leave your house.

For the customer who has in-house power generation, please secure fuel for generator.

**From:** NRC Announcement [nrc.announcement@nrc.gov]  
**Sent:** Friday, March 18, 2011 3:48 PM  
**To:** NRC Announcement  
**Subject:** Event: NRC Viewing of the Commission Meeting on the Japan Event

## NRC Daily Announcements

MAXIMIZE YOUR  
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The Federal Employee  
Viewpoint Survey  
April 25 - May 20

**Friday March 18, 2011 -- Headquarters Edition**

◆ **Event: NRC Viewing of the Commission Meeting on the Japan Event**

### **Event: NRC Viewing of the Commission Meeting on the Japan Event**

On Monday, March 21, 2011, the NRC will hold a Commission Meeting to address the ongoing nuclear events at the Fukushima Nuclear Reactor site in Japan. The meeting is scheduled to convene at 9 a.m. in the One White Flint North (OWFN) Commission Hearing Room. Interested staff is encouraged to view the proceedings at one of the following locations:

- Two White Flint North (TWFN) auditorium
- TWFN exhibit area
- Cable Channel 46 and 47 throughout the White Flint North Complex
- TWFN Building O-2 B5
- OWFN Building - O-3 B4
- Executive Boulevard Building - 1B15
- Twinbrook Building - 5E01
- Church Street Building - 2C19
- Gateway Building - 04B2
- Region I\*
- Region II\*
- Region III\*
- Region IV\*
- Technical Training Center\*

\*Regional and TTC staff will be notified of the VTC viewing location by their VTC coordinator.

For more information about event viewing locations, contact Jason Wright at 415-5446 or Christine Kundrat at 415-6130.

TOP

(2011-03-18 00:00:00.0)

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**Weaver, Tonna**

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**From:** Gardocki, Stanley *ms*  
**Sent:** Friday, March 18, 2011 3:51 PM  
**To:** Purciarello, Gerard  
**Subject:** good web site, pictures of the reactor buildings also

<http://www.theglobeandmail.com/news/world/asia-pacific/devastating-photos-of-the-aftermath-of-japans-disasters/article1939569/>

*m-252*



Last updated Sunday, Mar. 13, 2011 3:33PM EDT

Photos from the day after Japan's strongest recorded earthquake and the devastating tsunami



(YOMIURI/REUTERS)

A ship is swept by waves after a tsunami and earthquake in Kamaishi City in Iwate Prefecture Mar

## Weaver, Tonna

**From:** Grobe, Jack *mr*  
**Sent:** Friday, March 18, 2011 6:18 PM  
**To:** Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric  
**Cc:** Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Giitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Lubinski, John  
**Subject:** Re: Support and Logistics for the Japan Commission Meeting

Oops - I made a mistake. Cathy Haney will be in France so Trish Milligan should also be expected to cover Radiological Consequence Assessment as well as Emergency Preparedness. Thanks.

Jack Grobe, Deputy Director, NRR

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**From:** Grobe, Jack *mr*  
**To:** Sheron, Brian; Uhle, Jennifer; Wiggins, Jim; Evans, Michele; Miller, Charles; Haney, Catherine; Dorman, Dan; Moore, Scott; Johnson, Michael; Holahan, Gary; Leeds, Eric; Grobe, Jack; Boger, Bruce; Brenner, Eliot; Hayden, Elizabeth; Schmidt, Rebecca; Doane, Margaret; Mamish, Nader; Dyer, Jim; Brown, Milton; Hackett, Edwin; Piccone, Josephine; Wilson, George; Harrison, Donnie; Kammerer, Annie; Collins, Timothy; Milligan, Patricia; Salley, MarkHenry; Bowman, Eric  
**Cc:** Borchardt, Bill; Weber, Michael; Virgilio, Martin; Ash, Darren; Burns, Stephen; Vietti-Cook, Annette; Andersen, James; Giitter, Joseph; Howe, Allen; Nelson, Robert; McGinty, Tim; Blount, Tom; Holian, Brian; Gallagher, Johanna; Brown, Milton; Cheok, Michael; Lee, Samson; Hiland, Patrick; Skeen, David; Ruland, William; Sheron, Brian; Lubinski, John  
**Sent:** Fri Mar 18 18:06:05 2011  
**Subject:** Support and Logistics for the Japan Commission Meeting

Ladies and Gents,

We want to ask your support for several aspects of the Commission meeting on Monday morning regarding the situation in Japan.

First, the only staff at the Commission table will be Bill Borchardt.

In the well, we anticipate having the two available DEDOs (I understand that Mike Weber will be on shift) and one representative from the front office of each of the following offices (either the office director or deputy)

NRR, NRO, NSIR, RES, NMSS, FSME, OPA, OCA, OIP, CFO, ACRS

Annette Vietti-Cook has indicated that she will reserve the "quadrant" of seats nearest the microphone (on the left side of the room as the Commissioners would see it) for NRC staff. As I understand it, the right side will be for reporters and the central area will be open for general public.

In the area for NRC staff, there will be 39 seats.

From a staff perspective, we would like the highest priority available for the following individuals whom Bill will call upon to answer (on camera) any more detailed questions on the indicated subjects. Bill will have the list and ask for this person to respond to any question where he wants more detailed support. Some of these folks will likely already be in the well. The microphone has been moved to allow television camera access to any individual answering questions.

Protection Against Natural Disasters – Gary Holahan  
Station Blackout – George Wilson  
Severe Accident and Spent Fuel Pool Accident Progression – Jennifer Uhle  
Radiological Consequence Analysis – Cathy Haney  
Hydrogen Fires and Explosions – MarkHenry Salley  
Public Stakeholder Outreach – Eliot Brenner  
State Outreach – Josie Piccone  
International Interactions – Margie Doane  
10CFR50.54(hh)(2)/B.5.b – Eric Bowman  
Seismic Issues, Tsunami Issues, GI-199 – Annie Kammerer  
Mark I containment issues – Tim Collins  
Emergency Preparedness – Trish Milligan  
Emergency Operating procedures/SAMGs – Donnie Harrison

We understand that these people are available for the meeting. If not, please coordinate with Allen Howe to provide an equivalently capable individual.

That leaves 26 seats in the staff section for TAs and other Division Directors and above who should attend the meeting.

SECY is arranging for an e-mail to be sent out to the staff to indicate where televisions are available for other interested staff to observe the Commission meeting.

Thanks for your support.

Jack Grobe, Deputy Director  
for Engineering and Corporate Support  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

## Weaver, Tonna

**From:** JAPAN ASSISTANCE ALERT [JAPAN\_ASSISTANCE\_ALERT@USAID.GOV]  
**Sent:** Friday, March 18, 2011 9:25 PM  
**Subject:** 03.18.11 - USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #8  
**Attachments:** 03.18.11 - USAID-DCHA Japan Earthquake and Tsunami Fact Sheet #8.pdf; 03.18.11 - Japan Earthquake and Tsunami Program Map.pdf

Please find attached and pasted below the USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #8 and accompanying map, both dated March 18, 2011. These documents have been approved for public use.

If you experience formatting issues in the text below, please refer to the attached document.

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



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FROM THE AMERICAN PEOPLE

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

### *Japan – Earthquake and Tsunami*

Fact Sheet #8, Fiscal Year (FY) 2011

March 18, 2011

*Note: The last fact sheet was dated March 17, 2011.*

#### KEY DEVELOPMENTS

- The earthquake and tsunami have resulted in 6,911 deaths and left 10,692 people missing, as reported by the Government of Japan (GoJ) on March 18. The disasters have damaged or destroyed more than 92,000 buildings and 1,200 roads.
- According to the International Atomic Energy Agency (IAEA), the event at the Fukushima Daiichi plant has been raised from level four to level five on the IAEA International Nuclear and Radiological Event Scale—a level equivalent to the 1979 Three Mile Island incident in the U.S. At present, the U.N. World Health Organization has reported no significant risk of radiation exposure for areas outside of Japan.
- The urban search and rescue (USAR) teams from Fairfax County, Virginia, and Los Angeles County, California, concluded their last search and rescue assignment on March 17. Following this, officials from the Osaka Fire Department—the coordinator of international USAR efforts on behalf of the GoJ in Ofunato and Kamaishi cities—indicated that no further assignments are forthcoming from the GoJ. The U.S. USAR teams are coordinating demobilization plans with the local prefecture, Japan's Ministry of Foreign Affairs, and the U.S. Embassy in Tokyo.

NUMBERS AT A GLANCE <sup>[1]</sup>		SOURCE
Confirmed Deaths	6,911	GoJ NPA <sup>[2]</sup> – March 18, 2011
Missing Persons	10,692	GoJ NPA – March 18, 2011
Number of People in Evacuation Centers	390,000	JSDF <sup>[3]</sup> – March 18, 2011

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

USAID/OFDA Assistance for the Japan Earthquake and Tsunami \$7,199,434

Total Planned Assistance from USAID for the Japan Earthquake and Tsunami..... \$8,000,000

DoD Humanitarian Assistance for the Japan Earthquake and Tsunami..... \$7,140,900

Total USG Assistance for the Japan Earthquake and Tsunami..... \$14,340,334

#### CONTEXT

- On March 11 at 0046 hours Eastern Standard Time (EST), or 1446 hours Japan Standard Time (JST), a magnitude 9.0 earthquake occurred east of Honshu—the largest and main island of Japan—at a depth of approximately 15 miles. The epicenter of the earthquake was located 80 miles east of Sendai, the capital of Miyagi Prefecture, and 231 miles northeast of Tokyo. The

m-254

earthquake generated a large tsunami that resulted in additional fatalities and damage, particularly in Miyagi, Fukushima, and Iwate prefectures.

- On March 11, U.S. Ambassador John V. Roos declared a disaster due to the effects of the earthquake and tsunami in Japan. USAID/OFDA provided an initial \$100,000 through the U.S. Embassy in Tokyo to assist with local relief efforts. USAID deployed a Disaster Assistance Response Team (DART)—including two USAR teams from Fairfax County, Virginia, and Los Angeles County, California—to support Japanese emergency response efforts. In addition, USAID activated a Response Management Team (RMT) in Washington, D.C.
- InterAction, an alliance of U.S.-based non-governmental organizations (NGOs), maintains a list of organizations accepting donations for the Japanese earthquake response. The American Red Cross (AmRC) accepts donations of \$10 through text messages of “redcross” sent to 90999.

#### **USAR Operations**

- On March 18, the U.S. USAR teams transferred nearly \$145,000 in equipment to the Ofunato fire department to assist with local efforts. The equipment includes 4 zodiac boat kits—containing boats, motor, fuel tanks, and paddles—16 kerosene heaters, 160 cots, and 160 sleeping bags.
- The DART received reports that JSDF—the official lead for GoJ emergency rescue efforts—is transitioning from search and rescue operations to life-sustaining efforts in some or all of Miyagi and Iwate prefectures on March 18. A week following the earthquake and tsunami, little hope for recovery of live victims remains due to the low temperatures in Japan and the lack of survivable spaces in collapsed buildings in the teams’ assigned locations.

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

- According to the U.N. Office for the Coordination of Humanitarian Affairs (OCHA), logistics are the biggest challenge at this stage of the emergency. GoJ authorities have mobilized a large amount of aid, but fuel shortages resulting from a breakdown of six of nine oil factories in Kanto and Tohoku areas and a lack of transport vehicles are hindering the timely delivery of relief supplies. To address fuel shortages, the GoJ is redirecting 38,000 kiloliters of fuel per day—the average daily demand before the tsunami—from oil refineries in Hokkaido and western Japan.
- On March 16, the GoJ announced a plan for managing and delivering food and relief items to evacuation centers in affected areas, according to the DART. Under the GoJ plan, evacuation centers will send requests for assistance to municipalities, and the prefecture will consolidate the requests and liaise with the national government to request relief items and food from the private sector and other municipalities. The relief supplies will then be consolidated at 50 JSDF sites throughout Japan for distribution by the JSDF and municipalities.
- DoD is assisting relief efforts by providing transportation and other logistical support. The DART is working to vet local prefectures’ requests for assistance and convey them to U.S. Forces-Japan (USFJ) for coordination with JSDF for transportation and onward distribution. Sufficient relief commodities are available in-country, and the GoJ has not requested in-kind contributions.
- In close coordination with JSDF, DoD continues to facilitate the transport of in-kind assistance. On March 18, DoD personnel conducted multiple relief missions in affected areas, including the delivery of water, food, and toiletries to approximately 350 people in Karakuwa town in Miyagi Prefecture. As of March 17, DoD personnel had delivered more than 58,000 liters of water and 4,200 lbs of food and flown 197 helicopter and 202 aircraft missions in support of humanitarian assistance efforts in Japan. To date, DoD has provided an estimated \$7.1 million in humanitarian assistance.
- In response to an official request from the GoJ, USAID/OFDA is sending 10,000 personal protective equipment (PPE) kits to Japan for use in recovery clean-up. The airlift containing the PPE departed the U.S. on March 18.

#### **Humanitarian Assessments**

- On March 18, DART staff conducted a ground and aerial assessment of tsunami-affected areas in Miyagi Prefecture. The DART visited two evacuation sites near Minami Sanriku, one of the hardest hit towns, that housed 300 and 1,500 people. According to international media, the tsunami destroyed approximately 95 percent of the buildings in the town and left between 8,000 and 10,000 individuals missing.
- DART staff observed cramped conditions at the centers visited but no life-threatening conditions. Affected individuals continue to receive food, water, blankets, and medical and other supplies through a variety of sources. Authorities in both locations reported receiving a steady stream of assistance from various sources, including the central and prefecture governments, surrounding communities, the JSDF, and the private sector. DART staff noted that the system for submitting requests for assistance and receiving goods appears well-organized and coordinated among the various levels of the GoJ. Local officials at the evacuation centers noted that transportation of the goods from the central or prefectural government to the sites remains a significant challenge due to limited amount of fuel. USFJ is coordinating with the GoJ to ensure the availability of fuel without negatively impacting the domestic fuel economy.

- DART staff observed health clinics in both of the evacuation centers visited, with no significant increases in communicable diseases recorded as a result of the tsunami. Médecins Sans Frontières/Japan staff at the larger evacuation site reported adequate health care, surveillance systems, and medical stocks, with the most commonly reported health issues including common colds, respiratory infections, and chronic conditions. DART staff noted that toilet coverage appeared low at the larger evacuation site; however, Japanese officials noted that additional latrines are currently under construction to meet needs.
- According to evacuation center officials, individuals in affected areas also continue to reside in their houses, where possible. While these individuals have been largely self-sufficient to date, they are traveling to the centers to obtain food and other supplies and returning to their houses after receiving supplies.

#### **Health**

- As reported by OCHA, the GoJ is preparing to receive medical help from overseas for the thousands injured by the earthquake and tsunami. Although doctors without Japanese medical licenses cannot legally practice medicine in Japan, the GoJ Health Ministry has sent a notice to local governments in Iwate, Miyagi, and Fukushima prefectures indicating that foreign doctors may administer minor medical procedures. The GoJ has received offers from countries looking to assist Japan in the medical field.

#### **Humanitarian Coordination and Information Management**

- The DART and the RMT continue to link U.S. private and public entities with USG assets to support GoJ emergency response efforts. The RMT assists in these efforts by tracking pledges of financial and in-kind support from major U.S. businesses, as well as facilitating linkages between corporations with technical expertise and other U.S. agencies also responding to the disasters in Japan.
- As of March 17, approximately 13 international or foreign NGOs were working through local partners to provide assistance in Japan's tsunami- and earthquake-affected areas, according to OCHA. Due to current logistical limitations, the GoJ requests that foreign NGOs wait until the situation improves before attempting to conduct activities in Japan.
- According to OCHA, Japanese NGOs are working in northern Japan to bring assistance to affected populations. More Japanese NGOs are expected to arrive in the affected areas in the coming days.

### **USAID HUMANITARIAN ASSISTANCE TO JAPAN**

<b>Implementing Partner</b>	<b>Activity</b>	<b>Location</b>	<b>Amount</b>
<b>USAID/OFDA ASSISTANCE<sup>1</sup></b>			
U.S. Embassy in Tokyo	Emergency Relief Support	Affected Areas	\$100,000
DoD	USAR Operations (Transport of USAR teams)	Affected Areas	\$1,000,000
L.A. County USAR Team	USAR Operations	Affected Areas	\$2,058,000
Fairfax County USAR Team	USAR Operations	Affected Areas	\$2,058,000
U.S. Department of Health and Human Services	Health	Affected Areas	\$93,360
	USAID/DART Support Costs		\$1,599,600
	Administrative Support		\$290,474
<b>TOTAL USAID/OFDA</b>			<b>\$7,199,434</b>
<b>DOD ASSISTANCE</b>			
	Emergency Relief Support	Affected Areas	\$7,140,900
<b>TOTAL DOD</b>			<b>\$7,140,900</b>
<b>TOTAL USG HUMANITARIAN ASSISTANCE TO JAPAN IN FY 2011</b>			<b>\$14,340,334</b>

<sup>1</sup> USAID/OFDA funding represents anticipated or actual obligated amounts as of March 18, 2011.

## **PUBLIC DONATION INFORMATION**

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

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

**Diedra Spencer, Helen Ho, and Alison Lapp**

*Information Coordinators*

Japan Earthquake and Tsunami Response Management Team

202-712-0039

[rmtpactsu\\_inc@ofda.gov](mailto:rmtpactsu_inc@ofda.gov)

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

[2] National Police Agency (NPA).

[3] Japan Self Defense Force (JSDF).

## Weaver, Tonna

**From:** NRC Announcement [nrc.announcement@nrc.gov]  
**Sent:** Friday, March 18, 2011 10:00 PM  
**To:** NRC Announcement  
**Subject:** Daily: 9 New Items from Friday, March 18, 2011

# NRC Daily Announcements



The Federal Employee  
Viewpoint Survey  
April 25 - May 20

**Friday March 18, 2011 -- Headquarters Edition**

- **Event: RES Seminar: 25th Anniversary of Chernobyl - April 26, 2011**
- **Event: RES Seminar on Seismic Research Postponed**
- **General Interest: Latest Edition of FSME Quarterly Newsletter is Now Online**
- **Event: NRC Viewing of the Commission Meeting on the Japan Event**
- **General Interest: Security/Safety Reminder - Personal Evacuation Kits**
- **Employee News: 2011 International Conference for Law Enforcement Agencies at the North Bethesda Marriott**
- **Staff Changes: Reorganization in the Office of Administration**
- **Event: Earth Day Celebration, Wednesday, April 20, 2011.**
- **Employee News: Retirements and Farewells**

### **Event: RES Seminar: 25th Anniversary of Chernobyl - April 26, 2011**

A RES Seminar on the 25th Anniversary of Chernobyl will be held in the TWFN auditorium on Tuesday, April 26, 2011, from 9:30 to 11:30 a.m. A summary of the RBMK reactor type, the accident, radiological impacts, and sarcophagus will be given by Brian Sheron, Director of the Office of Nuclear Regulatory Research, and Frank Congel (retired NRC employee), Former Director, Division of Incident Response Operations, NSIR and Former Director, OE.

This agenda gives the order of presentations and speakers:

Introduction – Mike Weber, Deputy Executive Director for Materials, Waste, Research, State, Tribal and Compliance Programs  
RBMK Reactor Type – Brian Sheron  
Summary of Chernobyl Accident – Brian Sheron  
Radiological Impact – Frank Congel  
Sarcophagus – Frank Congel

Details about VTCs will be provided when available.

m-255



## **Event: RES Seminar on Seismic Research Postponed**

The upcoming RES Seminar scheduled for March 22, 2011, on Seismic Research at Lawrence Berkley National Laboratory is postponed. Key NRC staff involved with the seminar are currently heavily involved with the activities at the Incident Response Center. The RES intranet page will be updated and an announcement sent when the seminar is re-scheduled.

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(2011-03-18 00:00:00.0)

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## **General Interest: Latest Edition of FSME Quarterly Newsletter is Now Online**

The latest edition of the Office of Federal and State Materials and Environmental Management Programs (FSME) Quarterly Newsletter is now available. The Newsletter covers a variety of FSME activities and is one of the tools the Office uses to communicate with its stakeholders. For more information, or if you have comments about the content of the Newsletter, please contact Vanessa Cox, 301-415-8342.

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## **Event: NRC Viewing of the Commission Meeting on the Japan Event**

On Monday, March 21, 2011, the NRC will hold a Commission Meeting to address the ongoing nuclear events at the Fukushima Nuclear Reactor site in Japan. The meeting is scheduled to convene at 9 a.m. in the One White Flint North (OWFN) Commission Hearing Room. Interested staff is encouraged to view the proceedings at one of the following locations:

- Two White Flint North (TWFN) auditorium
- TWFN exhibit area
- Cable Channel 46 and 47 throughout the White Flint North Complex
- TWFN Building O-2 B5
- OWFN Building - O-3 B4
- Executive Boulevard Building - 1B15
- Twinbrook Building - 5E01
- Church Street Building - 2C19
- Gateway Building - 04B2
- Region I\*
- Region II\*
- Region III\*
- Region IV\*
- Technical Training Center\*

\*Regional and TTC staff will be notified of the VTC viewing location by their VTC coordinator.

For more information about event viewing locations, contact Jason Wright at 415-5446 or Christine Kundrat at 415-6130.

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## **General Interest: Security/Safety Reminder - Personal Evacuation Kits**

Yellow Announcement No. 035, "Security/Safety Reminder - Personal Evacuation Kits," is now available on the [internal Web site](#) under Yellow Announcements.

This announcement can also be found in the ADAMS 2011 Yellow Announcements folder in the Main Library of the ADAMS Document Manager. In the folder, Yellow Announcements are arranged in report number order.

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If you have difficulty accessing a Web link in this announcement, contact the [NRC Announcement Coordinator](#), Beverly Martin, ADM/DAS, 301-492-3674.

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(2011-03-18 00:00:00.0)

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## **Employee News: 2011 International Conference for Law Enforcement Agencies at the North Bethesda Marriott**

The Commission on Accreditation for Law Enforcement Agencies will hold its 2011 International Conference at the North Bethesda Marriott from Tuesday, March 22, 2011, through Saturday, March 26, 2011. More than 1,000 law enforcement officers from around the world are expected to attend. Employees are advised that due to the nature of this conference, the surrounding area will experience a significant increase in law enforcement presence.

Please contact [Gary Simpler](#), Office of Administration, at (301) 415-7402 if you have any questions.

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## **Staff Changes: Reorganization in the Office of Administration**

Yellow Announcement No. 034, "Reorganization in the Office of Administration," is now available on the [internal Web site](#) under Yellow Announcements.

This announcement can also be found in the ADAMS 2011 Yellow Announcements folder in the Main Library of the ADAMS Document Manager. In the folder, Yellow Announcements are arranged in report number order.

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If you have difficulty accessing a Web link in this announcement, contact the [NRC Announcement Coordinator](#), Beverly Martin, ADM/DAS, 301-492-3674.

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## **Event: Earth Day Celebration, Wednesday, April 20, 2011.**

The NRC will observe Earth Day on Wednesday, April 20, 2011. The environmental community of

individuals, corporations, and governments will join together to mark the 1st Anniversary Earth Day Celebration. Earth Day 2011 will call attention to the progress that has been made as well as the work yet to be completed.

The first Earth Day celebration took place in 1970 as a spectacular grassroots movement of citizen leadership. Earth Day inspires us to save the land we love, to realize that global problems do have local solutions, and to make the preservation of the earth a personal commitment. Come celebrate Earth Day by participating in activities and learning more about the actions we can take to recycle, reduce waste, save energy, and protect our environment.

Earth Day will be held in the Two White Flint North exhibit area from 11:30 a.m. to 1:00 p.m. The planned activities are listed below.

**Welcome to the Earth Day Resource Center.** View special sculptures by the Georgetown Hill Schoolchildren illustrating how everyday products can be used more than once to reduce waste.

**Composting Demonstration.** Montgomery County composting experts will be on hand to demonstrate how to setup and compost at home. Learn about this fascinating process that reduces landfill waste while producing soil conditioner that helps plants flourish. The county does not sell compost bins or purchase them for county businesses but will have a few on hand to give away.

**Geranium Sale.** The Employee Welfare and Recreation Association (EWRA) Website will have plants for sale. You can find more details and [an order form](#) on the [EWRA Home Page](#).

**Flower and Gardening Tips.** Representatives from the Maryland Master Gardeners will provide information on flowers and gardening. Get information on soil testing services, learn what plants flourish with minimal watering, and get answers to your personal gardening questions.

**Commuting Services.** Visit with transportation representatives from NRC and the North Bethesda Transportation Center to better understand commuting options in the local area.

**Recycling and Waste Prevention.** See NRC's recycling program exhibit and talk to Montgomery County representatives about recycling at home. View samples of the types of batteries that can be recycled at NRC.

**Energy Saving.** Visit a special display to learn how to save energy. NRC facilities staff and representatives from Montgomery County will provide information on how you can save energy at work and at home. Also, learn more about how to report energy and water waste at NRC by using the "Fixit" system.

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## **Employee News: Retirements and Farewells**

Headquarters and Regional employees who are leaving the agency:

### **Retirements:**

Brenda Ross, OIS (retiring on March 31, event on March 30)

Michael D. Tschiltz, NMSS (retiring on April 2, event on March 29)

Marie T. Miller, Region I (retiring on April 3, event on March 29)  
Ted Quay, NRR (retiring in April, event on March 31)  
Rex Wescott, NMSS (retiring on March 31, event on March 24)

For details, access the [Retirements and Farewells Web page](#).

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The latest Announcements are always on the [NRC@WORK Home Page](#).

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[Frequently Asked Questions About the NRC Daily Announcements Email](#)

**Thadani, Mohan**

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**From:** Thadani, Mohan *MR*  
**Sent:** Friday, March 18, 2011 2:16 PM  
**To:** Howe, Allen  
**Subject:** FW: Mark I Containment Performance Improvement Program (2).docx

Allen:

I provided my input to Tim as red font input to his draft.

Hope this helps.

Thanks.

Mohan

## **Mark I Containment Performance Improvement Program**

Why did we do it?

- WASH-1400 said Mark I containments were too small
- TMI happened
- In SECY-89-017, dated January 23, 1989, the staff presented its findings concerning the Mark I containment Performance Improvement program (CPIP) to the commission.
- Although the PRA studies did not show the BWR Mark I plants to be risk outliers as a class relative to other plant designs, they do suggest that Mark I containments could be challenged by a large scale core melt accident, primarily due to its smaller size.,
- NUREG-1150 confirmed high Mark I failure probability if core melts. The dominant accident sequences were identified as station blackout (SBO), and anticipated transients without scram (ATWS). The list should have included the sequence involving loss of long term decay heat removal (TW), except for the fact that the plant that was selected had the likelihood of containment failure reduced because of assumed successful venting of the containment.
- All Mark I containments had the capability to vent containment. However, the excising vent path was partly made of sheet metal. If venting was performed, as permitted by existing emergency operating procedures (EOPs), sheet metal part of the vent would have failed at the venting pressure levels.
- On September 1, 1989, the Commission responded to the staff recommendations in SECY 89-017 and directed the staff to implement, on generic basis, the installation of hardened vent capabilities at BWRs. With Mark1 Containments.

What did the MK I-CPIP look at?

- Focused on those events that dominate core damage frequency in Mark I ..
  - SBO/ATWS/Loss of Decay Heat Removal events (TW sequences)
- Goals were:
  - Reduce challenges to containment (i.e. lower the frequency of core melts from SBO and TW)
  - Improve containment response to challenging events
  - Mitigate F. P. release from a failed containment
- 
- Recommendations:
  - o Provide a hardened vent system that is powered by DC power and vents thru the air space above the suppression pool [provides containment heat removal, to preclude gross containment failure and scrubs fission products ... a controlled release is better than an uncontrolled release]
  - o Improve reliability of the ADS (it's easier to get water into a low pressure RCS) ... [improves chances of preventing core melt and facilitates severe accident management]
  - o Provide an additional low pressure water source to the RCS and drywell sprays that is powered independent of normal or emergency AC (e.g. diesel fire pumps ) ... [in conjunction with ADS, this can cool the core (or debris) and scrub fission products]
  - o Update emergency procedures and training to address use of these features.
- Other considerations
  - o Additional hydrogen control measures were considered but rejected because the Mark I containments are operated in an inert atmosphere.

Commission Action:

-Commission directed That the recommended improvements should be evaluated on a plant specific basis as part of the IPE program except for the hardened vent recommendation. For hardened vents a GL was issued requesting licensees to provide their plans for either including a hardened vent or advising us that they did not intend to upgrade to a hardened vent. The staff was directed to approve hardened vent installation under 50.59 (i.e., no prior staff review), on plant specific basis to ensure consideration of plant specific features of the specific Mark I containments.

For facilities not electing to voluntarily incorporate design changes, the Commission directed the staff to perform plant specific back fit analyses..

**Thadani, Mohan**

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**From:** Thadani, Mohan *men*  
**Sent:** Friday, March 18, 2011 12:06 PM  
**To:** Collins, Timothy  
**Subject:** RE: Mark I Containment Performance Improvement Program (2).docx

1:15 is good.

---

**From:** Collins, Timothy *men*  
**Sent:** Friday, March 18, 2011 11:54 AM  
**To:** Thadani, Mohan  
**Subject:** RE: Mark I Containment Performance Improvement Program (2).docx

Thanks Mohan .... I will come by at 1:15 if that is good for you. Just let me know.

Tim c

---

**From:** Thadani, Mohan *men*  
**Sent:** Friday, March 18, 2011 11:10 AM  
**To:** Collins, Timothy  
**Subject:** Mark I Containment Performance Improvement Program (2).docx

Tim:

Please see my additions. Can we discuss when you have some time?

Thanks.

Mohan

*m-257*

## Thadani, Mohan

**From:** Thadani, Mohan, *NR*  
**Sent:** Friday, March 18, 2011 8:55 AM  
**To:** Whited, Jeffrey  
**Subject:** FW: Max inundation nd protection levels

For your Use. Also, I was unable to locate the requested info in Callaway FSAR. We can obtain the information from the licensee if required. Please advise.

**From:** Markley, Michael **On Behalf Of** Thadani, Mohan, *NR*  
**Sent:** Thursday, March 17, 2011 5:15 PM  
**To:** Mahoney, Michael  
**Cc:** Meighan, Sean  
**Subject:** Max inundation nd protection levels

<u>Plant</u>	Max Inundation	Protection Level	Margin
Columbia	433.3ft msl	435.0 ft.	1.7 ft

Plant Name (location)	Safe shutdown or Design basis earthquake <sup>3</sup>	<del>Reference</del> Review Level earthquake	probable max tsunami OR max tsunami water level (for coastal sites)
Columbia	0.25 g	N/A	N/A

*Mohan C Thadani*

Senior Project Manager  
Plant Licensing Branch IV  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
(301) 415-1476 [Mohan.Thadani@nrc.gov](mailto:Mohan.Thadani@nrc.gov)

*M-258*



**Thadani, Mohan**

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**From:** Hayden, Elizabeth OPA  
**Sent:** Friday, March 18, 2011 7:24 AM  
**To:** Thadani, Mohan  
**Subject:** Out of Office: questions about containment testing

I am out of the office until Monday, March 21. If you need assistance in the interim, please call 301-415-8200 or e-mail OPA [Resource@nrc.gov](mailto:Resource@nrc.gov).

m-259

## Nelson, Robert

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**From:** Nelson, Robert *NR*  
**Sent:** Friday, March 18, 2011 4:06 PM  
**To:** Giitter, Joseph; Leeds, Eric; Boger, Bruce  
**Cc:** Meighan, Sean; Nguyen, Quynh; Thomas, Eric; Markley, Michael; Chernoff, Harold  
**Subject:** FYI: Comm Team SitRep

1. We've been rather short-handed today. But we're making some progress.
2. Mike Markley has been focusing on the Sen Boxer Qs in support of RIV briefing book for Comm Apostolakis' trip next week.
3. When done with the above, we'll begin screening the backlog of Qs for existing As and preparing draft answers for the delta.
4. Eric Thomas is 'mining' for related Q&A info from the Ops Center with some success
5. Harold & his staff posted a DORL staff support roster on our DORL web site and are preparing a strategy/approach for addressing the AP FOIA. This will be major time sink for anyone who has sent or received a related e-mail.
6. We've added links to publicly available documents to the NRR SharePoint site:  
<http://portal.nrc.gov/edo/nrr/default.aspx> for access by all staff.
7. Harold has been working with DPR re: ListServ distribution of the IN. We haven't distributed gen comms in this way in the past so there are some bugs to work out.
8. I'm trying to develop a protocol/process for interacting with the Liaison Team. The Liaison Team's role is to coordinate the review of Qs and As by the Regional State Liaison Officers (RSLOs) and our partners in FEMA and DOE. When our Qs and As are complete, we need to send to the Liaison Team so they can coordinate that review.
9. Hopefully, Annie Kammerer will have her version of her seismic Q&A document reduced to a publicly releasable form tonite.
10. I talked to Eric about management reviews for Qs & As my team develops. I have an IOU to recommend a process.
11. NRO has offered Eric Oesterle to help. We'll link up with him on Monday.

I'm not planning weekend support. I'm available at home by telephone/cell.

Many thanks to the Comm Team for a confusing but productive three days.

NELSON

*M-260*

**Nelson, Robert**

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**From:** Nelson, Robert *NRK*  
**Sent:** Friday, March 18, 2011 2:55 PM  
**To:** Nguyen, Quynh  
**Subject:** RE: SUCCESS --- Alignment on OPsCenter SharePoint

Great, thank

Any progress on the Chairman's written testimony?

NELSON

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**From:** Nguyen, Quynh *NRK*  
**Sent:** Friday, March 18, 2011 2:42 PM  
**To:** Nelson, Robert  
**Cc:** Meighan, Sean; Steger (Tucci), Christine; Markley, Michael; Thomas, Eric  
**Subject:** SUCCESS --- Alignment on OPsCenter SharePoint

Nelson,

I talked with Greg S. (DPR) – the “Ops” Center SharePoint was a personal initiative by him to help keep track of Ops documents.

I explained the NRR TA Site and added a link to “Ops” via “Documents that We May Find Useful.”

Summary: “Ops” will NOT be sent to all NRC staff.

- 1 – NRR Home SharePoint – info for all staff (internal use). Subset of NRR TA SharePoint.
- 2 – NRR TA SharePoint – Q&A and works in progress.
- 3 - Ops SharePoint – where they may be putting their documents. Can be linked to from the NRR TA SharePoint.

Quynh

**Jimenez, Juan**

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**From:** Wagner, Katie  
**Sent:** Friday, March 18, 2011 4:59 PM  
**To:** Jimenez, Juan  
**Subject:** FW: "Status of Japan-Related Requests" Sharepoint Page

fyi

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**From:** Wagner, Katie  
**Sent:** Friday, March 18, 2011 4:55 PM  
**To:** Gibson, Kathy; Scott, Michael  
**Cc:** Lee, Richard; Santiago, Patricia  
**Subject:** "Status of Japan-Related Requests" Sharepoint Page

Good Afternoon All,

The Sharepoint page on the Status of Japan-Related Requests has been populated and updated:  
<http://portal.nrc.gov/edo/res/DSA/Shared%20Documents/JPN-Status-Request.aspx>

A report of requests is easily generated by clicking the "Japan Requests Status Report (EXCEL)" link near the top of the page. To ensure the generated report is current, navigate to the Data tab and click "refresh" so the excel files synchronizes the latest data. If a message pops up, click OK.

Thank you,

Katie Wagner  
General Engineer  
U.S. Nuclear Regulatory Commission  
(301) 251.7917  
[Katie.Wagner@nrc.gov](mailto:Katie.Wagner@nrc.gov)

m-262

**Marksberry, Don**

**From:** OST01 HOC *-ops center*  
**Sent:** Friday, March 18, 2011 5:06 AM  
**To:** Abrams, Charlotte; Adams, John; Afshar-Tous, Mugeh; Alemu, Bezakulu; Alter, Peter; Anderson, James; Ashkeboussi, Nima; Baker, Stephen; Bergman, Thomas; Berry, Rollie; Bloom, Steven; Blount, Tom; Boger, Bruce; Bower, Anthony; Brandon, Lou; Brandt, Philip; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Bukharin, Oleg; Camper, Larry; Carpenter, Cynthia; Case, Michael; Casto, Greg; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Collins, Frank; Cool, Donald; Costa, Arlon; Crutchley, Mary Glenn; Cruz, Zahira; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Doane, Margaret; Dorman, Dan; Dozier, Jerry; Droggitis, Spiros; Dudek, Michael; Dudes, Laura; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Franovich, Rani; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Giitter, Joseph; Gordon, Dennis; Gott, William; Grant, Jeffery; Grobe, Jack; Hale, Jerry; Hardesty, Duane; Hart, Ken; Hart, Michelle; Hasselberg, Rick; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Huyck, Doug; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Isom, James; Jackson, Karen; Jessie, Janelle; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; Khan, Omar; Kowalczyk, Jeffrey; Kozal, Jason; Kratchman, Jessica; Kugler, Andrew; Lamb, Christopher; Larson, Emily; LaVie, Steve; Lewis, Robert; Li, Yong; Lombard, Mark; Lubinski, John; Lynch, Jeffery; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McMurtray, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Nerret, Amanda; Norris, Michael; Norton, Charles; Ordaz, Vonna; Padovan, Mark; Patel, Jay; Parillo, John; Pope, Tia; Purdy, Gary; Quinlan, Kevin; Ragland, Robert; Ralph, Melissa; Reed, Elizabeth; Reed, Wendy; Reis, Terrence; Riley (OCA), Timothy; Rini, Brett; Rodriguez-Luccioni, Hector; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Salay, Michael; Salus, Amy; Sanfilippo, Nathan; Scarbrough, Thomas; Schaperow, Jason; Schmidt, Duane; Schoenebeck, Greg; Schrader, Eric; Schwartzman, Jennifer; Seber, Dogan; Shane, Raeann; Shea, James; Shepherd, Jill; Sheron, Brian; Skeen, David; Sloan, Scott; Smiroldo, Elizabeth; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Sun, Casper; Tappert, John; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tobin, Jennifer; Trefethen, Jean; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Vick, Lawrence; Wastler, Sandra; Watson, Bruce; Weber, Michael; Webber, Robert; White, Bernard; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Roy  
**Cc:** OST02 HOC; OST01 HOC  
**Subject:** Work Schedule and Pay Guidance for Reponders to Japan Events  
**Attachments:** Work Schedule and Premium Pay Guidance for Japan Response 3.docx

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**From:** Davidson, Lawrence  
**Sent:** Thursday, March 17, 2011 5:14 PM  
**To:** OST02 HOC; McMurtray, Anthony  
**Cc:** Evans, Michele; Johns, Nancy; Scott, Tracy; Tallarico, Alison  
**Subject:** FW:

Please distribute to everyone who serves in and supports the Ops Center in response to the events in Japan...

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**From:** Davidson, Lawrence  
**Sent:** Thursday, March 17, 2011 2:06 PM  
**To:** Abraham, Susan; Abrams, Charlotte; Ader, Charles; Akstulewicz, Frank; Albert, Ronald; Allwein, Russell; Alston,

Timothy; Andersen, James; Anderson, Joseph; Armentrout, Deborah; Ash, Darren; Ash, Melissa; Astwood, Heather; Auluck, Rajender; Austin, Joseph; Ayres, David; Bahadur, Sher; Bailey, Marissa; Bailey, Stewart; Baker, Pamela; Banas, Paul; Barss, Dan; Bartlett, Bruce; Bartley, Jonathan; Bartley, Malion; Batkin, Joshua; Baum, Robin; Bayliff, Shirley; Beardsley, James; Beasley, Benjamin; Bell, Hubert; Bell, Marvin; Bellamy, Ronald; Bellinger, Alesha; Benjamin, Jamie; Benner, Eric; Benney, Brian; Bergman, Thomas; Biggins, James; Bladey, Cindy; Blamey, Alan; Bloom, Steven; Bloomer, Tamara; Blount, Tom; Boger, Bruce; Boland, Anne; Bolduc, Angela; Bonser, Brian; Borchardt, Bill; Borden, William; Bouling, Ramona; Bower, Fred; Bower, Phyllis; Boyce, Tom (RES); Boyce, Thomas (OIS); Brady, Joseph; Brenner, Eliot; Brezovec, Michael; Broaddus, Doug; Brooks, Kenneth; Brown, Frederick; Brown, Tony; Brown, Milton; Brown, Rohn; Bubar, Patrice; Buchholz, Jeri; Buckley, Michael; Bumpass, Sheila; Burns, Stephen; Burritt, Arthur; Burton, Stephen; Burton, William; Bush-Goddard, Stephanie; Cain, Chuck; Caldwell, Robert; Calle, Joselito; Cameron, Jamnes; Campbell, Andy; Campbell, Larry; Campbell, Stephen; Campbell, Vivian; Camper, Larry; Caniano, Roy; Cardenas, Daniel; Carlson, Robert; Carpenter, Cynthia; Case, Michael; Casto, Chuck; Casto, Greg; Cataldo, Paul; Catts, Michelle; Champion, Bryan; Chang, Helen; Chang, Lydia; Cheok, Michael; Chernoff, Harold; Chernoff, Margaret; Chokshi, Nilesh; Christensen, Harold; Clark, Jeff; Clay, Earnestine; Clayton, Brent; Clifford, James; Cobey, Eugene; Cochrum, Steven; Coe, Doug; Cohen, Miriam; Cohen, Ronald; Cohen, Stephen; Colaccino, Joseph; Coleman, Judy; Collins, Daniel; Collins, Elmo; Conte, Richard; Cook, Christopher; Corbett, James; Cordes, John; Correia, Richard; Costello, Ralph; Coyne, Kevin; Croteau, Rick; Crowe, Eddy; Cruz, Jeffrey; Csontos, Aladar; Cubbage, Amy; Cubellis, Louis; Cullison, David; Curtis, David; Daley, Robert; Daly, Jill; Dambly, Jan; Daniel, Susan; Danna, James; Dapas, Marc; Davis, Henry; Davis, Jack; Davis, Marlene; Dean, Michael; Dean, Bill; Dehn, Janine; Delligatti, Mark; Dembek, Stephen; Demoss, Gary; Dennig, Robert; Dentel, Glenn; Desai, Binoy; Dias, Antonio; Diaz-Toro, Diana; Dickson, Billy; Dingbaum, Stephen; DiPaolo, Eugene; Dixon, John; Dixon-Herrity, Jennifer; Doane, Margaret; Dodmead, James; Doerflein, Lawrence; Donaldson, Leslie; Donnell, Tremaine; Donoghue, Joseph; Doornbos, Roger; Dorman, Dan; Dorsey, Jeryll; Dosch, William; Dreisbach, Jason; Droggitis, Spiros; Dudes, Laura; Dumbacher, David; Duncan, Eric; Dwyer, James; Dyer, Jim; Eads, Johnny; Easson, Pamela; Egan, Dennis; Egli, Richard; Einberg, Christian; Elkins, Scott; Ellegood, John; Elliott, Robert; Ellsbury, Richard; Erlanger, Craig; Ernstes, Michael; Brown, Cris; Evans, Carolyn; 'Michele.ca@nrc.gov'; Farnholtz, Thomas; Felts, Russell; Fenton, Darlene; Ferdas, Marc; Ferrell, Kimberly; Ficks, Ben; Fields, Leslie; Finney, Patrick; Fitch, Karen; Flanders, Scott; Flynn, Sean; Foster, Jack; Franke, Mark; Franovich, Rani; Fredericks, Carl; Freeman, Scott; Fretz, Robert; Frumkin, Daniel; Frye, Timothy; Fuller, Michael; Gaddy, Vincent; Gallo, Jenny; Galloway, Melanie; Gartman, Michael; Gavrilas, Mirela; Giantelli, Adelaide; Gibson, Kathy; Giessner, John; Giitter, Joseph; Givvines, Mary; Gody, Tony; Golder, Jennifer; Golshan, KG; Gorham, Tajuan; Gott, William; Graham, Thorne; Grancorvitz, Teresa; Grant, Jeffery; Graser, Dan; Gray, Mel; Greene, Kathryn; Grice, Thomas; Griffin, Steven; Grobe, Jack; Hawkins, Kimberly; Gusack, Barbara; Guthrie, Eugene; Guttmann, Jack; Haag, Robert; Habighorst, Peter; Hackett, Edwin; Haeg, Lucas; Haire, Mark; Hall, Donald; Hall, Patricia; Hamzehee, Hossein; Haney, Catherine; Hansell, Samuel; Harris, Tim; Harrison, Donnie; Hatchett, Gregory; Hawken, Roy; Hay, Michael; Hayden, Elizabeth; Hays, Myra; Heck, James; Heck, Jared; Helton, Shana; Henderson, Pamela; Hickey, James; Hiland, Patrick; Hills, David; Hilton, Nick; Hiltz, Thomas; Hirsch, Patricia; Hoeg, Tim; Hogan, Rosemary; Holahan, Gary; Holahan, Patricia; Holian, Brian; Holland, Crystal; Holody, Daniel; Holonich, Joseph; Holt, BJ; Hopper, George; Howard, Patrick; Howe, Allen; Howell, Art; Howell, Linda; Hoxie, Chris; Hsia, Anthony; Hsu, Caroline; Hsueh, Kevin; Huber, Deborah; Hudson, Jody; Humerick, David; Hunegs, Gordon; Hunter, James; Huth, Virginia; Hutto, Andy; Huyck, Doug; Imboden, Andy; Itzkowitz, Marvin; Jackson, Deborah; Jackson, Donald; Jackson, Terry; James, Lois; Jankovich, John; Janney, Margie; Jarvis, Rodney; Jenkins, Ronaldo; Jernell, Eleni; Johns, Nancy; Johnson, Michael; Johnson, Clay; Johnson, Robert; Jolicoeur, John; Jones, Bradley; Jones, Evan; Jones, William; Josey, Jeffrey; Joustra, Judith; Julian, Emile; Jung, Ian; Junge, Michael; Kahler, Robert; Kaplan, Michele; Karas, Rebecca; Kellar, Ray; Kelley, Corenthis; Kemerer, Myron; Kemker, Brian; Kennedy, Kriss; Kennedy, Silas; Kerben, Valerie; Kern, David; Khanna, Meena; Kim, Yong; Kimble, Daniel; King, Donald; King, Michael; Kinneman, John; Kirkland, John; Kirkwood, Sara; Klein, Alex; Knutson, Ed; Kobetz, Timothy; Kokajko, Lawrence; Kolaczyk, Kenneth; Konzman, Carl; Koshy, Thomas; Kowal, Mark; Kramer, John; Krohn, Paul; Krsek, Robert; Krupnick, David; Kulesa, Gloria; Kulp, Jeffrey; Kunowski, Michael; Lam, Donna; Lambert, Kenneth; Landau, Mindy; Langan, Scott; Lankford, Jeffrey; Lantz, Ryan; Lara, Julio; Larkin, Grant; Laura, Richard; Layton, Michael; Le, Hong; Lee, Bert; Lee, David; Lee, Richard; Lee, Samson; Lee, Samuel; Leeds, Eric; Lennartz, Jay; Lesser, Mark; Lew, David; Lewis, Robert; Lipa, Christine; Lombard, Mark; Long, Chris; Lopez, Joseph; Lorson, Raymond; Loudon, Patrick; Lubinski, John; Luehman, James; Lui, Christiana; Lukes, Robert; Lund, Louise; Lupold, Timothy; Lyons-Burke, Kathy; Ma, May; Madden, Patrick; Madison, Wil; Magruder, Stewart; Mamish, Nader; Markley, Michael; Marshall, Jane; Marshfield, Mark; Martin, Gillian; Masnik, Michael; Masse, Todd; Matheson, Mary; Mathew, Roy; Matthews, David; Mattingley, Joel; Maxin, Mark; Mayfield, Michael; McCann, Carrie; McConnell, Keith; McCoppin, Michael; McCoy, Gerald; McCrary, Cheryl; McCree, Victor; McDermott, Brian; McGhee, James; McGill, Clinton; McGinty, Tim; McGowan, Anna; McHale, John; McKelvey, Harold; McKenna, Eileen; McKenney, Christopher; McKirgan, John; McMillan, Joseph; McMurtray, Anthony; Mendiola, Anthony; Meyer, David; Michalak, Paul; Miller, Charles; Miller, Chris; Miller, Geoffrey; Miller, Marie; Miller, Mark; Miller, Michael; Miotla, Sherri; Mitchell, Matthew; Mitchell, Reggie; Mohseni, Aby; Monk, Robert; Monninger, John; Montgomery, Jack; Moore, Scott; Moore, Thomas; Moorman, James; Morris, Eddie; Morris, James; Morris, R. Michael;

Morris, Scott; Morrissey, Thomas; Moulding, Patrick; Moy, Romena; Mrowca, Lynn; Muessle, Mary; Munday, Joel; Murphy, Jerome; Murphy, Martin; Musser, Randy; Narick, Marianne; Nazario, Tomy; Nease, Rebecca; Neff, Deborah; Nelson, Robert; Nichols, Russell; Nieh, Ho; Norato, Michael; Norris, Michael; Nute-Blackshear, Lora; OBrien, Kenneth; OBryan, Phil; O'Donohue, Kathleen; Offutt, David; Ogle, Chuck; OKeefe, Neil; Okleson, Edward; Ordaz, Vonna; Orth, Steven; O'Sullivan, Kevin; Ott, William; Ousley, Elizabeth; Owens, Janice; Paradiso, Karen; Partlow, Benjamin; Pascarelli, Robert; Peck, Michael; Pederson, Cynthia; Pelke, Patricia; Pellet, John; Pelton, David; Peralta, Juan; Perry, Jamila; Perry, Neil; Persinko, Andrew; Peters, Sean; Peterson, Gordon; Peterson, Hironori; Pham, Bo; Phillips, Charles; Piccone, Josephine; Pool, Stephen; Poole, Brooke; Powell, Amy; Powell, Dawn; Powell, Raymond; Prescott, Peter; Pretzello, Andrew; Price, Georgette; Pruett, Troy; Pstrak, David; Pulliam, Timothy; Quay, Theodore; Quichocho, Jessie; Rabideau, Peter; Rahimi, Meraj; Raione, Richard; Rajnic, Cecilia; Ramirez, Frances; Rasmussen, Richard; Rasouli, Houman; Raspa, Rossana; Rayland, Andrew; Raymond, William; Reckley, William; Reddick, Darani; Reece, James; Regan, Christopher; Reis, Terrence; Remsburg, Kristy; Reynolds, Steven; Reynoso, John; Rheume, Cynthia; Ricci, John; Rich, Daniel; Rich, Thomas; Richards, Stuart; Ricketts, Paul; Riemer, Kenneth; Ring, Mark; Roach, Edward; Roach, Gregory; Roberts, Darrell; Rodgers, Felecia; Rogge, John; Rosenberg, Stacey; Ross, Thierry; Ross-Lee, MaryJane; Rothschild, Trip; Rough, Richard; Rowhani, Bahman; Royal, Judith; Rubenstone, James; Rubic, Mark; Ruiz, Robert; Ruland, William; Rule, David; Rutkowski, John; Rutledge, Steven; Rzepka, Robert; Sabisch, Andrew; Safford, Carrie; Salgado, Nancy; Salley, MarkHenry; Salter, Susan; Sanchez, Alba; Sanchez, Alfred; Sangimino, Donna-Marie; Santiago, Patricia; Santos, Cayetano; Sargent, Kimberly; Satorius, Mark; Schaaf, Robert; Schaeffer, James; Schmidt, Rebecca; Schneider, Max; Schnetzler, Bonnie; Schoenmann, Sandra; Schroeder, Daniel; Schum, Constance; Scott, Catherine; Scott, Michael; Sealing, Donna; Segala, John; Serepca, Beth; Seymour, Deborah; Shaeffer, Scott; Shaffer, Steve; Shannon, Mel; Shannon, Michael; Sharkey, Jeffry; Shay, Jason; Shear, Gary; Shehee, James; Sheron, Brian; Shields, James; Shoop, Undine; Shuaibi, Mohammed; Silva, Patricia; Simms, Sophonia; Skeen, David; Skokowski, Richard; Smith, Arthur; Smith, Brian; Smith, Galen; Smith, Rich; Smith, Tuwanda; Solorio, Dave; Sosa, Belkys; Sotiropoulos, Dina; Spencer, Mary; Spindler, David; Spitzberg, Blair; StAmour, Norman; Stablein, King; Stapleton, Bernard; Stetson, Kathleen; Stewart, Scott; Stewart, Sharon; Stoedter, Karla; Stone, AnnMarie; Suber, Gregory; Subosits, Stephen; Sullivan, Allen; Swain, Karol; Sydnor, Russell; Sykes, Marvin; Szyperski, Bill; Tailleart, Don; Talley, Sandra; Tappert, John; Tate, Travis; Taylor, Robert; Tenaglia, Mickey; Terao, David; Terry, Leslie; Thaggard, Mark; Thomas, Brian; Thomas, Christopher; Thorp, John; Tonacci, Mark; Tracy, Glenn; Tran, Tu; Trapp, James; Travick, Vanette; Trent, Glenn; Tschiltz, Michael; Turner, Joseph; Turtill, Richard; Uhle, Jennifer; Ulses, Anthony; Usilton, William; Valentin, Andrea; Vogel, Anton; Vias, Steven; Vietti-Cook, Annette; Virgilio, Martin; VonTill, Bill; Voytko, Victoria; Walker, Tracy; Walker, Wayne; Wall, Scott; Warnick, Greg; Wastler, Sandra; Waters, Michael; Watson, Bruce; Weaver, Doug; Webber, Robert; Weber, Michael; Weerakkody, Sunil; Welling, Blake; Werkheiser, David; Werner, Greg; Wert, Leonard; West, Garmon; West, Steven; Westreich, Barry; Whetstine, Jack; White, Duncan; White, Darrell; Whited, Ryan; Whitten, Jack; Widdup, Joseph; Widmann, Malcolm; Wiggins, Jim; Williams, Barbara; Williams, Evelyn; Williams, Kevin; Williams, Michael; Williams, Mona; Williams-Johnson, Patrice; Williamson, Edward; Wilson, Ernest; Wilson, George; Wilson, Peter; Wood, Gene; Wood, Kent; Wright, Lisa (Gibney); Wrona, David; Wunder, George; Yerokun, Jimi; Young, Cale; Young, Mitzi; Zane, Steven; Zeiler, John; Zimmerman, Jacob; Zimmerman, Roy; Zabler, Marian

**Cc:** Scott, Tracy; Tallarico, Alison; Thoman, Raymond; Jones, Jackie; Blair, Tina; Chin, Allison; Dean, Vivian; Evans(HR), Marilyn; Himmelberg, Jude; Jackson, Briana; Jaigobind, Savi; Silberfeld, Dafna; Watson, Madonna; Williams, Michelle; Atkinson, Jeanne; Broadwater, Lynne; Brown, Keisa; Hicks, Beverly; Hicks, Valencia; Jonsson, Dawn; Lindsay, Sandy; Marziale, Riqueza; ORourke, Christine; Reeves, Gloria; Scott, Mary; Thomas-Richards, Karen; Todd, Colleen

**Subject:**

Managers, supervisors, team leaders, and T&L Coordinators,

Attached for your information is a document that addresses, in detail, work schedules and premium pay for individuals who serve in and support the NRC Operations Center or work in Japan, in response to the current, serious nuclear power plant issues in that country. NSIR and the NRC Japanese support team leader will provide the document to all participants.

T&L Coordinators, please note that participants in your organization may contact you to request a change in their HRMS workgroups for pay periods in which they perform emergency response work.

Participants should contact me if they have any questions on work schedules or premium pay.

Larry Davidson

Office of Human Resources

Nuclear Regulatory Commission

301-492-2286; [lawrence.davidson@nrc.gov](mailto:lawrence.davidson@nrc.gov)



## **WORK SCHEDULE AND PREMIUM PAY GUIDANCE** **FOR RESPONSE TO EVENTS IN JAPAN**

Please first review this document and contact Larry Davidson of the Office of Human Resources (301-492-2286 or [lawrence.davidson@nrc.gov](mailto:lawrence.davidson@nrc.gov)) for any needed assistance.

### **Work Schedules**

One or more types of work schedules may be appropriate during a pay period in which you serve in and support the NRC Operations Center or work in Japan, in response to the current, serious nuclear power plant issues in that country. You are authorized to select the type of work schedule you will work during the pay period depending on:

- Your specific workdays and work clock hours in the Operations Center or in Japan, as well as any flexibility you have to choose those workdays and clock hours;
- Your entitlement to premium pay for work in the Operations Center or Japan;
- Your performance, if any, of regular duties outside of the Operations Center/Japan during the pay period; and,
- Your loss of earned credit hours if you switch from NEWFlex to another type of work schedule.

Possible work schedules include:

- Compressed work schedule – Appropriate if, during the entire pay period, your workdays and work clock hours are fixed (i.e., you do not have any flexibility to choose either) and there are fewer than ten nonovertime workdays in the pay period (at least one nonovertime workday contains more than eight nonovertime hours). Note that restrictions on nonovertime work clock hours and weekend workdays have been lifted for the pay period. An Expanded-Compressed Work Schedule may be appropriate (see the Yellow Announcement at <http://www.internal.nrc.gov/announcements/yellow/2003/2003-032.html> and Article 6.10.3 of the Collective Bargaining Agreement).
- NEWFlex - Appropriate if, during at least a portion of the pay period, you have some discretion to select your workdays and/or work clock hours (for example, if/when performing regular duties outside of the Operations Center or Japan). Note that restrictions on nonovertime work clock hours and weekend workdays have been lifted for the pay period.
- First-40 – Appropriate if it is impracticable to prescribe a regular schedule of definite hours of duty for each workday of the workweek (likely not appropriate).

Note that you must advise your T&L coordinator to change your HRMS workgroup if you change the type of schedule you work, e.g., if you normally work CWS and change to NEWFlex for the pay period in which you serve in and support the NRC Operations Center or work in Japan. Also note that if you switch from NEWFlex to another type of work schedule, you will lose and will be paid for any accumulated credit hours.

Also note that if you work fewer than 80 hours serving in and supporting the NRC Operations Center or working in Japan, your "home" supervisor will allow you discretion, to the extent possible, to decide how/when to cover any missing time.

### **Premium Pay**

Cap on Combined Salary Plus Premium Pay – The biweekly cap on premium pay has been lifted and will be applied on an annual basis during any pay period in which you serve in and support the NRC Operations Center or work in Japan (the annual cap will benefit you if you are paid a salary below the GG-15 step 10 salary rate). Your organization has been advised to contact CFO with employee names and dates of work.

Overtime pay or regular comp time – Overtime (limited to the higher of: your regular rate; or, 150% of GG-10 step 10) is paid for your work in excess of your full-time work schedule during the pay period. You may choose to be compensated via regular compensatory time off instead (limited to a 40-hour pay period carryover) if your overtime work was not scheduled in advance of the workweek, or regardless of when it was scheduled if you are on NEWFlex.

TRCs – Use "OT" for overtime pay and "COMPE" for regular comp time.

Night premium (10%) – This premium is paid for your *nonovertime* work between 6:00 p.m. and 6:00 a.m. the following morning, and for your *overtime* work during these clock hours if the work was scheduled in advance of the week in which you performed it. Also, this premium is paid for your periods of paid leave, if any, during night clock hours if, during the pay period, you have fewer than 8 hours of total paid leave inclusive of both night and day work.

TRC – NDIFF (hours must also be recorded under another TRC such as REG or OT).

Sunday premium (25%) – This premium is paid for your *nonovertime* work performed on a shift(s), any part(s) of which falls on a Sunday (e.g., a shift from Saturday at 6:00 p.m. to Sunday at 6:00 a.m.). Sunday premium is not payable for periods of nonwork, including leave, holidays not worked, and excused absence.

TRC – SUNP (hours must also be recorded under another TRC such as REG).

Standby status - You are eligible for special overtime pay if you are restricted by official order to a designated post of duty and assigned to be in a state of readiness to perform work, versus actually performing work, with limitations on your activities so substantial that you cannot use

your time effectively for your own purposes. We do not anticipate that any employee will be in a standby status.

### **Miscellaneous**

#### **Employee Assistance Program (EAP)**

Free, confidential counseling is available to you and your family members to address emotional issues, work problems, substance abuse, stress, crisis, marital/family concerns, financial matters, legal issues, eldercare resources, and childcare referrals. Call 1-800-869-0276 or check [www.eapconsultants.com](http://www.eapconsultants.com).

#### **Travel**

If you travel to/from Japan:

- Keep a log of specific travel times and work clock hours to help NRC compute your entitlement to compensation.
- Consider enrolling in the Smart Traveler Enrollment Program or STEP) to make it easier for the Embassy/Consulates to contact you in case of an emergency. You may enroll at <https://travelregistration.state.gov>, or if you have no internet access, directly at the U.S. Embassy or U.S. Consulates.
- If you are paid a salary below the GG-15 step 10 salary rate, you are entitled to overtime pay (limited to higher of: your regular rate; or, 150% of GG-10 step 10) for travel to/from Japan, and if the travel is during night hours (6:00 p.m. to 6:00 a.m.) and scheduled in advance of the workweek, you are also entitled to night premium pay. You may substitute regular compensatory time off (limited to a 40-hour pay period carryover) for overtime pay if your travel was not scheduled in advance of the workweek, or regardless of when it was scheduled if you are on NEWFlex.

TRCs – Use “OT” for overtime pay, “COMPE” for regular comp time, and “NDIFF” for night premium pay.

## Marksberry, Don

**From:** OST02 HOC - OPS Center  
**Sent:** Friday, March 18, 2011 3:06 PM  
**To:** Abrams, Charlotte; Adams, John; Afshar-Tous, Mugeh; Alemu, Bezakulu; Alter, Peter; Anderson, James; Ashkeboussi, Nima; Athey, George; Baker, Stephen; Bergman, Thomas; Berry, Rollie; Bhachu, Ujagar; Bloom, Steven; Blount, Tom; Boger, Bruce; Borchardt, Bill; Bower, Anthony; Bowman, Gregory; Brandon, Lou; Brandt, Philip; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Brown, Michael; Bukharin, Oleg; Camper, Larry; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coggins, Anita; Collins, Frank; Cool, Donald; Costa, Arlon; Crutchley, Mary Glenn; Cruz, Zahira; Cutaia, Robert; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Doane, Margaret; Dorman, Dan; Dorsey, Cynthia; Dozier, Jerry; Droggitis, Spiros; Dube, Donald; Dudes, Laura; Eads, Johnny; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Floyd, Daphene; Foggie, Kirk; Foster, Jack; Fragoyannis, Nancy; Franovich, Rani; Frazier, Alan; Freshwater, David; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Gibson, Kathy; Giitter, Joseph; Gilmer, James; Gordon, Dennis; Gott, William; Grant, Jeffery; Grimes, Kelly; Grobe, Jack; Gulla, Gerald; Hale, Jerry; Hardesty, Duane; Harris, Tim; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Isom, James; Jackson, Karen; Jacobson, Jeff; Jessie, Janelle; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; 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; Lising, Jason; Lombard, Mark; Lubinski, John; Lui, Christiana; Lynch, Jeffery; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Masao, Nagai; Maupin, Cardilia; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McGovern, Denise; McMurtray, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Nerret, Amanda; Nguyen, Carolyn; Norris, Michael; Norton, Charles; Ordaz, Vonna; Owens, Janice; Padovan, Mark; Parillo, John; Patel, Jay; Perin, Vanice; Pope, Tia; Powell, Amy; Purdy, Gary; Quinlan, Kevin; Ragland, Robert; Ragland, Randolph; Ralph, Melissa; Ramsey, Jack; Reed, Elizabeth; Reed, Sara; Reed, Wendy; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Robinson, Edward; Rodriguez-Luccioni, Hector; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; 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; Skeen, David; Sloan, Scott; Smirolodo, Elizabeth; Smith, Brooke; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Sun, Casper; Tappert, John; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tobin, Jennifer; Trefethan, Jean; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Vick, Lawrence; Virgilio, Martin; Virgilio, Rosetta; Ward, Leonard; Wastler, Sandra; Watson, Bruce; Webber, Robert; Weber, Michael; White, Bernard; Wiggins, Jim; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Roy

**Subject:** Staffing Plan  
**Attachments:** Staffing plan 3-19 - 3-25.pdf

This list is for next week Sat 3/19 at 7a.m. to Friday 3/25. We do recognize that some positions do not have full staffing. We are looking to fill those. If you know anyone who would want to fill them, have them contact OPS Center at 816-5100.

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Position	Date	Time	Staff
<b>Executive Team</b>			
<b>ET Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Roy Zimmerman
Sat	19-Mar	7am - 3pm	Jim Wiggins
Sat	19-Mar	3pm-11pm	Brian Sheron
Sat-Sun	3/19-3/20	11pm - 7am	Mike Johnson
Sun	20-Mar	7am - 3pm	Jim Wiggins
Sun	20-Mar	3pm-11pm	Brian Sheron
Sun-Mon	3/20-3/21	11pm - 7am	Mike Johnson
Mon	21-Mar	7am - 3pm	Mike Weber
Mon	21-Mar	3pm-11pm	Jim Wiggins
Mon-Tues	3/21-3/22	11pm - 7am	Mike Johnson
Tues	22-Mar	7am - 3pm	Mike Weber
Tues	22-Mar	3pm-11pm	Jim Wiggins
Tues-Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	Mike Weber
Wed	23-Mar	3pm-11pm	
Wed-Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	
Thur	24-Mar	3pm-11pm	
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	
Fri	25-Mar	3pm-11pm	
Fri-Sat	3/25-3/26	11pm-7am	
	3/25-3/26	11pm-7am	
<b>ET Response Advisor</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Morris
Sat	19-Mar	7am - 3pm	Brian McDermott
Sat	19-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sat-Sun	3/19-3/20	11pm - 7am	Scott Morris
Sun	20-Mar	7am - 3pm	Chris Miller
Sun	20-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sun-Mon	3/20-3/21	11pm - 7am	Scott Morris
Mon	21-Mar	7am - 3pm	Brian McDermott
Mon	21-Mar	3pm-11pm	Chris Miller
Mon-Tues	3/21-3/22	11pm - 7am	Scott Morris
Tues	22-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Tues	22-Mar	3pm-11pm	Chris Miller
Tues-Wed	3/22-3/23	11pm - 7am	Scott Morris
Wed	23-Mar	7am - 3pm	Brian McDermott
Wed	23-Mar	3pm-11pm	Chris Miller
Wed-Thur	3/23-3/24	11pm - 7am	Scott Morris
Thur	24-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Thur	24-Mar	3pm-11pm	Brian McDermott
Thur-Fri	3/24-3/25	11pm - 7am	Chris Miller
Fri	25-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Fri	25-Mar	3pm-11pm	Brian McDermott
Fri-Sat	3/25-3/26	11pm-7am	
<b>ET Rx Prot Measures &amp; State Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Moore

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Sat	19-Mar	7am - 3pm	Larry Camper
Sat	19-Mar	3pm-11pm	P. Holahan
Sat-Sun	3/19-3/20	11pm - 7am	K. McConnell
Sun	20-Mar	7am - 3pm	Vonna Ordaz
Sun	20-Mar	3pm-11pm	Larry Camper
Sun-Mon	3/20-3/21	11pm - 7am	Rob Lewis
Mon	21-Mar	7am - 3pm	Charlie Miller
Mon	21-Mar	3pm-11pm	Larry Camper
Mon-Tues	3/21-3/22	11pm - 7am	Rob Lewis
Tues	22-Mar	7am - 3pm	Charlie Miller
Tues	22-Mar	3pm-11pm	P. Holahan
Tues-Wed	3/22-3/23	11pm - 7am	C. Carpenter
Wed	23-Mar	7am - 3pm	Charlie Miller
Wed	23-Mar	3pm-11pm	P. Holahan
Wed-Thur	3/23-3/24	11pm - 7am	C. Carpenter
Thur	24-Mar	7am - 3pm	Charlie Miller
Thur	24-Mar	3pm-11pm	Larry Camper
Thur-Fri	3/24-3/25	11pm - 7am	C. Carpenter
Fri	25-Mar	7am - 3pm	Charlie Miller
Fri	25-Mar	3pm-11pm	P. Holahan
Fri-Sat	3/25-3/26	11pm-7am	C. Carpenter
<b>Executive Briefing Team</b>			
<b>EBT Admin. Assistant</b>			
Fri-Sat	3/18-3/19	11pm-7am	Sapna Hurd
Sat	19-Mar	7am - 3pm	Carolyn Kahler
Sat	19-Mar	3pm-11pm	Annette Stang
Sat-Sun	3/19-3/20	11pm - 9am	Sapna Hurd
Sun	20-Mar	9am - 7pm	Annette Stang
Sun	3/20-3/21	7pm-7am	Carolyn Kahler
Sun-Mon	21-Mar	7am - 3pm	A. Stang (7-11) / Sapna Hurd (11-3)
Mon	21-Mar	3pm-11pm	Tia Pope
Mon	3/21-3/22	11pm - 7am	Christina Merritt
Mon-Tues	22-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Tues	22-Mar	3pm-11pm	Jon Fiske
Tues	3/22-3/23	11pm - 7am	Tia Pope
Tues-Wed	23-Mar	7am - 3pm	Jon Fiske
Wed	23-Mar	3pm-11pm	
Wed	3/23-3/24	11pm - 7am	Christina Merritt
Wed-Thur	24-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Thur	24-Mar	3pm-11pm	Andrea Wimbush
Thur	3/24-3/25	11pm - 7am	Tia Pope
Thur-Fri	25-Mar	7am - 3pm	Annette Stang
Fri	25-Mar	3pm-11pm	Carolyn Kahler
Fri	3/25-3/26	11pm-7am	Sapna Hurd
Fri-Sat			
<b>EBT Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Jim Anderson
Sat	19-Mar	7am - 3pm	Christine Steger
Sat	19-Mar	3pm-11pm	Sara Mroz
Sat-Sun	3/19-3/20	11pm - 7am	Jim Anderson
Sun	20-Mar	7am - 3pm	Yen Chen

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

**MARCH 18-26**

Sun	20-Mar	3pm-11pm	Sara Mroz
Sun-Mon	3/20-3/21	11pm - 7am	Jim Anderson
Mon	21-Mar	7am - 3pm	Yen Chen
Mon	21-Mar	3pm-11pm	Sara Mroz
Mon-Tues	3/21-3/22	11pm - 7am	Jim Anderson
Tues	22-Mar	7am - 3pm	Yen Chen
Tues	22-Mar	3pm-11pm	Sara Mroz
Tues-Wed	3/22-3/23	11pm - 7am	Jim Anderson
Wed	23-Mar	7am - 3pm	Yen Chen
Wed	23-Mar	3pm-11pm	Sara Mroz
Wed-Thur	3/23-3/24	11pm - 7am	Jim Anderson
Thur	24-Mar	7am - 3pm	Yen Chen
Thur	24-Mar	3pm-11pm	Sara Mroz
Thur-Fri	3/24-3/25	11pm - 7am	Jim Anderson
Fri	25-Mar	7am - 3pm	Yen Chen
Fri	25-Mar	3pm-11pm	Sara Mroz
Fri-Sat	3/25-3/26	11pm-7am	Jim Anderson
<b>Executive Support Team</b>			
<b>EST Status Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Doug Huyck
Sat	19-Mar	7am - 3pm	Craig Erlanger
Sat	19-Mar	3pm-11pm	John Jolicoeur
Sat-Sun	3/19-3/20	11pm - 7am	Doug Huyck
Sun	20-Mar	7am - 3pm	Craig Erlanger
Sun	20-Mar	3pm-11pm	John Jolicoeur
Sun-Mon	3/20-3/21	11pm - 7am	Doug Huyck
Mon	21-Mar	7am - 3pm	Jane Marshall
Mon	21-Mar	3pm-11pm	Bill Gott
Mon-Tues	3/21-3/22	11pm - 7am	Jeff Grant
Tues	22-Mar	7am - 3pm	Jane Marshall
Tues	22-Mar	3pm-11pm	Bill Gott
Tues-Wed	3/22-3/23	11pm - 7am	Jeff Grant
Wed	23-Mar	7am - 3pm	Jane Marshall
Wed	23-Mar	3pm-11pm	Bill Gott
Wed-Thur	3/23-3/24	11pm - 7am	Jeff Grant
Thur	24-Mar	7am - 3pm	Jane Marshall
Thur	24-Mar	3pm-11pm	Bill Gott
Thur-Fri	3/24-3/25	11pm - 7am	Jeff Grant
Fri	25-Mar	7am - 3pm	Jane Marshall
Fri	25-Mar	3pm-11pm	Bill Gott
Fri-Sat	3/25-3/26	11pm-7am	Jeff Grant
<b>EST Actions Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Amy Roundtree
Sat	19-Mar	7am - 3pm	Bezakulu Alemu
Sat	19-Mar	3pm-11pm	Melissa Ralph
Sat-Sun	3/19-3/20	11pm - 7am	Jonathan Fiske
Sun	20-Mar	7am - 3pm	Melissa Ralph
Sun	20-Mar	3pm-11pm	Jonathan Fiske
Sun-Mon	3/20-3/21	11pm - 7am	Dori Votolato-Willis
Mon	21-Mar	7am - 3pm	Melissa Ralph

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Mon	21-Mar	3pm-11pm	Amanda Nerret
Mon-Tues	3/21-3/22	11pm - 7am	Kelly Grimes
Tues	22-Mar	7am - 3pm	Melissa Ralph
Tues	22-Mar	3pm-11pm	Dori Votolato-Willis
Tues-Wed	3/22-3/23	11pm - 7am	Kelly Grimes
Wed	23-Mar	7am - 3pm	Melissa Ralph
Wed	23-Mar	3pm-11pm	Dori Votolato-Willis
Wed-Thur	3/23-3/24	11pm - 7am	Kelly Grimes
Thur	24-Mar	7am - 3pm	Wendy Reed
Thur	24-Mar	3pm-11pm	Dori Votolato-Willis
Thur-Fri	3/24-3/25	11pm - 7am	Jonathan Fiske
Fri	25-Mar	7am - 3pm	Amanda Nerret
Fri	25-Mar	3pm-11pm	Melissa Ralph
Fri-Sat	3/25-3/26	11pm-7am	Jonathan Fiske

**EST Coordinator**

Fri-Sat	3/18-3/19	11pm-7am	Rebecca Stone
Sat	19-Mar	7am - 3pm	Clyde Ragland
Sat	19-Mar	3pm-11pm	Tony Bowers
Sat-Sun	3/19-3/20	11pm - 7am	Rebecca Stone
Sun	20-Mar	7am - 3pm	Clyde Ragland
Sun	20-Mar	3pm-11pm	Tony Bowers
Sun-Mon	3/20-3/21	11pm - 7am	Rebecca Stone
Mon	21-Mar	7am - 3pm	Tony McMurtray
Mon	21-Mar	3pm-11pm	Tony Bowers
Mon-Tues	3/21-3/22	11pm - 7am	Rebecca Stone
Tues	22-Mar	7am - 3pm	Tony McMurtray
Tues	22-Mar	3pm-11pm	Tony Bowers
Tues-Wed	3/22-3/23	11pm - 7am	Rebecca Stone
Wed	23-Mar	7am - 3pm	Tony McMurtray
Wed	23-Mar	3pm-11pm	Clyde Ragland
Wed-Thur	3/23-3/24	11pm - 7am	Rebecca Stone
Thur	24-Mar	7am - 3pm	Tony McMurtray
Thur	24-Mar	3pm-11pm	Clyde Ragland
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	Tony McMurtray
Fri	25-Mar	3pm-11pm	Clyde Ragland
Fri-Sat	3/25-3/26	11pm-7am	

**EST Chronology Officer**

Fri-Sat	3/18-3/19	11pm-7am	Dennis Gordon
Sat	19-Mar	7am - 3pm	Carolyn Nguyen
Sat	19-Mar	3pm-11pm	Rebecca Karas
Sat-Sun	3/19-3/20	11pm - 7am	Cynthia Dorsey
Sun	20-Mar	7am - 3pm	James Vaughn
Sun	20-Mar	3pm-11pm	Rebecca Karas
Sun-Mon	3/20-3/21	11pm - 7am	Mark Resner
Mon	21-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Mon	21-Mar	3pm-11pm	Rebecca Karas
Mon-Tues	3/21-3/22	11pm - 7am	Thomas Scarbrough
Tues	22-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Tues	22-Mar	3pm-11pm	Rebecca Karas



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Tues-Wed	3/22-3/23	11pm - 7am	Thomas Scarbrough
Wed	23-Mar	7am - 3pm	James Vaughn
Wed	23-Mar	3pm-11pm	Rebecca Karas
Wed-Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Thur	24-Mar	3pm-11pm	Rebecca Karas
Thur-Fri	3/24-3/25	11pm - 7am	Thomas Scarbrough
Fri	25-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Fri	25-Mar	3pm-11pm	Rebecca Karas
Fri-Sat	3/25-3/26	11pm-7am	Thomas Scarbrough
<b>EST Response Ops Mgr</b>			
Fri-Sat	3/18-3/19	11pm-7am	Omar Khan
Sat	19-Mar	7am - 3pm	Cris Brown
Sat	19-Mar	3pm-11pm	Bob Stransky
Sat-Sun	3/19-3/20	11pm - 7am	Jean Trefethan
Sun	20-Mar	7am - 3pm	Karen Jackson
Sun	20-Mar	3pm-11pm	Roberto Figueroa
Sun-Mon	3/20-3/21	11pm - 7am	Jean Trefethan
Mon	21-Mar	7am - 3pm	Bob Stransky
Mon	21-Mar	3pm-11pm	Omar Khan
Mon-Tues	3/21-3/22	11pm - 7am	Cris Brown
Tues	22-Mar	7am - 3pm	Bob Stransky
Tues	22-Mar	3pm-11pm	Karen Jackson
Tues-Wed	3/22-3/23	11pm - 7am	Roberto Figueroa
Wed	23-Mar	7am - 3pm	Bob Stransky
Wed	23-Mar	3pm-11pm	Jean Trefethan
Wed-Thur	3/23-3/24	11pm - 7am	Cris Brown
Thur	24-Mar	7am - 3pm	Karen Jackson
Thur	24-Mar	3pm-11pm	Omar Khan
Thur-Fri	3/24-3/25	11pm - 7am	Roberto Figueroa
Fri	25-Mar	7am - 3pm	Jean Trefethan
Fri	25-Mar	3pm-11pm	Cris Brown
Fri-Sat	3/25-3/26	11pm-7am	Roberto Figueroa
<b>EST Admin. Assistant</b>			
Fri-Sat	3/18-3/19	11pm-7am	Tabitha Howard
Sat	19-Mar	7am - 3pm	Karen Meyer
Sat	19-Mar	3pm-11pm	Amy Salus
Sat-Sun	3/19-3/20	11pm - 7am	Chris Lamb
Sun	20-Mar	7am - 3pm	Karen Meyer
Sun	20-Mar	3pm-11pm	Linda Williamson
Sun-Mon	3/20-3/21	11pm - 7am	Chris Lamb
Mon	21-Mar	7am - 3pm	Karen Meyer
Mon	21-Mar	3pm-11pm	Mary Glenn Crutchley
Mon-Tues	3/21-3/22	11pm - 7am	Andrea Wimbush
Tues	22-Mar	7am - 3pm	Amy Salus
Tues	22-Mar	3pm-11pm	Mary Glenn Crutchley
Tues-Wed	3/22-3/23	11pm - 7am	Michelle Manahan
Wed	23-Mar	7am - 3pm	Karen Meyer
Wed	23-Mar	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	3/23-3/24	11pm - 7am	Andrea Wimbush

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

- MARCH 18-26

Thur	24-Mar	7am - 3pm	Amy Salus
Thur	24-Mar	3pm-11pm	Mary Glenn Crutchley
Thur-Fri	3/24-3/25	11pm - 7am	Tabitha Howard
Fri	25-Mar	7am - 3pm	Karen Meyer
Fri	25-Mar	3pm-11pm	Mary Glenn Crutchley
Fri-Sat	3/25-3/26	11pm-7am	Michelle Manahan
<b>Liason Team</b>			
<b>LT Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Tom Blount
Sat	19-Mar	7am - 3pm	Tom Bergman
Sat	19-Mar	3pm-11pm	Bob Webber
Sat-Sun	3/19-3/20	11pm - 7am	John Adams
Sun	20-Mar	7am - 3pm	Tom Bergman
Sun	20-Mar	3pm-11pm	Bob Webber
Sun-Mon	3/20-3/21	11pm - 7am	John Adams
Mon	21-Mar	7am - 3pm	Tom Bergman
Mon	21-Mar	3pm-11pm	Bob Webber
Mon-Tues	3/21-3/22	11pm - 7am	John Adams
Tues	22-Mar	7am - 3pm	Tom Bergman
Tues	22-Mar	3pm-11pm	Bob Webber
Tues-Wed	3/22-3/23	11pm - 7am	John Adams
Wed	23-Mar	7am - 3pm	Michael Tschiltz
Wed	23-Mar	3pm-11pm	Joe Giitter
Wed-Thur	3/23-3/24	11pm - 7am	Tim McGinty
Thur	24-Mar	7am - 3pm	Michael Tschiltz
Thur	24-Mar	3pm-11pm	Joe Giitter
Thur-Fri	3/24-3/25	11pm - 7am	Tim McGinty
Fri	25-Mar	7am - 3pm	Michael Tschiltz
Fri	25-Mar	3pm-11pm	Joe Giitter
Fri-Sat	3/25-3/26	11pm-7am	Tim McGinty
<b>LT Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Janelle Jessie
Sat	19-Mar	7am - 3pm	Jeff Temple
Sat	19-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/19-3/20	11pm - 7am	Janelle Jessie
Sun	20-Mar	7am - 3pm	Jeff Temple
Sun	20-Mar	3pm-11pm	Nathan Sanfilippo
Sun-Mon	3/20-3/21	11pm - 7am	Milt Murray
Mon	21-Mar	7am - 3pm	Jeff Temple
Mon	21-Mar	3pm-11pm	Nathan Sanfilippo
Mon-Tues	3/21-3/22	11pm - 7am	Milt Murray
Tues	22-Mar	7am - 3pm	Rani Franovich
Tues	22-Mar	3pm-11pm	Nathan Sanfilippo
Tues-Wed	3/22-3/23	11pm - 7am	Milt Murray
Wed	23-Mar	7am - 3pm	Rani Franovich
Wed	23-Mar	3pm-11pm	Jeff Temple
Wed-Thur	3/23-3/24	11pm - 7am	Milt Murray
Thur	24-Mar	7am - 3pm	Rani Franovich
Thur	24-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/24-3/25	11pm - 7am	Milt Murray

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Fri	25-Mar	7am - 3pm	Janelle Jessie
Fri	25-Mar	3pm-11pm	Rani Franovich
Fri-Sat	3/25-3/26	11pm-7am	Milt Murray
<b>LT Federal Liason (2)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Sloan
Sat	19-Mar	7am - 3pm	Russ Chazell
Sat	19-Mar	3pm-11pm	Jeff Lynch
Sat-Sun	3/19-3/20	11pm - 7am	Scott Sloan
Sun	20-Mar	7am - 3pm	Ned Wright
Sun	20-Mar	3pm-11pm	Jerry Hale
Sun-Mon	3/20-3/21	11pm - 7am	Lisa Wright
Mon	21-Mar	7am - 3pm	Beth Reed/Ted Smith
Mon	21-Mar	3pm-11pm	Ned Wright
Mon-Tues	3/21-3/22	11pm - 7am	Lisa Wright
Tues	22-Mar	7am - 3pm	Beth Reed/Ted Smith
Tues	22-Mar	3pm-11pm	Ned Wright
Tues-Wed	3/22-3/23	11pm - 7am	Lisa Wright
Wed	23-Mar	7am - 3pm	Jerry Hale/
Wed	23-Mar	3pm-11pm	Ted Smith
Wed-Thur	3/23-3/24	11pm - 7am	Lisa Wright
Thur	24-Mar	7am - 3pm	/Ted Smith
Thur	24-Mar	3pm-11pm	Jerry Hale
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	/Ted Smith
Fri	25-Mar	3pm-11pm	Jerry Hale
Fri-Sat	3/25-3/26	11pm-7am	
<b>LT Congressional Liason (2)</b>			
Sat	19-Mar	7am - 2pm	Spiros Droggitis
	19-Mar	2pm-9pm	Tim Riley
Sun	20-Mar	7am - 2pm	Rebecca Schmidt
	20-Mar	2pm-9pm	Reanne Shane
Mon	21-Mar	7am - 2pm	
	21-Mar	2pm-9pm	
Tues	22-Mar	7am - 2pm	
	22-Mar	2pm-9pm	
Wed	23-Mar	7am - 2pm	
	23-Mar	2pm-9pm	
Thur	24-Mar	7am - 2pm	
	24-Mar	2pm-9pm	
Fri	25-Mar	7am - 2pm	
	25-Mar	2pm-9pm	
<b>LT International Liason (2)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Elizabeth Smirolodo/Danielle Emche
Sat	19-Mar	7am - 3pm	Lance English/Steve Bloom
Sat	19-Mar	3pm-11pm	Jenny Tobin/Jill Shephard
Sat-Sun	3/19-3/20	11pm - 7am	Elizabeth Smirolodo/Danielle Emche
Sun	20-Mar	7am - 3pm	Karen/Steve Baker
Sun	20-Mar	3pm-11pm	Eric Stahl/Nancy
Sun-Mon	3/20-3/21	11pm - 7am	Elizabeth Smirolodo/Jenny Tobin

## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Mon	21-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3
Mon	21-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Mon-Tues	3/21-3/22	11pm - 7am	Eric Stahl/Mugeh
Tues	22-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3
Tues	22-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Tues-Wed	3/22-3/23	11pm - 7am	Eric Stahl/Mugeh
Wed	23-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3
Wed	23-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Wed-Thur	3/23-3/24	11pm - 7am	Eric Stahl/Mugeh
Thur	24-Mar	7am - 3pm	Steve Bloom/Lance English
Thur	24-Mar	3pm-11pm	Janice/Jenny Tobin
Thur-Fri	3/24-3/25	11pm - 7am	Andrea/Elizabeth Smioldo
Fri	25-Mar	7am - 3pm	Steve Bloom/Lance English
Fri	25-Mar	3pm-11pm	Janice/Jenny Tobin
Fri-Sat	3/25-3/26	11pm-7am	Andrea/Elizabeth Smioldo

## Protective Measures Team

<b>PMTR Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Kathy Gibson
Sat	19-Mar	7am - 3pm	John Lubinski
Sat	19-Mar	3pm-11pm	Don Cool
Sat-Sun	3/19-3/20	11pm - 7am	Kathy Gibson
Sun	20-Mar	7am - 3pm	John Lubinski
Sun	20-Mar	3pm-11pm	Don Cool
Sun-Mon	3/20-3/21	11pm - 7am	Kathy Gibson
Mon	21-Mar	7am - 3pm	John Lubinski
Mon	21-Mar	3pm-11pm	Don Cool
Mon-Tues	3/21-3/22	11pm - 7am	John Tappert
Tues	22-Mar	7am - 3pm	John Lubinski
Tues	22-Mar	3pm-11pm	Don Cool
Tues-Wed	3/22-3/23	11pm - 7am	John Tappert
Wed	23-Mar	7am - 3pm	Terry Reis
Wed	23-Mar	3pm-11pm	Cindy Jones
Wed-Thur	3/23-3/24	11pm - 7am	Randy Sullivan
Thur	24-Mar	7am - 3pm	Terry Reis
Thur	24-Mar	5pm-11pm	Cindy Jones
Thur-Fri	3/24-3/25	11pm - 7am	Randy Sullivan
Fri	25-Mar	7am - 3pm	Terry Reis
Fri	25-Mar	5pm-11pm	Cindy Jones
Fri-Sat	3/25-3/26	11pm-7am	Randy Sullivan

<b>PMTR Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Mike Norris
Sat	19-Mar	7am - 3pm	Duane Hardesty
Sat	19-Mar	3pm-11pm	Jay Patel
Sat-Sun	3/19-3/20	11pm - 7am	Lou Brandon
Sun	20-Mar	7am - 3pm	Nima Ashkeboussi
Sun	20-Mar	3pm-11pm	Jay Patel
Sun-Mon	3/20-3/21	11pm - 7am	Lou Brandon
Mon	21-Mar	7am - 3pm	John Wray (volunteer from OE)
Mon	21-Mar	3pm-11pm	Jay Patel
Mon-Tues	3/21-3/22	11pm - 7am	Lou Brandon

## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Tues	22-Mar	7am - 3pm	John Wray (volunteer from OE)
Tues	22-Mar	3pm-11pm	Nima Ashkeboussi
Tues-Wed	3/22-3/23	11pm - 7am	Mike Norris
Wed	23-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Wed	23-Mar	3pm-11pm	Nima Ashkeboussi
Wed-Thur	3/23-3/24	11pm - 7am	Mike Norris
Thur	24-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Thur	24-Mar	3pm-11pm	Nima Ashkeboussi
Thur-Fri	3/24-3/25	11pm - 7am	Mike Norris
Fri	25-Mar	7am - 3pm	Duane Hardesty
Fri	25-Mar	3pm-11pm	Jay Patel
Fri-Sat	3/25-3/26	11pm-7am	

**PMTR Prot Actions Asst Dir**

Fri-Sat	3/18-3/19	11pm-7am	Greg Casto
Sat	19-Mar	7am - 3pm	Kathryn Brock
Sat	19-Mar	3pm-11pm	Kevin Williams
Sat-Sun	3/19-3/20	11pm - 7am	Greg Casto
Sun	20-Mar	7am - 3pm	Kathryn Brock
Sun	20-Mar	3pm-11pm	Tim Harris
Sun-Mon	3/20-3/21	11pm - 7am	Greg Casto
Mon	21-Mar	7am - 3pm	Kathryn Brock
Mon	21-Mar	3pm-11pm	
Mon-Tues	3/21-3/22	11pm - 7am	Jessica Kratchman
Tues	22-Mar	7am - 3pm	Kathryn Brock
Tues	22-Mar	3pm-11pm	Tim Harris
Tues-Wed	3/22-3/23	11pm - 7am	Jessica Kratchman
Wed	23-Mar	7am - 3pm	Sandra Wastler
Wed	23-Mar	3pm-11pm	
Wed-Thur	3/23-3/24	11pm - 7am	Jessica Kratchman
Thur	24-Mar	7am - 3pm	Sandra Wastler
Thur	24-Mar	3pm-11pm	
Thur-Fri	3/24-3/25	11pm - 7am	Jessica Kratchman
Fri	25-Mar	7am - 3pm	Kathryn Brock
Fri	25-Mar	3pm-11pm	
Fri-Sat	3/25-3/26	11pm-7am	Greg Casto

**PMTR RAAD**

Fri-Sat	3/18-3/19	11pm-7am	Randy Sullivan
Sat	19-Mar	7am - 3pm	Bruce Watson
Sat	19-Mar	3pm-11pm	Michelle Hart
Sat-Sun	3/19-3/20	11pm - 7am	Patricia Milligan
Sun	20-Mar	7am - 3pm	Eric Schrader
Sun	20-Mar	3pm-11pm	Steve LaVie
Sun-Mon	3/20-3/21	11pm - 7am	Randy Sullivan
Mon	21-Mar	7am - 3pm	Bruce Watson
Mon	21-Mar	3pm-11pm	Michelle Hart/Steve Lavie
Mon-Tues	3/21-3/22	11pm - 7am	
Tues	22-Mar	7am - 3pm	Bruce Watson
Tues	22-Mar	3pm-11pm	Steve LaVie
Tues-Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	Bruce Watson

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Wed	23-Mar	3pm-11pm	Michelle Hart/Steve Lavie
Wed-Thur	3/23-3/24	11pm - 7am	Patricia Milligan
Thur	24-Mar	7am - 3pm	Bruce Watson
Thur	24-Mar	3pm-11pm	Steve LaVie
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	
Fri	25-Mar	3pm-11pm	Michelle Hart/Steve Lavie
Fri-Sat	3/25-3/26	11pm-7am	
<b>PMTR Dose Assessment (RASCAL)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Duane Schmidt/Tony Huffert
Sat	19-Mar	7am - 3pm	Casper Sun
Sat	19-Mar	3pm-11pm	Margaret Cervera
Sat-Sun	3/19-3/20	11pm - 7am	Kimberly Gambone/John Parillo
Sun	20-Mar	7am - 3pm	Casper Sun
Sun	20-Mar	3pm-11pm	Margaret Cervera
Sun-Mon	3/20-3/21	11pm - 7am	Kimberly Gambone/John Parillo
Mon	21-Mar	7am - 3pm	Eric Schrader/Rich Clement
Mon	21-Mar	3pm-11pm	Margaret Cervera/Tony Huffert
Mon-Tues	3/21-3/22	11pm - 7am	John Parillo
Tues	22-Mar	7am - 3pm	Eric Schrader/Rich Clement
Tues	22-Mar	3pm-11pm	Gary Purdy/Casper Sun
Tues-Wed	3/22-3/23	11pm - 7am	Margaret Cervera/Tony Huffert
Wed	23-Mar	7am - 3pm	Eric Schrader/Rich Clement
Wed	23-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Wed-Thur	3/23-3/24	11pm - 7am	Tony Huffert/John Parillo
Thur	24-Mar	7am - 3pm	Eric Schrader/Rich Clement
Thur	24-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Thur-Fri	3/24-3/25	11pm - 7am	Tony Huffert/John Parillo
Fri	25-Mar	7am - 3pm	Eric Schrader/Rich Clement
Fri	25-Mar	3pm-11pm	Gary Purdy/Casper Sun
Fri-Sat	3/25-3/26	11pm-7am	John Parillo
<b>PMTR GIS Analyst</b>			
Fri-Sat	3/18-3/19	11pm-7am	Stephanie Devlin
Sat	19-Mar	7am - 3pm	Nebiyu Tirah
Sat	19-Mar	3pm-11pm	Yong Li
Sat-Sun	3/19-3/20	11pm - 7am	
Sun	20-Mar	7am - 3pm	Phil Brandt
Sun	20-Mar	3pm-11pm	Ken See
Sun-Mon	3/20-3/21	11pm - 7am	
Mon	21-Mar	7am - 3pm	Nebiyu Tirah
Mon	21-Mar	3pm-11pm	
Mon-Tues	3/21-3/22	11pm - 7am	
Tues	22-Mar	7am - 3pm	Yong Li
Tues	22-Mar	3pm-11pm	
Tues-Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	
Wed	23-Mar	3pm-11pm	
Wed-Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	Yong Li
Thur	24-Mar	3pm-11pm	

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

MARCH 18-20

Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	
Fri	25-Mar	3pm-11pm	
Fri-Sat	3/25-3/26	11pm-7am	
<b>PMTR Meteorologist</b>			
Fri-Sat	18-Mar	3pm-11pm	Mike Mazaika
Sat	3/18-3/19	11pm-7am	Dave Brown
Sat	19-Mar	7am - 3pm	Kevin Quinlan
Sat-Sun	19-Mar	3pm-11pm	Mike Mazaika
Sun	3/19-3/20	11pm - 7am	David Brown
Sun	20-Mar	7am - 3pm	Kevin Quinlan
Sun-Mon	20-Mar	3pm-11pm	Mike Mazaika
Mon	3/20-3/21	11pm - 7am	David Brown
Mon	21-Mar	7am - 3pm	Mike Mazaika
Mon-Tues	21-Mar	3pm-11pm	
Tues	3/21-3/22	11pm - 7am	
Tues	22-Mar	7am - 3pm	
Tues-Wed	22-Mar	3pm-11pm	
Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	
Wed-Thur	23-Mar	3pm-11pm	
Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	
Thur-Fri	24-Mar	3pm-11pm	
Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	
Fri-Sat	25-Mar	3pm-11pm	
	3/25-3/26	11pm-7am	
<b>Reactor Safety Team</b>			
<b>RST Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Jennifer Uhle
Sat	19-Mar	7am - 3pm	Laura Dudes
Sat	19-Mar	3pm-11pm	Dave Skeen
Sat-Sun	3/19-3/20	11pm - 7am	Jennifer Uhle
Sun	20-Mar	7am - 3pm	Laura Dudes
Sun	20-Mar	3pm-11pm	Dave Skeen
Sun-Mon	3/20-3/21	11pm - 7am	Jennifer Uhle
Mon	21-Mar	7am - 3pm	Fred Brown
Mon	21-Mar	3pm-11pm	Dave Skeen
Mon-Tues	3/21-3/22	11pm - 7am	Jennifer Uhle
Tues	22-Mar	7am - 3pm	Fred Brown
Tues	22-Mar	3pm-11pm	Dave Skeen
Tues-Wed	3/22-3/23	11pm - 7am	Brian Holian
Wed	23-Mar	7am - 3pm	Fred Brown
Wed	23-Mar	3pm-11pm	Bill Ruland
Wed-Thur	3/23-3/24	11pm - 7am	Brian Holian
Thur	24-Mar	7am - 3pm	Fred Brown
Thur	24-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/24-3/25	11pm - 7am	Brian Holian
Fri	25-Mar	7am - 3pm	Pat Hiland

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

MARCH 18-26

Fri	25-Mar	3pm-11pm	Bill Ruland
Fri-Sat	3/25-3/26	11pm-7am	Brian Holian
Sat	26-Mar	0700 -1500	Jerry Dozier?
Sat	26-Mar	1500 - 2300	Hussein Esmail
Sat	3/26-27/2011	2300 - 0700	
<b>RST Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Rollie Berry
Sat	19-Mar	7am - 3pm	Scott Sloan
Sat	19-Mar	3pm-11pm	Oleg Bukharin
Sat-Sun	3/19-3/20	11pm - 7am	Frank Collins
Sun	20-Mar	7am - 3pm	Peter Alter
Sun	20-Mar	3pm-11pm	Eric Thomas
Sun-Mon	3/20-3/21	11pm - 7am	Mike Morlang
Mon	21-Mar	7am - 3pm	Peter Alter
Mon	21-Mar	3pm-11pm	Greg Schoenebeck
Mon-Tues	3/21-3/22	11pm - 7am	Frank Collins
Tues	22-Mar	7am - 3pm	Rick Hasselberg
Tues	22-Mar	3pm-11pm	Mike Morlang
Tues-Wed	3/22-3/23	11pm - 7am	Oleg Bukharin
Wed	23-Mar	7am - 3pm	Eric Thomas*
Wed	23-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/23-3/24	11pm - 7am	Frank Collins
Thur	24-Mar	7am - 3pm	Rick Hasselberg
Thur	24-Mar	3pm-11pm	Brett Rini
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	Eric Thomas*
Fri	25-Mar	3pm-11pm	Brett Rini
Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
<b>Severe Accident/PRA</b>			
Fri-Sat	3/18-3/19	11pm - 7am	Don Marksberry
Sat	19-Mar	7am - 3pm	Len Ward
Sat	19-Mar	3pm-11pm	Ed Fuller
Sat-Sun	3/19-3/20	11pm - 7am	Mike Salay
Sun	20-Mar	7am - 3pm	John Lane
Sun	20-Mar	3pm-11pm	
Sun-Mon	3/20-3/21	11pm - 7am	Don Dube
Mon	21-Mar	7am - 3pm	Jeff Circle
Mon	21-Mar	3pm-11pm	Hossein Esmaili
Mon-Tues	3/21-3/22	11pm - 7am	Jim Gilmer
Tues	22-Mar	7am - 3pm	Ed Fuller
Tues	22-Mar	3pm-11pm	Len Ward
Tues-Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	Jeff Circle
Wed	23-Mar	3pm-11pm	Jerry Dozier
Wed-Thur	3/23-3/24	11pm - 7am	Mike Salay
Thur	24-Mar	7am - 3pm	Jeff Circle
Thur	24-Mar	3pm-11pm	Steve Laur
Thur-Fri	3/24-3/25	11pm - 7am	



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Fri	25-Mar	7am - 3pm	Jerry Dozier ?
Fri	25-Mar	3pm-11pm	Steve Laur
Fri-Sat	3/25-3/26	11pm-7am	
<b>BWR Expertise</b>			
Fri-Sat	3/18-3/19	11pm-7am	Mike Brown
Sat	19-Mar	7am - 3pm	Peter Alter
Sat	19-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/19-3/20	11pm - 7am	John Kauffman
Sun	20-Mar	7am - 3pm	Larry Vick
Sun	20-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/20-3/21	11pm - 7am	Mike Brown
Mon	21-Mar	7am - 3pm	Gerry Gulla (OE volunteer)
Mon	21-Mar	3pm-11pm	Chuck Norton
Mon-Tues	3/21-3/22	11pm - 7am	Mike Brown
Tues	22-Mar	7am - 3pm	
Tues	22-Mar	3pm-11pm	Chuck Norton
Tues-Wed	3/22-3/23	11pm - 7am	Mike Brown
Wed	23-Mar	7am - 3pm	Larry Vick
Wed	23-Mar	3pm-11pm	Chuck Norton
Wed-Thur	3/23-3/24	11pm - 7am	Eva Brown
Thur	24-Mar	7am - 3pm	
Thur	24-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/24-3/25	11pm - 7am	Eva Brown
Fri	25-Mar	7am - 3pm	
Fri	25-Mar	3pm-11pm	
Fri-Sat	3/25-3/26	11pm-7am	Eva Brown
<b>RST Comm/ERDS Operator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Andy Kugler
Sat	19-Mar	7am - 3pm	Joseph Williams
Sat	19-Mar	3pm-11pm	John Thorp
Sat-Sun	3/19-3/20	11pm - 7am	Ujagav Bhachu
Sun	20-Mar	7am - 3pm	Denise McGovern
Sun	20-Mar	3pm-11pm	Donna Williams
Sun-Mon	3/20-3/21	11pm - 7am	Ujagav Bhachu
Mon	21-Mar	7am - 3pm	Joseph Williams
Mon	21-Mar	3pm-11pm	
Mon-Tues	3/21-3/22	11pm - 7am	
Tues	22-Mar	7am - 3pm	Steve Bloom
Tues	22-Mar	3pm-11pm	Jim Isom
Tues-Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	Joseph Williams
Wed	23-Mar	3pm-11pm	Ken Hart
Wed-Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	John Thorp
Thur	24-Mar	3pm-11pm	Ken Hart
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	Donna Williams
Fri	25-Mar	3pm-11pm	Jim Isom
Fri-Sat	3/25-3/26	11pm-7am	

## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

RST Support (Seismology Q&A)			
Fri-Sat	3/18-3/19	11pm-7am	Off (On Call)
Sat	19-Mar	7am - 3pm	Off (On Call)
Sat	19-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/19-3/20	11pm - 7am	Off (On Call)
Sun	20-Mar	7am - 3pm	Off (On Call)
Sun	20-Mar	3pm-11pm	Off (On Call)
Sun-Mon	3/20-3/21	11pm - 7am	Off (On Call)
Mon	21-Mar	7am - 3pm	Off (On Call)
Mon	21-Mar	3pm-11pm	Off (On Call)
Mon-Tues	3/21-3/22	11pm - 7am	Off (On Call)
Tues	22-Mar	7am - 3pm	Off (On Call)
Tues	22-Mar	3pm-11pm	Off (On Call)
Tues-Wed	3/22-3/23	11pm - 7am	Off (On Call)
Wed	23-Mar	7am - 3pm	Off (On Call)
Wed	23-Mar	3pm-11pm	Off (On Call)
Wed-Thur	3/23-3/24	11pm - 7am	Off (On Call)
Thur	24-Mar	7am - 3pm	Off (On Call)
Thur	24-Mar	3pm-11pm	Off (On Call)
Thur-Fri	3/24-3/25	11pm - 7am	Off (On Call)
Fri	25-Mar	7am - 3pm	off (On Call)
Fri	25-Mar	3pm-11pm	Off (On Call)
Fri-Sat	3/25-3/26	11pm-7am	Off (On Call)

## Weaver, Tonna

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**From:** Brown, Courtney [cobrown@ofda.gov]  
**Sent:** Saturday, March 19, 2011 9:05 AM  
**To:** RMTPACTSU\_PRO; RMT\_PACTSU; DART\_PACTSU  
**Subject:** Re: UPDATED: Japan EQ Press Guidance

Just received a call from mofa asking that in our press releases and talking points that we do not reference the end of the rescue phase as the reason why our usar teams left.

Rg, can we rework the TP on the USAR team paying close attention to references to the JSDF end of rescue phase.

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**From:** RMTPACTSU\_PRO  
**To:** RMT\_PACTSU; DART\_PACTSU  
**Sent:** Sat Mar 19 08:56:05 2011  
**Subject:** UPDATED: Japan EQ Press Guidance  
Includes USAR Demob info.

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The Government of Japan (GoJ) National Police Agency reported 7,348 deaths, 10,947 persons missing, and 2,603 people injured due to the earthquake and tsunami as of 0500 hours EDT on March 19. In addition, the natural disasters damaged or destroyed more than 117,000 buildings and 1,300 roads.

Conditions at the Fukushima Daiichi nuclear power plant remain relatively stable as of 0500 hours EDT March 19, according to U.S. Nuclear Regulatory Commission (NRC) personnel on the RMT. DART and RMT staff facilitated a NRC-Bechtel collaboration to design and procure 12 pumps intended to inject water into spent fuel pools, which are being transported to Japan by the Government of Australia and U.S. Forces-Japan. The NRC plans to host an information-sharing, industry to industry/government agency meeting at 1400 hours EDT today.

### USG ASSISTANCE

The U.S. Agency for International Development is working with agencies across the U.S. Government—including the Departments of State, Defense, and Energy and the Nuclear Regulatory Commission—to assure that we are able to provide necessary assistance to the Government of Japan in the aftermath of the devastating earthquake and tsunami.

The USAID Disaster Assistance Response Team (DART) is in Japan and working to manage the overall U.S. Government response effort in Japan in coordination with the U.S. Embassy in Tokyo.

Nuclear specialists on the DART—including 11 NRC officers, 1 DoE officer, and 1 U.S. Department of Health and Human Services (HHS) officer—are monitoring technical aspects of the nuclear issues at the Fukushima Daiichi nuclear power plant, engaging with GoJ officials on the status of the health impacts of radiation, and providing guidance to the U.S. Embassy in Tokyo on efforts to cool reactors.

DART staff continue to engage at three levels to determine any possible humanitarian needs in Japan—nationally through Japan's Ministry of Foreign Affairs (MoFA) and other GoJ contacts, locally at the prefecture level and in coordination with U.S. Forces-Japan, and through Japanese civil society organizations, including Japan Platform (JP) and the Japan Non-governmental organization (NGO) Center for International Cooperation (JANIC).

On a March 18 field assessment to Miyagi Prefecture, DART staff observed that assistance is flowing in an organized manner from the national level to the evacuation center level. However, concerns that fuel shortages may limit the transport of existing relief supplies remain. To address fuel shortages, the GoJ is working to redirect 38,000 kiloliters of fuel per day—the average daily

demand before the tsunami—from oil refineries in Hokkaido and western Japan. In addition, USFJ continues to coordinate with the GoJ to ensure the availability of fuel without negatively impacting the domestic fuel economy.

The DART is working to vet requests for assistance from local prefectures and convey them to USFJ for coordination with JSDF for transportation and onward distribution. The DART notes that sufficient relief commodities are available in-country and the GoJ has not requested in-kind contributions.

On March 13, USAID's Urban Search and Rescue (USAR) teams from Fairfax County and Los Angeles County, comprising 144 personnel and 12 live search canines, arrived in Misawa, Japan and were immediately dispatched to Ofunato in Iwate prefecture. In coordination with the Government of Japan (GoJ), the National Japanese USAR teams and our international partners, the U.S. USAR teams completed all searches the GoJ asked for in the central portion of the city of Ofunato and Kamaishi City. Japanese Self Defense Forces marked the end of rescue efforts and a transition to humanitarian missions in Iwate and Miyagi with a moment of silence. The U.S. USAR teams are now returning to the United States, and they should arrive on Saturday afternoon in LA and just after midnight in Fairfax.

Prior to their departure, the U.S. USAR teams transferred nearly \$145,000 in equipment to the Ofunato fire department to assist with local recovery efforts. The equipment includes 4 zodiac boat kits—containing boats, motor, fuel tanks, and paddles—16 kerosene heaters, 160 cots, and 160 sleeping bags.

For individuals and businesses who wish to help those in Japan, we encourage making a cash donation to a reputable organization working in the affected area. Nothing will get there faster or help more at this time. Visit [www.usaid.gov](http://www.usaid.gov) for more info or email [japanhelp@ofda.gov](mailto:japanhelp@ofda.gov)

Weaver, Tonna

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**From:** Joe Colvin [president@ans.org]  
**Sent:** Saturday, March 19, 2011 8:09 AM  
**To:** Panicker, Mathew  
**Subject:** Arranging In-State Meetings With Your Senators/Members of Congress  
**Attachments:** Mar 18\_Info sources2.pdf

Dear ANS Members,

We are all saddened by the catastrophic earthquake and tsunami in Japan and the resulting damage to the Fukushima Daiichi Nuclear Station. As we move forward, it is critically important that we work together to ensure that our federal policy makers have accurate information about nuclear technology and radiation.

Your Senators and Members of Congress are returning to their States and Districts next week, and I encourage you to schedule a meeting with them while they are back home. They need to know they have constituents with nuclear related technical expertise who can help them make sense of this very complex and dynamic situation in Japan.

I suggest you take these steps:

1. Find the phone numbers of your Senators' state offices by accessing their website here [http://www.senate.gov/general/contact\\_information/senators\\_cfm.cfm](http://www.senate.gov/general/contact_information/senators_cfm.cfm). You can find your Member of Congress' district office by clicking here <http://www.house.gov/zip/ZIP2Rep.html>.

2. Call their scheduler and ask for an appointment. Let them know you are a constituent and a member of the American Nuclear Society with knowledge relevant to technical aspects of the situation in Japan. If you are offered a meeting with staff, accept.

3. Once you have an appointment, arm yourself with information. Unfortunately, we cannot provide you with up-to-date talking points since the situation itself is so fluid. Instead, your role is to help the member understand some of the many technical issues, learn about their concerns and share your expertise. Below are some reliable sources of information, which are being updated regularly:

\* American Nuclear Society Japan Page [ansnuclearcafe.org](http://ansnuclearcafe.org)

\* Nuclear Energy Institute [www.nei.org](http://www.nei.org)

\* World Nuclear News [www.world-nuclear-news.org](http://www.world-nuclear-news.org)

\* ANS Radiation Dose Chart [www.new.ans.org/pi/resources/dosechart/](http://www.new.ans.org/pi/resources/dosechart/)

\* NHK Television [www3.nhk.or.jp/nhkworld/index.html](http://www3.nhk.or.jp/nhkworld/index.html)

\* Japan Times [www.japantimes.co.jp](http://www.japantimes.co.jp)

4. On the day of the meeting,



\* Be prompt and patient. It is not uncommon for a member of Congress to be late or to have a meeting interrupted due to a crowded schedule.

\* Be grateful. Make sure you open the conversation by thanking the members/staff for his/her time, and send a handwritten thank you note afterwards.

\* Be honest. The situation in Japan is a difficult one. Don't feel the need to provide "spin." Stick to the facts as you know them and don't be afraid to say that you do not know the answer to a question. The goal is to be a technical resource for them to contact in the future and let them know your support for NS&T in general.

\* Be responsive. Make sure you follow up promptly if the member/staff has asked you to provide any additional information or analysis. Contact us at [japanfacts@ans.org](mailto:japanfacts@ans.org) if you need help.

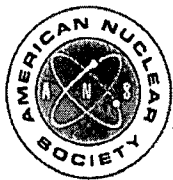
Again, your goal is to be a technical resource to your Senators/Representative and their staffs, providing perspective and correcting misperceptions without sugarcoating the situation.

Finally, we encourage you to send ANS a message to let us know how your meeting went. Send an e-mail to [japanfacts@ans.org](mailto:japanfacts@ans.org) with the subject line "MEETING."

Any help you can give would be greatly appreciated.

Joe Colvin  
ANS President

Attachment: Information About Conditions in Japan, March 18, 2011



## AMERICAN NUCLEAR SOCIETY

555 North Kensington Avenue  
La Grange Park, Illinois  
60526-5592 USA

Tel: 708/ 352-6611  
E-Mail: [NUCLEUS@ans.org](mailto:NUCLEUS@ans.org)  
<http://www.ans.org>  
Fax: 708/ 352-0499

### Information about Conditions in Japan March 18, 2011

#### Humanitarian Assistance

- American Nuclear Society Japan Relief Fund [www.ans.org/relief](http://www.ans.org/relief)
- U.S. Agency for International Development [www.usaid.gov](http://www.usaid.gov)
- U.S. State Department [www.state.gov](http://www.state.gov)
- U.S. Red Cross [www.redcross.org](http://www.redcross.org)

#### News Updates on Japan's Nuclear Crisis

- American Nuclear Society [www.ans.org](http://www.ans.org)
- Nuclear Energy Institute [www.nei.org](http://www.nei.org)
- World Nuclear News [www.world-nuclear-news.org](http://www.world-nuclear-news.org)

#### Understanding Radiation Measurements

- ANS Radiation Dose Chart (interactive) [www.ans.org/pi/resources/dosechart/](http://www.ans.org/pi/resources/dosechart/)
- ANS Radiation Dose Chart (in print form)  
[www.ans.org/pi/resources/dosechart/docs/dosechart.pdf](http://www.ans.org/pi/resources/dosechart/docs/dosechart.pdf)

#### English Language News in Japan

- NHK Television [www3.nhk.or.jp/nhkworld/index.html](http://www3.nhk.or.jp/nhkworld/index.html)
- Japan Times [www.japantimes.co.jp](http://www.japantimes.co.jp)

### About the American Nuclear Society

The American Nuclear Society is a not-for-profit, international, scientific and educational organization. It was established by a group of individuals who recognized the need to unify the professional activities within the diverse fields of nuclear science and technology. December 11, 1954, marks the Society's historic beginning at the National Academy of Sciences in Washington, D.C. ANS has since developed a multifarious membership composed of approximately 11,000 engineers, scientists, administrators, and educators representing 1,600 plus corporations, educational institutions, and government agencies. It is governed by four officers and a board of directors elected by the membership.

## Weaver, Tonna

**From:** JAPAN ASSISTANCE ALERT [JAPAN\_ASSISTANCE\_ALERT@USAID.GOV]  
**Sent:** Saturday, March 19, 2011 7:46 PM  
**Subject:** 03.19.11 - USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #9  
**Attachments:** 03.19.11 - USAID-DCHA Japan Earthquake and Tsunami Fact Sheet #9.pdf; 03.19.11 - Japan Earthquake and Tsunami Program Map.pdf

Please find attached and pasted below the USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #9 and accompanying map, both dated March 19, 2011. These documents have been approved for public use.

If you experience formatting issues in the text below, please refer to the attached document.

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



**USAID**  
FROM THE AMERICAN PEOPLE

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

### *Japan – Earthquake and Tsunami*

Fact Sheet #9, Fiscal Year (FY) 2011

March 19, 2011

*Note: The last fact sheet was dated March 18, 2011.*

#### KEY DEVELOPMENTS

- The earthquake and tsunami have resulted in more than 7,500 deaths and left nearly 11,700 people missing, as reported by the Government of Japan (GoJ) on March 19. The natural disasters also damaged or destroyed more than 117,000 buildings and 1,300 roads.
- On March 19, the GoJ Ministry of Economy, Trade, and Industry (METI) noted expectations that fuel shortages that have been hampering relief supply delivery during the past week should begin to improve in coming days as two large refineries resume operations and 300 fuel trucks commence deliveries to affected areas. According to local media, METI staff have identified priority gas stations in affected areas to receive fuel supplies as they become available and have shared the list with trucking associations, police, local governments, and fuel distributors.
- The GoJ has announced the creation of a sub-task force under the Prime Minister to strengthen and further systematize GoJ response in tsunami-affected areas. The new task force is headed by the GoJ Minister of State for Disaster Management and will work to meet needs in isolated areas, ensure replenishment of relief supplies, and restore vital lifelines, such as electricity and water. The new sub-task force will also work to further enhance measures to provide material support to affected areas.
- Following nearly a week of urban search and rescue (USAR) operations, the GoJ expressed appreciation for the efforts of the U.S. USAR teams from Fairfax County, Virginia, and Los Angeles County, California. The U.S. teams departed Japan on March 19 after completing all GoJ-assigned missions.

NUMBERS AT A GLANCE <sup>[1]</sup>		SOURCE
Confirmed Deaths	7,508	GoJ NPA <sup>[2]</sup> – March 19, 2011
Missing Persons	11,680	GoJ NPA – March 19, 2011
Number of People in Evacuation Centers	255,074	GoJ NPA – March 19, 2011

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

USAID/OFDA Assistance for the Japan Earthquake and Tsunami..... \$7,210,614  
DoD<sup>[3]</sup> Humanitarian Assistance for the Japan Earthquake and Tsunami..... \$7,140,900  
Total U.S. Government (USG) Assistance for the Japan Earthquake and Tsunami..... \$14,351,514

#### CONTEXT

m-267



- On March 11 at 0046 hours Eastern Standard Time, or 1446 hours Japan Standard Time, a magnitude 9.0 earthquake occurred off the east coast of Honshu Island, Japan—approximately 231 miles northeast of Tokyo—at a depth of approximately 15 miles, generating a tsunami that struck the eastern coast of Japan and resulted in additional fatalities and damage, particularly in Miyagi, Fukushima, and Iwate prefectures. Furthermore, the natural disasters led to a serious nuclear incident at the Fukushima Daiichi power plant located approximately 150 miles north of Tokyo.
- On March 11, U.S. Ambassador John V. Roos declared a disaster due to the effects of the earthquake and tsunami in Japan. USAID/OFDA provided an initial \$100,000 through the U.S. Embassy in Tokyo to assist with local relief efforts. In addition, USAID activated a Response Management Team (RMT) in Washington, D.C., and deployed a Disaster Assistance Response Team (DART)—including USAR specialists and nuclear experts—to support Japanese emergency response efforts.

#### ***Humanitarian Coordination and Response***

- DART staff note that the GoJ has been responding robustly to humanitarian needs arising from the earthquake and tsunami, and the Prime Minister's newly announced sub-task force represents a further augmentation in capacity. Under the new GoJ system, the national government plans to collect relief items and food from municipalities and the private sector and consolidate it at approximately 50 Japan Self-Defense Forces (JSDF) sites nationwide. The JSDF or local government will distribute the supplies to evacuation centers. DART staff note that the system—if implemented as described—may alleviate challenges that have hampered the transportation of supplies to date, as the JSDF reported having adequate fuel supplies to conduct operations.
- According to the Japan Platform—a consortium of Japanese civil society, private sector, and government organizations—local officials have reported that poor road access has created small pockets of isolated populations in tsunami-affected areas. The JSDF has assembled teams to facilitate voluntary transport to evacuation centers and expects to reach all isolated populations within the next two days. Approximately 94 percent of main roads reaching affected coastal areas had been repaired as of March 19, with additional repairs ongoing in affected areas, according to the GoJ. In addition, six previously damaged sea ports are now operational and the Sendai airport is open for a limited number of emergency and humanitarian flights.
- On March 19, prefectures across Japan announced plans to provide temporary housing for evacuees from tsunami- and nuclear-affected areas. According to international media, Shimane Prefecture has 675 public houses available for evacuee families and plans to provide evacuees staying in the prefecture with 300,000 yen—approximately \$3,722—per household for living expenses, and the Tokyo Metropolitan Government also plans to accommodate 1,600 evacuees in public buildings. In addition, the governor of Hyogo Prefecture announced that seven prefectures in the Kansai area of western Japan will accept and provide temporary shelter for earthquake evacuees.

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

- The U.N. World Food Program (WFP) has reported plans to deploy logisticians to the GoJ central coordination response unit and to establish a logistics coordination cell at Narita Airport in Tokyo to help prevent congestion due to relief item donations. WFP also plans to provide emergency storage facilities to support GoJ efforts.
- The GoJ has commenced the transport of 600,000 liters of gasoline to meet humanitarian needs, following the delivery of 60,000 liters on March 18, according to the U.N. Office for the Coordination of Humanitarian Affairs. The GoJ has also disbursed approximately \$66 million from a reserve fund to cover fuel costs for JSDF relief efforts.
- On March 19, U.S. Joint Forces–Japan (USFJ) delivered nearly 5,000 daily servings of food and water, as well as 18,600 pounds of emergency relief supplies to affected communities. USFJ personnel have conducted more than 400 helicopter and aircraft missions and transported a total of approximately 60,000 daily servings of food and water and 80,000 pounds of emergency relief supplies since March 11. USFJ continues to assist in delivering additional relief supplies to affected locations.
- Two DART military liaison officers remain at the Yokota Air Force Base outside of Tokyo, Japan, to work with USFJ in defining humanitarian requirements and validating humanitarian operations. DART staff continue to work with USFJ to clarify the scope and scale of the overall military mission in ongoing USG humanitarian assistance operations.

#### ***Humanitarian Assessments***

- On March 18, the non-governmental organization International Medical Corps (IMC) conducted an assessment of Matsushima city in Miyagi Prefecture. IMC staff noted limited damage to the city, where the local hospital is near capacity but functioning well, with a referral and transfer system in place and local volunteer medical staff filling gaps in personnel. To further augment capacity, local officials noted that a 30-person team of volunteer physicians from Hyogo plan to arrive in the area in the coming days. During the visit, IMC staff did not identify any acute population or health care needs.
- In East Matsushima city, IMC reported that approximately 14,000 evacuees are staying in 80 centers managed by the local Public Health and Social Welfare Service director. Fuel shortages and other public service disruptions present a challenge to relief delivery, as noted in DART assessments of other affected areas; however, the JSDF, other GoJ agencies, and the Japanese Red Cross Society continue to distribute water and other supplies at various locations in the city.

### Situation at Nuclear Power Plants

- DART nuclear specialists noted no significant changes at the Fukushima Daiichi power plant on March 19, with JSDF continuing attempts to cool spent fuel ponds. According to the International Atomic Energy Agency, the Tokyo Electric Power Company is also ventilating the rooftops of units 5 and 6 of the Daiichi plant to release hydrogen and prevent further explosions.
- To date, staff from the DART and the U.S. Embassy in Tokyo report no increase in radiation levels in Tokyo.

### USAID HUMANITARIAN ASSISTANCE TO JAPAN

Implementing Partner	Activity	Location	Amount
<b>USAID/OFDA ASSISTANCE<sup>1</sup></b>			
U.S. Embassy in Tokyo	Emergency Relief Support	Affected Areas	\$100,000
DoD	USAR Operations (Transport of USAR teams)	Affected Areas	\$1,000,000
L.A. County USAR Team	USAR Operations	Affected Areas	\$2,058,000
Fairfax County USAR Team	USAR Operations	Affected Areas	\$2,058,000
U.S. Department of Health and Human Services	Health	Affected Areas	\$93,360
	USAID/DART Support Costs		\$1,599,600
	Administrative Support		\$301,654
<b>TOTAL USAID/OFDA</b>			<b>\$7,210,614</b>
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### PUBLIC DONATION INFORMATION

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

Pacific Tsunami and Japan Earthquake Response Management Team  
RMTPACTSU\_INC@ofda.gov  
202-712-0039

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

[2] National Police Agency (NPA).

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



**BUREAU FOR DEMOCRACY, CONFLICT, AND HUMANITARIAN ASSISTANCE (DCHA)  
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<sup>2</sup> National Police Agency (NPA).

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

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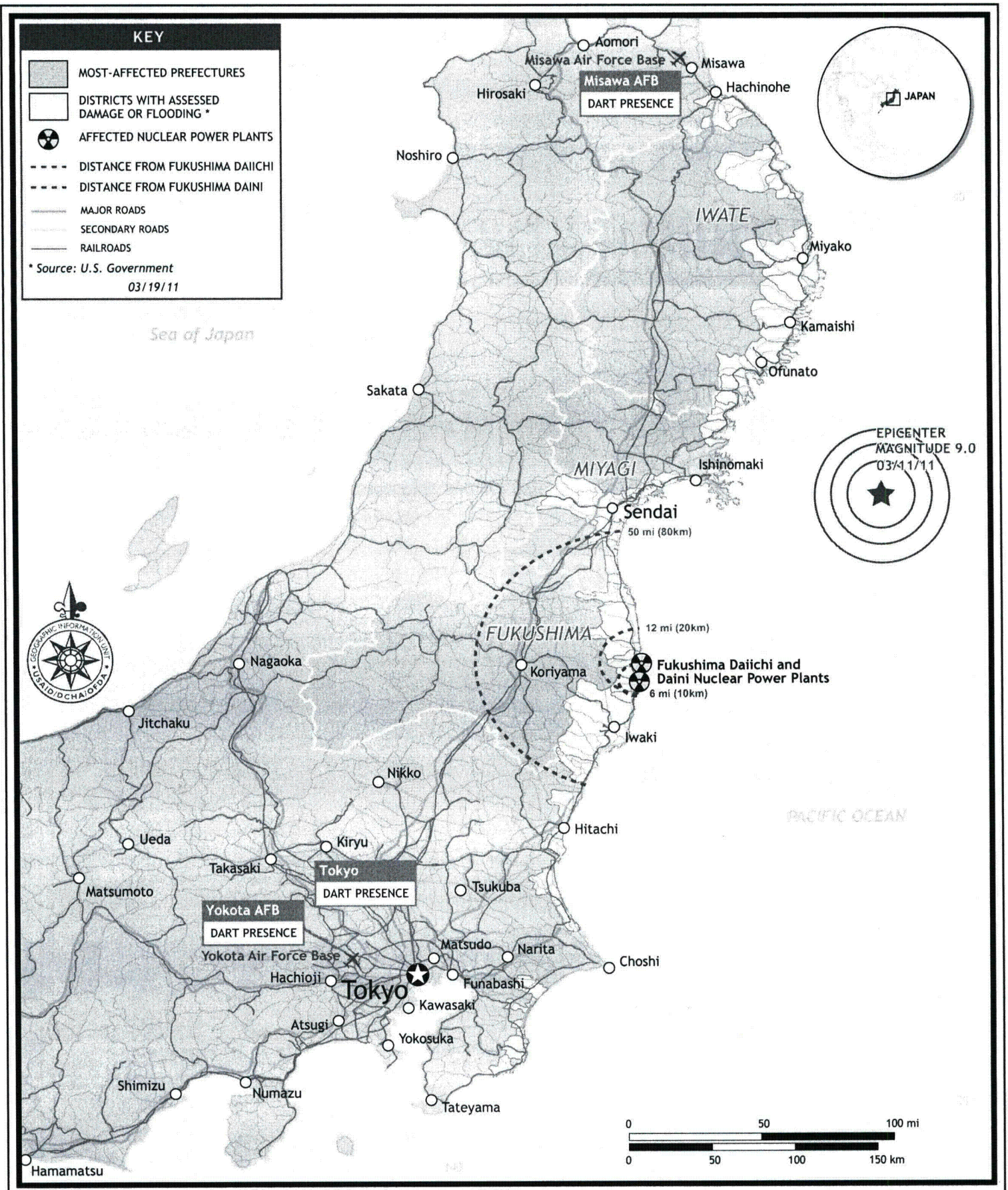
USAID/OFDA bulletins appear on the USAID web site at [http://www.usaid.gov/our\\_work/humanitarian\\_assistance/disaster\\_assistance/](http://www.usaid.gov/our_work/humanitarian_assistance/disaster_assistance/)





**USAID**  
FROM THE AMERICAN PEOPLE

# USG HUMANITARIAN ASSISTANCE TO JAPAN FOR THE EARTHQUAKE AND TSUNAMI

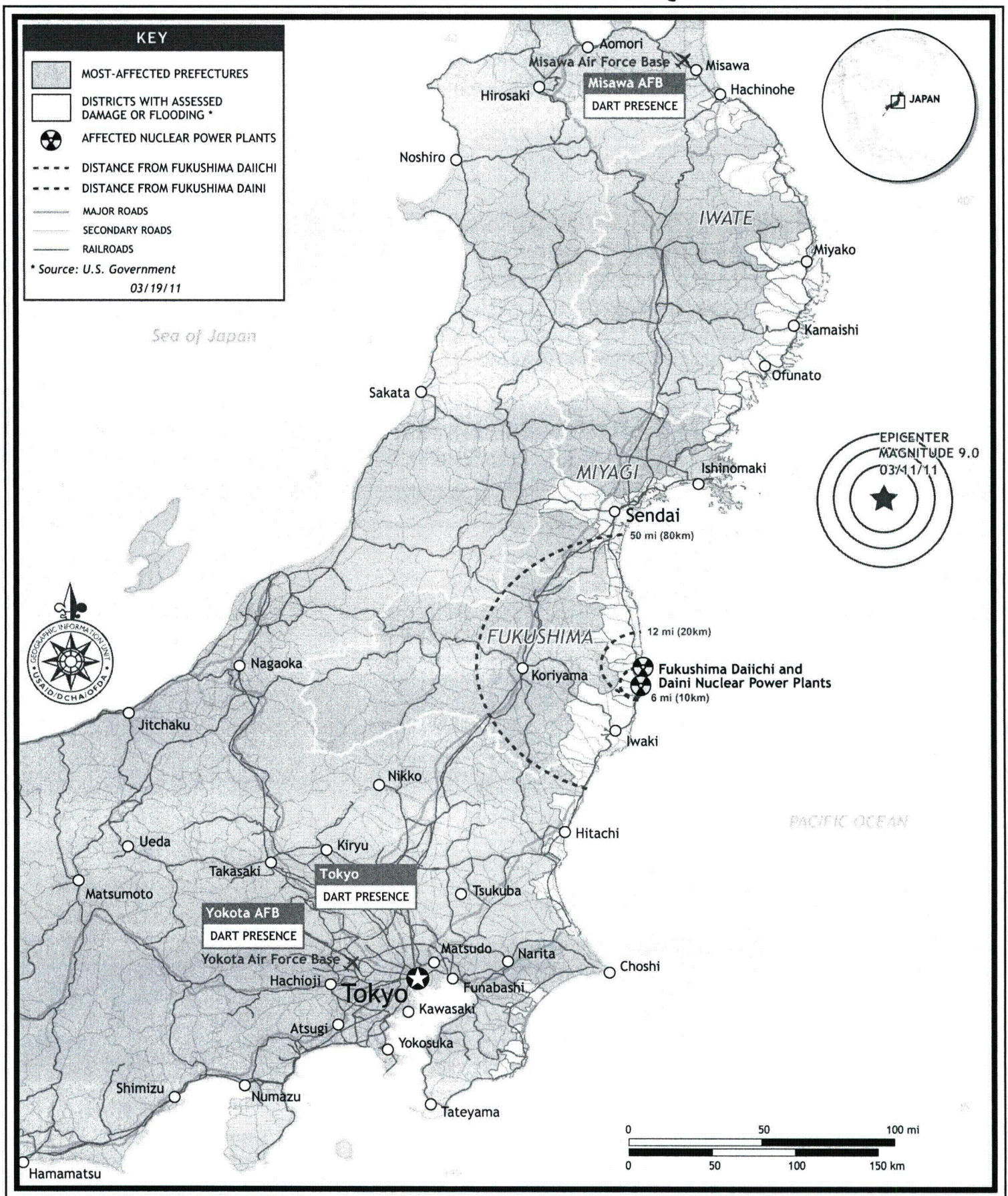






**USAID**  
FROM THE AMERICAN PEOPLE

# USG HUMANITARIAN ASSISTANCE TO JAPAN FOR THE EARTHQUAKE AND TSUNAMI





## Yarsky, Peter

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**From:** Gibson, Kathy  
**Sent:** Saturday, March 19, 2011 6:46 PM  
**To:** Huffert, Anthony; Yarsky, Peter; Rubin, Stuart; Salley, MarkHenry  
**Cc:** Uhle, Jennifer; Coyne, Kevin; Bush-Goddard, Stephanie; Elkins, Scott; Scott, Michael  
**Subject:** Japan

**Importance:** High

You will NOT be going to Japan at this time. Thank you so much for your willingness to serve.

Kathy

M-268

**Yarsky, Peter**

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**From:** Gibson, Kathy  
**Sent:** Saturday, March 19, 2011 4:18 PM  
**To:** Gavrilas, Mirela; RES\_DSA  
**Subject:** Fw: NRC Operations Center Watchbill for Japan Event  
**Attachments:** MASTER RESPONDER SCHEDULE - JAPAN EARTHQUAKE2.pdf; MASTER RESPONDER SCHEDULE - JAPAN EARTHQUAKE1.pdf

Operations Center is looking for support. Please see the attached watchbill and if there is a position you can fill, let the ops center (and your supervisor) know.

Thanks!

---

**From:** OST02 HOC

*—OPS CENTER*  
**To:** Abrams, Charlotte; Adams, John; Afshar-Tous, Mugeh; Alemu, Bezakulu; Alter, Peter; Anderson, James; Ashkeboussi, Nima; Athey, George <george.athey@nrc.gov>; Baker, Stephen; Bergman, Thomas; Berry, Rollie; Bhachu, Ujagar; Bloom, Steven; Blount, Tom; Boger, Bruce; Borchardt, Bill; Bower, Anthony; Bowman, Gregory; Brandon, Lou; Brandt, Philip; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Brown, Michael; Bukharin, Oleg; Camper, Larry; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coggins, Anita <anita.coggins@nrc.gov>; Collins, Frank; Cool, Donald; Costa, Richard; Crutchley, Mary Glenn; Cruz, Zahira; Cutaiar, Robert <robert.cutaiar@nrc.gov>; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Doane, Margaret; Dorman, Dan; Dorsey, Cynthia; Dozier, Jerry; Droggitis, Spiros; Dube, Donald; Dudes, Laura; Eads, Johnny; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Floyd, Daphene; Foggie, Kirk; Foster, Jack; Fragoyannis, Nancy; Franovich, Rani; Frazier, Alan; Freshwater, David <david.freshwater@nrc.gov>; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Gibson, Kathy; Giitter, Joseph; Gilmer, James; Gordon, Dennis; Gott, William; Grant, Jeffery; Grimes, Kelly; Grobe, Jack; Gulla, Gerald; Hale, Jerry; Hardesty, Duane; Harris, Tim; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Isom, James; Jackson, Karen; Jacobson, Jeffrey; Jessie, Janelle; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; 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; Lising, Jason; Lombard, Mark; Lubinski, John; Lui, Christiana; Lynch, Jeffery; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Masao, Nagai <nagai.masao@nrc.gov>; Maupin, Cardilia <cardilia.maupin@nrc.gov>; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McGovern, Denise; McMurtray, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Nerret, Amanda; Nguyen, Carolyn <carolyn.nguyen@nrc.gov>; Norris, Michael; Norton, Charles; Ordaz, Vonna; Owens, Janice; Padovan, Mark; Parillo, John; Patel, Jay; Perin, Vanice; Pope, Tia; Powell, Amy; Purdy, Gary; Quinlan, Kevin; Ragland, Robert; Ragland, Randolph; Ralph, Melissa; Ramsey, Jack; Reed, Elizabeth; Reed, Sara <sara.reed@nrc.gov>; Reed, Wendy; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Robinson, Edward; Rodriguez-Luccioni, Hector; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; 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; Skeen, David; Sloan, Scott; Smirollo, Elizabeth; Smith, Brooke; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Sun, Casper; Tappert, John; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tobin, Jennifer; Trefethan, Jean <jean.trefethan@nrc.gov>; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Vick, Lawrence; Virgilio, Martin; Virgilio, Rosetta; Ward, Leonard; Wastler, Sandra; Watson, Bruce; Webber, Robert; Weber, Michael; White, Bernard; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Roy

**Sent:** Sat Mar 19 06:23:06 2011

**Subject:** NRC Operations Center Watchbill for Japan Event

Good morning,

Attached is the schedule for Ops Center Watchbill March 18-26 and March 26 – April 1. You will be receiving updated copies as the schedule continues to change. We do recognize that some positions do not have full staffing. We are looking to fill those. If you know anyone who would want to fill them, have them contact OPS Center at 816-5100.

Thanks

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Position	Date	Time	Staff
<b>Executive Team</b>			
<b>ET Director</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>ET Response Advisor</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

<b>ET Rx Prot Measures &amp; State Coordinator</b>			
Fri-Sat	3/25-3/26	11pm-7am	C. Carpenter
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	P. Holahan
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	P. Holahan
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	P. Holahan
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	P. Holahan
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>Executive Briefing Team</b>			
<b>EBT Admin. Assistant</b>			
Fri-Sat	3/25-3/26	11pm-7am	Sapna Hurd
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	Sapna Hurd
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	Sapna Hurd
Fri-Sat	4/1-4/2	11pm-7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

<b>EBT Coordinator</b>			
Fri-Sat	3/25-3/26	11pm-7am	Jim Anderson
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>Executive Support Team</b>			
<b>EST Status Officer</b>			
Fri-Sat	3/25-3/26	11pm-7am	Jeff Grant
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

<b>EST Actions Officer</b>			
Fri-Sat	3/25-3/26	11pm-7am	Jonathan Fiske
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>EST Coordinator</b>			
Fri-Sat	3/25-3/26	11pm-7am	Clyde Ragland
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

<b>EST Chronology Officer</b>			
Fri-Sat	3/25-3/26	11pm-7am	Thomas Scarbrough
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>EST Response Ops Mgr</b>			
Fri-Sat	3/25-3/26	11pm-7am	Roberto Figueroa
Sat	26-Mar	7am - 3pm	Omar Khan
Sat	26-Mar	3pm-11pm	Cris Brown
Sat-Sun	3/26-3/27	11pm - 7am	Roberto Figueroa
Sun	27-Mar	7am - 3pm	Omar Khan
Sun	27-Mar	3pm-11pm	Cris Brown
Sun-Mon	3/27-3/28	11pm - 7am	Karen Jackson
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>EST Admin. Assistant</b>			



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Fri-Sat	3/25-3/26	11pm-7am	Michelle Manahan ?
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	Linda Williamson
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	Mary Glenn Crutchley
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	3/30-3/31	11pm - 7am	Linda Williamson
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	Tabitha Howard
Thur-Fri	3/31-4/1	11pm - 7am	Linda Williamson
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	Tabitha Howard
Fri-Sat	4/1-4/2	11pm-7am	

**Liason Team**

<b>LT Director</b>			
Fri-Sat	3/25-3/26	11pm-7am	Milt Murray
Sat	26-Mar	7am - 3pm	Nathan SanFilippo
Sat	26-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/26-3/27	11pm - 7am	Milt Murray
Sun	27-Mar	7am - 3pm	Nathan SanFilippo
Sun	27-Mar	3pm-11pm	Rani Franovich
Sun-Mon	3/27-3/28	11pm - 7am	Milt Murray
Mon	28-Mar	7am - 3pm	Nathan SanFilippo
Mon	28-Mar	3pm-11pm	Rani Franovich
Mon-Tue	3/28-3/29	11pm - 7am	Janelle Jesse
Tue	29-Mar	7am - 3pm	Nathan SanFilippo
Tue	29-Mar	3pm-11pm	Rani Franovich
Tue-Wed	3/29-3/30	11pm - 7am	Janelle Jesse
Wed	30-Mar	7am - 3pm	Nathan SanFilippo
Wed	30-Mar	3pm-11pm	Rani Franovich
Wed-Thur	3/30-3/31	11pm - 7am	Janelle Jesse
Thur	31-Mar	7am - 3pm	Milt Murray
Thur	31-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/31-4/1	11pm - 7am	Rani Franovich
Fri	1-Apr	7am - 3pm	Jeff Temple
Fri	1-Apr	3pm-11pm	Janelle Jesse
Fri-Sat	4/1-4/2	11pm-7am	Rani Franovich
<b>LT Coordinator</b>			

## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 26-April 1

Fri-Sat	3/25-3/26	11pm-7am	Milt Murray/Janelle Jessie
Sat	26-Mar	7am - 3pm	Nathan Sanflippo
Sat	26-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/26-3/27	11pm - 7am	Milt Murray
Sun	27-Mar	7am - 3pm	Nathan Sanflippo
Sun	27-Mar	3pm-11pm	Rani Franovich
Sun-Mon	3/27-3/28	11pm - 7am	Milt Murray/Janelle Jessie
Mon	28-Mar	7am - 3pm	Nathan Sanflippo
Mon	28-Mar	3pm-11pm	Rani Franovich
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	Nathan Sanflippo
Tue	29-Mar	3pm-11pm	Rani Franovich
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	Nathan Sanflippo
Wed	30-Mar	3pm-11pm	Jeff Temple
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	Milt Murray
Thur	31-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/31-4/1	11pm - 7am	Rani Franovich
Fri	1-Apr	7am - 3pm	Jeff Temple
Fri	1-Apr	3pm-11pm	Janelle Jessie
Fri-Sat	4/1-4/2	11pm-7am	Rani Franovich
<b>LT State Liaison</b>			
Fri-Sat	3/25-3/26	9pm-7am	Ryan/Turtill (ON CALL ONLY)
Sat	26-Mar	7am-2pm	Ryan/Turtill (ON CALL ONLY)
Sat	26-Mar	2pm-9pm	Ryan/Turtill (ON CALL ONLY)
Sat-Sun	3/27-3/27	9pm-7am	
Sun	27-Mar	7am-2pm	
Sun	27-Mar	2pm-9pm	
Sun-Mon	3/27-3/28	9pm-7am	
Mon	28-Mar	7am-2pm	
Mon	28-Mar	2pm-9pm	
Mon-Tue	3/28-3/29	9pm-7am	
Tue	29-Mar	7am-2pm	
Tue	29-Mar	2pm-9pm	
Tue-Wed	3/29-3/30	9pm-7am	
Wed	30-Mar	7am-2pm	
Wed	30-Mar	2pm-9pm	
Wed-Thur	3/30-3/31	9pm-7am	
Thur	31-Mar	7am-2pm	
Thur	31-Mar	2pm-9pm	
Thur-Fri	3/31-4/1	9pm-7am	
Fri	1-Apr	7am-2pm	
Fri	1-Apr	2pm-9pm	
Fri-Sat	4/1-4/2	9pm-7am	
<b>LT Federal Liason (2)</b>			

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	Jerry Hale
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

**LT Congressional Liason (2)**

Sat	26-Mar	7am - 3pm	Steve Bloom/Lance English
Sat	26-Mar	3pm-11pm	Janice/Jenny Tobin
Sun	3/26-3/27	11pm - 7am	Elizabeth Smioldo/
Sun	27-Mar	7am - 3pm	Jill/karen
Mon	27-Mar	3pm-11pm	Nancy/Jenny
Mon	3/27-3/28	11pm - 7am	Steve Baker/Brian
Tue	28-Mar	7am - 3pm	Jill/karen
Tue	28-Mar	3pm-11pm	Nancy
Wed	3/28-3/29	11pm - 7am	Steve Baker/Brian
Wed	29-Mar	7am - 3pm	Jill/karen
Thur	29-Mar	3pm-11pm	Nancy
Thur	3/29-3/30	11pm - 7am	Steve Baker/Brian
Fri	30-Mar	7am - 3pm	Eric/Lauren
Fri	30-Mar	3pm-11pm	Danielle/Mugeh
	3/30-3/31	11pm - 7am	Jen Schwartzman/Charlotte Abrams
	31-Mar	7am - 3pm	Danielle/Lauren
	31-Mar	3pm-11pm	Eric/Mugeh
	3/31-4/1	11pm - 7am	Jen Schwartzman/Charlotte Abrams

**LT International Liason (2)**

Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

**Protective Measures Team**

<b>PMTR Director</b>			
Fri-Sat	3/25-3/26	11pm-7am	Randy Sullivan
Sat	26-Mar	7am - 3pm	Terry Reis
Sat	26-Mar	3pm-11pm	Cindy Jones
Sat-Sun	3/26-3/27	11pm - 7am	Randy Sullivan
Sun	27-Mar	7am - 3pm	Don Cool
Sun	27-Mar	3pm-11pm	V. Holahan
Sun-Mon	3/27-3/28	11pm - 7am	John Tappert
Mon	28-Mar	7am - 3pm	Don Cool
Mon	28-Mar	3pm-11pm	V. Holahan
Mon-Tue	3/28-3/29	11pm - 7am	John Tappert
Tue	29-Mar	7am - 3pm	Terry Reis
Tue	29-Mar	3pm-11pm	V. Holahan
Tue-Wed	3/29-3/30	11pm - 7am	Patricia Milligan
Wed	30-Mar	7am - 3pm	Terry Reis
Wed	30-Mar	3pm-11pm	V. Holahan
Wed-Thur	3/30-3/31	11pm - 7am	Patricia Milligan
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

<b>PMTR Coordinator</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 26-April 1

Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>PMTR Prot Actions Asst Dir</b>			
Fri-Sat	3/25-3/26	11pm-7am	Greg Casto
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	Greg Casto
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	Greg Casto
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	Greg Casto
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	Greg Casto
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	Greg Casto
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>PMTR RAAD</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>PMTR Dose Assessment (RASCAL)</b>			
Fri-Sat	3/25-3/26	11pm-7am	John Parillo
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>PMTR GIS Analyst</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>PMTR Meteorologist</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>Reactor Safety Team</b>			
<b>RST Director</b>			
Fri-Sat	3/25-3/26	11pm-7am	Brian Holian
Sat	26-Mar	7am - 3pm	Pat Hiland
Sat	26-Mar	3pm-11pm	Bill Ruland
Sat-Sun	3/26-3/27	11pm - 7am	Mike Case
Sun	27-Mar	7am - 3pm	Pat Hiland
Sun	27-Mar	3pm-11pm	Fred Brown
Sun-Mon	3/27-3/28	11pm - 7am	Mike Case



## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 26-April 1

Mon	28-Mar	7am - 3pm	Pat Hiland
Mon	28-Mar	3pm-11pm	Fred Brown
Mon-Tue	3/28-3/29	11pm - 7am	Mike Case
Tue	29-Mar	7am - 3pm	Jennifer Uhle
Tue	29-Mar	3pm-11pm	Fred Brown
Tue-Wed	3/29-3/30	11pm - 7am	Mike Case
Wed	30-Mar	7am - 3pm	Jennifer Uhle
Wed	30-Mar	3pm-11pm	Fred Brown
Wed-Thur	3/30-3/31	11pm - 7am	Dave Skeen
Thur	31-Mar	7am - 3pm	Jennifer Uhle
Thur	31-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/31-4/1	11pm - 7am	Dave Skeen
Fri	1-Apr	7am - 3pm	Jennifer Uhle
Fri	1-Apr	3pm-11pm	Bill Ruland
Fri-Sat	4/1-4/2	11pm-7am	Dave Skeen

**RST Coordinator**

Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

**Severe Accident/PRA**

Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	



## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 26-April 1

Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>BWR Expertise</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Comm/ERDS Operator</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 26-April 1

Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Support (Seismology Q&amp;A)</b>			
Fri-Sat	3/25-3/26	11pm-7am	
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Position	Date	Time	Staff
<b>Executive Team</b>			
<b>ET Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Roy Zimmerman
Sat	19-Mar	7am - 3pm	Jim Wiggins
Sat	19-Mar	3pm-11pm	Brian Sheron
Sat-Sun	3/19-3/20	11pm - 7am	Mike Johnson
Sun	20-Mar	7am - 3pm	Jim Wiggins
Sun	20-Mar	3pm-11pm	Brian Sheron
Sun-Mon	3/20-3/21	11pm - 7am	Mike Johnson
Mon	21-Mar	7am - 3pm	Mike Weber
Mon	21-Mar	3pm-11pm	Jim Wiggins
Mon-Tues	3/21-3/22	11pm - 7am	Mike Johnson
Tues	22-Mar	7am - 3pm	Mike Weber
Tues	22-Mar	3pm-11pm	Jim Wiggins
Tues-Wed	3/22-3/23	11pm - 7am	Bruce Boger
Wed	23-Mar	7am - 3pm	Mike Weber
Wed	23-Mar	3pm-11pm	Roy Zimmerman
Wed-Thur	3/23-3/24	11pm - 7am	Bruce Boger
Thur	24-Mar	7am - 3pm	Mike Weber
Thur	24-Mar	3pm-11pm	Roy Zimmerman
Thur-Fri	3/24-3/25	11pm - 7am	Bruce Boger
Fri	25-Mar	7am - 3pm	Mike Weber
Fri	25-Mar	3pm-11pm	Roy Zimmerman
Fri-Sat	3/25-3/26	11pm-7am	
<b>ET Response Advisor</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Morris
Sat	19-Mar	7am - 3pm	Brian McDermott
Sat	19-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sat-Sun	3/19-3/20	11pm - 7am	Scott Morris
Sun	20-Mar	7am - 3pm	Chris Miller
Sun	20-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sun-Mon	3/20-3/21	11pm - 7am	Scott Morris
Mon	21-Mar	7am - 3pm	Brian McDermott
Mon	21-Mar	3pm-11pm	Chris Miller
Mon-Tues	3/21-3/22	11pm - 7am	Scott Morris
Tues	22-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Tues	22-Mar	3pm-11pm	Chris Miller
Tues-Wed	3/22-3/23	11pm - 7am	Scott Morris
Wed	23-Mar	7am - 3pm	Brian McDermott
Wed	23-Mar	3pm-11pm	Chris Miller
Wed-Thur	3/23-3/24	11pm - 7am	Scott Morris
Thur	24-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Thur	24-Mar	3pm-11pm	Brian McDermott
Thur-Fri	3/24-3/25	11pm - 7am	Chris Miller
Fri	25-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Fri	25-Mar	3pm-11pm	Brian McDermott
Fri-Sat	3/25-3/26	11pm-7am	
<b>ET Rx Prot Measures &amp; State Coordinator</b>			

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Fri-Sat	3/18-3/19	11pm-7am	Scott Moore
Sat	19-Mar	7am - 3pm	Larry Camper
Sat	19-Mar	3pm-11pm	P. Holahan
Sat-Sun	3/19-3/20	11pm - 7am	K. McConnell
Sun	20-Mar	7am - 3pm	Vonna Ordaz
Sun	20-Mar	3pm-11pm	Larry Camper
Sun-Mon	3/20-3/21	11pm - 7am	Rob Lewis
Mon	21-Mar	7am - 3pm	Charlie Miller
Mon	21-Mar	3pm-11pm	Larry Camper
Mon-Tues	3/21-3/22	11pm - 7am	Rob Lewis
Tues	22-Mar	7am - 3pm	Charlie Miller
Tues	22-Mar	3pm-11pm	P. Holahan
Tues-Wed	3/22-3/23	11pm - 7am	C. Carpenter
Wed	23-Mar	7am - 3pm	Charlie Miller
Wed	23-Mar	3pm-11pm	P. Holahan
Wed-Thur	3/23-3/24	11pm - 7am	C. Carpenter
Thur	24-Mar	7am - 3pm	Charlie Miller
Thur	24-Mar	3pm-11pm	Larry Camper
Thur-Fri	3/24-3/25	11pm - 7am	C. Carpenter
Fri	25-Mar	7am - 3pm	Charlie Miller
Fri	25-Mar	3pm-11pm	P. Holahan
Fri-Sat	3/25-3/26	11pm-7am	C. Carpenter

**Executive Briefing Team**

<b>EBT Admin. Assistant</b>			
Fri-Sat	3/18-3/19	11pm-7am	Sapna Hurd
Sat	19-Mar	7am - 3pm	Carolyn Kahler
Sat	19-Mar	3pm-11pm	Annette Stang
Sat-Sun	3/19-3/20	11pm - 9am	Sapna Hurd
Sun	20-Mar	9am - 7pm	Annette Stang
Sun	3/20-3/21	7pm-7am	Carolyn Kahler
Sun-Mon	21-Mar	7am - 3pm	A. Stang (7-11) / Sapna Hurd (11-3)
Mon	21-Mar	3pm-11pm	Tia Pope
Mon	3/21-3/22	11pm - 7am	Christina Merritt
Mon-Tues	22-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Tues	22-Mar	3pm-11pm	Jon Fiske
Tues	3/22-3/23	11pm - 7am	Tia Pope
Tues-Wed	23-Mar	7am - 3pm	Jon Fiske
Wed	23-Mar	3pm-11pm	Annette Stang
Wed	3/23-3/24	11pm - 7am	Christina Merritt
Wed-Thur	24-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Thur	24-Mar	3pm-11pm	Andrea Wimbush
Thur	3/24-3/25	11pm - 7am	Tia Pope
Thur-Fri	25-Mar	7am - 3pm	Annette Stang
Fri	25-Mar	3pm-11pm	Carolyn Kahler
Fri	3/25-3/26	11pm-7am	Sapna Hurd
<b>EBT Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Christine Steger
Sat	19-Mar	7am - 3pm	Caroline Nguyen
Sat	19-Mar	3pm-11pm	Sara Mroz

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Sat-Sun	3/19-3/20	11pm - 7am	Jim Anderson
Sun	20-Mar	7am - 3pm	Yen Chen
Sun	20-Mar	3pm-11pm	Caroline Nguyen
Sun-Mon	3/20-3/21	11pm - 7am	Jim Anderson
Mon	21-Mar	7am - 3pm	Yen Chen
Mon	21-Mar	3pm-11pm	Sara Mroz
Mon-Tues	3/21-3/22	11pm - 7am	Jim Anderson
Tues	22-Mar	7am - 3pm	Yen Chen
Tues	22-Mar	3pm-11pm	Sara Mroz
Tues-Wed	3/22-3/23	11pm - 7am	Jim Anderson
Wed	23-Mar	7am - 3pm	Yen Chen
Wed	23-Mar	3pm-11pm	Sara Mroz
Wed-Thur	3/23-3/24	11pm - 7am	Jim Anderson
Thur	24-Mar	7am - 3pm	Yen Chen
Thur	24-Mar	3pm-11pm	Sara Mroz
Thur-Fri	3/24-3/25	11pm - 7am	Jim Anderson
Fri	25-Mar	7am - 3pm	Yen Chen
Fri	25-Mar	3pm-11pm	Sara Mroz
Fri-Sat	3/25-3/26	11pm-7am	Jim Anderson

**Executive Support Team**

<b>EST Status Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Doug Huyck
Sat	19-Mar	7am - 3pm	Craig Erlanger
Sat	19-Mar	3pm-11pm	John Jolicoeur
Sat-Sun	3/19-3/20	11pm - 7am	Doug Huyck
Sun	20-Mar	7am - 3pm	Craig Erlanger
Sun	20-Mar	3pm-11pm	John Jolicoeur
Sun-Mon	3/20-3/21	11pm - 7am	Doug Huyck
Mon	21-Mar	7am - 3pm	Jane Marshall
Mon	21-Mar	3pm-11pm	Bill Gott
Mon-Tues	3/21-3/22	11pm - 7am	Jeff Grant
Tues	22-Mar	7am - 3pm	Jane Marshall
Tues	22-Mar	3pm-11pm	Bill Gott
Tues-Wed	3/22-3/23	11pm - 7am	Jeff Grant
Wed	23-Mar	7am - 3pm	Jane Marshall
Wed	23-Mar	3pm-11pm	Bill Gott
Wed-Thur	3/23-3/24	11pm - 7am	Jeff Grant
Thur	24-Mar	7am - 3pm	Jane Marshall
Thur	24-Mar	3pm-11pm	Bill Gott
Thur-Fri	3/24-3/25	11pm - 7am	Jeff Grant
Fri	25-Mar	7am - 3pm	Jane Marshall
Fri	25-Mar	3pm-11pm	Bill Gott
Fri-Sat	3/25-3/26	11pm-7am	Jeff Grant
<b>EST Actions Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Amy Roundtree
Sat	19-Mar	7am - 3pm	Bezakulu Alemu
Sat	19-Mar	3pm-11pm	Melissa Ralph
Sat-Sun	3/19-3/20	11pm - 7am	Jonathan Fiske
Sun	20-Mar	7am - 3pm	Melissa Ralph

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
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Sun	20-Mar	3pm-11pm	Jonathan Fiske
Sun-Mon	3/20-3/21	11pm - 7am	Dori Votolato-Willis
Mon	21-Mar	7am - 3pm	Melissa Ralph
Mon	21-Mar	3pm-11pm	Amanda Nerret
Mon-Tues	3/21-3/22	11pm - 7am	Kelly Grimes
Tues	22-Mar	7am - 3pm	Melissa Ralph
Tues	22-Mar	3pm-11pm	Dori Votolato-Willis
Tues-Wed	3/22-3/23	11pm - 7am	Kelly Grimes
Wed	23-Mar	7am - 3pm	Melissa Ralph
Wed	23-Mar	3pm-11pm	Dori Votolato-Willis
Wed-Thur	3/23-3/24	11pm - 7am	Kelly Grimes
Thur	24-Mar	7am - 3pm	Wendy Reed
Thur	24-Mar	3pm-11pm	Dori Votolato-Willis
Thur-Fri	3/24-3/25	11pm - 7am	Jonathan Fiske
Fri	25-Mar	7am - 3pm	Amanda Nerret
Fri	25-Mar	3pm-11pm	Melissa Ralph
Fri-Sat	3/25-3/26	11pm-7am	Jonathan Fiske
<b>EST Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Rebecca Stone
Sat	19-Mar	7am - 3pm	Clyde Ragland
Sat	19-Mar	3pm-11pm	Tony Bowers
Sat-Sun	3/19-3/20	11pm - 7am	Rebecca Stone
Sun	20-Mar	7am - 3pm	Clyde Ragland
Sun	20-Mar	3pm-11pm	Tony Bowers
Sun-Mon	3/20-3/21	11pm - 7am	Rebecca Stone
Mon	21-Mar	7am - 3pm	Tony McMurtray
Mon	21-Mar	3pm-11pm	Tony Bowers
Mon-Tues	3/21-3/22	11pm - 7am	Rebecca Stone
Tues	22-Mar	7am - 3pm	Tony McMurtray
Tues	22-Mar	3pm-11pm	Tony Bowers
Tues-Wed	3/22-3/23	11pm - 7am	Rebecca Stone
Wed	23-Mar	7am - 3pm	Tony McMurtray
Wed	23-Mar	3pm-11pm	Clyde Ragland
Wed-Thur	3/23-3/24	11pm - 7am	Rebecca Stone
Thur	24-Mar	7am - 3pm	Tony McMurtray
Thur	24-Mar	3pm-11pm	Clyde Ragland
Thur-Fri	3/24-3/25	11pm - 7am	Steve Campbell
Fri	25-Mar	7am - 3pm	Tony McMurtray
Fri	25-Mar	3pm-11pm	Clyde Ragland
Fri-Sat	3/25-3/26	11pm-7am	Steve Campbell
<b>EST Chronology Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Dennis Gordon
Sat	19-Mar	7am - 3pm	Vanice Perrin
Sat	19-Mar	3pm-11pm	Rebecca Karas
Sat-Sun	3/19-3/20	11pm - 7am	Cynthia Dorsey
Sun	20-Mar	7am - 3pm	James Vaughn
Sun	20-Mar	3pm-11pm	Rebecca Karas
Sun-Mon	3/20-3/21	11pm - 7am	Mark Resner
Mon	21-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Mon	21-Mar	3pm-11pm	Rebecca Karas

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
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Mon-Tues	3/21-3/22	11pm - 7am	Thomas Scarbrough
Tues	22-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Tues	22-Mar	3pm-11pm	Rebecca Karas
Tues-Wed	3/22-3/23	11pm - 7am	Thomas Scarbrough
Wed	23-Mar	7am - 3pm	James Vaughn
Wed	23-Mar	3pm-11pm	Rebecca Karas
Wed-Thur	3/23-3/24	11pm - 7am	Nick Ballam
Thur	24-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Thur	24-Mar	3pm-11pm	Rebecca Karas
Thur-Fri	3/24-3/25	11pm - 7am	Thomas Scarbrough
Fri	25-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Fri	25-Mar	3pm-11pm	Rebecca Karas
Fri-Sat	3/25-3/26	11pm-7am	Thomas Scarbrough
<b>EST Response Ops Mgr</b>			
Fri-Sat	3/18-3/19	11pm-7am	Omar Khan
Sat	19-Mar	7am - 3pm	Cris Brown
Sat	19-Mar	3pm-11pm	Bob Stransky
Sat-Sun	3/19-3/20	11pm - 7am	Jean Trefethan
Sun	20-Mar	7am - 3pm	Karen Jackson
Sun	20-Mar	3pm-11pm	Roberto Figueroa
Sun-Mon	3/20-3/21	11pm - 7am	Jean Trefethan
Mon	21-Mar	7am - 3pm	Bob Stransky
Mon	21-Mar	3pm-11pm	Omar Khan
Mon-Tues	3/21-3/22	11pm - 7am	Cris Brown
Tues	22-Mar	7am - 3pm	Bob Stransky
Tues	22-Mar	3pm-11pm	Karen Jackson
Tues-Wed	3/22-3/23	11pm - 7am	Roberto Figueroa
Wed	23-Mar	7am - 3pm	Bob Stransky
Wed	23-Mar	3pm-11pm	Jean Trefethan
Wed-Thur	3/23-3/24	11pm - 7am	Cris Brown
Thur	24-Mar	7am - 3pm	Karen Jackson
Thur	24-Mar	3pm-11pm	Omar Khan
Thur-Fri	3/24-3/25	11pm - 7am	Roberto Figueroa
Fri	25-Mar	7am - 3pm	Jean Trefethan
Fri	25-Mar	3pm-11pm	Cris Brown
Fri-Sat	3/25-3/26	11pm-7am	Roberto Figueroa
<b>EST Admin. Assistant</b>			
Fri-Sat	3/18-3/19	11pm-7am	Tabitha Howard
Sat	19-Mar	7am - 3pm	Karen Meyer
Sat	19-Mar	3pm-11pm	Amy Salus
Sat-Sun	3/19-3/20	11pm - 7am	Chris Lamb
Sun	20-Mar	7am - 3pm	Karen Meyer
Sun	20-Mar	3pm-11pm	Linda Williamson
Sun-Mon	3/20-3/21	11pm - 7am	Chris Lamb
Mon	21-Mar	7am - 3pm	Karen Meyer
Mon	21-Mar	3pm-11pm	Mary Glenn Crutchley
Mon-Tues	3/21-3/22	11pm - 7am	Andrea Wimbush
Tues	22-Mar	7am - 3pm	Amy Salus
Tues	22-Mar	3pm-11pm	Mary Glenn Crutchley
Tues-Wed	3/22-3/23	11pm - 7am	Michelle Manahan

## JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Wed	23-Mar	7am - 3pm	Karen Meyer
Wed	23-Mar	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	3/23-3/24	11pm - 7am	Andrea Wimbush
Thur	24-Mar	7am - 3pm	Amy Salus
Thur	24-Mar	3pm-11pm	Mary Glenn Crutchley
Thur-Fri	3/24-3/25	11pm - 7am	Tabitha Howard
Fri	25-Mar	7am - 3pm	Karen Meyer
Fri	25-Mar	3pm-11pm	Mary Glenn Crutchley
Fri-Sat	3/25-3/26	11pm-7am	Michelle Manahan

**Liason Team**

<b>LT Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Tom Blount
Sat	19-Mar	7am - 3pm	Tom Bergman
Sat	19-Mar	3pm-11pm	Bob Webber
Sat-Sun	3/19-3/20	11pm - 7am	John Adams
Sun	20-Mar	7am - 3pm	Tom Bergman
Sun	20-Mar	3pm-11pm	Bob Webber
Sun-Mon	3/20-3/21	11pm - 7am	John Adams
Mon	21-Mar	7am - 3pm	Tom Bergman
Mon	21-Mar	3pm-11pm	Bob Webber
Mon-Tues	3/21-3/22	11pm - 7am	John Adams
Tues	22-Mar	7am - 3pm	Tom Bergman
Tues	22-Mar	3pm-11pm	Bob Webber
Tues-Wed	3/22-3/23	11pm - 7am	John Adams
Wed	23-Mar	7am - 3pm	Michael Tschiltz
Wed	23-Mar	3pm-11pm	Joe Giitter
Wed-Thur	3/23-3/24	11pm - 7am	Tim McGinty
Thur	24-Mar	7am - 3pm	Michael Tschiltz
Thur	24-Mar	3pm-11pm	Joe Giitter
Thur-Fri	3/24-3/25	11pm - 7am	Tim McGinty
Fri	25-Mar	7am - 3pm	Michael Tschiltz
Fri	25-Mar	3pm-11pm	Joe Giitter
Fri-Sat	3/25-3/26	11pm-7am	Tim McGinty

<b>LT Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Janelle Jessie
Sat	19-Mar	7am - 3pm	Jeff Temple
Sat	19-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/19-3/20	11pm - 7am	Janelle Jessie
Sun	20-Mar	7am - 3pm	Jeff Temple
Sun	20-Mar	3pm-11pm	Nathan Sanfilippo
Sun-Mon	3/20-3/21	11pm - 7am	Milt Murray
Mon	21-Mar	7am - 3pm	Jeff Temple
Mon	21-Mar	3pm-11pm	Nathan Sanfilippo
Mon-Tues	3/21-3/22	11pm - 7am	Milt Murray
Tues	22-Mar	7am - 3pm	Rani Franovich
Tues	22-Mar	3pm-11pm	Nathan Sanfilippo
Tues-Wed	3/22-3/23	11pm - 7am	Milt Murray
Wed	23-Mar	7am - 3pm	Rani Franovich
Wed	23-Mar	3pm-11pm	Jeff Temple



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Wed-Thur	3/23-3/24	11pm - 7am	Milt Murray
Thur	24-Mar	7am - 3pm	Rani Franovich
Thur	24-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/24-3/25	11pm - 7am	Milt Murray
Fri	25-Mar	7am - 3pm	Janelle Jessie
Fri	25-Mar	3pm-11pm	Rani Franovich
Fri-Sat	3/25-3/26	11pm-7am	Milt Murray
<b>LT State Liaison</b>			
Thur-Fri	3/17-3/18	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Fri	18-Mar	7am-2pm	Lukes/Flannery
Fri	18-Mar	2pm-9pm	Turttil/Maupin
Fri-Sat	3/18-3/19	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Sat	19-Mar	7am-2pm	Ryan/Turttil (ON CALL ONLY)
Sat	19-Mar	2pm-9pm	Ryan/Turttil (ON CALL ONLY)
Sat-Sun	3/19-3/20	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Sun	20-Mar	7am-2pm	Ryan/Turttil (ON CALL ONLY)
Sun	20-Mar	2pm-9pm	Ryan/Turttil (ON CALL ONLY)
Sun-Mon	3/20-3/21	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Mon	21-Mar	7am-2pm	Flannery (Riveria-On Call)
Mon	21-Mar	2pm-9pm	Easson (Turttil-On Call)
Mon-Tue	3/21-3/22	9pm-7am	Ryan/Turttil
Tue	22-Mar	7am-2pm	Flannery (Riveria-On Call)
Tue	22-Mar	2pm-9pm	Easson (Turttil-On Call)
Tue-Wed	3/22-3/23	9pm-7am	Ryan/Turttil
Wed	23-Mar	7am-2pm	Maupin (Lukes-On Call)
Wed	23-Mar	2pm-9pm	Rivera (Easson-On Call)
Wed-Thur	3/23-3/24	9pm-7am	Ryan/Turttil
Thur	24-Mar	7am-2pm	Lukes (Flannery-On Call)
Thur	24-Mar	2pm-9pm	Maupin (Riveria-On Call)
Thur-Fri	3/24-3/25	9pm-7am	Ryan/Turttil
Fri	25-Mar	7am-2pm	Ryan (Maupin-On Call)
Fri	25-Mar	2pm-9pm	Turttil (Riveria-On Call)
Fri-Sat	3/25-3/26	9pm-7am	Ryan/Turttil (ON CALL ONLY)
<b>LT Federal Liaison (2)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Sloan
Sat	19-Mar	7am - 3pm	Russ Chazell
Sat	19-Mar	3pm-11pm	Jeff Lynch
Sat-Sun	3/19-3/20	11pm - 7am	Scott Sloan
Sun	20-Mar	7am - 3pm	Ned Wright
Sun	20-Mar	3pm-11pm	Jerry Hale
Sun-Mon	3/20-3/21	11pm - 7am	Lisa Wright
Mon	21-Mar	7am - 3pm	Beth Reed/Ted Smith
Mon	21-Mar	3pm-11pm	Ned Wright
Mon-Tues	3/21-3/22	11pm - 7am	Lisa Wright
Tues	22-Mar	7am - 3pm	Beth Reed/Ted Smith
Tues	22-Mar	3pm-11pm	Ned Wright
Tues-Wed	3/22-3/23	11pm - 7am	Lisa Wright
Wed	23-Mar	7am - 3pm	Jerry Hale/
Wed	23-Mar	3pm-11pm	Ted Smith
Wed-Thur	3/23-3/24	11pm - 7am	Lisa Wright



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Thur	24-Mar	7am - 3pm	/Ted Smith
Thur	24-Mar	3pm-11pm	Jerry Hale
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	/Ted Smith
Fri	25-Mar	3pm-11pm	Jerry Hale
Fri-Sat	3/25-3/26	11pm-7am	
<b>LT Congressional Liason (2)</b>			
Sat	19-Mar	7am - 2pm	Spiros Droggitis
	19-Mar	2pm-9pm	Tim Riley
Sun	20-Mar	7am - 2pm	Rebecca Schmidt
	20-Mar	2pm-9pm	Reanne Shane
Mon	21-Mar	7am - 2pm	Spiros Droggitis
	21-Mar	2pm-9pm	Tim Riley
Tues	22-Mar	7am - 2pm	Tim Riley
	22-Mar	2pm-9pm	Spiros Droggitis
Wed	23-Mar	7am - 2pm	Gene Dacus
	23-Mar	2pm-9pm	Raeann Shane
Thur	24-Mar	7am - 2pm	Spiros Droggitis
	24-Mar	2pm-9pm	Raeann Shane
Fri	25-Mar	7am - 2pm	Gene Dacus
	25-Mar	2pm-9pm	Amy Powell
<b>LT International Liason (2)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Elizabeth Smiroldo/Danielle Emche
Sat	19-Mar	7am - 3pm	Lance English/Steve Bloom
Sat	19-Mar	3pm-11pm	Jenny Tobin/Jill Shephard
Sat-Sun	3/19-3/20	11pm - 7am	Elizabeth Smiroldo/Danielle Emche
Sun	20-Mar	7am - 3pm	Karen/Steve Baker
Sun	20-Mar	3pm-11pm	Eric Stahl/Nancy
Sun-Mon	3/20-3/21	11pm - 7am	Elizabeth Smiroldo/Jenny Tobin
Mon	21-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3
Mon	21-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Mon-Tues	3/21-3/22	11pm - 7am	Eric Stahl/Mugeh
Tues	22-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3
Tues	22-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Tues-Wed	3/22-3/23	11pm - 7am	Eric Stahl/Mugeh
Wed	23-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3
Wed	23-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Wed-Thur	3/23-3/24	11pm - 7am	Eric Stahl/Mugeh
Thur	24-Mar	7am - 3pm	Steve Bloom/Lance English
Thur	24-Mar	3pm-11pm	Janice/Jenny Tobin
Thur-Fri	3/24-3/25	11pm - 7am	Andrea/Elizabeth Smiroldo
Fri	25-Mar	7am - 3pm	Steve Bloom/Lance English
Fri	25-Mar	3pm-11pm	Janice/Jenny Tobin
Fri-Sat	3/25-3/26	11pm-7am	Andrea/Elizabeth Smiroldo
<b>Protective Measures Team</b>			
<b>PMTR Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Kathy Gibson
Sat	19-Mar	7am - 3pm	John Lubinski

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
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Sat	19-Mar	3pm-11pm	Don Cool
Sat-Sun	3/19-3/20	11pm - 7am	Kathy Gibson
Sun	20-Mar	7am - 3pm	John Lubinski
Sun	20-Mar	3pm-11pm	Don Cool
Sun-Mon	3/20-3/21	11pm - 7am	Kathy Gibson
Mon	21-Mar	7am - 3pm	John Lubinski
Mon	21-Mar	3pm-11pm	Don Cool
Mon-Tues	3/21-3/22	11pm - 7am	John Tappert
Tues	22-Mar	7am - 3pm	John Lubinski
Tues	22-Mar	3pm-11pm	Don Cool
Tues-Wed	3/22-3/23	11pm - 7am	John Tappert
Wed	23-Mar	7am - 3pm	Terry Reis
Wed	23-Mar	3pm-11pm	Cindy Jones
Wed-Thur	3/23-3/24	11pm - 7am	Randy Sullivan
Thur	24-Mar	7am - 3pm	Terry Reis
Thur	24-Mar	5pm-11pm	Cindy Jones
Thur-Fri	3/24-3/25	11pm - 7am	Randy Sullivan
Fri	25-Mar	7am - 3pm	Terry Reis
Fri	25-Mar	5pm-11pm	Cindy Jones
Fri-Sat	3/25-3/26	11pm-7am	Randy Sullivan
<b>PMTR Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Mike Norris
Sat	19-Mar	7am - 3pm	Duane Hardesty
Sat	19-Mar	3pm-11pm	Jay Patel
Sat-Sun	3/19-3/20	11pm - 7am	Lou Brandon
Sun	20-Mar	7am - 3pm	Nima Ashkeboussi
Sun	20-Mar	3pm-11pm	Jay Patel
Sun-Mon	3/20-3/21	11pm - 7am	Lou Brandon
Mon	21-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Mon	21-Mar	3pm-11pm	Jay Patel
Mon-Tues	3/21-3/22	11pm - 7am	Lou Brandon
Tues	22-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Tues	22-Mar	3pm-11pm	Nima Ashkeboussi
Tues-Wed	3/22-3/23	11pm - 7am	Mike Norris
Wed	23-Mar	7am - 3pm	John Wray (volunteer from OE)
Wed	23-Mar	3pm-11pm	Nima Ashkeboussi
Wed-Thur	3/23-3/24	11pm - 7am	Mike Norris
Thur	24-Mar	7am - 3pm	John Wray (volunteer from OE)
Thur	24-Mar	3pm-11pm	Nima Ashkeboussi
Thur-Fri	3/24-3/25	11pm - 7am	Mike Norris
Fri	25-Mar	7am - 3pm	Duane Hardesty
Fri	25-Mar	3pm-11pm	Jay Patel
Fri-Sat	3/25-3/26	11pm-7am	
<b>PMTR Prot Actions Asst Dir</b>			
Fri-Sat	3/18-3/19	11pm-7am	Greg Casto
Sat	19-Mar	7am - 3pm	Kathryn Brock
Sat	19-Mar	3pm-11pm	Kevin Williams
Sat-Sun	3/19-3/20	11pm - 7am	Greg Casto
Sun	20-Mar	7am - 3pm	Kathryn Brock
Sun	20-Mar	3pm-11pm	Tim Harris

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
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Sun-Mon	3/20-3/21	11pm - 7am	Greg Casto (Jessica Kratchman - to shadow)
Mon	21-Mar	7am - 3pm	Kathryn Brock
Mon	21-Mar	3pm-11pm	
Mon-Tues	3/21-3/22	11pm - 7am	Jessica Kratchman
Tues	22-Mar	7am - 3pm	Kathryn Brock
Tues	22-Mar	3pm-11pm	Tim Harris
Tues-Wed	3/22-3/23	11pm - 7am	Jessica Kratchman
Wed	23-Mar	7am - 3pm	Sandra Wastler
Wed	23-Mar	3pm-11pm	
Wed-Thur	3/23-3/24	11pm - 7am	Jessica Kratchman
Thur	24-Mar	7am - 3pm	Sandra Wastler
Thur	24-Mar	3pm-11pm	
Thur-Fri	3/24-3/25	11pm - 7am	Jessica Kratchman
Fri	25-Mar	7am - 3pm	Kathryn Brock
Fri	25-Mar	3pm-11pm	
Fri-Sat	3/25-3/26	11pm-7am	Greg Casto
<b>PMTR RAAD</b>			
Fri-Sat	3/18-3/19	11pm-7am	Randy Sullivan
Sat	19-Mar	7am - 3pm	Bruce Watson
Sat	19-Mar	3pm-11pm	Michelle Hart
Sat-Sun	3/19-3/20	11pm - 7am	Patricia Milligan
Sun	20-Mar	7am - 3pm	Eric Schrader
Sun	20-Mar	3pm-11pm	Steve LaVie
Sun-Mon	3/20-3/21	11pm - 7am	Randy Sullivan
Mon	21-Mar	7am - 3pm	Bruce Watson
Mon	21-Mar	3pm-11pm	Michelle Hart/Steve Lavie
Mon-Tues	3/21-3/22	11pm - 7am	Boby Abu-Eid
Tues	22-Mar	7am - 3pm	Bruce Watson
Tues	22-Mar	3pm-11pm	Steve LaVie
Tues-Wed	3/22-3/23	11pm - 7am	Boby Abu-Eid
Wed	23-Mar	7am - 3pm	Bruce Watson
Wed	23-Mar	3pm-11pm	Michelle Hart/Steve Lavie
Wed-Thur	3/23-3/24	11pm - 7am	Patricia Milligan
Thur	24-Mar	7am - 3pm	Bruce Watson
Thur	24-Mar	3pm-11pm	Steve LaVie
Thur-Fri	3/24-3/25	11pm - 7am	Cynthia Barr
Fri	25-Mar	7am - 3pm	Randy Sullivan
Fri	25-Mar	3pm-11pm	Michelle Hart/Steve Lavie
Fri-Sat	3/25-3/26	11pm-7am	Cynthia Barr
<b>PMTR Dose Assessment (RASCAL)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Duane Schmidt/Tony Huffert
Sat	19-Mar	7am - 3pm	Casper Sun
Sat	19-Mar	3pm-11pm	Margaret Cervera
Sat-Sun	3/19-3/20	11pm - 7am	Kimberly Gambone/John Parillo
Sun	20-Mar	7am - 3pm	Casper Sun
Sun	20-Mar	3pm-11pm	Margaret Cervera
Sun-Mon	3/20-3/21	11pm - 7am	Kimberly Gambone/John Parillo
Mon	21-Mar	7am - 3pm	Eric Schrader/Rich Clement
Mon	21-Mar	3pm-11pm	Margaret Cervera/Tony Huffert
Mon-Tues	3/21-3/22	11pm - 7am	John Parillo

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
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Tues	22-Mar	7am - 3pm	Eric Schrader/Rich Clement
Tues	22-Mar	3pm-11pm	Gary Purdy/Casper Sun
Tues-Wed	3/22-3/23	11pm - 7am	Margaret Cervera/Tony Huffert
Wed	23-Mar	7am - 3pm	Eric Schrader/Rich Clement
Wed	23-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Wed-Thur	3/23-3/24	11pm - 7am	Tony Huffert/John Parillo
Thur	24-Mar	7am - 3pm	Eric Schrader/Rich Clement
Thur	24-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Thur-Fri	3/24-3/25	11pm - 7am	Tony Huffert/John Parillo
Fri	25-Mar	7am - 3pm	Eric Schrader/Rich Clement
Fri	25-Mar	3pm-11pm	Gary Purdy/Casper Sun
Fri-Sat	3/25-3/26	11pm-7am	John Parillo
<b>PMTR GIS Analyst</b>			
Fri-Sat	3/18-3/19	11pm-7am	Stephanie Devlin
Sat	19-Mar	7am - 3pm	Nebiyu Tirah
Sat	19-Mar	3pm-11pm	Yong Li
Sat-Sun	3/19-3/20	11pm - 7am	Alice Stieve
Sun	20-Mar	7am - 3pm	Phil Brandt
Sun	20-Mar	3pm-11pm	Ken See
Sun-Mon	3/20-3/21	11pm - 7am	Alice Stieve
Mon	21-Mar	7am - 3pm	Nebiyu Tirah
Mon	21-Mar	3pm-11pm	Stephanie Devlin
Mon-Tues	3/21-3/22	11pm - 7am	Alice Stieve
Tues	22-Mar	7am - 3pm	Yong Li
Tues	22-Mar	3pm-11pm	Stephanie Devlin
Tues-Wed	3/22-3/23	11pm - 7am	Alice Stieve
Wed	23-Mar	7am - 3pm	Allen Gross
Wed	23-Mar	3pm-11pm	Stephanie Devlin
Wed-Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	Yong Li
Thur	24-Mar	3pm-11pm	Stephanie Devlin
Thur-Fri	3/24-3/25	11pm - 7am	Dogan Seber
Fri	25-Mar	7am - 3pm	Hosang Ahn
Fri	25-Mar	3pm-11pm	Stephanie Devlin
Fri-Sat	3/25-3/26	11pm-7am	Phil Brandt
<b>PMTR Meteorologist</b>			
Fri-Sat	18-Mar	3pm-11pm	Mike Mazaika
Sat	3/18-3/19	11pm-7am	Dave Brown
Sat	19-Mar	7am - 3pm	Kevin Quinlan
Sat-Sun	19-Mar	3pm-11pm	Mike Mazaika
Sun	3/19-3/20	11pm - 7am	David Brown
Sun	20-Mar	7am - 3pm	Kevin Quinlan
Sun-Mon	20-Mar	3pm-11pm	Mike Mazaika
Mon	3/20-3/21	11pm - 7am	David Brown
Mon	21-Mar	7am - 3pm	Mike Mazaika
Mon-Tues	21-Mar	3pm-11pm	
Tues	3/21-3/22	11pm - 7am	
Tues	22-Mar	7am - 3pm	
Tues-Wed	22-Mar	3pm-11pm	
Wed	3/22-3/23	11pm - 7am	

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Wed	23-Mar	7am - 3pm	
Wed-Thur	23-Mar	3pm-11pm	
Thur	3/23-3/24	11pm - 7am	
Thur	24-Mar	7am - 3pm	
Thur-Fri	24-Mar	3pm-11pm	
Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	
Fri-Sat	25-Mar	3pm-11pm	
	3/25-3/26	11pm-7am	
<b>Reactor Safety Team</b>			
<b>RST Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Jennifer Uhle
Sat	19-Mar	7am - 3pm	Laura Dudes
Sat	19-Mar	3pm-11pm	Dave Skeen
Sat-Sun	3/19-3/20	11pm - 7am	Jennifer Uhle
Sun	20-Mar	7am - 3pm	Laura Dudes
Sun	20-Mar	3pm-11pm	Dave Skeen
Sun-Mon	3/20-3/21	11pm - 7am	Jennifer Uhle
Mon	21-Mar	7am - 3pm	Fred Brown
Mon	21-Mar	3pm-11pm	Dave Skeen
Mon-Tues	3/21-3/22	11pm - 7am	Jennifer Uhle
Tues	22-Mar	7am - 3pm	Fred Brown
Tues	22-Mar	3pm-11pm	Dave Skeen
Tues-Wed	3/22-3/23	11pm - 7am	Brian Holian
Wed	23-Mar	7am - 3pm	Fred Brown
Wed	23-Mar	3pm-11pm	Bill Ruland
Wed-Thur	3/23-3/24	11pm - 7am	Brian Holian
Thur	24-Mar	7am - 3pm	Fred Brown
Thur	24-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/24-3/25	11pm - 7am	Brian Holian
Fri	25-Mar	7am - 3pm	Pat Hiland
Fri	25-Mar	3pm-11pm	Bill Ruland
Fri-Sat	3/25-3/26	11pm-7am	Brian Holian
Sat	26-Mar	0700 -1500	Pat Hiland
Sat	26-Mar	1500 - 2300	Bill Ruland
Sat	3/26-27/2011	2300 - 0700	Mike Case
<b>RST Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Rollie Berry
Sat	19-Mar	7am - 3pm	Scott Sloan
Sat	19-Mar	3pm-11pm	Oleg Bukharin
Sat-Sun	3/19-3/20	11pm - 7am	Frank Collins
Sun	20-Mar	7am - 3pm	Peter Alter
Sun	20-Mar	3pm-11pm	Eric Thomas
Sun-Mon	3/20-3/21	11pm - 7am	Mike Morlang
Mon	21-Mar	7am - 3pm	Peter Alter
Mon	21-Mar	3pm-11pm	Greg Schoenebeck
Mon-Tues	3/21-3/22	11pm - 7am	Frank Collins



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Tues	22-Mar	7am - 3pm	Rick Hasselberg
Tues	22-Mar	3pm-11pm	Mike Morlang
Tues-Wed	3/22-3/23	11pm - 7am	Oleg Bukharin
Wed	23-Mar	7am - 3pm	Eric Thomas*
Wed	23-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/23-3/24	11pm - 7am	Frank Collins
Thur	24-Mar	7am - 3pm	Rick Hasselberg
Thur	24-Mar	3pm-11pm	Brett Rini
Thur-Fri	3/24-3/25	11pm - 7am	Tom Boyce (RES)
Fri	25-Mar	7am - 3pm	Eric Thomas*
Fri	25-Mar	3pm-11pm	Brett Rini
Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
<b>Severe Accident/PRA</b>			
Fri-Sat	3/18-3/19	11pm - 7am	Don Marksberry
Sat	19-Mar	7am - 3pm	Len Ward
Sat	19-Mar	3pm-11pm	Ed Fuller
Sat-Sun	3/19-3/20	11pm - 7am	Mike Salay
Sun	20-Mar	7am - 3pm	John Lane
Sun	20-Mar	3pm-11pm	Jim Gilmer
Sun-Mon	3/20-3/21	11pm - 7am	Don Dube
Mon	21-Mar	7am - 3pm	Jeff Circle
Mon	21-Mar	3pm-11pm	Hossein Esmaili
Mon-Tues	3/21-3/22	11pm - 7am	Jim Gilmer
Tues	22-Mar	7am - 3pm	Ed Fuller
Tues	22-Mar	3pm-11pm	Len Ward
Tues-Wed	3/22-3/23	11pm - 7am	
Wed	23-Mar	7am - 3pm	Jeff Circle
Wed	23-Mar	3pm-11pm	Jerry Dozier
Wed-Thur	3/23-3/24	11pm - 7am	Mike Salay
Thur	24-Mar	7am - 3pm	Jeff Circle
Thur	24-Mar	3pm-11pm	Steve Laur
Thur-Fri	3/24-3/25	11pm - 7am	
Fri	25-Mar	7am - 3pm	Jerry Dozier ?
Fri	25-Mar	3pm-11pm	Steve Laur
Fri-Sat	3/25-3/26	11pm-7am	
<b>BWR Expertise</b>			
Fri-Sat	3/18-3/19	11pm-7am	Mike Brown
Sat	19-Mar	7am - 3pm	Peter Alter
Sat	19-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/19-3/20	11pm - 7am	John Kauffman
Sun	20-Mar	7am - 3pm	Larry Vick
Sun	20-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/20-3/21	11pm - 7am	Mike Brown
Mon	21-Mar	7am - 3pm	Gerry Gulla (OE volunteer)
Mon	21-Mar	3pm-11pm	Chuck Norton
Mon-Tues	3/21-3/22	11pm - 7am	Mike Brown
Tues	22-Mar	7am - 3pm	Tom Boyce (RES)
Tues	22-Mar	3pm-11pm	Chuck Norton
Tues-Wed	3/22-3/23	11pm - 7am	Mike Brown
Wed	23-Mar	7am - 3pm	Larry Vick

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Wed	23-Mar	3pm-11pm	Chuck Norton
Wed-Thur	3/23-3/24	11pm - 7am	Eva Brown
Thur	24-Mar	7am - 3pm	
Thur	24-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/24-3/25	11pm - 7am	Eva Brown
Fri	25-Mar	7am - 3pm	
Fri	25-Mar	3pm-11pm	
Fri-Sat	3/25-3/26	11pm-7am	Eva Brown
<b>RST Comm/ERDS Operator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Andy Kugler
Sat	19-Mar	7am - 3pm	Joseph Williams
Sat	19-Mar	3pm-11pm	John Thorp
Sat-Sun	3/19-3/20	11pm - 7am	Ujagav Bhachu
Sun	20-Mar	7am - 3pm	Denise McGovern
Sun	20-Mar	3pm-11pm	Donna Williams
Sun-Mon	3/20-3/21	11pm - 7am	Ujagav Bhachu
Mon	21-Mar	7am - 3pm	Joseph Williams
Mon	21-Mar	3pm-11pm	
Mon-Tues	3/21-3/22	11pm - 7am	Bill Rogganbrodt
Tues	22-Mar	7am - 3pm	Steve Bloom
Tues	22-Mar	3pm-11pm	Jim Isom
Tues-Wed	3/22-3/23	11pm - 7am	Bill Rogganbrodt
Wed	23-Mar	7am - 3pm	Joseph Williams
Wed	23-Mar	3pm-11pm	Ken Hart
Wed-Thur	3/23-3/24	11pm - 7am	Bill Rogganbrodt
Thur	24-Mar	7am - 3pm	John Thorp
Thur	24-Mar	3pm-11pm	Ken Hart
Thur-Fri	3/24-3/25	11pm - 7am	Bill Rogganbrodt
Fri	25-Mar	7am - 3pm	Donna Williams
Fri	25-Mar	3pm-11pm	Jim Isom
Fri-Sat	3/25-3/26	11pm-7am	Bill Rogganbrodt
<b>RST Support (Seismology Q&amp;A)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Off (On Call)
Sat	19-Mar	7am - 3pm	Off (On Call)
Sat	19-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/19-3/20	11pm - 7am	Off (On Call)
Sun	20-Mar	7am - 3pm	Off (On Call)
Sun	20-Mar	3pm-11pm	Off (On Call)
Sun-Mon	3/20-3/21	11pm - 7am	Off (On Call)
Mon	21-Mar	7am - 3pm	Off (On Call)
Mon	21-Mar	3pm-11pm	Off (On Call)
Mon-Tues	3/21-3/22	11pm - 7am	Off (On Call)
Tues	22-Mar	7am - 3pm	Off (On Call)
Tues	22-Mar	3pm-11pm	Off (On Call)
Tues-Wed	3/22-3/23	11pm - 7am	Off (On Call)
Wed	23-Mar	7am - 3pm	Off (On Call)
Wed	23-Mar	3pm-11pm	Off (On Call)
Wed-Thur	3/23-3/24	11pm - 7am	Off (On Call)
Thur	24-Mar	7am - 3pm	Off (On Call)
Thur	24-Mar	3pm-11pm	Off (On Call)



JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE  
MARCH 18-26

Thur-Fri	3/24-3/25	11pm - 7am	Off (On Call)
Fri	25-Mar	7am - 3pm	off (On Call)
Fri	25-Mar	3pm-11pm	Off (On Call)
Fri-Sat	3/25-3/26	11pm-7am	Off (On Call)

Marksberry, Don

From:  
Sent:  
To:

OST01 HOC *-OPS Center*  
Saturday, March 19, 2011 6:28 AM  
Abrams, Charlotte; Adams, John; Afshar-Tous, Mugeh; Alemu, Bezakulu; Alter, Peter; Anderson, James; Ashkeboussi, Nima; Baker, Stephen; Bergman, Thomas; Berry, Rollie; Bloom, Steven; Blount, Tom; Boger, Bruce; Bower, Anthony; Brandon, Lou; Brandt, Philip; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Bukharin, Oleg; Camper, Larry; Carpenter, Cynthia; Case, Michael; Casto, Greg; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Collins, Frank; Cool, Donald; Costa, Arlon; Crutchley, Mary Glenn; Cruz, Zahira; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Doane, Margaret; Dorman, Dan; Dozier, Jerry; Droggitis, Spiros; Dudek, Michael; Dudes, Laura; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Franovich, Rani; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Giitter, Joseph; Gordon, Dennis; Gott, William; Grant, Jeffery; Grobe, Jack; Hale, Jerry; Hardesty, Duane; Hart, Ken; Hart, Michelle; Hasselberg, Rick; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Huyck, Doug; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Isom, James; Jackson, Karen; Jessie, Janelle; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; Khan, Omar; Kowalczyk, Jeffrey; Kozal, Jason; Kratchman, Jessica; Kugler, Andrew; Lamb, Christopher; Larson, Emily; LaVie, Steve; Lewis, Robert; Li, Yong; Lombard, Mark; Lubinski, John; Lynch, Jeffery; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McMurtray, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Nerret, Amanda; Norris, Michael; Norton, Charles; Ordaz, Vonna; Padovan, Mark; Patel, Jay; Parillo, John; Pope, Tia; Purdy, Gary; Quinlan, Kevin; Ragland, Robert; Ralph, Melissa; Reed, Elizabeth; Reed, Wendy; Reis, Terrence; Riley (OCA), Timothy; Rini, Brett; Rodriguez-Luccioni, Hector; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Salay, Michael; Salus, Amy; Sanfilippo, Nathan; Scarbrough, Thomas; Schaperow, Jason; Schmidt, Duane; Schoenebeck, Greg; Schrader, Eric; Schwartzman, Jennifer; Seber, Dogan; Shane, Raeann; Shea, James; Shepherd, Jill; Sheron, Brian; Skeen, David; Sloan, Scott; Smioldo, Elizabeth; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Sun, Casper; Tappert, John; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tobin, Jennifer; Trefethen, Jean; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Vick, Lawrence; Wastler, Sandra; Watson, Bruce; Weber, Michael; Webber, Robert; White, Bernard; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Roy  
Subject: FOIA information request

Good Morning All,

The staff of the HOC has received a broad scope FOIA request from the Associated Press requiring the release of all communications pertaining to the Japanese nuclear incidents caused by the March 11, 2011, earthquake and tsunami.

In response to this request, an email account is being created as a FOIA drop box. In the near future, you will be required to forward all emails that you have received (either to your personal email or HOC computer email) relating to these events to the established drop box. This includes emails that you have deleted but have the ability to restore. In addition, all future emails pertaining to the Japanese nuclear incidents MUST be copied to this drop box. The address is [FOIAResource.hoc@nrc.gov](mailto:FOIAResource.hoc@nrc.gov).

A team is currently being assembled to ensure that all forwarded communications will be reviewed, and any information that qualifies for exemption (including P.I.I.) will be redacted. Therefore, you do not need to filter or redact any communication that is to be forwarded for compliance with this FOIA request.

This request has been granted expedited processing. It requires timely action from each of us to comply within the time constraints.

If you have any questions or concerns, please contact Rebecca Stone, Melissa Ralph, or Jonathan Fiske.

Marksberry, Don

From:  
Sent:  
To:

OST01 HOC *-OPS center*  
Saturday, March 19, 2011 3:25 PM  
Abrams, Charlotte; Adams, John; Afshar-Tous, Mugeh; Alemu, Bezakulu; Alter, Peter; Anderson, James; Ashkeboussi, Nima; Baker, Stephen; Bergman, Thomas; Berry, Rollie; Bloom, Steven; Blount, Tom; Boger, Bruce; Bower, Anthony; Brandon, Lou; Brandt, Philip; Brock, Kathryn; Brown, Cris; Brown, David; Brown, Eva; Brown, Frederick; Bukharin, Oleg; Camper, Larry; Carpenter, Cynthia; Case, Michael; Casto, Greg; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Collins, Frank; Cool, Donald; Costa, Arlon; Crutchley, Mary Glenn; Cruz, Zahira; Dacus, Eugene; DeCicco, Joseph; Decker, David; Dembek, Stephen; Devlin, Stephanie; Doane, Margaret; Dorman, Dan; Dozier, Jerry; Drogitis, Spiros; Dudek, Michael; Dudes, Laura; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Franovich, Rani; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Giitter, Joseph; Gordon, Dennis; Gott, William; Grant, Jeffery; Grobe, Jack; Hale, Jerry; Hardesty, Duane; Hart, Ken; Hart, Michelle; Hasselberg, Rick; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Huyck, Doug; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Isom, James; Jackson, Karen; Jessie, Janelle; Johnson, Michael; Jolicoeur, John; Jones, Andrea; Jones, Cynthia; Kahler, Carolyn; Kammerer, Annie; Karas, Rebecca; Khan, Omar; Kowalczyk, Jeffrey; Kozal, Jason; Kratchman, Jessica; Kugler, Andrew; Lamb, Christopher; Larson, Emily; LaVie, Steve; Lewis, Robert; Li, Yong; Lombard, Mark; Lubinski, John; Lynch, Jeffery; Mamish, Nader; Manahan, Michelle; Marksberry, Don; Marshall, Jane; Mayros, Lauren; Mazaika, Michael; McConnell, Keith; McCoppin, Michael; McDermott, Brian; McGinty, Tim; McMurtry, Anthony; Merritt, Christina; Meyer, Karen; Miller, Charles; Miller, Chris; Milligan, Patricia; Mohseni, Aby; Moore, Scott; Morlang, Gary; Morris, Scott; Mroz (Sahm), Sara; Munson, Clifford; Murray, Charles; Nerret, Amanda; Norris, Michael; Norton, Charles; Ordaz, Vonna; Padovan, Mark; Patel, Jay; Parillo, John; Pope, Tia; Purdy, Gary; Quinlan, Kevin; Ragland, Robert; Ralph, Melissa; Reed, Elizabeth; Reed, Wendy; Reis, Terrence; Riley (OCA), Timothy; Rini, Brett; Rodriguez-Luccioni, Hector; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Salay, Michael; Salus, Amy; Sanfilippo, Nathan; Scarbrough, Thomas; Schaperow, Jason; Schmidt, Duane; Schoenebeck, Greg; Schrader, Eric; Schwartzman, Jennifer; Seber, Dogan; Shane, Raeann; Shea, James; Shepherd, Jill; Sheron, Brian; Skeen, David; Sloan, Scott; Smiroldo, Elizabeth; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Sun, Casper; Tappert, John; Temple, Jeffrey; Thaggard, Mark; Thomas, Eric; Thorp, John; Tobin, Jennifer; Trefethen, Jean; Tschiltz, Michael; Turtill, Richard; Uhle, Jennifer; Valencia, Sandra; Vaughn, James; Vick, Lawrence; Wastler, Sandra; Watson, Bruce; Weber, Michael; Webber, Robert; White, Bernard; Wiggins, Jim; Williams, Donna; Williams, Joseph; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Roy  
Subject: Correction: FOIA information request

Good Afternoon All,

The staff of the NRC HOC has received a broad scope FOIA request from the Associated Press requiring the release of all communications pertaining to the Japanese nuclear incidents caused by the March 11, 2011, earthquake and tsunami.

In response to this request, an email account is being created as a FOIA drop box. In the near future, you will be required to forward all emails that you have received (either to your personal email or HOC computer email) relating to these events to the established drop box. This includes emails that you have deleted but have the ability to restore. In addition, all future emails pertaining to the Japanese nuclear incidents MUST be copied to this drop box. The address is [FOIA.Response.hoc.Resource@nrc.gov](mailto:FOIA.Response.hoc.Resource@nrc.gov) or [FoiaResponse.hoc@nrc.gov](mailto:FoiaResponse.hoc@nrc.gov).

A team is currently being assembled to ensure that all forwarded communications will be reviewed, and any information that qualifies for exemption (including P.I.I.) will be redacted. Therefore, you do not need to filter or redact any communication that is to be forwarded for compliance with this FOIA request.

~~This request has been granted expedited processing. It requires timely action from each of us to comply with the FOIA constraints.~~

If you have any questions or concerns, please contact Rebecca Stone, Melissa Ralph, or Jonathan Fiske.

## Weaver, Tonna

**From:** JAPAN ASSISTANCE ALERT [JAPAN\_ASSISTANCE\_ALERT@USAID.GOV]  
**Sent:** Sunday, March 20, 2011 3:28 PM  
**Subject:** 03.20.11 - USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #10  
**Attachments:** 03.20.11 - USAID-DCHA Japan EQ and Tsunami Fact Sheet #10.pdf; 03.20.11 - Japan Earthquake and Tsunami Map.pdf

Please find attached and pasted below the USAID/DCHA Japan Earthquake and Tsunami Fact Sheet #10 and accompanying map, both dated March 20, 2011. These documents have been approved for public use.

If you experience formatting issues in the text below, please refer to the attached document.

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



**USAID**  
FROM THE AMERICAN PEOPLE

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

### *Japan – Earthquake and Tsunami*

Fact Sheet #10, Fiscal Year (FY) 2011

March 20, 2011

*Note: The last fact sheet was dated March 19, 2011.*

#### **KEY DEVELOPMENTS**

- The earthquake and tsunami have resulted in nearly 8,500 deaths and left nearly 13,000 people missing, as reported by the Government of Japan (GoJ) on March 20. The natural disasters also damaged or destroyed more than 126,000 buildings and 1,400 roads.
- On March 20, USAID/OFDA Director Mark Bartolini arrived in Tokyo for a three-day visit to meet with staff from the U.S. Embassy, U.S. Department of Defense (DoD), U.N. agencies, and non-governmental organizations, as well as travel to tsunami-affected areas with the Disaster Assistance Response Team (DART). In addition, a third DART military liaison officer arrived in Tokyo to work with DoD in defining humanitarian requirements and validating humanitarian operations. The DART currently comprises 20 members, including representatives from USAID, the U.S. Department of Health and Human Services, the U.S. Nuclear Regulatory Commission, and the U.S. Department of Energy (DoE).
- In response to a GoJ request, USAID/OFDA has dispatched 10,000 sets of personal protective equipment (PPE)—including suits, masks, gloves, decontamination bags, and other supplies—to Yokota, Japan, from the USAID/OFDA chemical, biological, radiological, nuclear, and radiological warehouse at Dobbins Air Reserve Base in Georgia. The PPE sets are scheduled to arrive on March 21 local time for consignment to the GoJ.
- Japan Self-Defense Force (JSDF) and other GoJ personnel had transported nearly all of 23,000 previously isolated individuals to evacuation centers as of March 19, according to the U.N. Office for the Coordination of Humanitarian Affairs (OCHA). GoJ officials reported that only 20 people remained isolated due to damaged roads and communications in Miyagi and Fukushima prefectures.

NUMBERS AT A GLANCE <sup>[1]</sup>		SOURCE
Confirmed Deaths	8,450	GoJ NPA <sup>[2]</sup> – March 20, 2011
Missing Persons	12,931	GoJ NPA – March 20, 2011
Number of People in Evacuation Centers	350,332	GoJ NPA – March 20, 2011

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

USAID/OFDA Assistance for the Japan Earthquake and Tsunami..... \$7,210,614  
DoD Humanitarian Assistance for the Japan Earthquake and Tsunami..... \$16,100,000

M-272

**Total USAID and DoD Assistance for the Japan Earthquake and Tsunami..... \$23,310,614**

## CONTEXT

- On March 11 at 0046 hours Eastern Standard Time, or 1446 hours Japan Standard Time, a magnitude 9.0 earthquake occurred off the east coast of Honshu Island, Japan—approximately 231 miles northeast of Tokyo—at a depth of approximately 15 miles, generating a tsunami that struck the eastern coast of Japan and resulted in additional fatalities and damage, particularly in Miyagi, Fukushima, and Iwate prefectures. Furthermore, the natural disasters led to a serious nuclear incident at the Fukushima Daiichi power plant located approximately 150 miles north of Tokyo.
- On March 11, U.S. Ambassador John V. Roos declared a disaster due to the effects of the earthquake and tsunami in Japan. USAID/OFDA provided an initial \$100,000 through the U.S. Embassy in Tokyo to assist with local relief efforts. In addition, USAID activated a Response Management Team (RMT) in Washington, D.C., and deployed a DART—including urban search and rescue (USAR) specialists and nuclear experts—to support Japanese emergency response efforts.

## Humanitarian Situation and Response

- The GoJ is progressively opening damaged roads, and the JSDF plans to reach all remaining isolated populations in the coming days. Approximately 120,000 national emergency service personnel are currently working in the most affected areas of Japan, repairing infrastructure and distributing a significant amount of food, water, blankets, and other supplies to individuals in evacuation centers.
- The number of individuals residing in evacuation centers is decreasing as road repairs enable displaced individuals to travel to relatives' and friends' houses in unaffected areas or return to their houses as electricity is restored, according to OCHA. On March 20, OCHA reported that the number of people living in evacuation centers had decreased by more than 15,700 people—or 5 percent—since March 18.
- As of March 20, more than 21,000 residents of affected areas had relocated to other parts of Japan, according to OCHA. The GoJ Ministry of Land, Infrastructure, Transport, and Tourism has requested Japan's housing industry build 30,000 transitional shelters—including two rooms, a kitchen, toilet, and washroom—in the next two months and has deployed specialist teams to the affected areas to select suitable locations for shelter placement. Construction has begun in Iwate Prefecture, where workers had completed approximately 200 shelters as of March 20, according to OCHA. In addition, all of Japan's prefectures are making plans to provide more sustainable housing for the displaced population in evacuation centers.

## Logistics and Relief Supplies

- DART staff note that limited supply of fuel for relief supply transport continues to represent the most significant challenge to the earthquake and tsunami response effort to date. To ease shortages in affected areas, the GoJ has delivered approximately 600,000 liters of fuel per day for the past two days. As of March 20, the GoJ had delivered a total of 4.3 million liters of fuel to affected prefectures and is using 280 tanker vehicles for gasoline transport, OCHA reported.
- As of March 19, approximately 17,000 U.S. Military personnel, 100 aircraft, and 14 ships were assisting or prepared to support relief operations in Japan, including by providing transportation of relief commodities.

## Situation at Nuclear Power Plants

- The GoJ has detected radiation levels in milk from a farm in Fukushima above the limit set by a national food safety law. Officials also reported radiation levels over food safety limits in seven samples of spinach from Ibaraki Prefecture. According to the GoJ Chief Cabinet Secretary, the radiation levels are not expected to pose any immediate health hazards, and the GoJ is monitoring other food products.
- DoE, DART, and U.S. Embassy staff also actively continue to monitor and triangulate information on radiation levels in Tokyo. Despite recent media reports to the contrary, all three U.S. agencies continue to report no increases in radiation levels in Tokyo at this time.

## USAID AND DOD HUMANITARIAN ASSISTANCE TO JAPAN

Implementing Partner	Activity	Location	Amount
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USAID/OFDA ASSISTANCE <sup>1</sup>			
U.S. Embassy in Tokyo	Emergency Relief Support	Affected Areas	\$100,000
DoD	USAR Operations (Transport of USAR teams)	Affected Areas	\$1,000,000
L.A. County USAR Team	USAR Operations	Affected Areas	\$2,058,000
Fairfax County USAR Team	USAR Operations	Affected Areas	\$2,058,000
HHS	Health	Affected Areas	\$93,360
	USAID/DART Support Costs		\$1,599,600
	Administrative Support		\$301,654
<b>TOTAL USAID/OFDA</b>			<b>\$7,210,614</b>
DOD ASSISTANCE			
	Emergency Relief Support	Affected Areas	\$16,100,000
<b>TOTAL DOD</b>			<b>\$16,100,000</b>
<b>TOTAL USG HUMANITARIAN ASSISTANCE TO JAPAN IN FY 2011</b>			<b>\$23,310,614</b>

<sup>1</sup> USAID/OFDA funding represents anticipated or actual obligated amounts as of March 20, 2011.

#### PUBLIC DONATION INFORMATION

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

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

**Helen Ho and Alison Lapp**

Information Coordinators

Pacific Tsunami and Japan Earthquake Response Management Team

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

202-712-0039

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

[2] National Police Agency (NPA).



## Weaver, Tonna

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**From:** Andersen, James *ED*  
**Sent:** Sunday, March 20, 2011 6:04 PM  
**To:** Laufer, Richard; Baval, Rochelle; Svinicki, Kristine; Montes, David; Adler, James; Bates, Andrew; Batkin, Joshua; Bubar, Patrice; Bupp, Margaret; Chairman Temp; Clark, Lisa; Coggins, Angela; Davis, Roger; Dhir, Neha; Hart, Ken; Loyd, Susan; Monninger, John; Nieh, Ho; Pearson, Laura; Reddick, Darani; Rothschild, Trip; Joosten, Sandy; Sharkey, Jeffry; Shea, Pamela; Sosa, Belkys; Burns, Stephen; Vietti-Cook, Annette; Warren, Roberta; Zorn, Jason; Baggett, Steven; Bradford, Anna; Castleman, Patrick; Kock, Andrea; Tadesse, Rebecca; Thoma, John; Franovich, Mike; Hipschman, Thomas; Batkin, Joshua; Marshall, Michael; Orders, William; Snodderly, Michael; Warnick, Greg; Lisann, Elizabeth  
**Cc:** Dudley, Richard; Ruland, William; Tregoning, Robert; Wittick, Brian; Blake, Kathleen; Bozin, Sunny; Cianci, Sandra; Crawford, Carrie; Gibbs, Catina; Harves, Carolyn; Hasan, Nasreen; Jimenez, Patricia; KLS Temp; Landau, Mindy; Lepre, Janet; Lewis, Antoinette; Herr, Linda; Muessle, Mary; Pace, Patti; Pulley, Deborah; Savoy, Carmel; Speiser, Herald; Taylor, Renee; Temp, GEA; Temp, WCO; Temp, WDM; Wright, Darlene; Wittick, Susan; Sargent, Kimberly; Hayden, Elizabeth; Brenner, Eliot; Powell, Amy; Schmidt, Rebecca; Borchardt, Bill; Weber, Michael; Ash, Darren; Virgilio, Martin; Muessle, Mary; Landau, Mindy; Leeds, Eric; Howe, Allen; Gratton, Christopher; Boska, John; Grobe, Jack  
**Subject:** Materials for March 21st Commission Briefing on Japan Event (Staff Slides)  
**Attachments:** Staff Slides for March 21 Meeting Rev 1.pptx

Attached are the staff slides for the Commission Meeting on March 21, 2011, "Briefing on NRC Response to Recent Nuclear Events in Japan." I am sending this information out via two e-mail list, I apologize if you are getting it twice.

Jim Andersen  
Deputy AO, TBPM, OEDO  
415-1725.

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**From:** Laufer, Richard *RL*  
**Sent:** Friday, March 18, 2011 4:46 PM  
**To:** Baval, Rochelle; Svinicki, Kristine; Montes, David; Adler, James; Bates, Andrew; Batkin, Joshua; Bubar, Patrice; Bupp, Margaret; Chairman Temp; Clark, Lisa; Coggins, Angela; Davis, Roger; Dhir, Neha; Hart, Ken; Loyd, Susan; Monninger, John; Nieh, Ho; Pearson, Laura; Reddick, Darani; Rothschild, Trip; Joosten, Sandy; Sharkey, Jeffry; Shea, Pamela; Sosa, Belkys; Burns, Stephen; Vietti-Cook, Annette; Warren, Roberta; Zorn, Jason; Baggett, Steven; Bradford, Anna; Castleman, Patrick; Kock, Andrea; Tadesse, Rebecca; Thoma, John; Franovich, Mike; Hipschman, Thomas; Batkin, Joshua; Marshall, Michael; Orders, William; Snodderly, Michael; Warnick, Greg; Lisann, Elizabeth  
**Cc:** Dudley, Richard; Ruland, William; Tregoning, Robert; Wittick, Brian; Andersen, James; Blake, Kathleen; Bozin, Sunny; Cianci, Sandra; Crawford, Carrie; Gibbs, Catina; Harves, Carolyn; Hasan, Nasreen; Jimenez, Patricia; KLS Temp; Landau, Mindy; Lepre, Janet; Lewis, Antoinette; Herr, Linda; Muessle, Mary; Pace, Patti; Pulley, Deborah; Savoy, Carmel; Speiser, Herald; Taylor, Renee; Temp, GEA; Temp, WCO; Temp, WDM; Wright, Darlene; Wittick, Susan; Sargent, Kimberly; Hayden, Elizabeth; Brenner, Eliot; Powell, Amy; Schmidt, Rebecca  
**Subject:** Materials for March 21st Commission Briefing on Japan Event

Attached is the final scheduling note for the March 21st Commission briefing on the Japan Event. Staff slides should be emailed later today by Jim Andersen (OEDO).

Note that Commissioner Magwood goes first with questions.

Below are a few meeting logistics for your information:

- Bill Borchardt will be the only NRC staff member at the table.
- The seats in the well are reserved for DEDOs / Office Directors

*M-273*

- The stadium seating to the Commissioners left will be reserved for designated technical staff (who may be called upon during the meeting) and Commission Office EAs/TAs
- The stadium seating to the Commissioners right will be reserved for Press Corps/OPA
- Some of the stadium seating in front of the Commissioners will be reserved for VIPs (Congressional Office staffers).
- The remaining stadium seats in front of the Commissioners will be open to the public.

Once the available public seats are filled, members of the public will be directed around the back of the building where they will enter the TWFN Auditorium to view the Commission meeting.

Thanks,  
Rich



# **Briefing on NRC Response to Recent Nuclear Events in Japan**

**Bill Borchardt**  
**Executive Director for Operations**  
**March 21, 2011**

# **Agenda**

- **Event Overview**
- **Immediate NRC Response**
- **Continuing NRC Response**
- **Health Effects of Radiation**
- **Domestic Reactor Safety**
- **Path Forward**

# **Event Overview**

- **Discussion of initiating event**
- **Current status of reactors**
- **Current status of spent fuel pools**

# **Immediate NRC Response**

- **Activated Operations Center**
- **Dispatched NRC experts to Japan**
- **Areas of focus**
- **Extensive outreach to stakeholders**

# **Continuing NRC Response**

- **Operations Center**
- **Support U.S. response**
- **Provide assistance**
- **Mobilize resources**

# **Health Effects of Radiation**

- **Offsite Doses**
- **Radiological Consequences**



# **Domestic Reactor Safety**

- **NRC oversight of U.S. plant safety**
- **Continuous improvement based on operating experience**

# **NRC Activities – Near Term**

- **Inspection Activities**
- **Generic Communications**
- **Immediate regulatory actions**

# **NRC Activities – Longer Term**

- **Lessons learned and recommendations**
- **Regulatory actions, for example, to identify potential:**
  - **Research projects**
  - **Generic issues**
  - **Regulatory enhancements**

# **Conclusion**

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 4:11 PM  
**To:** Ellmers, Glenn  
**Cc:** Markley, Michael  
**Subject:** RE: Materials for March 21st Commission Briefing on Japan Event (Staff Slides)

Hard to believe. We'll wait for the transcript.

NELSON

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**From:** Ellmers, Glenn *EDO*  
**Sent:** Monday, March 21, 2011 4:07 PM  
**To:** Nelson, Robert  
**Cc:** Markley, Michael; Oesterle, Eric  
**Subject:** FW: Materials for March 21st Commission Briefing on Japan Event (Staff Slides)

Robert,  
Bill did not have prepared remarks. Here are the slides, though.

*m-274*

**Nelson, Robert**

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**From:** Nelson, Robert | *NR*  
**Sent:** Monday, March 21, 2011 3:51 PM  
**To:** Leeds, Eric; Boger, Bruce; Giitter, Joseph  
**Cc:** Meighan, Sean; Nguyen, Quynh; Markley, Michael; Oesterle, Eric; Thomas, Eric  
**Subject:** FYI: Comm Team Sitrep

1. The biggest advancement was the public version of Annie Kemmerer's Qs & As. Our team had little to do with this other than to ask for it.
2. We added numerous documents to our NRR internal website: <http://portal.nrc.gov/edo/nrr/default.aspx>. I've communicated this update to our regional POCs.
3. I prepared & forwarded to Eric a recommended communication to all NRR staff regarding that web site. Our staff is hungry for info.
4. We completed our compilation of OBE, SSE, Max Flooding Level and Protection Level for all of the plants based on info in the FSARs. This info is readily available when needed.
5. We'll begin our screening of potentially sensitive licensing actions tomorrow. I'll inform you of the results.
6. We working on some additional Qs & As but we've been impacted by the AP FOIA and did not make as much progress as we had hoped.
7. I've asked OEDO for the file of the EDO's opening remarks from today's meeting. We don't want to wait for the transcript. This is another source of info for Qs & As. No response yet.

NELSON

*m-275*

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 3:47 PM  
**To:** Roberts, Darrell  
**Subject:** RE: FYI: FEMA EPZ Info

We're working on more Qs & As and hope to have at least drafts tomorrow. I'll keep you informed.

Please let us know of suspected gaps.

NELSON *R*

---

**From:** Roberts, Darrell *DR*  
**Sent:** Monday, March 21, 2011 3:45 PM  
**To:** Nelson, Robert  
**Subject:** RE: FYI: FEMA EPZ Info

Bob,

I understand the dilemma. I guess we'll just rely upon what's on the linked page and hope it fields all of the subjects that we expect to address in our AAMs. If we see any gaps, we'll pursue.

DJR

---

**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 3:05 PM  
**To:** Roberts, Darrell  
**Subject:** RE: FYI: FEMA EPZ Info

A few minutes ago, I sent you a link to all the related publicly releasable information. We update this site as new information becomes available.

There are so many people involved in different organizations developing Qs & As that I couldn't begin to give you a list of those under development. I'm trying to get a better handle on this but as far as I can tell, there is no central agency POC for developing Qs & As.

NELSON *R*

---

**From:** Roberts, Darrell *DR*  
**Sent:** Friday, March 18, 2011 5:42 PM  
**To:** Nelson, Robert  
**Cc:** Kennedy, Kriss; Lara, Julio; Croteau, Rick; West, Steven; Shear, Gary; Hay, Michael  
**Subject:** RE: FYI: FEMA EPZ Info

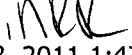
Bob,

It's not clear whether this info is what we're using in response to the 50-mile evacuation/ 10-mile EPZ controversy, or are there some other Qs/As being developed (see attached e-mail you forwarded from Eric Leeds to the RAs). At some point it would be helpful to get a summary listing of all the links and/or Q-and-A documents so we can keep track of what all we're supposed to be using.

Thx,

DJR

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**From:** Nelson, Robert   
**Sent:** Friday, March 18, 2011 1:47 PM  
**To:** Roberts, Darrell; Kennedy, Kriss; Lara, Julio; Croteau, Rick  
**Cc:** West, Steven; Shear, Gary; Hay, Michael  
**Subject:** FYI: FEMA EPZ Info

<http://portal.nrc.gov/edo/nrr/NRR TA/FAQ Related to Events Occuring in Japan/Emergency Planning Zones.pdf>

Supplied by FEMA & publicly releasable.

NELSON





**Nelson, Robert**

---

**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 3:45 PM  
**To:** Croteau, Rick  
**Subject:** RE:

We're working on your specific Qs & hope to make progress tomorrow.

NELSON

---

**From:** Croteau, Rick *RC*  
**Sent:** Monday, March 21, 2011 3:44 PM  
**To:** Nelson, Robert  
**Subject:** RE:

Thanks. These are looking good and will help much at our public meetings. FYI, our first is this Thursday at Robinson.

---

**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 2:34 PM  
**To:** Croteau, Rick; Roberts, Darrell; Kennedy, Kriss; Lara, Julio  
**Cc:** Hay, Michael; West, Steven; Shear, Gary; Meighan, Sean; Nguyen, Quynh; Markley, Michael; Oesterle, Eric  
**Subject:**

We've added some additional information to our web site. All info under "Japan Event Information" has been screened for public release.

<http://portal.nrc.gov/edo/nrr/default.aspx>

NELSON

*M-277*

## Nelson, Robert

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**From:** Nelson, Robert *NRK*  
**Sent:** Monday, March 21, 2011 2:53 PM  
**To:** Leeds, Eric  
**Cc:** Steger (Tucci), Christine; Meighan, Sean; Nguyen, Quynh; Gitter, Joseph  
**Subject:** Recommendation: Communication to the Staff

I recommend that you send an e-mail or HIGNFY to NRR staff similar to the following. The latter part of this communication duplicates what you sent earlier to managers. I've found that this info has not filtered down to all of the staff.

We've added a new feature to the NRR internal web site, "Japan Event Information." The link is provided below. All of the information under this title has been publicly released or has been screened and determined to be acceptable for public release in response 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." Currently, we are updating the internal NRR web site daily.

<http://portal.nrc.gov/edo/nrr/default.aspx>

In a related matter, I've assigned Bob Nelson, Deputy Director, Division of Operating Reactor Licensing, as the NRR Coordinator for External Communications related to NRR's response to the recent events in Japan. 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. Assisting Nelson will be Sean Meighan and Quynh Nguyen from the NRR front office, Eric Thomas from DIRS, Eric Oesterle from NRO and a communications "tiger team" formulated in DORL headed by Mike Markley. Harold Chernoff will also provide assistance as needed. Please forward all of your requests for support in this area to Nelson. (Extension 1453).

NELSON

*M-278*

**Howe, Allen**

---

**From:** Howe, Allen *NRK*  
**Sent:** Monday, March 21, 2011 5:11 PM  
**To:** Ellmers, Glenn  
**Subject:** RE: Differences in Licensing between U.S. and Japan

Glenn – I do not

Sorry

Allen

---

**From:** Ellmers, Glenn  
**Sent:** Monday, March 21, 2011 4:58 PM  
**To:** Howe, Allen  
**Subject:** Differences in Licensing between U.S. and Japan

Allen,  
I have this question in to OIP as well, but are you aware of anything I can consult on differences between U.S. and Japanese approaches to licensing NPP's?  
Thanks,  
Glenn

Glenn Ellmers  
Senior Communications Specialist, OEDO  
301-415-0442  
OWFN - 17F03  
Mail stop: 016E15

*M-279*

**Howe, Allen**

---

**From:** Howe, Allen *NR*  
**Sent:** Monday, March 21, 2011 12:31 PM  
**To:** NRR\_DORL Distribution  
**Subject:** FW: MANY, MANY THANKS

DORL team – I know that many of you contributed to this meeting via gathering info and compiling it or backing up those who were pulled off for other tasks.

My thanks to you.

Allen

---

**From:** Howe, Allen  
**Sent:** Monday, March 21, 2011 12:15 PM  
**To:** Boska, John; Gratton, Christopher; Tully, Bridin; Sola, Clara; Miller, Ed; Mahoney, Michael; Andersen, James; Wittick, Susan; Deegan, George; Scott, Michael; Williams, Kevin; Milligan, Patricia; Wilson, George; Bowman, Eric; Thomas, Eric; Collins, Timothy; Harrison, Donnie; Salley, MarkHenry; Kammerer, Annie; Ramsey, Jack; Hall, Randy; Thadani, Mohan; Khanna, Meena; Dion, Jeanne; Shropshire, Alan; Williams, Donna; Bajwa, Chris; VandenBerghe, John; Johnson, Don; Patterson, Malcolm; Kahler, Robert; Anderson, Joseph; Tam, Peter; Pickett, Douglas; Martin, Robert; Sullivan, Randy; Norris, Michael; Kahler, Robert; Ellmers, Glenn  
**Cc:** Brenner, Eliot; Holahan, Gary; Uhle, Jennifer; Piccone, Josephine; Doane, Margaret; Leeds, Eric; Grobe, Jack; Boger, Bruce; Ruland, William; Brown, Frederick; Holian, Brian; Westreich, Barry; Lee, Samson; Cheok, Michael; Harrington, Holly; Uhle, Jennifer; Sheron, Brian; Borchardt, Bill  
**Subject:** MANY, MANY THANKS

Folks – the Commission meeting on the Japan event was an extremely high profile, short turnaround request. You all exemplified the best of what this agency is all about: outstanding cooperation, teamwork, and excellence in this effort. The focus and help was tremendous and many worked long hours including through the weekend to support this accomplishment. My sincere thanks to all of you for your hard work and dedication in making this meeting a success.

Thank you -

Allen Howe, Deputy Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

P.S. many folks worked on this – apologies if I missed someone. Please forward to anyone that I may have missed.

*M-280*

**Nelson, Robert**

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**From:** Nelson, Robert *nr*  
**Sent:** Monday, March 21, 2011 2:28 PM  
**To:** Landau, Mindy  
**Cc:** Markley, Michael; Oesterle, Eric  
**Subject:** Query: EDO's Opening Remarks from 3/20 Commission Mtg

**Importance:** High

Can you provide a copy to me for use by my Comm Team? We don't want to wait 48 hours for the transcript.

NELSON

**Tracking:**

*m-281*

## Nelson, Robert

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**From:** Nelson, Robert *mr*  
**Sent:** Monday, March 21, 2011 11:22 AM  
**To:** Miller, Ed  
**Cc:** Chernoff, Harold  
**Subject:** Action: Earth Quake and Flooding spreadsheet

Schedule a meeting with Joe to discuss.

NELSON

---

**From:** Glitter, Joseph *mr*  
**Sent:** Monday, March 21, 2011 11:20 AM  
**To:** Miller, Ed; Nelson, Robert; Howe, Allen  
**Cc:** Chernoff, Harold  
**Subject:** RE: Earth Quake and Flooding spreadsheet

Let's discuss this table. I think the way the info is presented can easily be misinterpreted.

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**From:** Miller, Ed *mr*  
**Sent:** Monday, March 21, 2011 11:17 AM  
**To:** Nelson, Robert; Howe, Allen; Glitter, Joseph  
**Cc:** Chernoff, Harold  
**Subject:** FW: Earth Quake and Flooding spreadsheet

The attached spreadsheet contains the OBD, SSE, max flooding level, and max flooding protection level.

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**From:** Miller, Ed  
**Sent:** Monday, March 21, 2011 11:16 AM  
**To:** Chernoff, Harold  
**Subject:** Earth Quake and Flooding spreadsheet

*M-282*

## Nelson, Robert

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**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 10:35 AM  
**To:** Nguyen, Quynh  
**Subject:** RE: IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.

Please add the link to our web site.

NELSON

---

**From:** Nguyen, Quynh *NR*  
**Sent:** Monday, March 21, 2011 10:30 AM  
**To:** Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Galloway, Melanie; Glitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry  
**Cc:** Leeds, Eric; Grobe, Jack; Boger, Bruce  
**Subject:** IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.  
**Importance:** High

It's the IN regarding the Earthquake.

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**From:** RidsNrrOd Resource *NR*  
**Sent:** Monday, March 21, 2011 10:03 AM  
**To:** Meighan, Sean  
**Cc:** Nguyen, Quynh  
**Subject:** FW: IN 2011-05 (ML110760432)  
**Importance:** High

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**From:** Hawes, Cathy *NR*  
**Sent:** Friday, March 18, 2011 4:56 PM  
**To:** Albert, Ronald; Beaulieu, David; Blount, Tom; Foster, Jack; Furst, David; Gray, Kathy; Hawes, Cathy; Laura, Richard; Markley, Anthony; McGinty, Tim; Murphy, Martin; OGCMailCenter Resource; Peduzzi, Francis; Quay, Theodore; RidsEdoMailCenter Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsNrrAdes Resource; RidsNrrAdro Resource; RidsNrrDpr Resource; RidsNrrMailCenter Resource; RidsNrrOd Resource; RidsOcaaMailCenter Resource; RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; Rini, Brett; Stuchell, Sheldon; Tabatabai, Omid  
**Subject:** IN 2011-05 (ML110760432)  
**Importance:** High

Attached is NRC Information Notice 2011-05: Tohoku-Taiheiyoku-Oki Earthquake Effects on Japanese Nuclear Power Plants, dated March 18, 2011.

This IN can also be found in ADAMs under Accession No. ML110760432

## Nelson, Robert

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**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 10:35 AM  
**To:** Nguyen, Quynh; Markley, Michael  
**Subject:** RE: IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.  
**Importance:** High

Now that the Comm Mtg is over let's meet to coordinate today's activities

NELSON

---

**From:** Nguyen, Quynh *NR*  
**Sent:** Monday, March 21, 2011 10:30 AM  
**To:** Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry  
**Cc:** Leeds, Eric; Grobe, Jack; Boger, Bruce  
**Subject:** IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.  
**Importance:** High

It's the IN regarding the Earthquake.

---

**From:** RidsNrrOd Resource  
**Sent:** Monday, March 21, 2011 10:03 AM  
**To:** Meighan, Sean  
**Cc:** Nguyen, Quynh  
**Subject:** FW: IN 2011-05 (ML110760432)  
**Importance:** High

---

**From:** Hawes, Cathy *NR*  
**Sent:** Friday, March 18, 2011 4:56 PM  
**To:** Albert, Ronald; Beaulieu, David; Blount, Tom; Foster, Jack; Furst, David; Gray, Kathy; Hawes, Cathy; Laura, Richard; Markley, Anthony; McGinty, Tim; Murphy, Martin; OGCMailCenter Resource; Peduzzi, Francis; Quay, Theodore; RidsEdoMailCenter Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsNrrAdes Resource; RidsNrrAdro Resource; RidsNrrDpr Resource; RidsNrrMailCenter Resource; RidsNrrOd Resource; RidsOcaaMailCenter Resource; RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; Rini, Brett; Stuchell, Sheldon; Tabatabai, Omid  
**Subject:** IN 2011-05 (ML110760432)  
**Importance:** High

Attached is NRC Information Notice 2011-05: Tohoku-Taiheiyu-Oki Earthquake Effects on Japanese Nuclear Power Plants, dated March 18, 2011.

This IN can also be found in ADAMS under Accession No. ML110760432

*M-284*



**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Monday, March 21, 2011 8:50 AM  
**To:** Howe, Allen  
**Cc:** Hughey, John; Mahoney, Michael; Giitter, Joseph  
**Subject:** RE: ACTION REQUIRED: FOIA 2011-0119  
**Attachments:** image001.gif

COB today as stated in the 5<sup>th</sup> bullet.

NELSON

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**From:** Howe, Allen *NR*  
**Sent:** Monday, March 21, 2011 8:32 AM  
**To:** Nelson, Robert; Giitter, Joseph  
**Cc:** Hughey, John; Mahoney, Michael  
**Subject:** RE: ACTION REQUIRED: FOIA 2011-0119

Nelson – what is the timeline?

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**From:** Nelson, Robert  
**Sent:** Monday, March 21, 2011 8:28 AM  
**To:** Giitter, Joseph; Howe, Allen  
**Cc:** Hughey, John; Mahoney, Michael  
**Subject:** ACTION REQUIRED: FOIA 2011-0119  
**Importance:** High

This applies to everyone, including SES. We are not exempt

NELSON

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**From:** Hughey, John *NR*  
**Sent:** Friday, March 18, 2011 4:30 PM  
**To:** Mahoney, Michael  
**Cc:** Nelson, Robert; Chernoff, Harold  
**Subject:** RE: ACTION: FOIA 2011-0119

Mike please send the e-mail below, with the FOIA attachments, out to the DORL PMs and BCs.

Thanks,  
John

.....  
All,

Please follow the instructions/guidance below for the attached FOIA request. This guidance has been approved by Nelson.

- Only consider documents/files that were in existence on the date of the FOIA request, March 16, 2011. Any documents/files that you generated or received after March 16, 2011, are not covered in this FOIA.
- Please **print out** all covered documents/files and organize into two stacks: one stack for items that you determine should be released in their entirety and one stack that you determine should be partially or

entirely withheld. For those documents that should be partially or entirely withheld provide a simple typed out word document specifying the applicable Exemption (see attached FOIA instructions) and a brief statement of harm. Please also place brackets around the information to be withheld or write "Withhold All" at the top of each page that is to be withheld in its entirety.

- Do not include any e-mails that you received as part of a mass distribution from Joe, Nelson, Alan, or another NRC office or division, unless you modified or augmented that information and sent it to someone else.
- Please note that the scope of the FOIA request is specific to internal communications pertaining to the Japanese nuclear incidents. Therefore, any communications regarding information solely related to information pertaining to US plants is not included in the scope of the FOIA request.
- Please provide your hard copies to Karen Zeleznock (O8-H02) by COB Monday, March 21, 2011, as this is an expedited request. If you are working on a high priority issue that you feel you cannot step away from for the time required to gather this FOIA requested information, please provide Mike Mahoney with an e-mail stating when you expect to complete your document collection and the higher priority item that you are supporting.

\*\*\*\*\*

John Hughey  
Peach Bottom Project Manager  
NRR / Division of Operating Reactor Licensing  
Phone: 301-415-3204  
e-mail: John.Hughey@nrc.gov

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**From:** Mahoney, Michael *NRCL*  
**Sent:** Friday, March 18, 2011 1:49 PM  
**To:** NRR\_DORL\_PMs Distribution; NRR\_DORL\_BCs Distribution  
**Cc:** Meighan, Sean  
**Subject:** RE: ACTION: FOIA 2011-0119  
**Importance:** High

All,

Please ignore my previous email and stop efforts regarding this FOIA for the time being. We are regrouping and will be in contact when/if further actions are required of DORL.

Thanks  
Mike

**Michael Mahoney**  
Davis-Besse, Perry and FENOC Fleet Project Manager, Licensing Branch III-2  
U. S. Nuclear Regulatory Commission  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
Phone: (301)415-3867  
Email: Michael.Mahoney@NRC.GOV



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**From:** Mahoney, Michael  
**Sent:** Friday, March 18, 2011 12:34 PM  
**To:** NRR\_DORL\_PMs Distribution  
**Cc:** Meighan, Sean  
**Subject:** FW: ACTION: FOIA 2011-0119  
**Importance:** High

PMs,

See attached FOIA request. This has been granted for an expedited response. Please provide any information to me you have regarding this FOIA as soon as you can.

Mike

**Michael Mahoney**

Davis-Besse, Perry and FENOC Fleet Project Manager, Licensing Branch III-2  
U. S. Nuclear Regulatory Commission  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
Phone: (301)415-3867  
Email: Michael.Mahoney@NRC.GOV



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**From:** Nelson, Robert *NR*  
**Sent:** Friday, March 18, 2011 9:05 AM  
**To:** Mahoney, Michael  
**Cc:** Glitter, Joseph; Howe, Allen; Markley, Michael; Meighan, Sean  
**Subject:** ACTION: FOIA 2011-0119  
**Importance:** High

Please take for action & coordinate DORL response.

NELSON

---

**From:** Craver, Patti *NR*  
**Sent:** Thursday, March 17, 2011 5:57 PM  
**To:** Titus, Brett; Cusumano, Victor; Scales, Kerby; Heida, Bruce; Susco, Jeremy; Meighan, Sean; Cartwright, William; Valentine, Nicholee; Nguyen, Quynh  
**Cc:** Ruland, William; Bahadur, Sher; Lubinski, John; Hiland, Patrick; Wilson, George; Cheok, Michael; Lee, Samson; Holian, Brian; Galloway, Melanie; Glitter, Joseph; Nelson, Robert; Howe, Allen; Brown, Frederick; Blount, Tom; Quay, Theodore; McGinty, Tim; Boger, Bruce; Grobe, Jack; Leeds, Eric; Craver, Patti  
**Subject:** ACTION: FOIA 2011-0119  
**Importance:** High

NRR along with EDO, NSIR, OIP, OPA, RES and SECY have been assigned this FOIA request from the Associated Press seeking copies of all internal communications within the NRC (including its Chairman, four

Commissioners and their staff members) pertaining to the Japanese Nuclear incidents caused by the March 11 earthquake and tsunami.

No estimates are needed. Please begin processing.

This request has been granted expedited processing. It must be processed ahead of all, others except for requests already determined to warrant expedition.

Any documents that you feel should be withheld must have an FOIA exemption applied and a harm statement attached.

I will type up the appendices to help save some time, so please provide me your division's response as soon as you can.

Let me know if you have any questions.

Thanks,  
Patti  
FOIA Coordinator  
Infrastructure Services Branch  
Program Management, Policy Development  
and Analysis Staff  
Office of Nuclear Reactor Regulation  
(301) 415-1513  
[patti.craver@nrc.gov](mailto:patti.craver@nrc.gov)

## Weaver, Tonna

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**From:** Beall, James *MBK*  
**Sent:** Monday, March 21, 2011 2:54 PM  
**To:** Collins, Timothy  
**Cc:** Ruland, William  
**Subject:** Japan Lessons Learned

Tim –

I just spoke with Bill Ruland, and he told me to send you this.

I am quite confident that the valves and spool pieces to connect to the fire main are well known to PWRs for AFW and to BWRs for RCIC (perhaps CST refill) in the steam phase, and to low pressure systems, also, for later.

Thus, any US plant would be able to use a pumper or an external skid source.

I am quite confident that the US folk could disconnect a battery and reconnect to one on a skid. I am also quite confident that folk could change-out cells, replacing the battery in-situ one cell at a time with ones from a pallet.

Thus, a skid-mounted AC source that powered a battery charger (perhaps via inverter on the same or another skid) would be a good thing. If one used it to recharge cells, the skid might never have to get to the battery location, either physically or by cable. Instead, the cells could be what moved. Of course, if the charger could be cabled to the DC bus, so much the better.

The reason I brought all the above up is that I am not confident that the US folk have thought out how to wire in a purely external skid AC power source to the key AC loads directly. Transformers? Switchgear? Voltage matching? Fusing? Breakers? All the assumptions I seem to recall from yesteryear included that the power entry point was much higher in the power flow path than the load, such that installed plant hardware would be available to provide those functions. Following a gross immersion event (or something of the same in common-cause effect), that hardware might well not be available.

Thus, providing some short term AC source would require also providing functional upstream components, unless a skid-mounted AC source included those features (e.g., temp switchgear, breakers, etc.)

jim

Jimenez, Manuel

**From:** Conatser, Richard  
**Sent:** Monday, March 21, 2011 2:00 PM  
**To:** Werner, Greg; Henderson, Pamela; Dickson, Billy; Bonser, Brian  
**Cc:** Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine; Ricketson, Larry; Carson, Louis; Graves, Chris; Greene, Natasha; Alldredge, Casey  
**Subject:** RE: REMP Reporting Levels and Fukushima

Here is a link to the EPA RadNet Air Monitoring System. The graphs are updated daily.

<http://www.epa.gov/japan2011/rert/radnet-data.html#air-monitoring>

It has graphs of gross beta on air filters for various cities on the west coast.

Gross beta is more subject to background variability and it lacks the sensitivity of I-131 analysis, but it is still a good gross indicator.

**From:** Werner, Greg  
**Sent:** Monday, March 21, 2011 1:45 PM  
**To:** Conatser, Richard; Henderson, Pamela; Dickson, Billy; Bonser, Brian  
**Cc:** Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine; Ricketson, Larry; Carson, Louis; Graves, Chris; Greene, Natasha; Alldredge, Casey  
**Subject:** RE: REMP Reporting Levels and Fukushima

SONGS, Diablo, and Palo Verde are reporting air samples with I-131 at around 1 E-12 at this time. Over the weekend they were approximately 3 -5 E-13 at Diablo and SONGS.

Greg

**From:** Conatser, Richard  
**Sent:** Monday, March 21, 2011 12:18 PM  
**To:** Werner, Greg; Henderson, Pamela; Dickson, Billy; Bonser, Brian  
**Cc:** Garry, Steven; Pedersen, Roger; Jimenez, Manuel; Clemons-Webb, Candace; Shoop, Undine  
**Subject:** REMP Reporting Levels and Fukushima

All,

You may want to pass this along to your Inspectors who will be on inspections during the next couple of months.

The NRC's REMP REPORTING LEVELS may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. This email contains some unit conversions for your use. The table below shows the default NRC REPORTING LEVEL for I-131 in REMP samples listed in NUREG-1301 (PWRs) and NUREG-1302 (BWRs). It also converts the REPORTING LEVELS to those units commonly used at the plant sites.

**I-131 Reporting Level in NUREG 1301 and NUREG-1302**

	I-131	Units	I-131	Units
Drinking Water	2	pCi/L	2E-09	uCi/ml
Non-Drinking Water	20	pCi/L	2E-08	uCi/ml
Air	0.9	pCi/m3	9E-13	uCi/cc

These are default values, and the site-specific values will be in the licensees' ODCMs. The REMP REPORTING LEVELS may be exceeded as a result of plumes from Fukushima passing over REMP sampling stations. The REMP results may vary as various puffs/plumes traverse the US. If a nuclide concentration



## **Overview of Japanese Event and U.S. Response**

**Bill Borchardt**  
**Executive Director for Operations**  
**March 21, 2011**

### **Agenda**

- **Event Overview**
- **Immediate NRC Response**
- **Continuing NRC Response**
- **Assessment of Domestic Reactor Safety**
- **Planned NRC Activities**
- **Impact on Current NRC Activities**

2

### **Event Overview**

- **Discuss initiating events**
- **Current status of reactors**
- **Current status of spent fuel pools**

3

### **Immediate NRC Response**

- **Placed Operations Center in monitoring mode**
- **Sent 2 NRC experts to Japan on March 11<sup>th</sup>**
- **Consulted with U.S. Embassy**
- **Sent 8 more NRC personnel on March 14<sup>th</sup>**
- **Active outreach to stakeholders (Congressional Staffs, etc)**

4

M-288 1

### ***Continuing NRC Response***

- *Keep Operations Center manned 24/7*
- *Support NRC personnel in Japan, including rotations as necessary*
- *Evaluate need for generic communication to licensees*
- *Provide assistance as requested*

5

### ***Potential Consequences***

- *Release estimates from Japanese event*
- *Plume tracking*
- *Consequences for the U.S.*

6

### ***Assessment of Domestic Reactor Safety***

- *Design basis is to cope with natural disasters expected for their locale*
- *All reactors must be able to cope with station blackout for a designated time period*
- *Plans exist to cope with Beyond-Design-Basis events (Severe Accident Management Guidelines, B.5.b plans for terrorist attacks)*

7

### ***Assessment of Domestic Reactor Safety (Cont.)***

- *INPO and industry will respond to assist a licensee*
- *Improvements have been made since initial licensing*
- *U.S. plants continue to be safe*

8



### ***Planned NRC Activities***

- ***Consider how to evaluate lessons learned***
- ***Review panels may be a joint Federal effort***
- ***Lessons learned and recommendations will be developed***
- ***Regulatory actions will be considered***

9

### ***Impact on Current NRC Activities***

- ***Communication activities have increased***
- ***Certain licensing actions will be reviewed***
- ***Routine meetings will continue as scheduled***
- ***License renewals will continue as scheduled***

10

**Cartwright, William**

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**From:** Pannier, Stephen  
**Sent:** Monday, March 21, 2011 9:52 AM  
**To:** Thompson, John  
**Subject:** FW: More Fukushima One information... from TEPCO

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**From:** Pannier, Stephen  
**Sent:** Friday, March 11, 2011 11:31 AM  
**To:** Thomas, Eric  
**Subject:** More Fukushima One information... from TEPCO

Today at approximately 2:46PM, turbines and reactors of Tokyo Electric Power Company's Fukushima Daiichi Nuclear Power Station Unit 1 (Boiling Water Reactor, rated output 460 Megawatts) and Units 2 and 3 (Boiling Water Reactor, Rated Output 784 Megawatts) that had been operating at rated power automatically shutdown due to the Miyagiken-oki Earthquake.

For the above 3 units, off-site power was lost due to malfunction of one out of two off-site power systems, leading to automatic startup of emergency diesel generators.

Subsequently, at 3:41PM, emergency diesel generators shutdown due to malfunction resulting in the complete loss of alternating current for all three units.

Hence, at 3:42PM, it was decided that a specific incident stipulated in Article 10, Clause 1 of the Act on Special Measures Concerning Nuclear Emergency Preparedness has occurred and a "First Level Emergency" was declared

Subsequently, since the status of reactor water coolant injection could not be confirmed for the emergency core cooling systems of Units 1 and 2, at 4:36PM, it was decided that a specific incident stipulated in Article 15, Clause 1 of the Act has occurred.

Article 15, Clause 1 of the Act was cleared when the reactor water level monitoring function was restored for Unit 1. However, at 5:07PM, specific incident stipulated in Article 15, Clause 1 of the Act was applied again for Unit 1.

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**From:** Thomas, Eric  
**Sent:** Friday, March 11, 2011 11:13 AM  
**To:** Brown, Frederick  
**Cc:** Thorp, John; Garmon-Candelaria, David; Bernardo, Robert; Haskell, Russell; Pannier, Stephen  
**Subject:** Earthquake Update as of 11 am

Fred,

I have been monitoring the phone and email traffic as best I can this morning. There is a lot of repetition so I think it may be useful to summarize the salient points every couple of hours. Here is what I have as of 11:00. I am going over to

**Weaver, Tonna**

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**From:** Morris, Scott *INSIR*  
**Sent:** Monday, March 21, 2011 4:14 AM  
**To:** Ruland, William; Sloan, Scott  
**Cc:** Dudes, Laura; FOIA Response.hoc Resource; McGinty, Tim  
**Subject:** RE: Level of Involvement with Pumping System

I defer to Bill ... I appreciate all of your help on this!

---

**From:** Ruland, William *INSIR*  
**Sent:** Sunday, March 20, 2011 5:26 PM  
**To:** Sloan, Scott; Morris, Scott  
**Cc:** Dudes, Laura; FOIA Response.hoc Resource; McGinty, Tim  
**Subject:** Re: Level of Involvement with Pumping System

Generally agree but let's discuss it further in the morning. I'll be in the office tomorrow at about 7:30 a.m.

Thanks!

Bill  
Bill Ruland, from  
USNRC Blackberry

---

**From:** Sloan, Scott *INSIR*  
**To:** Ruland, William; Morris, Scott  
**Cc:** Dudes, Laura; FOIA Response.hoc Resource; McGinty, Tim  
**Sent:** Sun Mar 20 16:39:28 2011  
**Subject:** Level of Involvement with Pumping System

Bill/Scott,

After watch turnover this morning, I spoke with the on-watch RST Director, Laura Dudes, regarding the level of my involvement with the pumping system as the system nears transition from design/acquisition to operation/execution. Laura, along with the RST directors, have been a great resource and very supportive of me throughout this process. She recommended that I step out of a hands-on role regarding this system, as the vast majority of the action lies with Bechtel and the NRC team on the ground (Bill Cook has been named the NRC POC in Japan).

I am looking to you two, as the ones who brought me into this process, for your thoughts. I feel a particular sense of ownership over the delivery of this system, and I am more than happy to provide whatever support you desire, including deployment. However, I concur with Laura that the liaison burden has transferred sufficiently from headquarters to the site team, and the on-watch RST folks are more than capable of monitoring the situation.

Please let me know your thoughts regarding the extent of my involvement with this system going forward. Thanks very much for allowing me to participate, as I believe it is an important part of our response to the events at Daiichi.

V/r,  
Scott Sloan

## Weaver, Tonna

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**From:** Nguyen, Quynh *IN RR*  
**Sent:** Monday, March 21, 2011 10:30 AM  
**To:** Azeem, Almas; Cartwright, William; Cusumano, Victor; Heida, Bruce; Mahoney, Michael; Meighan, Sean; Nguyen, Quynh; Roquecruz, Carla; Susco, Jeremy; Titus, Brett; Valentine, Nicholee; Wertz, Trent  
**Subject:** FW: IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.  
**Attachments:** SecureZIP Attachments.zip  
**Importance:** High

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**From:** Nguyen, Quynh  
**Sent:** Monday, March 21, 2011 10:30 AM  
**To:** Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; Lund, Louise; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David; Thomas, Brian; Westreich, Barry  
**Cc:** Leeds, Eric; Grobe, Jack; Boger, Bruce  
**Subject:** IN 2011-05 (ML110760432) ... It's the IN regarding the Earthquake.  
**Importance:** High

It's the IN regarding the Earthquake.

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**From:** RidsNrrOd Resource  
**Sent:** Monday, March 21, 2011 10:03 AM  
**To:** Meighan, Sean  
**Cc:** Nguyen, Quynh  
**Subject:** FW: IN 2011-05 (ML110760432)  
**Importance:** High

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**From:** Hawes, Cathy *IN RR*  
**Sent:** Friday, March 18, 2011 4:56 PM  
**To:** Albert, Ronald; Beaulieu, David; Blount, Tom; Foster, Jack; Furst, David; Gray, Kathy; Hawes, Cathy; Laura, Richard; Markley, Anthony; McGinty, Tim; Murphy, Martin; OGCMailCenter Resource; Peduzzi, Francis; Quay, Theodore; RidsEdoMailCenter Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsNrrAdes Resource; RidsNrrAdro Resource; RidsNrrDpr Resource; RidsNrrMailCenter Resource; RidsNrrOd Resource; RidsOcaaMailCenter Resource; RidsOpaMail Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; Rini, Brett; Stuchell, Sheldon; Tabatabai, Omid  
**Subject:** IN 2011-05 (ML110760432)  
**Importance:** High

Attached is NRC Information Notice 2011-05: Tohoku-Taiheiyou-Oki Earthquake Effects on Japanese Nuclear Power Plants, dated March 18, 2011.  
This IN can also be found in ADAMs under Accession No. ML110760432

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, DC 20555-0001

March 18, 2011

NRC INFORMATION NOTICE 2011-05: TOHOKU-TAIHEIYOU-OKI EARTHQUAKE  
EFFECTS ON JAPANESE NUCLEAR POWER  
PLANTS

## ADDRESSEES

All holders of or applicants for operating licenses for nuclear power reactors under the provision of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of or applicants for a standard design certification, standard design approval, manufacturing license, limited work authorization, early site permits or combined license issued under 10 CFR Part 52, "Licenses, Certifications and Approvals for Nuclear Power Plants."

## PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to inform addressees of effects of the Tohoku-Taiheiyu-Okai Earthquake on nuclear power plants in Japan. The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. Suggestions contained in this IN are not NRC requirements; therefore, no specific action or written response is required.

## DESCRIPTION OF CIRCUMSTANCES

The following summary of events is provided based on the best information available at this time. The situation in Japan regarding recovery efforts for the Fukushima Daiichi Nuclear Power Station continues to evolve on an hourly basis.

On March 11, 2011, the Tohoku-Taiheiyu-Okai Earthquake occurred near the east coast of Honshu, Japan. This magnitude 9.0 earthquake and the subsequent tsunami caused significant damage to at least four of the six units of the Fukushima Daiichi nuclear power station as the result of a sustained loss of both the offsite and on-site power systems. Efforts to restore power to emergency equipment have been hampered or impeded by damage to the surrounding areas due to the tsunami and earthquake.

ML110760432

Units 1 through 3, which had been operating at the time of the earthquake, scrambled automatically, inserting their neutron absorbing control rods to ensure immediate shutdown of the fission process. Following the loss of electric power to normal and emergency core cooling systems and the subsequent failure of back-up decay heat removal systems, water injection into the cores of all three reactors was compromised, and reactor water levels could not be maintained. Tokyo Electric Power Company (TEPCO), the operator of the plant, resorted to injecting sea water and boric acid into the reactor vessels of these three units, in an effort to cool the fuel and ensure the reactors remained shutdown. However, the fuel in the reactor cores became partially uncovered. Hydrogen gas built up in Units 1 and 3 as a result of exposed, overheated fuel reacting with water. Following gas venting from the primary containment to relieve pressure, hydrogen explosions occurred in both units and damaged the secondary containments. It appears that primary containments for Units 1 and 3 remain functional, but the primary containment for Unit 2 may be damaged. TEPCO cut a hole in the side of the Unit 2 secondary containment to prevent hydrogen buildup following a sustained period when there was no water injection into the core.

In addition, Units 3 and 4 have low spent fuel pool (SFP) water levels. Efforts continue to supply seawater to the SFPs for Units 1 through 4 using various methods. At this time, the integrity of the SFPs for Units 3 and 4 is unknown.

Fukushima Daiichi Units 4 through 6 were shutdown for refueling outages at the time of the earthquake. The fuel assemblies for Unit 4 had been offloaded from the reactor core to the SFP. The SFPs for Units 5 and 6 appear to be intact, but the temperature of the pool water appears to be increasing. Emergency power is available to provide cooling water flow through the SFPs for Units 5 and 6.

The Japanese Government ordered an evacuation out to 20 km for the area surrounding Fukushima Daiichi. Residents out to 30 km were ordered to shelter in place.

The damage to Fukushima Daiichi nuclear power station appears to have been caused by initiating events outside of the design basis for the facilities.

## **BACKGROUND**

10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 2, "Design Bases for Protection against Natural Phenomena," or similar appropriate requirements in the licensing basis for a reactor facility, requires that structures, systems, and components (SSCs) important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunamis, and seiches without loss of capability to perform their safety functions. The design bases for these SSCs reflect: (1) appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena, and (3) the importance of the safety functions to be performed.

As a result of the terrorist events of September 11, 2001, the NRC issued EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (the ICM Order) dated February 25, 2002. The ICM Order, which is designated as Safeguards Information (SGI), modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM Order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and SFP cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts.

By letter, dated February 25, 2005, the NRC staff provided guidance for implementing Section B.5.b of the ICM Order. This guidance, designated as SGI, included best practices for mitigating losses of large areas of the plant and measures to mitigate fuel damage and minimize releases. Following issuance of the B.5.b Phase 1 Guidance, the NRC staff conducted inspections at operating reactor sites using Temporary Instruction (TI) 2515/164 (SGI) and subsequently TI 2515/168 (SGI) to ensure compliance with Section B.5.b of the ICM Order.

In December 2006, the Nuclear Energy Institute (NEI) issued NEI 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline." NEI 06-12 is designated for Official Use Only – Security Related Information (OUO-SRI). The NRC endorsed NEI 06-12, Revision 2, by letter dated December 22, 2006, also designated OUO-SRI, as an acceptable means for developing and implementing the mitigation strategies requirement in Section B.5.b of the ICM Order. NEI 06-12, Revision 2, provides guidance for implementing a set of strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of a large area of the plant due to explosions or fire. NEI 06-12 provides guidance in the following areas:

- Adding make-up water to the SFP,
- Spraying water on the spent fuel,
- Enhanced initial command and control activities for challenges to core cooling and containment, and
- Enhanced response strategies for challenges to core cooling and containment.

The specific strategies covered in NEI 06-12, Revision 2, were developed based on the results of assessments conducted at currently licensed power reactor facilities for the purpose of enhancing plant specific mitigation capability for damage conditions caused by a large explosion or fire. These assessments identified a wide spectrum of potential plant specific strategies. NEI 06-12, Revision 2, specifies one set of strategies applicable to all pressurized-water reactors and another set applicable to all boiling-water reactors. Both sets are derived from the results of the plant specific assessments.

The B.5.b Phase 1 Guidance and NEI 06-12, Revision 2, were used by each licensee in preparing information submitted to the NRC that describes a plant specific approach to implementing mitigating strategies and supports each plant specific license condition. The NRC staff has completed its review of the information submitted by each licensee, as well as information obtained during prior NRC inspections, and has issued an OUO-SRI safety

evaluation (SE) that documents the bases for its approval of the license condition for each facility. The SE issued for each licensee includes regulatory guidance in Section 3.0 of Appendix A, "Phase 1 Assessment," that recites the generic B.5.b Phase 1 Guidance of Reference 3, as clarified in TI 2515/168, in a form that is designated OUO-SRI rather than SGI.

By publishing new requirements in the *Federal Register* dated March 27, 2009 (74 FR 13926), the NRC amended 10 CFR Part 50, 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and 10 CFR Part 73, "Physical Protection of Plants and Materials." This rulemaking added paragraph (i) to 10 CFR 50.34, "Contents of Applications; Technical Information," and paragraph (d) to 10 CFR 52.80 "Contents of Applications; Additional Technical Information," to require submittal of a "description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter." This rulemaking also added 10 CFR 50.54(hh)(2) to impose the same mitigating strategies requirements on all reactor applicants and licensees as those imposed by the ICM Order and associated license conditions. The Statement of Considerations for this rulemaking specifically noted that the requirements in 10 CFR 50.54(hh) are intended to address certain events that are the cause of large fires and explosions that affect a substantial portion of the nuclear power plant and are not limited or directly linked to an aircraft impact. In addition, the rule contemplates that the initiating event for such large fires and explosions could be any number of beyond-design basis events. Such events include natural phenomena such as those described in GDC 2 (i.e., earthquakes, tornadoes, floods, tsunamis, and seiches), without regard to the GDC 2 provisions governing the severity of natural phenomena.

NRC regulations at 10 CFR 50.63, "Loss of All Alternating Current Power," require that light-water-cooled nuclear power plants be capable of withstanding for a specified duration and recovering from a station blackout.

## DISCUSSION

The nuclear power industry has taken the actions listed below at each licensed reactor site. Additional information is available in the NEI Fact Sheet, "Industry Taking Action to Ensure Continued Safety at U.S. Nuclear Energy Plants," dated March 16, 2011, available at [www.nei.org](http://www.nei.org).

1. verification of the capability to mitigate conditions that result from severe adverse events, including the loss of significant operational and safety systems due to natural events, fires, aircraft impact and explosions
2. verification of the capability to mitigate a total loss of electric power to a nuclear power plant
3. verification of the capability to mitigate flooding and the impact of floods on systems inside and outside the plant
4. identification of the potential for loss of equipment functions during seismic events appropriate for the site and the development of mitigating strategies to address potential vulnerabilities



NRC assessment of the implications of beyond design-basis natural phenomena is continuing as more information becomes available. The NRC staff is currently developing a TI to guide staff in performing independent assessments of nuclear power plant readiness to address beyond design-basis natural phenomena under the Reactor Oversight Process. The NRC is considering additional generic communications and additional action including requesting operating plants to provide specific information relating to their facilities to enable the NRC staff to complete a regulatory assessment of beyond design basis phenomena.

## **PAPERWORK REDUCTION ACT STATEMENT**

This Information Notice does not contain any information collections and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.).

### **Public Protection Notification**

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

## **CONTACTS**

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

**/RA/**

Laura A. Dudes, Director  
Division of Construction Inspection,  
and Operational Programs  
Office of New Reactors

**/RA/**

Timothy J. McGinty, Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Technical Contact: Eric E. Bowman, NRR  
301-415-2963  
e-mail: [Eric.Bowman@nrc.gov](mailto:Eric.Bowman@nrc.gov)

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

NRC assessment of the implications of beyond design-basis natural phenomena is continuing as more information becomes available. The NRC staff is currently developing a TI to guide staff in performing independent assessments of nuclear power plant readiness to address beyond design-basis natural phenomena under the Reactor Oversight Process. The NRC is considering additional generic communications and additional action including requesting operating plants to provide specific information relating to their facilities to enable the NRC staff to complete a regulatory assessment of beyond design basis phenomena.

## PAPERWORK REDUCTION ACT STATEMENT

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### Public Protection Notification

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## CONTACTS

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**/RA/**

Laura A. Dudes, Director  
Division of Construction Inspection,  
and Operational Programs  
Office of New Reactors

**/RA/**

Timothy J. McGinty, Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Technical Contact: Eric E. Bowman, NRR  
301-415-2963  
e-mail: [Eric.Bowman@nrc.gov](mailto:Eric.Bowman@nrc.gov)

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

ADAMS Accession Number: ML110760432 \* by e-mail

OFFICE	NRR/DPR/PGCB	TECH EDITOR*	NRR/DIRS/D*	NRR/DE/D*	NSIR/DSP*
NAME	EBowman	KAzariah-Kribbs	BWestreich	PHiland (GWilson for)	RCorreia
DATE	03/17/2011	03/17/2011	03/17/2011	03/17/2011	03/17/2011
OFFICE	NRO/DCIP/CAEB*	DPR/PGCB/LA	DPR/PGCB/BC	NRO/DCIP/D	NRR/DPR/D
NAME	TFrye	CHawes	SRosenberg	LDudes (MShuaibi for)	TMcGinty
DATE	03/18/2011	03/17/2011	03/17/2011	03/18/2011	03/18/2011

OFFICIAL RECORD COPY

**Weaver, Tonna**

---

**From:** Ruland, William *WR*  
**Sent:** Monday, March 21, 2011 10:42 AM  
**To:** Meighan, Sean  
**Subject:** RE: Deployment to Japan

Sure. The decision was already made. Don't know who. I'll get it for you.

---

**From:** Meighan, Sean *WR*  
**Sent:** Monday, March 21, 2011 9:05 AM  
**To:** Ruland, William  
**Subject:** Deployment to Japan

Bill:

A few of the volunteers for this week's deployment to Japan are asking when decision on who is going will be made. When you have info can you pass along?

Very Respectfully  
Sean

*m-292*

**Weaver, Tonna**

---

**From:** Ruland, William *WR*  
**Sent:** Monday, March 21, 2011 10:43 AM  
**To:** Evans, Michele  
**Subject:** Who's going to Japan? <eom>

*m293*

**Weaver, Tonna**

---

**From:** PMDAInfoNotice Resource  
**Sent:** Monday, March 21, 2011 8:57 AM  
**To:** NRR Distribution  
**Subject:** COMMISSION MEETING TO ADDRESS EVENTS IN JAPAN - TODAY 9:00 AM

**- PMDA INFORMATION NOTICE -**  
**Monday, March 21, 2011**

**IN NUMBER: 11-032**

On **Monday, March 21, 2011**, the NRC will hold a Commission Meeting to address the ongoing nuclear events at the Fukushima Nuclear Reactor site in Japan. The meeting is scheduled to convene at **9:00 a.m.** in the One White Flint North (OWFN) Commission Hearing Room. **Interested staff is encouraged to view the proceedings at one of the following locations:**

- Two White Flint North (TWFN) auditorium
- TWFN exhibit area
- Cable Channel 46 and 47 throughout the White Flint North Complex

In addition, NRR has set up viewing capabilities in the O13-D20 and O13-B4 conference rooms

Bryan Champion, Chief  
Information Technology Branch  
Program Management, Policy Development  
and Analysis Staff  
Office of Nuclear Reactor Regulation

m-294

## Weaver, Tonna

---

**From:** Leeds, Eric *INR*  
**Sent:** Monday, March 21, 2011 8:17 AM  
**To:** Grobe, Jack; Boger, Bruce  
**Cc:** Ruland, William  
**Subject:** FW: Tasking Memo Under Development

FYI – this is the straw man for the tasking memo.

### Near Term Review:

- 90 day effort
- Evaluate currently available technical and operational information from the event to identify near term (or immediate) operational or regulatory issues affecting US operating reactors of all designs in areas such as protection against earthquake, tsunami, flooding, hurricanes; station blackout and a degraded ability to restore power; severe accident mitigation; and emergency preparedness.
- Develop recommendations for generic communications, orders, etc
- This would possibly include a 30 day quick look report
- Limited stakeholder involvement informed by, but independent of industry efforts
- Public report

### Longer Term Review:

- Would start after we have sufficient technical information from Japan
- Evaluate all technical and policy issues to identify additional research, generic issues, changes to ROP, rulemakings, adjustments to the regulatory framework, etc that should be conducted by NRC
- Evaluate interagency issues (EP)
- Applicability to non-operating reactor facilities
- Substantive stakeholder involvement
- Public report

*m-295*

## Weaver, Tonna

---

**From:** Ruland, William *in RL*  
**Sent:** Monday, March 21, 2011 12:16 PM  
**To:** Howe, Allen  
**Subject:** RE: MANY, MANY THANKS

Right on!

---

**From:** Howe, Allen *in RL*  
**Sent:** Monday, March 21, 2011 12:15 PM  
**To:** Boska, John; Gratton, Christopher; Tully, Bridin; Sola, Clara; Miller, Ed; Mahoney, Michael; Andersen, James; Wittick, Susan; Deegan, George; Scott, Michael; Williams, Kevin; Milligan, Patricia; Wilson, George; Bowman, Eric; Thomas, Eric; Collins, Timothy; Harrison, Donnie; Salley, MarkHenry; Kammerer, Annie; Ramsey, Jack; Hall, Randy; Thadani, Mohan; Khanna, Meena; Dion, Jeanne; Shropshire, Alan; Williams, Donna; Bajwa, Chris; VandenBerghe, John; Johnson, Don; Patterson, Malcolm; Kahler, Robert; Anderson, Joseph; Tam, Peter; Pickett, Douglas; Martin, Robert; Sullivan, Randy; Norris, Michael; Kahler, Robert; Ellmers, Glenn  
**Cc:** Brenner, Eliot; Holahan, Gary; Uhle, Jennifer; Piccone, Josephine; Doane, Margaret; Leeds, Eric; Grobe, Jack; Boger, Bruce; Ruland, William; Brown, Frederick; Holian, Brian; Westreich, Barry; Lee, Samson; Cheok, Michael; Harrington, Holly; Uhle, Jennifer; Sheron, Brian; Borchardt, Bill  
**Subject:** MANY, MANY THANKS

Folks – the Commission meeting on the Japan event was an extremely high profile, short turnaround request. You all exemplified the best of what this agency is all about: outstanding cooperation, teamwork, and excellence in this effort. The focus and help was tremendous and many worked long hours including through the weekend to support this accomplishment. My sincere thanks to all of you for your hard work and dedication in making this meeting a success.

Thank you -

Allen Howe, Deputy Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

P.S. many folks worked on this – apologies if I missed someone. Please forward to anyone that I may have missed.

## Weaver, Tonna

---

**From:** Ruland, William *WR*  
**Sent:** Monday, March 21, 2011 5:25 PM  
**To:** Ferrell, Kimberly  
**Cc:** Le, Hong; Silk, Anne  
**Subject:** Re: Funding Needs for Japan Follow-up - Resent to provide Attachment

Sure. Let Anne Silk know how much time you need.

Bill  
Bill Ruland, from  
USNRC Blackberry

---

**From:** Ferrell, Kimberly *WR*  
**To:** Ruland, William  
**Cc:** Le, Hong  
**Sent:** Mon Mar 21 17:12:56 2011  
**Subject:** FW: Funding Needs for Japan Follow-up - Resent to provide Attachment

Bill,

We'd like the opportunity to discuss at tomorrow's LT, maybe 15 minutes. This is due by noon so we are not looking for precision.

Please advise.

Thanks!  
Kimberly

---

**From:** Ferrell, Kimberly *WR*  
**Sent:** Monday, March 21, 2011 5:06 PM  
**To:** Le, Hong; Nguyen, Caroline; Newell, Karenina  
**Cc:** Givvines, Mary; Narick, Marianne; Leeds, Eric; Grobe, Jack; Boger, Bruce  
**Subject:** FW: Funding Needs for Japan Follow-up - Resent to provide Attachment  
**Importance:** High

Hong,

This tasking is to confirm how much is needed for the near term and longer term lessons learned for the Japan event. This is due by noon tomorrow.

They are asking Business Line leads to coordinate the responses by business line and by office. Please see below.

Thanks!  
Kimberly

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**From:** Golder, Jennifer *JFG*  
**Sent:** Monday, March 21, 2011 4:24 PM

*m-297*



**To:** Ferrell, Kimberly; Abraham, Susan; Delligatti, Mark; Pulliam, Timothy  
**Subject:** FW: Funding Needs for Japan Follow-up - Resent to provide Attachment

With attachment

*Jennifer Golder*

Budget Director  
Office of the Chief Financial Officer  
United States Nuclear Regulatory Commission

---

**From:** Kasputys, Clare *EDD*  
**Sent:** Monday, March 21, 2011 4:18 PM  
**To:** RidsNroOd Resource; RidsNrrOd Resource; RidsNsirOd Resource; RidsResOd Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsOgcMailCenter Resource; RidsCsoMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsOipMailCenter Resource  
**Cc:** RidsNrrPmda Resource; RidsNroPmda Resource; RidsNsirPmda Resource; RidsResPmdaMail Resource; RidsFsmePbpaFmb Resource; RidsNmssTa Resource; Golder, Jennifer; Smolik, George; Muessle, Mary; Andersen, James; Jacobs-Baynard, Elizabeth; Allwein, Russell; Peterson, Gordon; Peterson, Gordon; Virgilio, Martin; Virgilio, Martin; Weber, Michael; Weber, Michael; Ash, Darren; Ash, Darren  
**Subject:** Funding Needs for Japan Follow-up - Resent to provide Attachment

Resent to provide the Attachment

All,

The Chairman has requested for the NRC to conduct a Near-term (90 day effort) and a longer-term review (as discussed by Bill B at the Commission meeting today) of regulatory issues affecting U.S. operating reactors based on the events in Japan. The Chairman is interested in seeking supplemental funding to support our efforts for the above effort, in addition to NRC's costs associated with emergency response and technical experts sent to Japan. OCFO is preparing cost data associated with emergency response and technical support to Japan.

On Friday, the OCFO requested some initial estimates to support the reviews (see attached). At this time, we are requesting the offices to review these initial estimates and include some information concerning the work that is envisioned to support these reviews. Listed below are some initial thoughts about the scope of the near-term and long-term reviews. Also, consider what on-going efforts related to the development of our regulatory program could benefit with supplemental funding. For example, it was mentioned in the Commission meeting that NRC is currently working on GSI-199. Should funding be accelerated for this effort and others of this nature.

Near Term Review (90 day effort):

- Evaluate currently available technical and operational information from the Japan event to identify near-term (or immediate) operational or regulatory issues affecting U.S. operating reactors of all designs in areas such as protection against earthquakes, tsunami, flooding, hurricanes, station blackout and a degraded ability to restore power; severe accident mitigation and emergency preparedness
- Develop recommendations for generic communications, orders, changes to inspection procedures and licensing review guidance, etc.
- Possibly prepare a 30 day quick look report

Longer-Term Review (Following obtaining sufficient technical information from the Japan event)

- Evaluate all technical and policy issues related to the event to identify additional research, generic issues, changes to the reactor oversight process, rulemakings and adjustments to the regulatory framework that should be conducted by the NRC.

- Evaluate interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities.

It is recognized that the full scope of the reviews has yet to be determined or the size of the group that will be conducting the analysis. Therefore, we are looking only for rough cost estimates. You are requested to send the level of funding (dollars and FTE) that is anticipated that could be obligated in FY 2011 for both the near-term and long-term efforts. We are asking the business line leads to coordinate with supporting offices and submit a response by business line and by office. Please send your responses to me and Liz Jacobs-Baynard and copy Jennifer Golder and George Smolik, OCFO NLT than Noon on Tuesday.

If you have any questions, please let me know.

Thank you for your support.

## Weaver, Tonna

---

**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.

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>

## Weaver, Tonna

---

**From:** Devercelly, Richard  
**Sent:** Monday, March 21, 2011 6:19 PM  
**To:** Casto, Chuck; Cook, William; Monninger, John; Dorman, Dan; Nakanishi, Tony; Foster, Jack; Smith, Brooke; Devercelly, Richard; Trapp, James; Uises, Anthony; Foggie, Kirk  
**Subject:** NRC JAPAN TEAM GOING HOME STUFF

Good Morning Y'all:

On the window sill library down toward the copy machine, I set up a section that I called "Going Home Stuff". There you will find exciting documents like:

- The work schedule and premium pay guidance
- Clarification for the use of the Japan Effort TAC
- NRC team logistics
- Time zone map
- Guidance on getting your return trip tickets.

Enjoy the read.

Rick DeVercelly

M-299

*NH*  
**Nguyen, Quynh**

---

**From:** Craver, Patti  
**Sent:** Monday, March 21, 2011 3:34 PM  
**To:** Titus, Brett; Cusumano, Victor; Scales, Kerby; Heida, Bruce; Valentine, Nicholee; Cartwright, William; Hughey, John; Susco, Jeremy; Nguyen, Quynh; Meighan, Sean  
**Cc:** Ruland, William; Lubinski, John; Hiland, Patrick; Cheok, Michael; Holian, Brian; Glitter, Joseph; Brown, Frederick; Blount, Tom; Boger, Bruce; Grobe, Jack; Leeds, Eric  
**Subject:** UPDATE to FOIA 2011-0119

Good Afternoon,

Additional information on the FOIA request on Japan.

1. As a reminder this request covers records from March 11<sup>th</sup> thru March 16<sup>th</sup>.
2. The requester is not willing to narrow her scope of the request.
3. DIRS will provide all the OPE daily event emails from March 11-16, 2011.
4. You do not need to include e-mails and other records relating to who at the NRC is available to travel to Japan and other administrative travel documents.
5. The HOC center has developed a drop box for documents responding to this request. This is for NSIR's use and the OP center. Please provide me your copies with your recommendations.
6. Charge your time to TAC ZF0001.

Let me know if you have any questions. I appreciate you working with your divisions to collect records in a timely manner. I know for some this is a huge tasking so let me know how I can help.

Thanks,  
Patti Craver  
FOIA Coordinator  
Infrastructure Services Branch  
Program Management, Policy Development  
and Analysis Staff  
Office of Nuclear Reactor Regulation  
(301) 415-1513  
[patti.craver@nrc.gov](mailto:patti.craver@nrc.gov)

*mm*  
**Cheek, Michael**

---

**From:** Howe, Allen  
**Sent:** Monday, March 21, 2011 12:15 PM  
**To:** Boska, John; Gratton, Christopher; Tully, Bridin; Sola, Clara; Miller, Ed; Mahoney, Michael; Andersen, James; Wittick, Susan; Deegan, George; Scott, Michael; Williams, Kevin; Milligan, Patricia; Wilson, George; Bowman, Eric; Thomas, Eric; Collins, Timothy; Harrison, Donnie; Salley, MarkHenry; Kammerer, Annie; Ramsey, Jack; Hall, Randy; Thadani, Mohan; Khanna, Meena; Dion, Jeanne; Shropshire, Alan; Williams, Donna; Bajwa, Chris; VandenBerghe, John; Johnson, Don; Patterson, Malcolm; Kahler, Robert; Anderson, Joseph; Tam, Peter; Pickett, Douglas; Martin, Robert; Sullivan, Randy; Norris, Michael; Kahler, Robert; Ellmers, Glenn  
**Cc:** Brenner, Eliot; Holahan, Gary; Uhle, Jennifer; Piccone, Josephine; Doane, Margaret; Leeds, Eric; Grobe, Jack; Boger, Bruce; Ruland, William; Brown, Frederick; Holian, Brian; Westreich, Barry; Lee, Samson; Cheek, Michael; Harrington, Holly; Uhle, Jennifer; Sheron, Brian; Borchardt, Bill  
**Subject:** MANY, MANY THANKS

Folks – the Commission meeting on the Japan event was an extremely high profile, short turnaround request. You all exemplified the best of what this agency is all about: outstanding cooperation, teamwork, and excellence in this effort. The focus and help was tremendous and many worked long hours including through the weekend to support this accomplishment. My sincere thanks to all of you for your hard work and dedication in making this meeting a success.

Thank you -

Allen Howe, Deputy Director  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission

P.S. many folks worked on this – apologies if I missed someone. Please forward to anyone that I may have missed.

Lee, Samson

---

**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.

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>

*NRR*  
**Nguyen, Quynh**

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**From:** Nelson, Robert  
**Sent:** Monday, March 21, 2011 2:53 PM  
**To:** Leeds, Eric  
**Cc:** Steger (Tucci), Christine; Meighan, Sean; Nguyen, Quynh; Giitter, Joseph  
**Subject:** Recommendation: Communication to the Staff

I recommend that you send an e-mail or HIGNFY to NRR staff similar to the following. The latter part of this communication duplicates what you sent earlier to managers. I've found that this info has not filtered down to all of the staff.

We've added a new feature to the NRR internal web site, "Japan Event Information." The link is provided below. All of the information under this title has been publicly released or has been screened and determined to be acceptable for public release in response 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." Currently, we are updating the internal NRR web site daily.

<http://portal.nrc.gov/edo/nrr/default.aspx>

In a related matter, I've assigned Bob Nelson, Deputy Director, Division of Operating Reactor Licensing, as the NRR Coordinator for External Communications related to NRR's response to the recent events in Japan. 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. Assisting Nelson will be Sean Meighan and Quynh Nguyen from the NRR front office, Eric Thomas from DIRS, Eric Oesterle from NRO and a communications "tiger team" formulated in DORL headed by Mike Markley. Harold Chernoff will also provide assistance as needed. Please forward all of your requests for support in this area to Nelson. (Extension 1453).

NELSON



*NRR*  
**Nguyen, Quynh**

---

**From:** Nelson, Robert  
**Sent:** Monday, March 21, 2011 2:34 PM  
**To:** Croteau, Rick; Roberts, Darrell; Kennedy, Kriss; Lara, Julio  
**Cc:** Hay, Michael; West, Steven; Shear, Gary; Meighan, Sean; Nguyen, Quynh; Markley, Michael; Oesterle, Eric

We've added some additional information to our web site. All info under "Japan Event Information" has been screened for public release.

<http://portal.nrc.gov/edo/nrr/default.aspx>

NELSON

**Galloway, Melanie**

---

**From:** Galloway, Melanie  
**Sent:** Monday, March 21, 2011 11:38 AM  
**To:** Ferrell, Kimberly  
**Subject:** FW: Additional Staff requirements outside Ops Center Long Term Staffing  
**Importance:** High

Kimberly,

I am forwarding to you because Mary is out of the office.

Melanie

---

**From:** Galloway, Melanie  
**Sent:** Monday, March 21, 2011 11:36 AM  
**To:** Pham, Bo; Givvines, Mary  
**Cc:** Auluck, Rajender; Dias, Antonio; Pelton, David; Wertz, Trent; Wrona, David; Imboden, Andy; Holian, Brian  
**Subject:** RE: Additional Staff requirements outside Ops Center Long Term Staffing

Mary,

Our complete list of names is  
Bo Pham  
Dan Doyle  
Jeremy Susco  
April BeBault  
Alison Travers

While none have OIP desk officer experience, the first 3 do have experience answering press questions.

Let us know if any of these folks will be needed by OIP.

Thanks.

Melanie

---

**From:** Pham, Bo  
**Sent:** Thursday, March 17, 2011 5:12 PM  
**To:** Givvines, Mary  
**Cc:** Galloway, Melanie; Auluck, Rajender; Dias, Antonio; Pelton, David; Wertz, Trent; Wrona, David; Imboden, Andy  
**Subject:** RE: Additional Staff requirements outside Ops Center Long Term Staffing

Mary,

Dan Doyle & I can assist with either OIP or OPA as well. We both have some experience with answering questions from the press.

Thanks.

**Bo Pham**  
Chief, Projects Branch 1  
Division of License Renewal

M-205

**Galloway, Melanie**

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**From:** Galloway, Melanie  
**Sent:** Monday, March 21, 2011 4:45 PM  
**To:** Imboden, Andy; Holian, Brian; Lund, Louise  
**Subject:** RE: Op Center Duty

Thanks. Is this your first stint?

**From:** Imboden, Andy  
**Sent:** Monday, March 21, 2011 4:31 PM  
**To:** Galloway, Melanie; Holian, Brian; Lund, Louise  
**Subject:** Op Center Duty

Just wanted to let you know my schedule this week in the Ops Center –  
Tuesday and Wednesday 11PM-7AM.

I will not be in the office on Wednesday, or Thursday morning. Jeff Rikhoff will be acting.

Thanks,  
Andy

M-306

**Valentine, Nicholee**

---

**From:** Regan, Christopher - NKK  
**Sent:** Monday, March 21, 2011 8:35 AM  
**To:** Astwood, Heather; Craig, Jocelyn; Cullingford, Michael; Dinitz, Ira; Dusaniwskyj, Michael; Harwell, Shawn; Hopkins, Jon; Lois, Kosmas; Pittiglio, Clayton; Purdie, Michael; Quinones, Lauren; Regan, Christopher; Richter, Brian; Rodriguez, Veronica; Simmons, Anneliese; Simpson, JoAnn; Szabo, Aaron; Fredrichs, Thomas  
**Subject:** FW: Slides for Commission Meeting this Morning  
**Attachments:** Staff Slides for March 21 Meeting Rev 1.pptx

FYI,  
Chris

---

**From:** Andersen, James  
**Sent:** Monday, March 21, 2011 6:41 AM  
**To:** Cohen, Miriam; Tracy, Glenn; Stewart, Sharon; Ordaz, Vonna; Kinneman, John; Gusack, Barbara  
**Subject:** Slides for Commission Meeting this Morning

Attached are the Commission Slides for this morning's meeting. Please also forward to your staff so that copies can be made for those individuals watching at the remote locations. Thanks.

Jim A.

M-307



# **Briefing on NRC Response to Recent Nuclear Events in Japan**

**Bill Borchardt**  
**Executive Director for Operations**  
**March 21, 2011**

# **Agenda**

- **Event Overview**
- **Immediate NRC Response**
- **Continuing NRC Response**
- **Health Effects of Radiation**
- **Domestic Reactor Safety**
- **Path Forward**

# **Event Overview**

- **Discussion of initiating event**
- **Current status of reactors**
- **Current status of spent fuel pools**

# **Immediate NRC Response**

- **Activated Operations Center**
- **Dispatched NRC experts to Japan**
- **Areas of focus**
- **Extensive outreach to stakeholders**



# **Continuing NRC Response**

- **Operations Center**
- **Support U.S. response**
- **Provide assistance**
- **Mobilize resources**

# **Health Effects of Radiation**

- **Offsite Doses**
- **Radiological Consequences**

# **Domestic Reactor Safety**

- **NRC oversight of U.S. plant safety**
- **Continuous improvement based on operating experience**

# **NRC Activities – Near Term**

- **Inspection Activities**
- **Generic Communications**
- **Immediate regulatory actions**

# **NRC Activities – Longer Term**

- **Lessons learned and recommendations**
- **Regulatory actions, for example, to identify potential:**
  - **Research projects**
  - **Generic issues**
  - **Regulatory enhancements**

# **Conclusion**

King, Mark

From: Wegner, Mary  
Sent: Tuesday, March 22, 2011 3:29 PM  
To: Garmon-Candelaria, David  
Cc: King, Mark  
Subject: FYI

## TEPCO may scrap all six reactors at quake-hit nuclear plant

Asahi Shimbun

2011/03/22



Chief Cabinet Secretary Yukio Edano (The Asahi Shimbun)

Tokyo Electric Power Co. (TEPCO) is likely to permanently close all of the six reactors at its stricken Fukushima nuclear power plant, according to sources in the company.

While it would be practically impossible to resume operations at the four reactors crippled in the Great East Japan Earthquake, the No. 5 and No. 6 reactors have not been seriously damaged. Theoretically, TEPCO could continue using them for power generation.

But a TEPCO source said that was unlikely. "Taking into consideration the sentiments of local residents, it will be difficult to resume operations (at the No. 5 and No. 6 reactors) and scrapping all the six reactors is inevitable," the source said.

Fuel rods in the cores of the No. 1, No. 2 and No. 3 reactors and spent fuel rods in storage pools at the No. 3 and No. 4 reactors are thought to have been damaged in the present crisis.

At the No. 1, No. 3 and No. 4 reactors, the buildings housing the core containment vessel and a core pressure container have been wrecked by hydrogen explosions. A hydrogen explosion at the No. 2 reactor is believed to have damaged a suppression pool connected to the core containment vessel.

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It could take nearly a decade to decommission the damaged reactors, one source in the company said.

TEPCO employees believe there is a strong chance that they will be unable to remove the damaged fuel rods from the core pressure containers in the stricken plant's No. 1, No. 2 and No. 3 reactors.

Because of the threat of radiation from the damaged fuel rods, the disposal process is likely to take years, they explained.

An official said: "It will take nearly 10 years to scrap the reactors."

At a news conference Sunday, Chief Cabinet Secretary Yukio Edano said resumption of power generation at the plant would be almost impossible.

"Looking at the situation objectively, there is no clear way in which one can see (TEPCO) restarting operations (at the Fukushima plant)."

Masao Hara, mayor of Koriyama in Fukushima Prefecture, said Saturday that the central government and TEPCO should be working on the assumption that the Fukushima No. 1 plant will be scrapped.

The mayor said he conveyed his request to industry minister Banri Kaieda on the phone. He said Kaieda replied that he would take the request seriously.



**Esmaili, Hossein**

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**From:** Dion, Jeanne  
**Sent:** Monday, March 21, 2011 8:47 AM  
**To:** RES Distribution  
**Subject:** Staff Slides for March 21 Meeting Rev 1.pptx  
**Attachments:** Staff Slides for March 21 Meeting Rev 1.pptx

Attached are slides for this morning's Commission meeting. There will be hard copies available in the Church St. conference rooms where the meeting will be VTC'd.

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

M-309



# **Briefing on NRC Response to Recent Nuclear Events in Japan**

**Bill Borchardt**  
**Executive Director for Operations**  
**March 21, 2011**

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- **Inspection Activities**
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- **Regulatory actions, for example, to identify potential:**
  - **Research projects**
  - **Generic issues**
  - **Regulatory enhancements**

# **Conclusion**

## Esmaili, Hossein

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**From:** Voglewede, John  
**Sent:** Monday, March 21, 2011 8:55 AM  
**To:** Lee, Richard  
**Cc:** Esmaili, Hossein; Tinkler, Charles; Schaperow, Jason  
**Subject:** FW: Radionuclides in

FYI

---

**From:** Wegner, Mary  
**Sent:** Monday, March 21, 2011 8:28 AM  
**To:** Karagiannis, Harriet; Voglewede, John  
**Subject:** Radionuclides in

### Fukushima Daiichi – Main Building (Source is NISA)

The radioactive nuclide analysis is planned to be continued to confirm the situation.

Major radioactive nuclides detected	Concentration of radioactive nuclide (Bq/cm <sup>3</sup> )	Allowable concentration of radioactive nuclide in the air for radiation workers (Bq/cm <sup>3</sup> )	
Volatile	Iodine-131	5.940 x 10 <sup>-3</sup>	1.0 x 10 <sup>-3</sup>
Iodine-132		0.220 x 10 <sup>-2</sup>	7.0 x 10 <sup>-2</sup>
Iodine-133		0.035 x 10 <sup>-3</sup>	5.0 x 10 <sup>-3</sup>
Particulate	Cesium-134	0.022 x 10 <sup>-3</sup>	2.0 x 10 <sup>-3</sup>
Cesium-137		0.024 x 10 <sup>-3</sup>	3.0 x 10 <sup>-3</sup>

M-310

## **Roche, Robert**

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**From:** Roche, Robert  
**Sent:** Monday, March 21, 2011 8:57 AM  
**To:** Kammerer, Annie  
**Subject:** RE: sharepoint site for seismic response team

I believe that as it is it should be accessible by everyone (at least read access). Please let me know of any access issue and if we should change the access right for any individual (i.e. from read to contributor or even owner access).

---

**From:** Kammerer, Annie  
**Sent:** Saturday, March 19, 2011 12:55 AM  
**To:** Roche, Robert  
**Subject:** RE: sharepoint site for seismic response team

It needs to be accessible by everyone.

---

**From:** Roche, Robert  
**Sent:** Friday, March 18, 2011 9:09 AM  
**To:** Kammerer, Annie  
**Subject:** RE: sharepoint site for seismic response team

Hi Annie,

Please let me know of any changes or any additions to the site. Right now the site has the same permissions as the SGSEB Site but we can change that if you want.

Hope this help!

Regards,

Robert

[http://portal.nrc.gov/edo/res/de/sgseb/srt\\_ieq/default.aspx](http://portal.nrc.gov/edo/res/de/sgseb/srt_ieq/default.aspx)

---

**From:** Kammerer, Annie  
**Sent:** Thursday, March 17, 2011 9:47 PM  
**To:** Roche, Robert  
**Subject:** sharepoint site for seismic response team

Robert, can you please create a share point site for the seismic response team working on teh Japan 3-11 earthquake and tsunami? The ops center is terrible for connectivity.

**Wagner, Katie**

---

**From:** Wagner, Katie  
**Sent:** Monday, March 21, 2011 10:14 AM  
**To:** Schaperow, Jason  
**Subject:** FW: GE request for NRC materials

FYI

---

**From:** Lee, Richard  
**Sent:** Friday, March 18, 2011 2:30 PM  
**To:** Wagner, Katie  
**Subject:** RE: GE request for NRC materials

Completed

---

**From:** Wagner, Katie  
**Sent:** Friday, March 18, 2011 1:05 PM  
**To:** Lee, Richard  
**Subject:** FW: GE request for NRC materials

Richard – Is the status of this item “Completed” or still “Pending”? – Thanks, Katie

---

**From:** Lee, Richard  
**Sent:** Friday, March 18, 2011 11:24 AM  
**To:** Wagner, Katie  
**Cc:** Tinkler, Charles  
**Subject:** RE: GE request for NRC materials

Yes! I called Charlie to tell SNL to release the reports, and he will be the contact to answer questions (I any) from GE.

---

**From:** Wagner, Katie  
**Sent:** Friday, March 18, 2011 11:06 AM  
**To:** Lee, Richard  
**Subject:** FW: GE request for NRC materials

Is this the email?

---

**From:** Gibson, Kathy  
**Sent:** Friday, March 18, 2011 10:10 AM  
**To:** Lee, Richard; Wagner, Katie  
**Cc:** Scott, Michael; Tinkler, Charles; Schaperow, Jason  
**Subject:** Re: GE request for NRC materials

Well done Richard thanks!

Richard, Katie - Charlie says that Sandia can email encrypted files and this may be the fastest way to transmit them to GE. If we don't have copies of the docs, please take this opportunity to get copies for NRC too. Thx

---

**From:** Lee, Richard  
**To:** Wagner, Katie

M-312

**Cc:** Gibson, Kathy; Scott, Michael; Tinkler, Charles; Schaperow, Jason

**Sent:** Fri Mar 18 10:05:18 2011

**Subject:** GE request for NRC materials

REF: Marquino, Wayne (GE) e-mail to Tinkler, Charles on March 17, 2011 requesting SNL reports.

Dear Katie:

This morning I spoke to Norm St. Amor of OIG on this matter because I could not get hold of Catherine Holzle. Norm said OUO materials can be released and asked me to consult with Russel Nichols (415-6874) or Donna Sealing (415-5804) of OIS on this matter.

I called Russel, and told him about GE requests for OUO materials to assist TEPCO (Japan) in responding and managing the crisis at Fukushima. He said once NRC made a determination on there is a need to know in carrying out our official function, we can release the materials to GE.

Hence, we should proceed to instruct SNL to release the materials to GE.

Richard

**Bush-Goddard, Stephanie**

---

**From:** Bush-Goddard, Stephanie  
**Sent:** Monday, March 21, 2011 1:30 PM  
**To:** Gibson, Kathy  
**Cc:** Elkins, Scott  
**Subject:** Work Schedule in Op Center

Kathy, and Scott

My schedule in the Op Center (as a GIS Analyst) is

3/27, 3/31 & 4/1

From 3pm to 11 pm.

I will work my regular job 11ish to 3pm on the days that I need to come in at 3pm.

Thanks  
-Stephanie

*12-313*



## **Bush-Goddard, Stephanie**

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**From:** Bush-Goddard, Stephanie  
**Sent:** Monday, March 21, 2011 1:41 PM  
**To:** RES\_DSA\_HEB  
**Cc:** Sherbini, Sami  
**Subject:** Japan Events, Radiation Contamination Spinach and Milk

Now that I have finished opening all my emails....

Let's use the Japan event as a learning opportunity to see where there are gaps in the radiation protection program at the NRC that we can fill.

After all our vision is to be an agency resource. Most of us should have some expertise that is of value for Japan.

I already have ideas and speakers for our next HP Brownbag. Lou Brandon (Protective Measures Team Lead) will kick it off.

Also and FYI:

My schedule in the Op Center is:  
3/27, 3/31 & 4/1 from 3pm to 11 pm.

I will work my regular job 11ish to 3pm on the days that I need to come in at 3pm.

Thanks  
-Stephanie

*M-314*

## **Emergency Response Governmental Decision and Recommendation Information Exchange**

A key issue in any nuclear emergency is the need to keep decision makers informed of the details of the quickly evolving situation. One aspect of such an evolution is that countries will make decisions regarding advice to their own citizens, regarding their own imports and exports, regarding their own industries, etc.

For this reason, I discussed today (17 March) with the Inter-Agency Committee on Response to Nuclear Emergencies (IACRNE) the idea of trying to collect a kind of "database" of decisions and recommendations that have been made by various governments at this early stage of the situation, and to try to update and modify this database as long as this remains of use to you. The IACRNE meeting today agreed that this information would be very useful, and mandated the NEA to try to put this together. The EC reported that for its member countries the ECURIE system has been used to collect this information, and as such I have asked Augustin Janssens to provide decisions and recommendations for European countries, so as to avoid double reporting (and double work).

To begin, then, I would like to know whether your governments have made recommendations with regard to your citizens in Japan, with regard to food or goods coming from Japan, with regard to your citizens going to Japan. Sample questions are given in the attached table.

I would also like to know if you have any other questions you would like to have asked in this regard, concerning other types of decisions or recommendations that would be of use to your government in the context of the current situation.

Please send me any information regarding your published governmental positions, and any new questions for which you would like to have input. I will make sure that the CRPPH constituency, as well as the IAEA and the other IACRNE member organizations, are kept informed of all results I am able to collect.

Sincerely,  
Ted

### Governmental Decisions and Recommendations

	Country	Decision taken or Recommendation made	Applicable Date	Applicable Population
What has your government recommended with regard to your citizens living in or visiting Japan?				
What has your government recommended with respect to the monitoring of passengers returning, by air, from Japan?				
What has your government recommended with respect to the importing of food or goods from Japan?				

#### General Question:

It is likely that, in the coming weeks, there will be discussion of the collective dose received by the Japanese population. I also feel that it is likely that there will be, in the press, discussion of the number of projected cancer deaths, using the collective dose and the 5%/Sv risk factor. Given this situation, I feel that it would be useful for the RP community represented by the CRPPH to consider how such claims could be addressed.

- Do you agree that we could address this issue?
- If so, what would be your response should you be asked about an estimate of projected deaths based on a collective dose estimate?

OK

**Wagner, Katie**

---

**From:** Wagner, Katie  
**Sent:** Monday, March 21, 2011 2:26 PM  
**To:** Bush-Goddard, Stephanie  
**Subject:** RE: US Average Dose Pie Chart

Yep it is item #15 but thanks for checking! I think it is in everyone's interest for the sharepoint site to be as accurate as possible. - Katie

---

**From:** Bush-Goddard, Stephanie  
**Sent:** Monday, March 21, 2011 2:15 PM  
**To:** Wagner, Katie  
**Subject:** RE: US Average Dose Pie Chart

Is this in the database, I looked, but maybe I overlooked.

-Steph

---

**From:** Brock, Terry  
**Sent:** Friday, March 18, 2011 7:57 AM  
**To:** Wagner, Katie  
**Cc:** Gibson, Kathy; Bush-Goddard, Stephanie  
**Subject:** FW: US Average Dose Pie Chart

FYI and for tracking

---

**From:** Brock, Terry  
**Sent:** Friday, March 18, 2011 7:55 AM  
**To:** 'Peter.lyons@Nuclear.Energy.gov'  
**Cc:** Sheron, Brian  
**Subject:** US Average Dose Pie Chart

Dr. Lyons,

Terry Brock here from the NRC. Brian Sheron asked me to forward the attached National Council on Radiological Protection and Measurement's (NCRP) pie chart for the different sources of radiation exposure in the U.S. and the average annual dose. The pie chart and the US average dose is from *NCRP Report No. 160 - Ionizing Radiation Exposure of the Population of the United States (2009)*.

Thanks,  
Terry

Terry Brock, Ph.D.  
Office of Nuclear Regulatory Research  
U.S. Nuclear Regulatory Commission  
Washington D.C. 20555  
Mail Stop CSB-3A07  
phone: 301-251-7487

**Esmaili, Hossein**

---

**From:** Lee, Richard  
**Sent:** Monday, March 21, 2011 9:42 PM  
**To:** Esmaili, Hossein  
**Subject:** FW: Effect of Salt

Hossein:

Here's the answers to salt water concerns (which was discussed when we met at DOE last Thursday).

Richard

---

**From:** Lee, Richard  
**Sent:** Friday, March 18, 2011 1:35 PM  
**To:** Gibson, Kathy  
**Cc:** Wagner, Katie; Salay, Michael  
**Subject:** RE: Effect of Salt

Kathy:

Below is a better response. It addressed not only the affects of sea water on fission products chemistry in the reactor coolant system and the spent fuel pool, but also address potential of plugging.

There do not appear to be serious downsides to the use of seawater. The Paul Scherer Institute (Switzerland) experiments have investigated effects of salt on aqueous iodine chemistry and had not seen much effect.

We see CII (Chlorine iodide) rather than I<sub>2</sub> partitioning from salt solutions but iodine partitioning is about the same. There will be some organic iodide formation because of the organic in seawater. Seawater pH will typically be less than 7, but boration will change the pH presumably to a higher value and this will suppress iodine partitioning from the water into the gas phase. Any silver will precipitate, but in BWRs there is only fission product silver and this does not have a high yield. We can presume the seawater is saturated in carbon dioxide. This may precipitate any barium or strontium in the water as a carbonate.

Again, we do not expect a big effect such as plugging etc. There will be enhanced corrosion of the cladding and the steel, but these are very long term effects and not of particular interest now.

I don't think we need to worry about iodine in the spent fuel pools. The fuel is old enough that we are well beyond 10 half lives for the most important iodine isotopes. The only significant iodine isotope is I-129 which has a very long half life and consequently a minuscule radioactivity in comparison to other things such as noble gases and cesium.

Richard

**From:** Gibson, Kathy  
**Sent:** Thursday, March 17, 2011 7:32 PM  
**To:** Lee, Richard; Salay, Michael  
**Cc:** Wagner, Katie  
**Subject:** FW: Effect of Salt  
**Importance:** High

Richard, Mike,

Do you have any info to answer this question? Effect of salt on cesium release? I'd like to respond to Brian tomorrow.

Thanks,  
Kathy

[cid:image001.jpg@01CBE571.47F0F530]

From: Sheron, Brian  
Sent: Thursday, March 17, 2011 6:56 PM  
To: Gibson, Kathy; Scott, Michael  
Cc: Uhle, Jennifer  
Subject: Effect of Salt

During my meeting today with Secretary Chu, the issue of salt water injection came up. The Japanese are injection seawater into the reactors. The seawater is boiling off, leaving salt. While there are obvious questions about how salt might affect coolability of the core (clogging coolant channels, etc., a question was raised about how the salt might affect the Cesium release. Do we have any info on what the effect might be?

**Hoxie, Chris**

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**From:** Hoxie, Chris  
**Sent:** Monday, March 21, 2011 11:56 PM  
**To:** Armstrong, Kenneth  
**Subject:** RE: QUERY: Funding Needs for Japan Follow-up

Ken,  
Once again I guess I need to come talk to you in the morning.

My general response is that my branch does not do this kind of work.  
There is no code development or thermal hydraulics here.

Severe accident input should come from Richard Lee.

I am surprised there is nothing on the list about health effects...???

We can discuss more tomorrow...

---

**From:** Armstrong, Kenneth  
**Sent:** Monday, March 21, 2011 4:58 PM  
**To:** Elkins, Scott; Hoxie, Chris; Zaki, Tarek; Lee, Richard; Bush-Goddard, Stephanie; Santiago, Patricia  
**Subject:** FW: QUERY: Funding Needs for Japan Follow-up  
**Importance:** High

BCs,

This is a very tight turn around. Please look over and provide any comments to me by noon tomorrow.

Thanks,  
Kenneth

---

**From:** Rini, Brett  
**Sent:** Monday, March 21, 2011 4:44 PM  
**To:** Case, Michael; Richards, Stuart; Coe, Doug; Coyne, Kevin; Scott, Michael; Gibson, Kathy; Elkins, Scott  
**Cc:** Sheron, Brian; Uhle, Jennifer; Valentin, Andrea; Grancorvitz, Teresa; Rivera-Lugo, Richard; Armstrong, Kenneth; Ibarra, Jose; Hudson, Daniel; RidsResPmdaMail Resource  
**Subject:** QUERY: Funding Needs for Japan Follow-up  
**Importance:** High

Division Directors,

We have received a quick turnaround OEDO request to estimate resources (\$ and FTE) required for a near term effort and longer term review related to the recent events in Japan. Brian brainstormed a list of possible research areas that I've listed below, and I will reach out to our customer offices to find out in what areas they anticipate asking us for help. Please review the list below, think about what areas of research you anticipate for your division, and estimate how much effort these projects will require.

- Spent fuel analyses – SFPs vs ISFSIs?
- Severe accident analyses
- Exceeding seismic design basis
- Response to aftershocks following a design or beyond-design basis earthquake
- Tsunami/storm surge impacts

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- Protection from hurricane winds, tornadoes, etc.

Please send me your inputs by noon tomorrow, and I will review the list with Brian before responding to OEDO. We weren't given much time to reply, so a rough estimate is all that's required at this time. I appreciate your help during this time of significant competing priorities.

Thanks,

Brett

---

**From:** Kasputys, Clare

**Sent:** Monday, March 21, 2011 4:18 PM

**To:** RidsNroOd Resource; RidsNrrOd Resource; RidsNsirOd Resource; RidsResOd Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsOgcMailCenter Resource; RidsCsoMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsOipMailCenter Resource

**Cc:** RidsNrrPmda Resource; RidsNroPmda Resource; RidsNsirPmda Resource; RidsResPmdaMail Resource; RidsFsmePbpaFmb Resource; RidsNmssTa Resource; Golder, Jennifer; Smolik, George; Muessle, Mary; Andersen, James; Jacobs-Baynard, Elizabeth; Allwein, Russell; Peterson, Gordon; Peterson, Gordon; Virgilio, Martin; Virgilio, Martin; Weber, Michael; Weber, Michael; Ash, Darren; Ash, Darren

**Subject:** Funding Needs for Japan Follow-up - Resent to provide Attachment

Resent to provide the Attachment

All,

The Chairman has requested for the NRC to conduct a Near-term (90 day effort) and a longer-term review (as discussed by Bill B at the Commission meeting today) of regulatory issues affecting U.S. operating reactors based on the events in Japan. The Chairman is interested in seeking supplemental funding to support our efforts for the above effort, in addition to NRC's costs associated with emergency response and technical experts sent to Japan. OCFO is preparing cost data associated with emergency response and technical support to Japan.

On Friday, the OCFO requested some initial estimates to support the reviews (see attached). At this time, we are requesting the offices to review these initial estimates and include some information concerning the work that is envisioned to support these reviews. Listed below are some initial thoughts about the scope of the near-term and long-term reviews. Also, consider what on-going efforts related to the development of our regulatory program could benefit with supplemental funding. For example, it was mentioned in the Commission meeting that NRC is currently working on GSI-199. Should funding be accelerated for this effort and others of this nature.

Near Term Review (90 day effort):

- Evaluate currently available technical and operational information from the Japan event to identify near-term (or immediate) operational or regulatory issues affecting U.S. operating reactors of all designs in areas such as protection against earthquakes, tsunami, flooding, hurricanes, station blackout and a degraded ability to restore power; severe accident mitigation and emergency preparedness
- Develop recommendations for generic communications, orders, changes to inspection procedures and licensing review guidance, etc.
- Possibly prepare a 30 day quick look report

Longer-Term Review (Following obtaining sufficient technical information from the Japan event)

- Evaluate all technical and policy issues related to the event to identify additional research, generic issues, changes to the reactor oversight process, rulemakings and adjustments to the regulatory framework that should be conducted by the NRC.
- Evaluate interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities.



It is recognized that the full scope of the reviews has yet to be determined or the size of the group that will be conducting the analysis. Therefore, we are looking only for rough cost estimates. You are requested to send the level of funding (dollars and FTE) that is anticipated that could be obligated in FY 2011 for both the near-term and long-term efforts. We are asking the business line leads to coordinate with supporting offices and submit a response by business line and by office. Please send your responses to me and Liz Jacobs-Baynard and copy Jennifer Golder and George Smolik, OCFO NLT than Noon on Tuesday.

If you have any questions, please let me know.

Thank you for your support.

Agenda on the meeting @ the Embassy of the U.S.A. 2011.03.22

1. Salt Issue

- TEPCO: preliminary analysis result on salt development
- NRC: analysis result
- discussion on salt issue solutions

2. Additional questions on core cooling, criticality and hydrogen explosion

- how to implement core cooling, except ongoing TEPCO ideas (recovery of CS, CRD and SLC)
- how to avoid recurrence of criticality
- how to avoid hydrogen explosion

3. Progress in water cannon, robot and radiation detector/protection

- NRC: answers on water cannon questions from TEPCO
- NRC: specific proposals on robots from NRC
- NRC: specific proposals on radiation detector/protection from NRC
- TEPCO: radiation level map of 1F site

4. Schedule on water cannon

- when to arrive at Yokota
- how to make the first contact with Bechtel experts

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**Esmaili, Hossein**

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**From:** Salay, Michael  
**Sent:** Tuesday, March 22, 2011 9:11 AM  
**To:** RES\_DSA\_FSTB  
**Subject:** Fukushima

Hi guys,

The same questions keep getting raised after issues answers have been provided. It is good to have a central repository for information to reference to improve communications so that the same questions don't keep getting raised.

I set up folders (seen on the left side link) for issues that have arisen in the past few days. If I set it up right, FSTB can modify site and DSA can view and add documents.

The site is  
<http://portal.nrc.gov/edo/res/DSA/FSTB/Fukushima/default.aspx>

located at  
Office of Nuclear Regulatory Research > DSA > Fuel and Source Term Branch (FSTB) > Fukushima

If you guys agree – we can inform Kathy, etc and extend view to others.

By the way, issues and status are posted at:  
<http://portal.nrc.gov/edo/res/DSA/Shared%20Documents/JPN-Status-Request.aspx>

-Mike

Michael Salay  
United States Nuclear Regulatory Commission  
Washington, DC 20555  
MS: C3-C07M  
[michael.salay@nrc.gov](mailto:michael.salay@nrc.gov)  
tel: 301-251-7543  
fax: 301-251-7436

m-319

## Yarsky, Peter

---

**From:** Carlson, Donald  
**Sent:** Tuesday, March 22, 2011 12:08 PM  
**To:** Yarsky, Peter  
**Subject:** FW: Fukushima Update

Pete,

I am forwarding your comments to the RST. Thank you for being so helpful. I hope this helps make you better known.

It scares me a little to see that the Agency/Ops Center seems to have no database of staff capabilities and expertise. The RST members on duty call whoever they happen to know. A few of them happened to know me and that I sometimes claim to understand criticality. Fortunately I knew about you. It surprised me that so few others there did.

I am at a bit of a handicap in my role as a 'consultant' to the RST. Since I'm not a trained/qualified member of the team, I don't have logon access to any RST or other Ops Center info. So my limited understanding of conditions in Japan comes mainly from the information I get from external sources.

Maybe you can help me make sense of the water level numbers on page 3 of the JAIF update table linked below. To me they mean nothing, given my less-than-intimate knowledge of BWR systems.

Also, I think everyone must be anxious to know conditions in the SFPs. The table is somewhat reassuring for the Unit 2/5/6 SFPs, not so much for 4/1/3. Any thoughts?

Thanks again,  
Don

---

**From:** Williams, Joseph  
**Sent:** Tuesday, March 22, 2011 10:09 AM  
**To:** Araguas, Christian; Boyle, Thomas; Briggs, Christine; Carlson, Donald; Coffin, Stephanie; Costa, Arlon; Cranston, Gregory; DeGange, Jonathan; Goodwin, Cameron; Held, Wesley; Humberstone, Matthew; James, Deonna; Jones (NRO), Mike; Kenyon, Thomas; Kevern, Thomas; Magruder, Stewart; Malave, Yanelly; Mayfield, Michael; Mazza, Jan; Moore, Ross; Notich, Mark; Powell, Tamara; Reckley, William; RobinsonII, Richard; Shaikh, Samina; Shea, James; Smith, John; Starefos, Joelle; StPeters, Courtney; Stutzcage, Edward; Tello, Linda  
**Subject:** Fukushima Update

In my opinion, the [Japan Atomic Industrial Forum](#) is one of the best sources of information on the status of the plants at Fukushima. Updates are posted here a few times during the day. The most recent update is a couple hours old; Tokyo is 13 hours ahead.

The overall situation has been fairly stable for a few days. Offsite AC has been connected to the site, but there are challenges to ensure equipment can be safely energized. Some of the process parameter information in the update is suspect. For example, the report shows the Unit 2 and 3 containments at below atmospheric pressure, and I don't think indicated core water levels have moved from an indication that the fuel is uncovered, even though it is my understanding that water is being provided in excess of the decay heat load, so the core should be full of water. That's my personal opinion, not an official agency point of view, so it's worth what you're paying for it.

Joe

## Wagner, Katie

---

**From:** Wagner, Katie  
**Sent:** Tuesday, March 22, 2011 12:28 PM  
**To:** Lee, Richard  
**Subject:** RE: DSA POC

Ok, though now it looks like I need to coordinate the responses to the SBO thing. Hrm.

---

**From:** Lee, Richard  
**Sent:** Tuesday, March 22, 2011 12:27 PM  
**To:** Wagner, Katie  
**Subject:** RE: DSA POC

After lunch time!

---

**From:** Wagner, Katie  
**Sent:** Tuesday, March 22, 2011 10:48 AM  
**To:** Lee, Richard  
**Subject:** DSA POC

Good Morning Richard,

I have some questions about my role at DSA's POC? When would be a good time to talk about this?

Thanks,

Katie Wagner  
General Engineer  
U.S. Nuclear Regulatory Commission  
(301) 251.7917  
[Katie.Wagner@nrc.gov](mailto:Katie.Wagner@nrc.gov)

## Yarsky, Peter

---

**From:** Carlson, Donald  
**Sent:** Tuesday, March 22, 2011 1:17 PM  
**To:** Yarsky, Peter  
**Subject:** RE: Fukushima Update

Pete,

Thanks for the great tutorial.

FYI - I've never been to any of Drew Barto's (NMSS/SFST) NRC Nuclear Criticality Safety Technical Advisory Group Meetings. But I just decided to go to the one today at 1:30 in O-16B4. I will report to them on the technical opinion we (i.e., the criticality big guns at ORNL and I) rendered Saturday on SFP criticality and maybe test the waters on their interest in helping convey to senior management the need for a staff capabilities/expertise data base. I may mention you.

Let me know if this interests you.

Don

---

**From:** Yarsky, Peter  
**Sent:** Tuesday, March 22, 2011 12:59 PM  
**To:** Carlson, Donald  
**Subject:** RE: Fukushima Update

Don,

I suspect that the water level numbers on page three refer to RPV downcomer level. Negative numbers here and quoted in absolute units would indicate relative to: (a) bottom of the narrow range instrument band or (2) top of active fuel (TAF) as a reference. In BDB/SA space, it is conventional to reference level to bottom of the narrow range band (instrument 0). I imagine that the (A) and (B) refer to instrumentation channels or to wide range and narrow range indication, either way I would just say that they are two different instrument readings. It would appear across Units 1, 2, and 3 that the RPV level is approximately 1.5 m below narrow range instrument 0.

Instrument 0 is typically ~170 inches above TAF.

Level below TAF does not necessarily mean that the core is not cooled. The downcomer level provides a density head to drive two-phase flow through the core. A level below the TAF in many cases is sufficient to provide two-phase cooling above the height of the downcomer level. Additionally, if level is far below the TAF, steam-cooling may also be effective in cooling the reactor fuel.

For ATWS, RPV level may be intentionally dropped to TAF-2 (TAF minus 2 feet) and in SA space, the level may be maintained at a level referred to as the minimum steam cooling reactor water level (MSCRWL, generally TAF minus ~30 inches).

If level is ~1.5 m (~60 inches) below instrument 0, it remains above the TAF. The ~2.4 m number (95 inches) would still be above TAF if referenced to instrument 0.

If the reference is to TAF, then 60 inches below TAF is below the MSCRWL and 95 inches below is likely below even core midplane. These numbers would be congruent with the assessment that the core would be damaged due to inadequate core cooling.

-Pete

---

**From:** Carlson, Donald  
**Sent:** Tuesday, March 22, 2011 12:08 PM  
**To:** Yarsky, Peter  
**Subject:** FW: Fukushima Update

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Thanks again,  
Don

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**Subject:** Fukushima Update

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Joe

**Jimenez, Juan**

---

**From:** Jimenez, Juan  
**Sent:** Tuesday, March 22, 2011 2:04 PM  
**To:** Wagner, Katie  
**Subject:** RE: Pls add Additional Status

alright

---

**From:** Wagner, Katie  
**Sent:** Tuesday, March 22, 2011 1:59 PM  
**To:** Jimenez, Juan  
**Subject:** Pls add Additional Status

Juan,

Can you please add a "Duplicate" status to the Japan-Related page? I just found out that #29 and #30 are probably duplicates.

Thanks,

Katie

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*M-323*



## Sturzebecher, Karl

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**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:15 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
**Cc:** Rivera-Lugo, Richard; Case, Michael  
**Subject:** RE: Spreadsheet

If you are working to support the agency response to the events in Japan, please provide the information requested below by noon tomorrow to Richie Rivera-Lugo.

Thanks  
Stu

---

**From:** Valentin, Andrea  
**Sent:** Tuesday, March 22, 2011 3:02 PM  
**To:** Case, Michael; Richards, Stuart; Gibson, Kathy; Coe, Doug; Coyne, Kevin; Kardaras, Tom  
**Cc:** Sheron, Brian  
**Subject:** Spreadsheet  
**Importance:** High

Hello All,

I am collecting the names and dates to send to CFO for work being done in support of the Japan response. CFO needs this info since HRMS may not allow the employee to enter time worked unless some changes are made to the system. The memo dated 3/16 said that they need this information ASAP to avoid difficulties processing the appropriate payments.

I plan to submit this interim list by COB tomorrow so CFO can get started on what they need to do. I can always send additional names later. Please remember to send me both names and dates worked (or planned schedule if it has not occurred yet).

Thanks,  
Andrea

*m-324*

Just remember that the strong Niigataken Chuetsu-Oki earthquake affected TEPCO's Kashiwazaki-Kariwa Nuclear Power Plant on 16 July 2007 with a moment magnitude of 6.6 ( $M_{JMA}=6.8$  according to the Japanese Meteorological Agency). The site has seven units with a total of 7965 MW net installed capacity. Five reactors are of BWR type with a net installed capacity of 1067 MW each. Two reactors are of ABWR type with 1315 MW net installed capacity each. The five BWR units entered commercial operation between 1985 and 1994 and the two ABWRs in 1996 and 1997 respectively.

From Press Release March 18, 2011 (looks like not affected by tsunami)

<http://www.tepco.co.jp/en/press/corp-com/release/11031802-e.html>

**Kashiwazaki Kariwa Nuclear Power Station:**

**Units 1, 5, 6, 7: normal operation**

**(Units 2 to 4: outage due to regular inspection)**

**It will be interesting to compare the 2011 results with those from 2007.**

Iouri

---

**From:** Csontos, Aladar

**Sent:** Thursday, March 17, 2011 11:18 AM

**To:** RES\_DE\_CIB; Nove, Carol; Benson, Michael

**Subject:** FW: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

**FYI. Just in case some of us get asked to support the Japanese issues... not likely, but, in case.**

---

**From:** Rivera-Lugo, Richard

**Sent:** Thursday, March 17, 2011 11:16 AM

**To:** Csontos, Aladar; Gavrilas, Mirela; Boyce, Tom (RES); Sydnor, Russell; Koshy, Thomas; Hogan, Rosemary; Graves, Herman

**Cc:** Case, Michael; Richards, Stuart

**Subject:** FW: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

**Branch Chiefs,**

**Please read the attached memo from the Office of HR on the recently granted waiver of work schedule and pay caps due to the events in Japan. Make sure that any of your staff who are providing support at the Ops Center or in any other way directly related to the events in Japan do the appropriate adjustments in their HRMS accounts.**

**More detailed information and points of contact are provided in the memo.**

Thanks,  
Richie

*Richard Rivera-Lugo, EIT, MEM*

Technical Assistant (Acting)

U.S. Nuclear Regulatory Commission – HQ

RES/DE

Ph. 301-251-7652

Fax 301-251-7420

Mail M.S. C5C07M

E-mail [Richard.Rivera-Lugo@nrc.gov](mailto:Richard.Rivera-Lugo@nrc.gov)

 Please consider the Environment before printing this e-mail.

## Rivera-Lugo, Richard

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:17 PM  
**To:** Valentin, Andrea  
**Cc:** Case, Michael; Rivera-Lugo, Richard  
**Subject:** RE: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

**Categories:** Green Category

We are checking with the division staff again. Rick Jervy and Annie Kammerer have also been supporting the Ops Center. Additionally, Syed Ali is traveling to Japan this week. Syed is SLS, so the pay issue may not apply in his case.

Stu

---

**From:** Valentin, Andrea  
**Sent:** Tuesday, March 22, 2011 3:13 PM  
**To:** Richards, Stuart; Rivera-Lugo, Richard  
**Cc:** Case, Michael  
**Subject:** RE: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

I have Sapna and Brett already (they sent me their info) but I will need to keep everyone updated since it is ongoing right now.

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:09 PM  
**To:** Rivera-Lugo, Richard  
**Cc:** Valentin, Andrea; Case, Michael  
**Subject:** RE: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

Richie

Did we need to provide a list of staff working in the Ops Center to PMDA?

Thanks  
Stu

---

**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 17, 2011 11:16 AM  
**To:** Csontos, Aladar; Gavrilas, Mirela; Boyce, Tom (RES); Sydnor, Russell; Koshy, Thomas; Hogan, Rosemary; Graves, Herman  
**Cc:** Case, Michael; Richards, Stuart  
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Thanks,  
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*Richard Rivera-Lugo*, EIT, MEM  
Technical Assistant (Acting)  
U.S. Nuclear Regulatory Commission – HQ  
RES/DE  
Ph. 301-251-7652  
Fax 301-251-7420  
Mail M.S. C5C07M  
E-mail [Richard.Rivera-Lugo@nrc.gov](mailto:Richard.Rivera-Lugo@nrc.gov)

 Please consider the Environment before printing this e-mail.

---

**From:** Flory, Shirley **On Behalf Of** RidsResOd Resource  
**Sent:** Thursday, March 17, 2011 9:18 AM  
**To:** Rini, Brett; Armstrong, Kenneth; Ibarra, Jose; Rivera-Lugo, Richard; Case, Michael; Coe, Doug; Coyne, Kevin; Gibson, Kathy; Richards, Stuart; Sangimino, Donna-Marie; Scott, Michael; Sheron, Brian; Uhle, Jennifer; Valentin, Andrea  
**Subject:** FW: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

---

**From:** RidsResPmdaMail Resource  
**Sent:** Thursday, March 17, 2011 8:50 AM  
**To:** Valentin, Andrea; RidsResOd Resource  
**Cc:** Donaldson, Leslie; Chan, Deborah; Isakovic, Nadja  
**Subject:** FW: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

Please read the following memo in response to work schedules and pay cap for Japan response.

Thanks,  
Heather

---

**From:** Khan, Charline  
**Sent:** Thursday, March 17, 2011 7:29 AM  
**To:** RidsAcraAcnw\_MailCTR Resource; RidsAslbpManagement Resource; RidsOgcMailCenter Resource; RidsOcaaMailCenter Resource; RidsOcfoMailCenter Resource; RidsOigMailCenter Resource; RidsOipMailCenter Resource; RidsOcaMailCenter Resource; RidsOpaMail Resource; RidsSecyMailCenter Resource; RidsSecyCorrespondenceMCTR Resource; RidsEdoMailCenter Resource; RidsAdmMailCenter Resource; RidsCsoMailCenter Resource; RidsOeMailCenter Resource; RidsFsmeOd Resource; RidsOiMailCenter Resource; RidsOIS Resource; RidsHrMailCenter Resource; RidsNroOd Resource; RidsNroMailCenter Resource; RidsNmssOd Resource; RidsNrrOd Resource; RidsNrrMailCenter Resource; RidsResOd Resource; RidsResPmdaMail Resource; RidsSbcrMailCenter Resource; RidsNsirOd Resource; RidsNsirMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource  
**Cc:** Davidson, Lawrence; Buchholz, Jeri; Johns, Nancy  
**Subject:** WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE EVENTS IN JAPAN

MEMORANDUM TO: Those on the Attached List

FROM: Miriam L. Cohen, Director/RA by J. Buchholz for/  
Office of Human Resources

DATED: March 16, 2011

**SUBJECT: WAIVER OF WORK SCHEDULE AND PAY CAP RULES FOR WORK IN RESPONSE TO THE  
EVENTS IN JAPAN**

ADAMS Accession No. ML11075A003 refers

**NOTE: Electronic distribution only**

*Charline Khan*

**Administrative Assistant (Rotation)**

**U.S. NUCLEAR REGULATORY COMMISSION**

**Office of Human Resources**

**P:301-492-2318**

**Charline.Khan@nrc.gov**

## Rivera-Lugo, Richard

---

**From:** Pires, Jose  
**Sent:** Tuesday, March 22, 2011 3:26 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** FW: Spreadsheet - HRMS SGSEB

**Categories:** Green Category

Jose Pires

March 14-16	about 1.5 hour/day
March 17	about 4 hours
March 18	about 5 hours
March 21, 22, 23, 24	about 6 hours
March 25	about 8 hours

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:15 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
**Cc:** Rivera-Lugo, Richard; Case, Michael  
**Subject:** RE: Spreadsheet

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Thanks  
Stu

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**Cc:** Sheron, Brian  
**Subject:** Spreadsheet  
**Importance:** High

Hello All,

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Thanks,  
Andrea

m-326

## Rivera-Lugo, Richard

---

**From:** Pires, Jose  
**Sent:** Tuesday, March 22, 2011 3:26 PM  
**To:** RES\_DE\_SGSEB  
**Subject:** FW: Spreadsheet

**Categories:** Green Category

Please see the notice below that relates to HRMS and work done in support of the response to the Japanese earthquake.

Provide the input to Richie and notice the immediacy of the request.

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:15 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
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Thanks,  
Andrea

## Rivera-Lugo, Richard

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**From:** Rini, Brett  
**Sent:** Tuesday, March 22, 2011 3:40 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** RE: ACTION: FOIA Request on Nuclear Power in China

**Categories:** Green Category

Probably all of DE given that this FOIA has broader applicability.

Please confirm with Mike/Stu or Stephanie that she can collect the information for the FOIA.

---

**From:** Rivera-Lugo, Richard  
**Sent:** Tuesday, March 22, 2011 3:38 PM  
**To:** Rini, Brett  
**Subject:** RE: ACTION: FOIA Request on Nuclear Power in China

Thanks Bretto! This is VERY helpful. I will "twick" the last portion of the message to address this specific FOIA and will send to the BCs. Should I follow your example of sending the FOIA to the BCs and SLs and ask them to distribute to their staff, or should I just send to all of DE?

---

**From:** Rini, Brett  
**Sent:** Tuesday, March 22, 2011 3:29 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** FW: ACTION: FOIA Request on Nuclear Power in China

Richie,

Here's an example of a FOIA request e-mail that I sent out in September. I couldn't find the original e-mail, only the responses. That's why I don't have the attachment on here. I think I just scanned in the request.

I had the Admin Assistant collect any records.

Brett

---

**From:** Rini, Brett  
**Sent:** Wednesday, September 01, 2010 11:21 AM  
**To:** Csontos, Aladar; Gavrilas, Mirela; Koshy, Thomas; Hogan, Rosemary; Sydnor, Russell; Karagiannis, Harriet; Tregoning, Robert; Murphy, Andrew; Ali, Syed; Birla, Sushil  
**Cc:** Case, Michael; Richards, Stuart; Siu, Carolyn  
**Subject:** ACTION: FOIA Request on Nuclear Power in China

BCs/SLs,

We have been tasked with a FOIA from the Union of Concerned Scientists regarding nuclear power in China. The request (attached) states:

- All NRC Commission, EDO's office, NRC staff, and NRC ACRS records (e.g., trip reports, telephone call summaries, slide presentations, white papers, procedures, guidance documents, etc.) dated January 1, 2006, and after related to nuclear power technology in China. The requested information includes records provided to Chinese entities by NRC, records received by the NRC from Chinese entities, and internal NRC records about nuclear power technology in China. This request also includes protocols and agreements between the US and Chinese governments and any related supporting and/or background records.



Please send the request to any staff in your branch that you think might be impacted and have relevant records. Please have your staff provide copies of any records they have that meet the above criteria to Carolyn Siu **by COB on Wednesday, 9/8**. In addition, please have them identify those records that may contain information they believe should not be released to the public per the exemption instructions (e.g., contains sensitive, proprietary, pre-decisional, or personal information). The FOIA instructions are attached.

The 9/8 due date is to provide sufficient time for screening and redacting information that meet FOIA exemption criteria for withholding, so that we can still meet our office due date of 9/10 for providing the records to the FOIA staff.

**If you or your staff do not have any relevant records, please provide me with a negative response.**

Please let me know if you have any questions, comments, or concerns related to this request.

Thanks,

Brett

## Jimenez, Juan

---

**From:** Wagner, Katie  
**Sent:** Tuesday, March 22, 2011 4:31 PM  
**To:** Jimenez, Juan  
**Subject:** RE: Pls add Additional Status

Awesome, thanks!

---

**From:** Jimenez, Juan  
**Sent:** Tuesday, March 22, 2011 2:04 PM  
**To:** Wagner, Katie  
**Subject:** RE: Pls add Additional Status

alright

---

**From:** Wagner, Katie  
**Sent:** Tuesday, March 22, 2011 1:59 PM  
**To:** Jimenez, Juan  
**Subject:** Pls add Additional Status

Juan,

Can you please add a "Duplicate" status to the Japan-Related page? I just found out that #29 and #30 are probably duplicates.

Thanks,  
Katie

N-329

## Rivera-Lugo, Richard

---

**From:** Sircar, Madhumita  
**Sent:** Tuesday, March 22, 2011 4:43 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** RE: Spreadsheet

**Categories:** Green Category

Richie,

Two hours in preparing answer.

*Thanks,*

*Mita Sircar*

*Tel: 301-251-3307*

---

**From:** Rivera-Lugo, Richard  
**Sent:** Tuesday, March 22, 2011 4:41 PM  
**To:** Sircar, Madhumita  
**Subject:** RE: Spreadsheet

How much is a few Mita? We need to provide the CFO with a determinate amount.

Thanks,

Richie

---

**From:** Sircar, Madhumita  
**Sent:** Tuesday, March 22, 2011 3:36 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** RE: Spreadsheet

Richie,

I worked on 3/17, Thursday a few hours.

*Thanks,*

*Mita Sircar*

*Tel: 301-251-3307*

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:15 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
**Cc:** Rivera-Lugo, Richard; Case, Michael  
**Subject:** RE: Spreadsheet

If you are working to support the agency response to the events in Japan, please provide the information requested below by noon tomorrow to Richie Rivera-Lugo.

Thanks  
Stu

m-330

---

**From:** Valentin, Andrea

**Sent:** Tuesday, March 22, 2011 3:02 PM

**To:** Case, Michael; Richards, Stuart; Gibson, Kathy; Coe, Doug; Coyne, Kevin; Kardaras, Tom

**Cc:** Sheron, Brian

**Subject:** Spreadsheet

**Importance:** High

Hello All,

I am collecting the names and dates to send to CFO for work being done in support of the Japan response. CFO needs this info since HRMS may not allow the employee to enter time worked unless some changes are made to the system. The memo dated 3/16 said that they need this information ASAP to avoid difficulties processing the appropriate payments.

I plan to submit this interim list by COB tomorrow so CFO can get started on what they need to do. I can always send additional names later. Please remember to send me both names and dates worked (or planned schedule if it has not occurred yet).

Thanks,  
Andrea

## Rivera-Lugo, Richard

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**From:** Kammerer, Annie  
**Sent:** Tuesday, March 22, 2011 5:15 PM  
**To:** Pires, Jose; Rivera-Lugo, Richard  
**Subject:** RE: Spreadsheet

**Categories:** Green Category

LOL. How about 21x7, with 3p to 11p specifically in the ops center, except when it is a double.

---

**From:** Pires, Jose  
**Sent:** Tuesday, March 22, 2011 3:26 PM  
**To:** RES\_DE\_SGSEB  
**Subject:** FW: Spreadsheet

Please see the notice below that relates to HRMS and work done in support of the response to the Japanese earthquake.

Provide the input to Richie and notice the immediacy of the request.

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:15 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
**Cc:** Rivera-Lugo, Richard; Case, Michael  
**Subject:** RE: Spreadsheet

If you are working to support the agency response to the events in Japan, please provide the information requested below by noon tomorrow to Richie Rivera-Lugo.

Thanks  
Stu

---

**From:** Valentin, Andrea  
**Sent:** Tuesday, March 22, 2011 3:02 PM  
**To:** Case, Michael; Richards, Stuart; Gibson, Kathy; Coe, Doug; Coyne, Kevin; Kardaras, Tom  
**Cc:** Sheron, Brian  
**Subject:** Spreadsheet  
**Importance:** High

Hello All,

I am collecting the names and dates to send to CFO for work being done in support of the Japan response. CFO needs this info since HRMS may not allow the employee to enter time worked unless some changes are made to the system. The memo dated 3/16 said that they need this information ASAP to avoid difficulties processing the appropriate payments.

I plan to submit this interim list by COB tomorrow so CFO can get started on what they need to do. I can always send additional names later. Please remember to send me both names and dates worked (or planned schedule if it has not occurred yet).

Thanks,  
Andrea

## Rivera-Lugo, Richard

---

**From:** Ake, Jon  
**Sent:** Tuesday, March 22, 2011 5:22 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** FW: Spreadsheet

Richie-  
I worked all last week on the response. I am technically on vacation so am not "working" presently.  
cheers-  
Jon

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:14 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
**Cc:** Rivera-Lugo, Richard; Case, Michael  
**Subject:** RE: Spreadsheet

If you are working to support the agency response to the events in Japan, please provide the information requested below by noon tomorrow to Richie Rivera-Lugo.

Thanks  
Stu

**From:** Valentin, Andrea  
**Sent:** Tuesday, March 22, 2011 3:02 PM  
**To:** Case, Michael; Richards, Stuart; Gibson, Kathy; Coe, Doug; Coyne, Kevin; Kardaras, Tom  
**Cc:** Sheron, Brian  
**Subject:** Spreadsheet  
**Importance:** High

Hello All,

I am collecting the names and dates to send to CFO for work being done in support of the Japan response. CFO needs this info since HRMS may not allow the employee to enter time worked unless some changes are made to the system. The memo dated 3/16 said that they need this information ASAP to avoid difficulties processing the appropriate payments.

I plan to submit this interim list by COB tomorrow so CFO can get started on what they need to do. I can always send additional names later. Please remember to send me both names and dates worked (or planned schedule if it has not occurred yet).

Thanks,  
Andrea

*M-332*

From:  
Sent:  
To:

OST02 HOC - OPS center

Tuesday, March 22, 2011 12:52 PM

Abrams, Charlotte; Abu-Eid, Bobby; Adams, John; Afshar-Tous, Mugeh; Ahn, Hosung; Alemu, Bezakulu; Alter, Peter; Anderson, Brian; Anderson, James; Arribas-Colon, Maria; Ashkeboussi, Nima; Athey, George; Baker, Stephen; Ballam, Nick; Barnhurst, Daniel; Barr, Cynthia; Barss, Dan; Bazian, Samuel; Bens, Michelle; Bergman, Thomas; Berry, Rollie; 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; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coggins, Angela; Collins, Frank; Cool, Donald; Correia, Richard; Costa, Arlon; Couret, Ivonne; 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; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Flannery, Cindy; Floyd, Daphene; Foggie, Kirk; Foster, Jack; Fragoyannis, Nancy; Franovich, Rani; Frazier, Alan; Freshman, Steve; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Gibson, Kathy; Glietter, Joseph; Gilmer, James; Gordon, Dennis; Gott, William; Grant, Jeffery; Greenwood, Carol; Grimes, Kelly; Grobe, Jack; Gross, Allen; Gulla, Gerald; Hale, Jerry; Hardesty, Duane; Harrington, Holly; Harris, Tim; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Hayden, Elizabeth; Helton, Donald; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Imboden, Andy; Isom, James; Jackson, Karen; Jacobson, Jeffrey; Jervy, Richard; Jessie, Janelle; 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; Lichtz, Taylor; Lising, Jason; Lombard, Mark; 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; McMurtry, 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; Nerret, Amanda; Nguyen, Caroline; Norris, Michael; Norton, Charles; Ordaz, Vonna; 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; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Robinson, Edward; Rodriguez-Luccioni, Hector; Roggenbrodt, William; Ropon, Kimberly; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Ryan, Michelle; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; 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; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Summers, Robert; Sun, Casper; 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; Versluis, Robert; 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; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Jacob; Zimmerman, Roy

MASTER RESPONDER SCHEDULE FOR MAR 19-25-11- JAPAN EARTHQUAKE (2).pdf

Attachments:

Please disregard the last copy which was the template.

Please disregard the last copy.

**Revised Copy**

Attached is the OPS Center watchbill for March 18-26<sup>th</sup>, you will be receiving the watchbill for the week of March 26-April 2<sup>nd</sup>, in the future. If you need to change the schedule, please send an email to OST02 HOC.



**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

Position	Date	Time	Staff
<b>Executive Team</b>			
<b>ET Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Roy Zimmerman
Sat	19-Mar	7am - 3pm	Jim Wiggins
Sat	19-Mar	3pm-11pm	Brian Sheron
Sat-Sun	3/19-3/20	11pm - 7am	Mike Johnson
Sun	20-Mar	7am - 3pm	Jim Wiggins
Sun	20-Mar	3pm-11pm	Brian Sheron
Sun-Mon	3/20-3/21	11pm - 7am	Mike Johnson
Mon	21-Mar	7am - 3pm	Mike Weber
Mon	21-Mar	3pm-11pm	Jim Wiggins
Mon-Tues	3/21-3/22	11pm - 7am	Mike Johnson
Tues	22-Mar	7am - 3pm	Mike Weber
Tues	22-Mar	3pm-11pm	Jim Wiggins
Tues-Wed	3/22-3/23	11pm - 7am	Bruce Boger
Wed	23-Mar	7am - 3pm	Mike Weber
Wed	23-Mar	3pm-11pm	Roy Zimmerman
Wed-Thur	3/23-3/24	11pm - 7am	Bruce Boger
Thur	24-Mar	7am - 3pm	Mike Weber
Thur	24-Mar	3pm-11pm	Roy Zimmerman
Thur-Fri	3/24-3/25	11pm - 7am	Jennifer Uhle
Fri	25-Mar	7am - 3pm	Mike Weber
Fri	25-Mar	3pm-11pm	Roy Zimmerman
Fri-Sat	3/25-3/26	11pm-7am	Jennifer Uhle
<b>ET Response Advisor</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Morris
Sat	19-Mar	7am - 3pm	Brian McDermott
Sat	19-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sat-Sun	3/19-3/20	11pm - 7am	Scott Morris
Sun	20-Mar	7am - 3pm	Chris Miller
Sun	20-Mar	3pm-11pm	Mary Jane (MJ) Ross-Lee
Sun-Mon	3/20-3/21	11pm - 7am	Scott Morris
Mon	21-Mar	7am - 3pm	Brian McDermott
Mon	21-Mar	3pm-11pm	Chris Miller
Mon-Tues	3/21-3/22	11pm - 7am	Scott Morris
Tues	22-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Tues	22-Mar	3pm-11pm	Chris Miller
Tues-Wed	3/22-3/23	11pm - 7am	Tim McGinty
Wed	23-Mar	7am - 3pm	Brian McDermott
Wed	23-Mar	3pm-11pm	Joe Giitter
Wed-Thur	3/23-3/24	11pm - 7am	Tim McGinty
Thur	24-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Thur	24-Mar	3pm-11pm	Joe Giitter
Thur-Fri	3/24-3/25	11pm - 7am	Tim McGinty
Fri	25-Mar	7am - 3pm	Mary Jane (MJ) Ross-Lee
Fri	25-Mar	3pm-11pm	Joe Giitter
Fri-Sat	3/25-3/26	11pm-7am	Tim McGinty
<b>ET Rx Prot Measures &amp; State Coordinator</b>			

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

Fri-Sat	3/18-3/19	11pm-7am	Scott Moore
Sat	19-Mar	7am - 3pm	Larry Camper
Sat	19-Mar	3pm-11pm	Patricia Holahan
Sat-Sun	3/19-3/20	11pm - 7am	Rob Lewis
Sun	20-Mar	7am - 3pm	Vonna Ordaz
Sun	20-Mar	3pm-11pm	Larry Camper
Sun-Mon	3/20-3/21	11pm - 7am	Cynthia Carpenter
Mon	21-Mar	7am - 3pm	Charlie Miller
Mon	21-Mar	3pm-11pm	Larry Camper
Mon-Tues	3/21-3/22	11pm - 7am	Rob Lewis
Tues	22-Mar	7am - 3pm	Charlie Miller
Tues	22-Mar	3pm-11pm	Patricia Holahan
Tues-Wed	3/22-3/23	11pm - 7am	Cynthia Carpenter
Wed	23-Mar	7am - 3pm	Charlie Miller
Wed	23-Mar	3pm-11pm	Patricia Holahan
Wed-Thur	3/23-3/24	11pm - 7am	Cynthia Carpenter
Thur	24-Mar	7am - 3pm	Charlie Miller
Thur	24-Mar	3pm-11pm	Larry Camper
Thur-Fri	3/24-3/25	11pm - 7am	Cynthia Carpenter
Fri	25-Mar	7am - 3pm	Charlie Miller
Fri	25-Mar	3pm-11pm	Patricia Holahan
Fri-Sat	3/25-3/26	11pm-7am	Cynthia Carpenter

**Executive Briefing Team**

<b>EBT Admin. Assistant</b>			
Fri-Sat	3/18-3/19	11pm-7am	Sapna Hurd
Sat	19-Mar	7am - 3pm	Carolyn Kahler
Sat	19-Mar	3pm-11pm	Annette Stang
Sat-Sun	3/19-3/20	11pm - 9am	Sapna Hurd
Sun	20-Mar	9am - 7pm	Annette Stang
Sun-Mon	3/20-3/21	7pm-7am	Carolyn Kahler
Mon	21-Mar	7am - 3pm	A. Stang (7-11) / Sapna Hurd (11-3)
Mon	21-Mar	3pm-11pm	Tia Pope
Mon-Tues	3/21-3/22	11pm - 7am	Christina Merritt
Tues	22-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Tues	22-Mar	3pm-11pm	Jon Fiske
Tues-Wed	3/22-3/23	11pm - 7am	Tia Pope
Wed	23-Mar	7am - 3pm	Jon Fiske
Wed	23-Mar	3pm-11pm	Annette Stang
Wed-Thur	3/23-3/24	11pm - 7am	Christina Merritt
Thur	24-Mar	7am - 3pm	Carolyn Kahler/Sapna Hurd
Thur	24-Mar	3pm-11pm	Andrea Wimbush
Thur-Fri	3/24-3/25	11pm - 7am	Tia Pope
Fri	25-Mar	7am - 3pm	Jon Fiske
Fri	25-Mar	3pm-11pm	Sapna Hurd
Fri-Sat	3/25-3/26	11pm-7am	Carolyn Kahler
<b>EBT Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Christine Steger
Sat	19-Mar	7am - 3pm	Caroline Nguyen
Sat	19-Mar	3pm-11pm	Sara Mroz

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

MARCH 18-26

Sat-Sun	3/19-3/20	11pm - 7am	Jim Andersen
Sun	20-Mar	7am - 3pm	Yen-Ju Chen
Sun	20-Mar	3pm-11pm	Caroline Nguyen
Sun-Mon	3/20-3/21	11pm - 7am	Jim Andersen
Mon	21-Mar	7am - 3pm	Yen-Ju Chen
Mon	21-Mar	3pm-11pm	Sara Mroz
Mon-Tues	3/21-3/22	11pm - 7am	Jim Andersen
Tues	22-Mar	7am - 3pm	Caroline Nguyen
Tues	22-Mar	3pm-11pm	Sara Mroz
Tues-Wed	3/22-3/23	11pm - 7am	Jim Andersen
Wed	23-Mar	7am - 3pm	Yen-Ju Chen
Wed	23-Mar	3pm-11pm	Sara Mroz
Wed-Thur	3/23-3/24	11pm - 7am	Jim Andersen
Thur	24-Mar	7am - 3pm	Yen-Ju Chen
Thur	24-Mar	3pm-11pm	Sara Mroz
Thur-Fri	3/24-3/25	11pm - 7am	Jim Andersen
Fri	25-Mar	7am - 3pm	Yen-Ju Chen
Fri	25-Mar	3pm-11pm	Sara Mroz
Fri-Sat	3/25-3/26	11pm-7am	Jim Andersen

**Executive Support Team**

<b>EST Status Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Doug Huyck
Sat	19-Mar	7am - 3pm	Craig Erlanger
Sat	19-Mar	3pm-11pm	John Jolicoeur
Sat-Sun	3/19-3/20	11pm - 7am	Doug Huyck
Sun	20-Mar	7am - 3pm	Craig Erlanger
Sun	20-Mar	3pm-11pm	John Jolicoeur
Sun-Mon	3/20-3/21	11pm - 7am	Doug Huyck
Mon	21-Mar	7am - 3pm	Jane Marshall
Mon	21-Mar	3pm-11pm	Bill Gott
Mon-Tues	3/21-3/22	11pm - 7am	Jeff Grant
Tues	22-Mar	7am - 3pm	John Jolicoeur
Tues	22-Mar	3pm-11pm	Bill Gott
Tues-Wed	3/22-3/23	11pm - 7am	Jeff Grant
Wed	23-Mar	7am - 3pm	Sally Billings/Jane Marshall
Wed	23-Mar	3pm-11pm	Bill Gott
Wed-Thur	3/23-3/24	11pm - 7am	Jeff Grant
Thur	24-Mar	7am - 3pm	Jane Marshall
Thur	24-Mar	3pm-11pm	Bill Gott
Thur-Fri	3/24-3/25	11pm - 7am	Jeff Grant
Fri	25-Mar	7am - 3pm	Jane Marshall
Fri	25-Mar	3pm-11pm	Bill Gott
Fri-Sat	3/25-3/26	11pm-7am	Jeff Grant
<b>EST Actions Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Amy Roundtree
Sat	19-Mar	7am - 3pm	Bezakulu Alemu
Sat	19-Mar	3pm-11pm	Melissa Ralph
Sat-Sun	3/19-3/20	11pm - 7am	Jonathan Fiske
Sun	20-Mar	7am - 3pm	Melissa Ralph

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

**MARCH 18-26**

Sun	20-Mar	3pm-11pm	Jonathan Fiske
Sun-Mon	3/20-3/21	11pm - 7am	Dori Votolato-Willis
Mon	21-Mar	7am - 3pm	Melissa Ralph
Mon	21-Mar	3pm-11pm	Amanda Nerret
Mon-Tues	3/21-3/22	11pm - 7am	Kelly Grimes
Tues	22-Mar	7am - 3pm	Melissa Ralph
Tues	22-Mar	3pm-11pm	Dori Votolato-Willis
Tues-Wed	3/22-3/23	11pm - 7am	Kelly Grimes
Wed	23-Mar	7am - 3pm	Melissa Ralph
Wed	23-Mar	3pm-11pm	Dori Votolato-Willis
Wed-Thur	3/23-3/24	11pm - 7am	Kelly Grimes
Thur	24-Mar	7am - 3pm	Wendy Reed
Thur	24-Mar	3pm-11pm	Dori Votolato-Willis
Thur-Fri	3/24-3/25	11pm - 7am	Jonathan Fiske
Fri	25-Mar	7am - 3pm	Amanda Nerret
Fri	25-Mar	3pm-11pm	Melissa Ralph
Fri-Sat	3/25-3/26	11pm-7am	Jonathan Fiske
<b>EST Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Rebecca Stone
Sat	19-Mar	7am - 3pm	Clyde Ragland
Sat	19-Mar	3pm-11pm	Tony Bowers
Sat-Sun	3/19-3/20	11pm - 7am	Rebecca Stone
Sun	20-Mar	7am - 3pm	Clyde Ragland
Sun	20-Mar	3pm-11pm	Tony Bowers
Sun-Mon	3/20-3/21	11pm - 7am	Rebecca Stone
Mon	21-Mar	7am - 3pm	Tony McMurtray
Mon	21-Mar	3pm-11pm	Tony Bowers
Mon-Tues	3/21-3/22	11pm - 7am	Rebecca Stone
Tues	22-Mar	7am - 3pm	Tony McMurtray
Tues	22-Mar	3pm-11pm	Clyde Ragland
Tues-Wed	3/22-3/23	11pm - 7am	Rebecca Stone
Wed	23-Mar	7am - 3pm	Tony McMurtray
Wed	23-Mar	3pm-11pm	Clyde Ragland
Wed-Thur	3/23-3/24	11pm - 7am	Rebecca Stone
Thur	24-Mar	7am - 3pm	Tony McMurtray
Thur	24-Mar	3pm-11pm	Clyde Ragland
Thur-Fri	3/24-3/25	11pm - 7am	Steve Campbell
Fri	25-Mar	7am - 3pm	Taylor Lichatz
Fri	25-Mar	3pm-11pm	Tony McMurtray
Fri-Sat	3/25-3/26	11pm-7am	Steve Campbell
<b>EST Chronology Officer</b>			
Fri-Sat	3/18-3/19	11pm-7am	Dennis Gordon
Sat	19-Mar	7am - 3pm	Vanice Perrin
Sat	19-Mar	3pm-11pm	Rebecca Karas
Sat-Sun	3/19-3/20	11pm - 7am	Cynthia Dorsey
Sun	20-Mar	7am - 3pm	James Vaughn
Sun	20-Mar	3pm-11pm	Rebecca Karas
Sun-Mon	3/20-3/21	11pm - 7am	Mark Resner
Mon	21-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Mon	21-Mar	3pm-11pm	Rebecca Karas

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-25

Mon-Tues	3/21-3/22	11pm - 7am	Thomas Scarbrough
Tues	22-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Tues	22-Mar	3pm-11pm	Rebecca Karas
Tues-Wed	3/22-3/23	11pm - 7am	Thomas Scarbrough
Wed	23-Mar	7am - 3pm	James Vaughn
Wed	23-Mar	3pm-11pm	Rebecca Karas
Wed-Thur	3/23-3/24	11pm - 7am	Nick Ballam
Thur	24-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Thur	24-Mar	3pm-11pm	Rebecca Karas
Thur-Fri	3/24-3/25	11pm - 7am	Thomas Scarbrough
Fri	25-Mar	7am - 3pm	Hector Rodriguez-Luccioni
Fri	25-Mar	3pm-11pm	Rebecca Karas
Fri-Sat	3/25-3/26	11pm-7am	Thomas Scarbrough
<b>EST Response Ops Mgr</b>			
Fri-Sat	3/18-3/19	11pm-7am	Omar Khan
Sat	19-Mar	7am - 3pm	Cris Brown
Sat	19-Mar	3pm-11pm	Bob Stransky
Sat-Sun	3/19-3/20	11pm - 7am	Jean Trefethan
Sun	20-Mar	7am - 3pm	Karen Jackson
Sun	20-Mar	3pm-11pm	Roberto Figueroa
Sun-Mon	3/20-3/21	11pm - 7am	Jean Trefethan
Mon	21-Mar	7am - 3pm	Bob Stransky
Mon	21-Mar	3pm-11pm	Omar Khan
Mon-Tues	3/21-3/22	11pm - 7am	Cris Brown
Tues	22-Mar	7am - 3pm	Bob Stransky
Tues	22-Mar	3pm-11pm	Karen Jackson
Tues-Wed	3/22-3/23	11pm - 7am	Roberto Figueroa
Wed	23-Mar	7am - 3pm	Bob Stransky
Wed	23-Mar	3pm-11pm	Jean Trefethan
Wed-Thur	3/23-3/24	11pm - 7am	Cris Brown
Thur	24-Mar	7am - 3pm	Karen Jackson
Thur	24-Mar	3pm-11pm	Omar Khan
Thur-Fri	3/24-3/25	11pm - 7am	Roberto Figueroa
Fri	25-Mar	7am - 3pm	Jean Trefethan
Fri	25-Mar	3pm-11pm	Cris Brown
Fri-Sat	3/25-3/26	11pm-7am	Roberto Figueroa
<b>EST Admin. Assistant</b>			
Fri-Sat	3/18-3/19	11pm-7am	Tabitha Howard
Sat	19-Mar	7am - 3pm	Karen Meyer
Sat	19-Mar	3pm-11pm	Amy Salus
Sat-Sun	3/19-3/20	11pm - 7am	Chris Lamb
Sun	20-Mar	7am - 3pm	Karen Meyer
Sun	20-Mar	3pm-11pm	Linda Williamson
Sun-Mon	3/20-3/21	11pm - 7am	Chris Lamb
Mon	21-Mar	7am - 3pm	Karen Meyer
Mon	21-Mar	3pm-11pm	Mary Glenn Crutchley
Mon-Tues	3/21-3/22	11pm - 7am	Andrea Wimbush
Tues	22-Mar	7am - 3pm	Cynthia Dorsey
Tues	22-Mar	3pm-11pm	Mary Glenn Crutchley
Tues-Wed	3/22-3/23	11pm - 7am	Michelle Manahan

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Wed	23-Mar	7am - 3pm	Karen Meyer
Wed	23-Mar	3pm-11pm	Mary Glenn Crutchley
Wed-Thur	3/23-3/24	11pm - 7am	Andrea Wimbush
Thur	24-Mar	7am - 3pm	Cynthia Dorsey
Thur	24-Mar	3pm-11pm	Mary Glenn Crutchley
Thur-Fri	3/24-3/25	11pm - 7am	Tabitha Howard
Fri	25-Mar	7am - 3pm	Karen Meyer
Fri	25-Mar	3pm-11pm	Michelle Manahan
Fri-Sat	3/25-3/26	11pm-7am	Linda Williamson

**Liaison Team**

<b>LT Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Tom Blount
Sat	19-Mar	7am - 3pm	Tom Bergman
Sat	19-Mar	3pm-11pm	Bob Webber
Sat-Sun	3/19-3/20	11pm - 7am	John Adams
Sun	20-Mar	7am - 3pm	Tom Bergman
Sun	20-Mar	3pm-11pm	Bob Webber
Sun-Mon	3/20-3/21	11pm - 7am	John Adams
Mon	21-Mar	7am - 3pm	Tom Bergman
Mon	21-Mar	3pm-11pm	Bob Webber
Mon-Tues	3/21-3/22	11pm - 7am	John Adams
Tues	22-Mar	7am - 3pm	Tom Bergman
Tues	22-Mar	3pm-11pm	Bob Webber
Tues-Wed	3/22-3/23	11pm - 7am	John Adams
Wed	23-Mar	7am - 3pm	Michael Tschiltz
Wed	23-Mar	3pm-11pm	Rich Correia
Wed-Thur	3/23-3/24	11pm - 7am	Jake Zimmerman
Thur	24-Mar	7am - 3pm	Michael Tschiltz
Thur	24-Mar	3pm-11pm	Rich Correia
Thur-Fri	3/24-3/25	11pm - 7am	Jake Zimmerman
Fri	25-Mar	7am - 3pm	Michael Tschiltz
Fri	25-Mar	3pm-11pm	Rich Correia
Fri-Sat	3/25-3/26	11pm-7am	Jake Zimmerman

<b>LT Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Janelle Jessie
Sat	19-Mar	7am - 3pm	Jeff Temple
Sat	19-Mar	3pm-11pm	Rani Franovich
Sat-Sun	3/19-3/20	11pm - 7am	Janelle Jessie
Sun	20-Mar	7am - 3pm	Jeff Temple
Sun	20-Mar	3pm-11pm	Nathan Sanfilippo
Sun-Mon	3/20-3/21	11pm - 7am	Milt Murray
Mon	21-Mar	7am - 3pm	Jeff Temple
Mon	21-Mar	3pm-11pm	Nathan Sanfilippo
Mon-Tues	3/21-3/22	11pm - 7am	Milt Murray
Tues	22-Mar	7am - 3pm	Rani Franovich
Tues	22-Mar	3pm-11pm	Nathan Sanfilippo
Tues-Wed	3/22-3/23	11pm - 7am	Milt Murray
Wed	23-Mar	7am - 3pm	Rani Franovich
Wed	23-Mar	3pm-11pm	Jeff Temple

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Wed-Thur	3/23-3/24	11pm - 7am	Milt Murray
Thur	24-Mar	7am - 3pm	Rani Franovich
Thur	24-Mar	3pm-11pm	Jeff Temple
Thur-Fri	3/24-3/25	11pm - 7am	Milt Murray
Fri	25-Mar	7am - 3pm	Janelle Jessie
Fri	25-Mar	3pm-11pm	Rani Franovich
Fri-Sat	3/25-3/26	11pm-7am	Milt Murray
<b>LT State Liaison</b>			
Thur-Fri	3/17-3/18	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Fri	18-Mar	7am-2pm	Lukes/Flannery
Fri	18-Mar	2pm-9pm	Turttil/Maupin
Fri-Sat	3/18-3/19	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Sat	19-Mar	7am-2pm	Ryan/Turttil (ON CALL ONLY)
Sat	19-Mar	2pm-9pm	Ryan/Turttil (ON CALL ONLY)
Sat-Sun	3/19-3/20	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Sun	20-Mar	7am-2pm	Ryan/Turttil (ON CALL ONLY)
Sun	20-Mar	2pm-9pm	Ryan/Turttil (ON CALL ONLY)
Sun-Mon	3/20-3/21	9pm-7am	Ryan/Turttil (ON CALL ONLY)
Mon	21-Mar	7am-2pm	Flannery (Riveria-On Call)
Mon	21-Mar	2pm-9pm	Easson (Turttil-On Call)
Mon-Tue	3/21-3/22	9pm-7am	Ryan/Turttil
Tue	22-Mar	7am-2pm	Flannery (Riveria-On Call)
Tue	22-Mar	2pm-9pm	Easson (Turttil-On Call)
Tue-Wed	3/22-3/23	9pm-7am	Ryan/Turttil
Wed	23-Mar	7am-2pm	Maupin (Lukes-On Call)
Wed	23-Mar	2pm-9pm	Rivera (Easson-On Call)
Wed-Thur	3/23-3/24	9pm-7am	Ryan/Turttil
Thur	24-Mar	7am-2pm	Lukes (Flannery-On Call)
Thur	24-Mar	2pm-9pm	Maupin (Riveria-On Call)
Thur-Fri	3/24-3/25	9pm-7am	Ryan/Turttil
Fri	25-Mar	7am-2pm	Ryan (Maupin-On Call)
Fri	25-Mar	2pm-9pm	Turttil (Riveria-On Call)
Fri-Sat	3/25-3/26	9pm-7am	Ryan/Turttil (ON CALL ONLY)
<b>LT Federal Liaison (2)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Scott Sloan
Sat	19-Mar	7am - 3pm	Russ Chazell
Sat	19-Mar	3pm-11pm	Jeff Lynch
Sat-Sun	3/19-3/20	11pm - 7am	Scott Sloan
Sun	20-Mar	7am - 3pm	Ned Wright
Sun	20-Mar	3pm-11pm	Jerry Hale
Sun-Mon	3/20-3/21	11pm - 7am	Lisa Wright
Mon	21-Mar	7am - 3pm	Beth Reed/Ted Smith
Mon	21-Mar	3pm-11pm	Ned Wright
Mon-Tues	3/21-3/22	11pm - 7am	Lisa Wright
Tues	22-Mar	7am - 3pm	Beth Reed/Ted Smith
Tues	22-Mar	3pm-11pm	Ned Wright
Tues-Wed	3/22-3/23	11pm - 7am	Lisa Wright
Wed	23-Mar	7am - 3pm	Jerry Hale/Ted Smith
Wed	23-Mar	3pm-11pm	Ned Wright
Wed-Thur	3/23-3/24	11pm - 7am	Lisa Wright

**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

**MARCH 18-25**

Thur	24-Mar	7am - 3pm	Ted Smith/Bethany Cecere
Thur	24-Mar	3pm-11pm	Jerry Hale
Thur-Fri	3/24-3/25	11pm - 7am	Scott Sloan
Fri	25-Mar	7am - 3pm	Ted Smith/Bethany Cecere
Fri	25-Mar	3pm-11pm	Jerry Hale
Fri-Sat	3/25-3/26	11pm-7am	Scott Sloan
<b>LT Congressional Liaison (2)</b>			
Sat	19-Mar	7am - 2pm	Spiros Droggitis
	19-Mar	2pm-9pm	Tim Riley
Sun	20-Mar	7am - 2pm	Rebecca Schmidt
	20-Mar	2pm-9pm	Reanne Shane
Mon	21-Mar	7am - 2pm	Spiros Droggitis
	21-Mar	2pm-9pm	Tim Riley
Tues	22-Mar	7am - 2pm	Tim Riley
	22-Mar	2pm-9pm	Spiros Droggitis
Wed	23-Mar	7am - 2pm	Gene Dacus
	23-Mar	2pm-9pm	Raeann Shane
Thur	24-Mar	7am - 2pm	Spiros Droggitis
	24-Mar	2pm-9pm	Raeann Shane
Fri	25-Mar	7am - 2pm	Gene Dacus
	25-Mar	2pm-9pm	Amy Powell
<b>LT International Liaison (2)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Elizabeth Smirolodo/Danielle Emche
Sat	19-Mar	7am - 3pm	Lance English/Steve Bloom
Sat	19-Mar	3pm-11pm	Jenny Tobin/Jill Shephard
Sat-Sun	3/19-3/20	11pm - 7am	Elizabeth Smirolodo/Danielle Emche
Sun	20-Mar	7am - 3pm	Karen Henderson/Steve Baker
Sun	20-Mar	3pm-11pm	Eric Stahl/Nancy Fragoyanis
Sun-Mon	3/20-3/21	11pm - 7am	Elizabeth Smirolodo/Jenny Tobin
Mon	21-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3)
Mon	21-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Mon-Tues	3/21-3/22	11pm - 7am	Eric Stahl/Mugeh Afshar-Tous
Tues	22-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3)
Tues	22-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Tues-Wed	3/22-3/23	11pm - 7am	Eric Stahl/Mugeh
Wed	23-Mar	7am - 3pm	Jen Schwartzman/Charlotte Abrams/Nancy (12-3)
Wed	23-Mar	3pm-11pm	Danielle Emche/Lauren Mayros
Wed-Thur	3/23-3/24	11pm - 7am	Eric Stahl/Mugeh
Thur	24-Mar	7am - 3pm	Steve Bloom/Lance English
Thur	24-Mar	3pm-11pm	Janice/Jenny Tobin
Thur-Fri	3/24-3/25	11pm - 7am	Andrea/Elizabeth Smirolodo
Fri	25-Mar	7am - 3pm	Steve Bloom/Lance English
Fri	25-Mar	3pm-11pm	Janice/Jenny Tobin
Fri-Sat	3/25-3/26	11pm-7am	Andrea/Elizabeth Smirolodo
<b>Protective Measures Team</b>			
<b>PMTR Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Kathy Gibson
Sat	19-Mar	7am - 3pm	John Lubinski



**JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE**

MARCH 18-26

Sat	19-Mar	3pm-11pm	Don Cool
Sat-Sun	3/19-3/20	11pm - 7am	Kathy Gibson
Sun	20-Mar	7am - 3pm	John Lubinski
Sun	20-Mar	3pm-11pm	Don Cool
Sun-Mon	3/20-3/21	11pm - 7am	Kathy Gibson
Mon	21-Mar	7am - 3pm	John Lubinski
Mon	21-Mar	3pm-11pm	Don Cool
Mon-Tues	3/21-3/22	11pm - 7am	John Tappert
Tues	22-Mar	7am - 3pm	John Lubinski
Tues	22-Mar	3pm-11pm	Don Cool
Tues-Wed	3/22-3/23	11pm - 7am	John Tappert
Wed	23-Mar	7am - 3pm	Terry Reis
Wed	23-Mar	3pm-11pm	Cindy Jones
Wed-Thur	3/23-3/24	11pm - 7am	Randy Sullivan
Thur	24-Mar	7am - 3pm	Terry Reis
Thur	24-Mar	5pm-11pm	Cindy Jones
Thur-Fri	3/24-3/25	11pm - 7am	Randy Sullivan
Fri	25-Mar	7am - 3pm	Terry Reis
Fri	25-Mar	5pm-11pm	Cindy Jones
Fri-Sat	3/25-3/26	11pm-7am	Randy Sullivan
<b>PMTR Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Mike Norris
Sat	19-Mar	7am - 3pm	Duane Hardesty
Sat	19-Mar	3pm-11pm	Jay Patel
Sat-Sun	3/19-3/20	11pm - 7am	Lou Brandon
Sun	20-Mar	7am - 3pm	Nima Ashkeboussi
Sun	20-Mar	3pm-11pm	Jay Patel
Sun-Mon	3/20-3/21	11pm - 7am	Lou Brandon
Mon	21-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Mon	21-Mar	3pm-11pm	Jay Patel
Mon-Tues	3/21-3/22	11pm - 7am	Lou Brandon
Tues	22-Mar	7am - 3pm	Prosanta Chowdhury (8 am)
Tues	22-Mar	3pm-11pm	Nima Ashkeboussi
Tues-Wed	3/22-3/23	11pm - 7am	Mike Norris
Wed	23-Mar	7am - 3pm	John Wray
Wed	23-Mar	3pm-11pm	Nima Ashkeboussi
Wed-Thur	3/23-3/24	11pm - 7am	Mike Norris
Thur	24-Mar	7am - 3pm	John Wray
Thur	24-Mar	3pm-11pm	Nima Ashkeboussi
Thur-Fri	3/24-3/25	11pm - 7am	Mike Norris
Fri	25-Mar	7am - 3pm	Duane Hardesty
Fri	25-Mar	3pm-11pm	Jay Patel
Fri-Sat	3/25-3/26	11pm-7am	Lou Brandon
<b>PMTR Prot Actions Asst Dir</b>			
Fri-Sat	3/18-3/19	11pm-7am	Greg Casto
Sat	19-Mar	7am - 3pm	Kathryn Brock
Sat	19-Mar	3pm-11pm	Kevin Williams
Sat-Sun	3/19-3/20	11pm - 7am	Greg Casto
Sun	20-Mar	7am - 3pm	Kathryn Brock
Sun	20-Mar	3pm-11pm	Tim Harris

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Sun-Mon	3/20-3/21	11pm - 7am	Greg Casto (Jessica Kratchman - to shadow)
Mon	21-Mar	7am - 3pm	Kathryn Brock
Mon	21-Mar	3pm-11pm	Dan Barss
Mon-Tues	3/21-3/22	11pm - 7am	Jessica Kratchman
Tues	22-Mar	7am - 3pm	Kathryn Brock
Tues	22-Mar	3pm-11pm	Tim Harris
Tues-Wed	3/22-3/23	11pm - 7am	Jessica Kratchman
Wed	23-Mar	7am - 3pm	Sandra Wastler
Wed	23-Mar	3pm-11pm	Vince Holahan
Wed-Thur	3/23-3/24	11pm - 7am	Jessica Kratchman
Thur	24-Mar	7am - 3pm	Sandra Wastler
Thur	24-Mar	3pm-11pm	Stacey Rosenberg
Thur-Fri	3/24-3/25	11pm - 7am	Jessica Kratchman
Fri	25-Mar	7am - 3pm	Kathryn Brock
Fri	25-Mar	3pm-11pm	Vince Holahan
Fri-Sat	3/25-3/26	11pm-7am	Greg Casto
<b>PMTR RAAD</b>			
Fri-Sat	3/18-3/19	11pm-7am	Randy Sullivan
Sat	19-Mar	7am - 3pm	Bruce Watson
Sat	19-Mar	3pm-11pm	Michelle Hart
Sat-Sun	3/19-3/20	11pm - 7am	Patricia Milligan
Sun	20-Mar	7am - 3pm	Eric Schrader
Sun	20-Mar	3pm-11pm	Steve LaVie
Sun-Mon	3/20-3/21	11pm - 7am	Mike Norris
Mon	21-Mar	7am - 3pm	Michelle Hart
Mon	21-Mar	3pm-11pm	Steve Lavie
Mon-Tues	3/21-3/22	11pm - 7am	Boby Abu-Eid
Tues	22-Mar	7am - 3pm	Bruce Watson
Tues	22-Mar	3pm-11pm	Steve LaVie
Tues-Wed	3/22-3/23	11pm - 7am	Boby Abu-Eid
Wed	23-Mar	7am - 3pm	Bruce Watson
Wed	23-Mar	3pm-11pm	Michelle Hart
Wed-Thur	3/23-3/24	11pm - 7am	Patricia Milligan
Thur	24-Mar	7am - 3pm	Bruce Watson
Thur	24-Mar	3pm-11pm	Steve LaVie
Thur-Fri	3/24-3/25	11pm - 7am	Cynthia Barr
Fri	25-Mar	7am - 3pm	Randy Sullivan
Fri	25-Mar	3pm-11pm	Michelle Hart
Fri-Sat	3/25-3/26	11pm-7am	Cynthia Barr
<b>PMTR Dose Assessment (RASCAL)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Duane Schmidt/Tony Huffert
Sat	19-Mar	7am - 3pm	Casper Sun / Joe DeCicco (10am arrive)
Sat	19-Mar	3pm-11pm	Margaret Cervera / Joe DeCicco
Sat-Sun	3/19-3/20	11pm - 7am	Kimberly Gambone/John Parillo
Sun	20-Mar	7am - 3pm	Casper Sun / Duane Schmidt
Sun	20-Mar	3pm-11pm	Margaret Cervera / Tony Huffert
Sun-Mon	3/20-3/21	11pm - 7am	Kimberly Gambone/John Parillo
Mon	21-Mar	7am - 3pm	Eric Schrader/Rich Clement
Mon	21-Mar	3pm-11pm	Margaret Cervera/Tony Huffert
Mon-Tues	3/21-3/22	11pm - 7am	John Parillo / Bernie White

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MARCH 18-26

Tues	22-Mar	7am - 3pm	Eric Schrader/Rich Clement
Tues	22-Mar	3pm-11pm	Gary Purdy/Casper Sun
Tues-Wed	3/22-3/23	11pm - 7am	Margaret Cervera/Tony Huffert
Wed	23-Mar	7am - 3pm	Eric Schrader/Rich Clement
Wed	23-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Wed-Thur	3/23-3/24	11pm - 7am	Tony Huffert/John Parillo
Thur	24-Mar	7am - 3pm	Eric Schrader/Rich Clement
Thur	24-Mar	3pm-11pm	Kimberly Gambone/Casper Sun
Thur-Fri	3/24-3/25	11pm - 7am	Tony Huffert/John Parillo
Fri	25-Mar	7am - 3pm	Eric Schrader/Rich Clement
Fri	25-Mar	3pm-11pm	Gary Purdy/Casper Sun
Fri-Sat	3/25-3/26	11pm-7am	John Parillo / Bernie White
<b>PMTR GIS Analyst</b>			
Fri-Sat	3/18-3/19	11pm-7am	Stephanie Devlin
Sat	19-Mar	7am - 3pm	Nebiyu Tiruneh
Sat	19-Mar	3pm-11pm	Yong Li
Sat-Sun	3/19-3/20	11pm - 7am	Alice Stieve
Sun	20-Mar	7am - 3pm	Phil Brandt
Sun	20-Mar	3pm-11pm	Ken See
Sun-Mon	3/20-3/21	11pm - 7am	Alice Stieve
Mon	21-Mar	7am - 3pm	Nebiyu Tiruneh
Mon	21-Mar	3pm-11pm	Stephanie Devlin
Mon-Tues	3/21-3/22	11pm - 7am	Alice Stieve
Tues	22-Mar	7am - 3pm	Yong Li
Tues	22-Mar	3pm-11pm	Stephanie Devlin
Tues-Wed	3/22-3/23	11pm - 7am	Alice Stieve
Wed	23-Mar	7am - 3pm	Allen Gross
Wed	23-Mar	3pm-11pm	Stephanie Devlin
Wed-Thur	3/23-3/24	11pm - 7am	Phil Brandt
Thur	24-Mar	7am - 3pm	Yong Li
Thur	24-Mar	3pm-11pm	Stephanie Devlin
Thur-Fri	3/24-3/25	11pm - 7am	Dogan Seber
Fri	25-Mar	7am - 3pm	Hosang Ahn
Fri	25-Mar	3pm-11pm	Stephanie Devlin
Fri-Sat	3/25-3/26	11pm-7am	Phil Brandt
<b>PMTR Meteorologist</b>			
Fri-Sat	18-Mar	3pm-11pm	Mike Mazaika
Sat	3/18-3/19	11pm-7am	Dave Brown
Sat	19-Mar	7am - 3pm	Kevin Quinlan
Sat-Sun	19-Mar	3pm-11pm	Mike Mazaika
Sun	3/19-3/20	11pm - 7am	David Brown
Sun	20-Mar	7am - 3pm	Kevin Quinlan
Sun	20-Mar	3pm-11pm	Mike Mazaika
Sun-Mon	3/20-3/21	11pm - 7am	David Brown
Mon	21-Mar	7am - 3pm	Mike Mazaika
Mon	21-Mar	3pm-11pm	Brad Harvey
Mon-Tues	3/21-3/22	11pm - 7am	Kevin Quinlan
Tues	22-Mar	7am - 3pm	David Brown
Tues	22-Mar	3pm-11pm	Brad Harvey
Tues-Wed	3/22-3/23	11pm - 7am	Andy Imboden/Kevin Quinlan

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

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Wed	23-Mar	7am - 3pm	Mike Mazaika
Wed	23-Mar	3pm-11pm	Brad Harvey
Wed-Thur	3/23-3/24	11pm - 7am	Kevin Quinlan
Thur	24-Mar	7am - 3pm	David Brown
Thur	24-Mar	3pm-11pm	Brad Harvey
Thur-Fri	3/24-3/25	11pm - 7am	Kevin Quinlan
Fri	25-Mar	7am - 3pm	Mike Mazaika
Fri	25-Mar	3pm-11pm	Brad Harvey
Fri-Sat	3/25-3/26	11pm-7am	Kevin Quinlan
<b>Reactor Safety Team</b>			
<b>RST Director</b>			
Fri-Sat	3/18-3/19	11pm-7am	Jennifer Uhle
Sat	19-Mar	7am - 3pm	Laura Dudes
Sat	19-Mar	3pm-11pm	Dave Skeen
Sat-Sun	3/19-3/20	11pm - 7am	Jennifer Uhle
Sun	20-Mar	7am - 3pm	Laura Dudes
Sun	20-Mar	3pm-11pm	Dave Skeen
Sun-Mon	3/20-3/21	11pm - 7am	Jennifer Uhle
Mon	21-Mar	7am - 3pm	Fred Brown
Mon	21-Mar	3pm-11pm	Dave Skeen
Mon-Tues	3/21-3/22	11pm - 7am	Jennifer Uhle
Tues	22-Mar	7am - 3pm	Fred Brown
Tues	22-Mar	3pm-11pm	Dave Skeen
Tues-Wed	3/22-3/23	11pm - 7am	Brian Holian
Wed	23-Mar	7am - 3pm	Fred Brown
Wed	23-Mar	3pm-11pm	Bill Ruland
Wed-Thur	3/23-3/24	11pm - 7am	Brian Holian
Thur	24-Mar	7am - 3pm	Fred Brown
Thur	24-Mar	3pm-11pm	Bill Ruland
Thur-Fri	3/24-3/25	11pm - 7am	Brian Holian
Fri	25-Mar	7am - 3pm	Pat Hiland
Fri	25-Mar	3pm-11pm	Bill Ruland
Fri-Sat	3/25-3/26	11pm-7am	Brian Holian
Sat	26-Mar	7am - 3pm	Pat Hiland
Sat	26-Mar	3pm-11pm	Bill Ruland
Sat	3/26-27/2011	11pm - 7am	Mike Case
<b>RST Coordinator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Rollie Berry
Sat	19-Mar	7am - 3pm	Scott Sloan
Sat	19-Mar	3pm-11pm	Oleg Bukharin
Sat-Sun	3/19-3/20	11pm - 7am	Frank Collins
Sun	20-Mar	7am - 3pm	Peter Alter
Sun	20-Mar	3pm-11pm	Eric Thomas
Sun-Mon	3/20-3/21	11pm - 7am	Mike Morlang
Mon	21-Mar	7am - 3pm	Peter Alter
Mon	21-Mar	3pm-11pm	Greg Schoenebeck
Mon-Tues	3/21-3/22	11pm - 7am	Frank Collins
Tues	22-Mar	7am - 3pm	Rick Hasselberg
Tues	22-Mar	3pm-11pm	Mike Morlang

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MAR 18-26

Tues-Wed	3/22-3/23	11pm - 7am	Oleg Bukharin
Wed	23-Mar	7am - 3pm	Eric Thomas
Wed	23-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/23-3/24	11pm - 7am	Frank Collins
Thur	24-Mar	7am - 3pm	Rick Hasselberg
Thur	24-Mar	3pm-11pm	Brett Rini
Thur-Fri	3/24-3/25	11pm - 7am	Tom Boyce (RES)
Fri	25-Mar	7am - 3pm	Eric Thomas
Fri	25-Mar	3pm-11pm	Brett Rini
Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
<b>Severe Accident/PRA</b>			
Fri-Sat	3/18-3/19	11pm - 7am	Don Marksberry
Sat	19-Mar	7am - 3pm	Len Ward
Sat	19-Mar	3pm-11pm	Ed Fuller
Sat-Sun	3/19-3/20	11pm - 7am	Mike Salay
Sun	20-Mar	7am - 3pm	John Lane
Sun	20-Mar	3pm-11pm	Jim Gilmer
Sun-Mon	3/20-3/21	11pm - 7am	Don Dube
Mon	21-Mar	7am - 3pm	Jeff Circle
Mon	21-Mar	3pm-11pm	Hossein Esmaili
Mon-Tues	3/21-3/22	11pm - 7am	Jim Gilmer
Tues	22-Mar	7am - 3pm	Ed Fuller
Tues	22-Mar	3pm-11pm	Len Ward
Tues-Wed	3/22-3/23	11pm - 7am	Hossein Esmaili
Wed	23-Mar	7am - 3pm	Jeff Circle
Wed	23-Mar	3pm-11pm	Sam Miranda
Wed-Thur	3/23-3/24	11pm - 7am	Mike Salay
Thur	24-Mar	7am - 3pm	Jeff Circle
Thur	24-Mar	3pm-11pm	Steve Laur
Thur-Fri	3/24-3/25	11pm - 7am	Don Helton
Fri	25-Mar	7am - 3pm	Steven Arndt
Fri	25-Mar	3pm-11pm	Steve Laur
Fri-Sat	3/25-3/26	11pm-7am	Don Helton
<b>BWR Expertise</b>			
Fri-Sat	3/18-3/19	11pm-7am	Mike Brown
Sat	19-Mar	7am - 3pm	Peter Alter
Sat	19-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/19-3/20	11pm - 7am	John Kauffman
Sun	20-Mar	7am - 3pm	Larry Vick
Sun	20-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/20-3/21	11pm - 7am	Mike Brown
Mon	21-Mar	7am - 3pm	Bob Summers
Mon	21-Mar	3pm-11pm	Chuck Norton
Mon-Tues	3/21-3/22	11pm - 7am	Mike Brown
Tues	22-Mar	7am - 3pm	Tom Boyce (RES)
Tues	22-Mar	3pm-11pm	Chuck Norton
Tues-Wed	3/22-3/23	11pm - 7am	Mike Brown
Wed	23-Mar	7am - 3pm	Larry Vick
Wed	23-Mar	3pm-11pm	Chuck Norton
Wed-Thur	3/23-3/24	11pm - 7am	Eva Brown

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

MAR 18-26

Thur	24-Mar	7am - 3pm	Peter Alter
Thur	24-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/24-3/25	11pm - 7am	Eva Brown
Fri	25-Mar	7am - 3pm	Bob Summers
Fri	25-Mar	3pm-11pm	Chuck Norton
Fri-Sat	3/25-3/26	11pm-7am	Eva Brown
<b>RST Comm/ERDS Operator</b>			
Fri-Sat	3/18-3/19	11pm-7am	Andy Kugler
Sat	19-Mar	7am - 3pm	Joseph Williams
Sat	19-Mar	3pm-11pm	John Thorp
Sat-Sun	3/19-3/20	11pm - 7am	Ujagar Bhachu
Sun	20-Mar	7am - 3pm	Denise McGovern
Sun	20-Mar	3pm-11pm	Donna Williams
Sun-Mon	3/20-3/21	11pm - 7am	Ujagar Bhachu
Mon	21-Mar	7am - 3pm	Joseph Williams
Mon	21-Mar	3pm-11pm	John Thorp
Mon-Tues	3/21-3/22	11pm - 7am	Bill Roggenbrodt
Tues	22-Mar	7am - 3pm	Steve Bloom
Tues	22-Mar	3pm-11pm	Jim Isom
Tues-Wed	3/22-3/23	11pm - 7am	Bill Roggenbrodt
Wed	23-Mar	7am - 3pm	Joseph Williams
Wed	23-Mar	3pm-11pm	Ken Hart
Wed-Thur	3/23-3/24	11pm - 7am	Bill Roggenbrodt
Thur	24-Mar	7am - 3pm	Andrew Kugler
Thur	24-Mar	3pm-11pm	John Thorp
Thur-Fri	3/24-3/25	11pm - 7am	Bill Roggenbrodt
Fri	25-Mar	7am - 3pm	Donna Williams
Fri	25-Mar	3pm-11pm	Jim Isom
Fri-Sat	3/25-3/26	11pm-7am	David Solorio
<b>RST Support (Seismology Q&amp;A)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Off (On Call)
Sat	19-Mar	7am - 3pm	Off (On Call)
Sat	19-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/19-3/20	11pm - 7am	Alice Stieve (On Call) Working as PMT GIS
Sun	20-Mar	7am - 3pm	Cliff Munson (On Call)
Sun	20-Mar	3pm-11pm	Annie Kammerer (On Call)
Sun-Mon	3/20-3/21	11pm - 7am	Stephanie Devlin (On Call)
Mon	21-Mar	7am - 3pm	Cliff Munson (On Call)
Mon	21-Mar	3pm-11pm	A. Kammerer 3-11; M. Bensi 3-6 (On Call)
Mon-Tues	3/21-3/22	11pm - 7am	Dogan Seber (On Call)
Tues	22-Mar	7am - 3pm	Nilesh Chokchi On Call)
Tues	22-Mar	3pm-11pm	S. Devlin 3-11; M. Bensi 3-6 (On Call)
Tues-Wed	3/22-3/23	11pm - 7am	Cliff Munson (On Call)
Wed	23-Mar	7am - 3pm	Nilesh Chokchi On Call)
Wed	23-Mar	3pm-11pm	A. Kammerer 3-11, M. Bensi 3-6 (On Call)
Wed-Thur	3/23-3/24	11pm - 7am	Annie Kammerer (On Call)
Thur	24-Mar	7am - 3pm	Cliff Munson (On Call)
Thur	24-Mar	3pm-11pm	A. Kammerer 3-11, M. Bensi 3-6 (On Call)
Thur-Fri	3/24-3/25	11pm - 7am	Dogan Seber (On Call)
Fri	25-Mar	7am - 3pm	Dogan Seber (On Call)

JAPAN EARTHQUAKE - ERO STAFFING SCHEDULE

~~MARCH 18-26~~      MARCH 18-26

Fri	25-Mar	3pm-11pm	A.Kammerer 3-11, M. Bensi 3-6 (On Call)
Fri-Sat	3/25-3/26	11pm-7am	Dogan Seber (On Call)
<b>RST Support (Structural)</b>			
Fri-Sat	3/18-3/19	11pm-7am	Off (On Call)
Sat	19-Mar	7am - 3pm	Off (On Call)
Sat	19-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/19-3/20	11pm - 7am	Off (On Call)
Sun	20-Mar	7am - 3pm	Off (On Call)
Sun	20-Mar	3pm-11pm	Off (On Call)
Sun-Mon	3/20-3/21	11pm - 7am	Off (On Call)
Mon	21-Mar	7am - 3pm	Off (On Call)
Mon	21-Mar	3pm-11pm	Bret Tegeler (On Call)
Mon-Tues	3/21-3/22	11pm - 7am	Bret Tegeler (On Call)
Tues	22-Mar	7am - 3pm	Pravin Patel (On Call)
Tues	22-Mar	3pm-11pm	Bret Tegeler (On Call)
Tues-Wed	3/22-3/23	11pm - 7am	Bret Tegeler (On Call)
Wed	23-Mar	7am - 3pm	Pravin Patel (On Call)
Wed	23-Mar	3pm-11pm	Samir Chakrabart (On Call)
Wed-Thur	3/23-3/24	11pm - 7am	Samir Chakrabart (On Call)
Thur	24-Mar	7am - 3pm	Pravin Patel (On Call)
Thur	24-Mar	3pm-11pm	Jerry Chung (On Call)
Thur-Fri	3/24-3/25	11pm - 7am	Jerry Chung (On Call)
Fri	25-Mar	7am - 3pm	Pravin Patel (On Call)
Fri	25-Mar	3pm-11pm	Manas Chakravorty (On Call)
Fri-Sat	3/25-3/26	11pm-7am	Manas Chakravorty (On Call)

**Nelson, Robert**

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**From:** Nelson, Robert *MR*  
**Sent:** Tuesday, March 22, 2011 4:36 PM  
**To:** Chernoff, Harold  
**Subject:** RE: Query: question from public. Can either of you write up an answer?

Good to go.

NELSON

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**From:** Chernoff, Harold *MR*  
**Sent:** Tuesday, March 22, 2011 4:33 PM  
**To:** Nelson, Robert  
**Cc:** Miller, Ed  
**Subject:** RE: Query: question from public. Can either of you write up an answer?

Nelson what say ye?

Holly Harrington Question and Response

Question:

Do all US Boiling Water Reactors with Mark 1 Containments have hard pipe vents from both the Suppression Pool, and Primary Containments to the Elevated Release Point so the Reactor Building will not accumulate hydrogen during venting .

Answer:

NRC Generic Letter 89-16, "Installation of a Hardened Wetwell Vent," conveyed the importance of having a robust pathway for venting primary containment, which contains the suppression pool, in certain severe accident scenarios. In response, all BWRs with Mark I containments that didn't have an existing strengthened or "hardened" pathway for venting directly from primary containment to the outside, made modifications to the plant consistent with the intent of the Generic Letter.

*M-334*



**Nelson, Robert**

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**From:** Nelson, Robert *MR*  
**Sent:** Tuesday, March 22, 2011 1:31 PM  
**To:** Howe, Allen  
**Cc:** Mahoney, Michael  
**Subject:** RE: Qs and As March 21 Commission Meeting

Consider them in the pool along with many, many others.

NELSON

---

**From:** Howe, Allen *MR*  
**Sent:** Tuesday, March 22, 2011 1:28 PM  
**To:** Mahoney, Michael; Nelson, Robert  
**Subject:** FW: Qs and As March 21 Commission Meeting

Resending because Joe said you were not sure that you had received.

Mike, Nelson – attached are the Qs and As as of Saturday night. Mark Salley and Annie Kammerer also updated some Qs and As and I will send that separately. How do we get this into the information pool that is being developed so that it can be captured and maintained?

Thanks - Allen

---

**From:** Sola, Clara *MR*  
**Sent:** Saturday, March 19, 2011 6:13 PM  
**To:** Holahan, Gary; Wilson, George; Uhle, Jennifer; Milligan, Patricia; Salley, MarkHenry; Brenner, Eliot; Piccone, Josephine; Doane, Margaret; Bowman, Eric; Kammerer, Annie; Collins, Timothy; Harrison, Donnie  
**Cc:** Howe, Allen; Giitter, Joseph  
**Subject:** Qs and As March 21 Commission Meeting

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Tuesday, March 22, 2011 1:22 PM  
**To:** RidsNrrDorl Resource  
**Cc:** Boska, John; Salgado, Nancy; Markley, Michael  
**Subject:** RE: ACTION: G20110195

Assign to Boska, cc: Mike Markley & me.

NELSON

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

**From:** RidsNrrDorl Resource *NR*  
**Sent:** Tuesday, March 22, 2011 1:01 PM  
**To:** Nelson, Robert  
**Subject:** FW: ACTION: G20110195

Nelson,

Is this action yours or should I forward same to John Boska?

Thank you,

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

**From:** RidsNrrMailCenter Resource *NR*  
**Sent:** Tuesday, March 22, 2011 12:24 PM  
**To:** RidsNrrDorl Resource  
**Cc:** Boska, John; Salgado, Nancy; Meighan, Sean  
**Subject:** ACTION: G20110195

Attached is a green ticket assigned to NRR on Seismic Risk at Indian Point Nuclear Generating Stations, due 04/02/11.

I will issue the green ticket once the TAC number has been assigned.

Thanks,  
Patti

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

**From:** Clayton, Kathleen *EDO*  
**Sent:** Tuesday, March 22, 2011 10:47 AM  
**To:** RidsNrrMailCenter Resource  
**Cc:** RidsOgcMailCenter Resource; RidsRgn1MailCenter Resource; RidsNsirMailCenter Resource; Wittick, Brian; Rihm, Roger  
**Subject:** ACTION: G20110195

Attached is a green ticket for NRR. The ADAMS version will be sent after DPC processes.

**Nelson, Robert**

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

I understand the sensitivity

NELSON

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**From:** Gerke, Laura *NR*  
**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 *NR*  
**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.

Please forward all of your requests for support in this area, to [Nelson](#), 301-415-1453.

Thank you all for your continued support!

Eric

*N-337*

- 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>

4

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Tuesday, March 22, 2011 9:53 AM  
**To:** Orf, Tracy  
**Subject:** RE: Japan FAQs on public website

I understand your point & we could do that. Given everything else that we need to do, I'm not sure that's a good use of our time.

Please stop by to talk. I have a meeting at 10 & another at 1.

NELSON

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**From:** Orf, Tracy *TR*  
**Sent:** Tuesday, March 22, 2011 6:54 AM  
**To:** Nelson, Robert  
**Subject:** Japan FAQs on public website

Nelson,

Who would we talk to about having someone spellcheck and fix the typos in the Japan FAQs on the public website (<http://www.nrc.gov/japan/faqs-related-to-japan.pdf>)? It detracts from the great information provided in the document.

Thanks,

Trace

**Tracy J. Orf**, Project Manager  
St. Lucie  
Plant Licensing Branch II-2  
Division of Operating Reactor Licensing  
Office of Nuclear Reactor Regulation  
Phone: (301) 415-2788

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Tuesday, March 22, 2011 9:27 AM  
**To:** Burnell, Scott  
**Subject:** RE: question from public. Can either of you write up an answer?

We'll get back to you.

NELSON

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**From:** Burnell, Scott *DBA*  
**Sent:** Tuesday, March 22, 2011 9:21 AM  
**To:** Thadani, Mohan  
**Cc:** Harrington, Holly; Anderson, Brian; Nelson, Robert; Collins, Timothy  
**Subject:** RE: question from public. Can either of you write up an answer?

Mohan;

Based on our e-mails yesterday, I'm thinking the answer is yes and that I can rely on what we agreed on, but please correct me if needed. Thanks.

Scott

---

**From:** Harrington, Holly *DBA*  
**Sent:** Tuesday, March 22, 2011 9:19 AM  
**To:** Burnell, Scott; Anderson, Brian  
**Subject:** question from public. Can either of you write up an answer?

Question:

Do all US Boiling Water Reactors with Mark 1 Containments have hard pipe vents from both the Suppression Pool, and Primary Containments to the Elevated Release Point so the Reactor Building will not accumulate hydrogen during venting .

*ML-239*

**Nelson, Robert**

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**From:** Nelson, Robert *NR*  
**Sent:** Tuesday, March 22, 2011 9:27 AM  
**To:** Chernoff, Harold; Miller, Ed  
**Cc:** Markley, Michael  
**Subject:** Query: question from public. Can either of you write up an answer?

Is the answer a simple yes? Can you help?

NELSON

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**From:** Burnell, Scott *SB*  
**Sent:** Tuesday, March 22, 2011 9:21 AM  
**To:** Thadani, Mohan  
**Cc:** Harrington, Holly; Anderson, Brian; Nelson, Robert; Collins, Timothy  
**Subject:** RE: question from public. Can either of you write up an answer?

Mohan;

Based on our e-mails yesterday, I'm thinking the answer is yes and that I can rely on what we agreed on, but please correct me if needed. Thanks.

Scott

---

**From:** Harrington, Holly *HP*  
**Sent:** Tuesday, March 22, 2011 9:19 AM  
**To:** Burnell, Scott; Anderson, Brian  
**Subject:** question from public. Can either of you write up an answer?

Question:

Do all US Boiling Water Reactors with Mark 1 Containments have hard pipe vents from both the Suppression Pool, and Primary Containments to the Elevated Release Point so the Reactor Building will not accumulate hydrogen during venting .

*m-340*

**Nelson, Robert**

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**From:** Nelson, Robert *NRK*  
**Sent:** Tuesday, March 22, 2011 7:58 AM  
**To:** Steger (Tucci), Christine  
**Subject:** RE: REVISION: Recommendation: Communication to the Staff

Thanks!

NELSON

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**From:** Steger (Tucci), Christine *NRK*  
**Sent:** Monday, March 21, 2011 5:24 PM  
**To:** Nelson, Robert  
**Subject:** REVISION: Recommendation: Communication to the Staff

Nelson,

I made some revisions below per Eric's request. Notice will go out shortly.

Thanks,  
Christine

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.

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>



**Christine A. Steger**

Communications Analyst

Program Management, Policy Development  
and Analysis Staff

Office of Nuclear Reactor Regulation

Direct: 301-415-2008

[christine.steger@nrc.gov](mailto:christine.steger@nrc.gov)

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**From:** Nelson, Robert *NRK*

**Sent:** Monday, March 21, 2011 2:53 PM

**To:** Leeds, Eric

**Cc:** Steger (Tucci), Christine; Meighan, Sean; Nguyen, Quynh; Glitter, Joseph

**Subject:** Recommendation: Communication to the Staff

I recommend that you send an e-mail or HIGNFY to NRR staff similar to the following. The latter part of this communication duplicates what you sent earlier to managers. I've found that this info has not filtered down to all of the staff.

We've added a new feature to the NRR internal web site, "Japan Event Information." The link is provided below. All of the information under this title has been publicly released or has been screened and determined to be acceptable for public release in response 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." Currently, we are updating the internal NRR web site daily.

<http://portal.nrc.gov/edo/nrr/default.aspx>

In a related matter, I've assigned Bob Nelson, Deputy Director, Division of Operating Reactor Licensing, as the NRR Coordinator for External Communications related to NRR's response to the recent events in Japan. 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. Assisting Nelson will be Sean Meighan and Quynh Nguyen from the NRR front office, Eric Thomas from DIRS, Eric Oesterle from NRO and a communications "tiger team" formulated in DORL headed by Mike Markley. Harold Chernoff will also provide assistance as needed. Please forward all of your requests for support in this area to Nelson. (Extension 1453).

NELSON

## Weaver, Tonna

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**From:** Cherry, Ronald C [CherryRC@state.gov]  
**Sent:** Tuesday, March 22, 2011 4:27 AM  
**To:** Aleshia Duncan; Cook, William; Smith, Brooke; Casto, Chuck; Courtney Brown; Damian Peko; Duncan, Aleshia D; Howard, E. Bruce; Foster, Jack; Trapp, James; James Trapp (BB); Monninger, John; Johnstone, Gregg M; Foggie, Kirk; Devercelly, Richard; Nakanishi, Tony; Ulses, Anthony  
**Cc:** Zumwalt, James P  
**Subject:** FW: Bechtel offer to Japan  
**Attachments:** Japan Offer-16Mar11\_p[1].pdf

Chuck et al,

Please see the attached letter offering pro bono assistance from Bechtel, which the DCM asked me to forward.

Thanks.

Ron

This email is UNCLASSIFIED.

m-342



March 16, 2011

To Whom It May Concern in the United States and Japanese Governments

Bechtel Group, Inc.'s nearly 40,000 employees extend their deepest condolences to Japan for the loss of life and property caused last week by the devastating earthquake and tsunami.

Because we appreciate the urgency of the situation and the humanitarian consequences, we are prepared to provide *immediate* professional assistance on a pro-bono basis in the following areas that match our expertise: (1) stabilizing and planning for decontaminating and decommissioning the Fukushima nuclear units; and (2) creating and launching a plan to recover essential infrastructure in the devastated area (including but not limited to temporary electricity, shelter for evacuees, water + waste-water, port(s), highways + bridge(s), rail line(s), telecommunications, removal of debris, etc.).

These services would be *pro-bono* as I mentioned but would be on the following basis:

1. Upon invitation from the applicable Japanese decision-maker, we will send right away a small team (6-12) of proven experts to Japan to immediately start early planning work, completely at our cost, for up to two weeks. We will, of course, communicate all suggestions transparently and real-time to applicable Japanese authorities to hopefully help generate immediate progress at the same time as we and Japanese counterparts are creating a longer-term plan for recovery.
2. At the end of such two initial weeks, if Japan wishes Bechtel to continue to help the recovery in some role, we will work out a mutually acceptable commercial basis. If Japan does not wish Bechtel to continue, we will professionally hand-over the work we have done to the applicable Japanese entity or authority and return our experts to their other work.
3. All Bechtel will require for this volunteer provision of technical assistance is a letter of invitation and essential agreement indicating:
  - a) Who will be the supportive, effective, and senior sponsor in the applicable Japanese authority or entity to provide Japanese leadership of the recovery planning.
  - b) A brief description of the scope of the requested services (including any geographic and sector priorities if they are known).
  - c) That local accommodation and effective access to the area and applicable decision-makers will be made available to our team.

- d) That a complete release, hold-harmless, and indemnification of Bechtel from any liability in all respects in connection with this volunteer pro-bono assistance is provided to Bechtel.

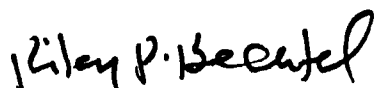
Bechtel has been a leading engineer constructor for the last 113 years, was the fifth largest in the world and largest in the United States in 2010, is a premier nuclear engineer and constructor, and has worked on a number of GE BWR projects over the years. Bechtel has worked in Japan closely with many of Japan's major contractors for many years and is currently working with some globally, and has unique experience with which to help Japan in this time of need. See [www.bechtel.com](http://www.bechtel.com). For directly relevant crisis recovery experience, you may wish to consider:

- Bechtel undertook reconstruction of most of Iraq's critical infrastructure (other than oil and gas facilities) under contract for USAID 2003 - 2006 under very difficult conditions. That approximately \$3 billion TIC work included: (1) temporary then permanent port facilities at Umm Qasr (the southern port) with which to bring ashore humanitarian supplies; (2) an operable rail line to move those supplies north; (3) electricity generation throughout Iraq; (4) waste-water and potable water systems throughout Iraq; (5) critical telecoms networks; and (6) hospitals, medical clinics, etc. The project was accomplished with a peak Bechtel career workforce of about 130 experts, an Iraqi staff of over 500 locally hired engineers and other professionals, and a peak Iraqi contractor workforce of approximately 45,000 through some 120 Iraqi contractors.
- Bechtel, under contract to the U.S. Federal Emergency Management Agency, provided engineering and construction and project management to get 100,000 displaced residents into temporary housing in Mississippi within 5 months following hurricane Katrina.
- Though having nothing to do with their original design or construction, Bechtel had the lead role in decontaminating and decommissioning the Three Mile Island Nuclear Plant in the U.S. and is continuing to help Russia entomb Chernobyl.

Bechtel's only motive in offering this expedited pro-bono professional assistance is humanitarian—the tragedy that has befallen Japan is enormous, and we believe we have the capability and experience to help, and the time for maximum contribution is now. We also are grateful for our many years of work in Japan, and we value our long-standing relationships with many Japanese companies and agencies.

I have asked our Asian Pacific President, Steve Katzman, to be ready to receive an invitation to mobilize a team on short notice for the offered pro-bono assistance. Please contact Mr. Katzman in Shanghai ([skatzman@bechtel.com](mailto:skatzman@bechtel.com); work phone: 86 21 2205 4888; and fax: 86 21 2205 4800) or me ([rileyb@bechtel.com](mailto:rileyb@bechtel.com); work phone: 415-768-1415; work fax: 415-442-1860) with your reply or any questions. Thank you.

Yours truly,



Riley P. Bechtel  
Chairman & CEO

Thorp, John

From: King, Mark  
Sent: Tuesday, March 22, 2011 5:07 PM  
To: Thorp, John; Garmon-Candelaria, David  
Subject: RE: coordination of Japan event response between OpE Branch and NRO - plan on a 2:15 to 2:30 meeting every day.

RE: Let me know what you think; is 2:15 a good time for folks to begin discussing the Japan response... short term 30-day quick look, middle term response 90 day response and long and very long term studies/ investigation needs.

John / Dave - Doug Copeland was there today... from NRO at the beginning of the meeting. I think if Dave Garmon comes in each day at 2:15 or we can call him over at from his desk earlier generally we finish between 2 and 2:15. Folks in NRO can tie in on the bridge line and to the GTM link if we need to share info via the internet.

What we need a good concise summary of the changes in status from day to day now that the events are hopefully slowing down.

But more importantly we need to determine ----What questions or concerns do we need to be asking / addressing for the US plants as a result of these events and information that we are receiving out of Japan. Examples -

Why did the EDGs not work? ( what specifically happened to them to cause the SBO condition)...?

Why did the electrical buses or various equipment not work? Why so much trouble tying in off-site electrical supply again?

Why did the hydrogen explosions rip the buildings apart – what failed in Japan to allow that to occur? How do you prevent re-currence?

Why were the SFPs allowed to go empty or allow spent fuel to be uncovered... how fast were temporary seawater pumps / fires trucks arranged as contingency... by the Japanese?... what can we learn from Japan for severe event response. Etc. etc. etc....?

What contingency actions can we pre-stage or have arranged ahead of time to mitigate future accidents like this to prevent or limit the severity of similar events....

Dave --- Let's plan on 2:15 – 2:30 pm each day either by phone or in person in O-7B2. NOTE: I think we have the room till 2:45 – should we have Kathy extend that out to 3 PM each day (if possible?).

Dave - you have a very important job (high profile job) to do here... for a while it appears. I'm sure you will start to get lots of help... shortly.

Mark

From: Thorp, John  
Sent: Tuesday, March 22, 2011 2:50 PM  
To: King, Mark  
Subject: RE: IOEB Clearinghouse Screening Summary for Tuesday, March 22, 2011

Mark,

Let me know what you think; is 2:15 a good time for folks that aren't already involved in the screening meeting to show up for the post meeting Japan discussion?

Thanks,

2-3.43

**Bernardo, Robert**

---

**From:** Conatser, Richard  
**Sent:** Tuesday, March 22, 2011 10:47 AM  
**To:** Bernardo, Robert  
**Subject:** EPA RadNet Trends

Bob,

Thanks for the info. Here's the link to EPA RadNet (U.S. Radiation Monitoring Network)

<http://www.epa.gov/japan2011/rert/radnet-data.html#air-monitoring>

Best Regards,

*Richard L. Conatser*

Health Physicist

Nuclear Regulatory Commission

301-415-4039

[Richard.Conatser@NRC.gov](mailto:Richard.Conatser@NRC.gov)

M-344

Thorp, John

---

**From:** Gray, Kathy  
**Sent:** Tuesday, March 22, 2011 1:52 PM  
**To:** NRR DIRS IOEB Distribution  
**Subject:** FW: REVISED IN 2011-05 (ML110760432)  
**Attachments:** ML110760432.pdf

FYI ..

---

**From:** Cathy Hawes [mailto:cmh2@nrc.gov]  
**Sent:** Tuesday, March 22, 2011 1:59 PM  
**To:** Gray, Kathy  
**Subject:** REVISED IN 2011-05 (ML110760432)

REVISED version of IN 2011-05. The revision are adding Nuclear Reactor of Operations to the Title on the first page and adding MShuaibi to the signature and concurrence pages indicating that he signed for LDudes.

Attached is an PDF version Information Notice 2011-05, Tohoku-Taiheiyoku-Oki Earthquake Effects On Japanese Nuclear Power Plants, dated March 18, 2011, (ML110760432), that has been posted to the NRR GCC Web, along with the URL for Web access to generic communications files on the NRC Homepage:  
<http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2011/>.

To subscribe or unsubscribe send an email to [lyris@nrc.gov](mailto:lyris@nrc.gov) , no subject, and use one of the following commands in the message portion:  
subscribe gc-nrr (first and last name)  
unsubscribe gc-nrr (first and last name)

thanks  
Cathy

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
OFFICE OF NUCLEAR REACTOR REGULATION  
WASHINGTON, DC 20555-0001

March 18, 2011

NRC INFORMATION NOTICE 2011-05: TOHOKU-TAIHEIYOU-OKI EARTHQUAKE  
EFFECTS ON JAPANESE NUCLEAR POWER  
PLANTS

## ADDRESSEES

All holders of or applicants for operating licenses for nuclear power reactors under the provision of Title 10 of the *Code of Federal Regulations* (10 CFR) Part 50, "Domestic Licensing of Production and Utilization Facilities," except those who have permanently ceased operations and have certified that fuel has been permanently removed from the reactor vessel.

All holders of or applicants for a standard design certification, standard design approval, manufacturing license, limited work authorization, early site permits or combined license issued under 10 CFR Part 52, "Licenses, Certifications and Approvals for Nuclear Power Plants."

## PURPOSE

The U.S. Nuclear Regulatory Commission (NRC) is issuing this information notice (IN) to inform addressees of effects of the Tohoku-Taiheiyou-Oki Earthquake on nuclear power plants in Japan. The NRC expects that recipients will review the information for applicability to their facilities and consider actions, as appropriate, to avoid similar problems. Suggestions contained in this IN are not NRC requirements; therefore, no specific action or written response is required.

## DESCRIPTION OF CIRCUMSTANCES

The following summary of events is provided based on the best information available at this time. The situation in Japan regarding recovery efforts for the Fukushima Daiichi Nuclear Power Station continues to evolve on an hourly basis.

On March 11, 2011, the Tohoku-Taiheiyou-Oki Earthquake occurred near the east coast of Honshu, Japan. This magnitude 9.0 earthquake and the subsequent tsunami caused significant damage to at least four of the six units of the Fukushima Daiichi nuclear power station as the result of a sustained loss of both the offsite and on-site power systems. Efforts to restore power to emergency equipment have been hampered or impeded by damage to the surrounding areas due to the tsunami and earthquake.

ML110760432



Units 1 through 3, which had been operating at the time of the earthquake, scrambled automatically, inserting their neutron absorbing control rods to ensure immediate shutdown of the fission process. Following the loss of electric power to normal and emergency core cooling systems and the subsequent failure of back-up decay heat removal systems, water injection into the cores of all three reactors was compromised, and reactor water levels could not be maintained. Tokyo Electric Power Company (TEPCO), the operator of the plant, resorted to injecting sea water and boric acid into the reactor vessels of these three units, in an effort to cool the fuel and ensure the reactors remained shutdown. However, the fuel in the reactor cores became partially uncovered. Hydrogen gas built up in Units 1 and 3 as a result of exposed, overheated fuel reacting with water. Following gas venting from the primary containment to relieve pressure, hydrogen explosions occurred in both units and damaged the secondary containments. It appears that primary containments for Units 1 and 3 remain functional, but the primary containment for Unit 2 may be damaged. TEPCO cut a hole in the side of the Unit 2 secondary containment to prevent hydrogen buildup following a sustained period when there was no water injection into the core.

In addition, Units 3 and 4 have low spent fuel pool (SFP) water levels. Efforts continue to supply seawater to the SFPs for Units 1 through 4 using various methods. At this time, the integrity of the SFPs for Units 3 and 4 is unknown.

Fukushima Daiichi Units 4 through 6 were shutdown for refueling outages at the time of the earthquake. The fuel assemblies for Unit 4 had been offloaded from the reactor core to the SFP. The SFPs for Units 5 and 6 appear to be intact, but the temperature of the pool water appears to be increasing. Emergency power is available to provide cooling water flow through the SFPs for Units 5 and 6.

The Japanese Government ordered an evacuation out to 20 km for the area surrounding Fukushima Daiichi. Residents out to 30 km were ordered to shelter in place.

The damage to Fukushima Daiichi nuclear power station appears to have been caused by initiating events outside of the design basis for the facilities.

## **BACKGROUND**

10 CFR Part 50, Appendix A, "General Design Criteria for Nuclear Power Plants," General Design Criterion (GDC) 2, "Design Bases for Protection against Natural Phenomena," or similar appropriate requirements in the licensing basis for a reactor facility, requires that structures, systems, and components (SSCs) important to safety be designed to withstand the effects of natural phenomena such as earthquakes, tornadoes, hurricanes, floods, tsunami, and seiches without loss of capability to perform their safety functions. The design bases for these SSCs reflect: (1) appropriate consideration of the most severe of the natural phenomena that have been historically reported for the site and surrounding area, with sufficient margin for the limited accuracy, quantity, and period of time in which the historical data have been accumulated, (2) appropriate combinations of the effects of normal and accident conditions with the effects of the natural phenomena, and (3) the importance of the safety functions to be performed.

As a result of the terrorist events of September 11, 2001, the NRC issued EA-02-026, "Order for Interim Safeguards and Security Compensatory Measures" (the ICM Order) dated February 25, 2002. The ICM Order, which is designated as Safeguards Information (SGI), modified then-operating licenses for commercial power reactor facilities to require compliance with specified interim safeguards and security compensatory measures. Section B.5.b of the ICM Order requires licensees to adopt mitigation strategies using readily available resources to maintain or restore core cooling, containment, and SFP cooling capabilities to cope with the loss of large areas of the facility due to large fires and explosions from any cause, including beyond-design-basis aircraft impacts.

By letter, dated February 25, 2005, the NRC staff provided guidance for implementing Section B.5.b of the ICM Order. This guidance, designated as SGI, included best practices for mitigating losses of large areas of the plant and measures to mitigate fuel damage and minimize releases. Following issuance of the B.5.b Phase 1 Guidance, the NRC staff conducted inspections at operating reactor sites using Temporary Instruction (TI) 2515/164 (SGI) and subsequently TI 2515/168 (SGI) to ensure compliance with Section B.5.b of the ICM Order.

In December 2006, the Nuclear Energy Institute (NEI) issued NEI 06-12, Revision 2, "B.5.b Phase 2 & 3 Submittal Guideline." NEI 06-12 is designated for Official Use Only – Security Related Information (OUO-SRI). The NRC endorsed NEI 06-12, Revision 2, by letter dated December 22, 2006, also designated OUO-SRI, as an acceptable means for developing and implementing the mitigation strategies requirement in Section B.5.b of the ICM Order. NEI 06-12, Revision 2, provides guidance for implementing a set of strategies intended to maintain or restore core cooling, containment, and SFP cooling capabilities under the circumstances associated with the loss of a large area of the plant due to explosions or fire. NEI 06-12 provides guidance in the following areas:

- Adding make-up water to the SFP,
- Spraying water on the spent fuel,
- Enhanced initial command and control activities for challenges to core cooling and containment, and
- Enhanced response strategies for challenges to core cooling and containment.

The specific strategies covered in NEI 06-12, Revision 2, were developed based on the results of assessments conducted at currently licensed power reactor facilities for the purpose of enhancing plant specific mitigation capability for damage conditions caused by a large explosion or fire. These assessments identified a wide spectrum of potential plant specific strategies. NEI 06-12, Revision 2, specifies one set of strategies applicable to all pressurized-water reactors and another set applicable to all boiling-water reactors. Both sets are derived from the results of the plant specific assessments.

The B.5.b Phase 1 Guidance and NEI 06-12, Revision 2, were used by each licensee in preparing information submitted to the NRC that describes a plant specific approach to implementing mitigating strategies and supports each plant specific license condition. The NRC staff has completed its review of the information submitted by each licensee, as well as information obtained during prior NRC inspections, and has issued an OUO-SRI safety

evaluation (SE) that documents the bases for its approval of the license condition for each facility. The SE issued for each licensee includes regulatory guidance in Section 3.0 of Appendix A, "Phase 1 Assessment," that recites the generic B.5.b Phase 1 Guidance of Reference 3, as clarified in TI 2515/168, in a form that is designated OUO-SRI rather than SGI.

By publishing new requirements in the *Federal Register* dated March 27, 2009 (74 FR 13926), the NRC amended 10 CFR Part 50, 10 CFR Part 52, "Licenses, Certifications, and Approvals for Nuclear Power Plants," and 10 CFR Part 73, "Physical Protection of Plants and Materials." This rulemaking added paragraph (i) to 10 CFR 50.34, "Contents of Applications; Technical Information," and paragraph (d) to 10 CFR 52.80 "Contents of Applications; Additional Technical Information," to require submittal of a "description and plans for implementation of the guidance and strategies intended to maintain or restore core cooling, containment, and spent fuel pool cooling capabilities under the circumstances associated with the loss of large areas of the plant due to explosions or fire as required by § 50.54(hh)(2) of this chapter." This rulemaking also added 10 CFR 50.54(hh)(2) to impose the same mitigating strategies requirements on all reactor applicants and licensees as those imposed by the ICM Order and associated license conditions. The Statement of Considerations for this rulemaking specifically noted that the requirements in 10 CFR 50.54(hh) are intended to address certain events that are the cause of large fires and explosions that affect a substantial portion of the nuclear power plant and are not limited or directly linked to an aircraft impact. In addition, the rule contemplates that the initiating event for such large fires and explosions could be any number of beyond-design basis events. Such events include natural phenomena such as those described in GDC 2 (i.e., earthquakes, tornadoes, floods, tsunamis, and seiches), without regard to the GDC 2 provisions governing the severity of natural phenomena.

NRC regulations at 10 CFR 50.63, "Loss of All Alternating Current Power," require that light-water-cooled nuclear power plants be capable of withstanding for a specified duration and recovering from a station blackout.

## DISCUSSION

The nuclear power industry has taken the actions listed below at each licensed reactor site. Additional information is available in the NEI Fact Sheet, "Industry Taking Action to Ensure Continued Safety at U.S. Nuclear Energy Plants," dated March 16, 2011, available at [www.nei.org](http://www.nei.org).

1. verification of the capability to mitigate conditions that result from severe adverse events, including the loss of significant operational and safety systems due to natural events, fires, aircraft impact and explosions
2. verification of the capability to mitigate a total loss of electric power to a nuclear power plant
3. verification of the capability to mitigate flooding and the impact of floods on systems inside and outside the plant
4. identification of the potential for loss of equipment functions during seismic events appropriate for the site and the development of mitigating strategies to address potential vulnerabilities

NRC assessment of the implications of beyond design-basis natural phenomena is continuing as more information becomes available. The NRC staff is currently developing a TI to guide staff in performing independent assessments of nuclear power plant readiness to address beyond design-basis natural phenomena under the Reactor Oversight Process. The NRC is considering additional generic communications and additional action including requesting operating plants to provide specific information relating to their facilities to enable the NRC staff to complete a regulatory assessment of beyond design basis phenomena.

## **PAPERWORK REDUCTION ACT STATEMENT**

This Information Notice does not contain any information collections and, therefore, is not subject to the requirements of the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.).

### **Public Protection Notification**

The NRC may not conduct or sponsor, and a person is not required to respond to, a request for information or an information collection requirement unless the requesting document displays a currently valid Office of Management and Budget control number.

## **CONTACTS**

This information notice requires no specific action or written response. Please direct any questions about this matter to the technical contact listed below or the appropriate Office of Nuclear Reactor Regulation (NRR) project manager.

**/RA/**

Laura A. Dudes, Director  
Division of Construction Inspection,  
and Operational Programs  
Office of New Reactors

**/RA/**

Timothy J. McGinty, Director  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation

Technical Contact: Eric E. Bowman, NRR  
301-415-2963  
e-mail: [Eric.Bowman@nrc.gov](mailto:Eric.Bowman@nrc.gov)

Note: NRC generic communications may be found on the NRC public Web site, <http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

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Note: NRC generic communications may be found on the NRC public Web site,  
<http://www.nrc.gov>, under Electronic Reading Room/Document Collections.

ADAMS Accession Number: ML110760432 \* by e-mail

OFFICE	NRR/DPR/PGCB	TECH EDITOR*	NRR/DIRS/D*	NRR/DE/D*	NSIR/DSP*
NAME	EBowman	KAzariah-Kribbs	BWestreich	PHiland (GWilson for)	RCorreia
DATE	03/17/2011	03/17/2011	03/17/2011	03/17/2011	03/17/2011
OFFICE	NRO/DCIP/CAEB*	DPR/PGCB/LA	DPR/PGCB/BC	NRO/DCIP/D	NRR/DPR/D
NAME	TFrye	CHawes	SRosenberg	LDudes (MShuaibi for)	TMcGinty
DATE	03/18/2011	03/17/2011	03/17/2011	03/18/2011	03/18/2011

OFFICIAL RECORD COPY

**Weaver, Tonna**

---

**From:** Leeds, Eric *ML*  
**Sent:** Tuesday, March 22, 2011 7:32 AM  
**To:** Grobe, Jack; Boger, Bruce  
**Cc:** Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Nelson, Robert; Quay, Theodore; Ruland, William; Skeen, David  
**Subject:** FW: Agenda Planning Meeting

FYI

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

---

**From:** Virgilio, Martin *EDO*  
**Sent:** Monday, March 21, 2011 11:19 PM  
**To:** Johnson, Michael; Wiggins, Jim; Leeds, Eric  
**Subject:** FW: Agenda Planning Meeting

FYI

---

**From:** Andersen, James *EDO*  
**Sent:** Monday, March 21, 2011 1:35 PM  
**To:** EDO\_TBPM Distribution  
**Cc:** Muessle, Mary; Weber, Michael; Virgilio, Martin; Ash, Darren; Landau, Mindy  
**Subject:** Agenda Planning Meeting

ETAs,

The Commission held an Agenda Planning Meeting this morning. SECY will provide the formal summary, but I wanted to let you know a couple things as quickly as possible:

- The 10CFR50.46(a) Commission meeting was postponed to a later unspecified date, the Commission will continue to review the paper (Bill Ruland was informed)
- The SMR Commission meeting on 3/29 is still on (Mike Mayfield was informed)
- The Source Security Commission meeting on 4/19 is still on (Josie Piccone was informed)
- The ITAAC Commission meeting was postponed to a later unspecified date, the Commission will continue to review the paper (Mike Mayfield was informed)
- The EEO/Human Capital Commission meeting was moved to June 2 (**Kris – please advise HR and SBCR**)
- The Cumulative Effectives of Regulation Commission meeting was postponed to a later unspecified date (Tom Blount was informed)
- The AARM Commission meeting on 5/27 is still on (**Brian please advice NRR**)

- The Emergency Planning Final Rule Commission meeting was moved up to May 12 (left Bob Kahler a message)
- The ACRS meeting on 6/6 is still on
- The International Commission meeting was postponed to a later unspecified date

Several new meetings were added:

- 30, 60, and 90 day status meetings regarding the Near-Term NRC Review Effort (task group?); probably around 5/3, 6/16, 7/18 (**Jim A lead for scheduling note**)
- Status meeting on the Japanese event with additional focus on radiological consequence / health effects; probably around 4/14 (**Brian lead for scheduling note**)
- Status meeting on the Japanese event with additional focus on station blackout; probably around 4/28 (**Brian lead for scheduling note**)
- Stakeholder meeting on the staff's 90 day status report; probably around 7/25 (**Jim A lead for scheduling note**)

## Weaver, Tonna

---

**From:** Ferrell, Kimberly *mkc*  
**Sent:** Tuesday, March 22, 2011 8:44 AM  
**To:** Le, Hong; Nguyen, Caroline; Newell, Karenina  
**Cc:** Ruland, William  
**Subject:** FW: Funding Needs for Japan Follow-up - Resent to provide Attachment  
**Importance:** High

It looks like OCFO recalled this exercise – no action is needed at this time.

---

**From:** RidsNrrOd Resource  
**Sent:** Tuesday, March 22, 2011 7:47 AM  
**To:** Meighan, Sean; Ferrell, Kimberly  
**Cc:** Nguyen, Quynh; Givvines, Mary  
**Subject:** FW: Funding Needs for Japan Follow-up - Resent to provide Attachment  
**Importance:** High

---

**From:** Jacobs-Baynard, Elizabeth *EB*  
**Sent:** Monday, March 21, 2011 5:44 PM  
**To:** Kasputys, Clare; RidsNroOd Resource; RidsNrrOd Resource; RidsNsirOd Resource; RidsResOd Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsOgcMailCenter Resource; RidsCsoMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsOipMailCenter Resource  
**Cc:** RidsNrrPmda Resource; RidsNroPmda Resource; RidsNsirPmda Resource; RidsResPmdaMail Resource; RidsFsmePbpaFmb Resource; RidsNmssTa Resource; Golder, Jennifer; Smolik, George; Muessle, Mary; Andersen, James; Allwein, Russell; Peterson, Gordon; Peterson, Gordon; Virgilio, Martin; Virgilio, Martin; Weber, Michael; Weber, Michael; Ash, Darren; Ash, Darren; Jacobs-Baynard, Elizabeth  
**Subject:** RE: Funding Needs for Japan Follow-up - Resent to provide Attachment  
**Importance:** High

**Recalling e-mail.** At this time, there is no need for offices to respond to the requested e-mail. OCFO has come up with rough estimates of the associated costs for near-term and long term tasks. Please be informed that there may be additional assistance requested from offices at a later date. Thanks for your support and cooperation.

Liz

---

**From:** Kasputys, Clare *KB*  
**Sent:** Monday, March 21, 2011 4:18 PM  
**To:** RidsNroOd Resource; RidsNrrOd Resource; RidsNsirOd Resource; RidsResOd Resource; RidsFsmeOd Resource; RidsNmssOd Resource; RidsOgcMailCenter Resource; RidsCsoMailCenter Resource; RidsRgn1MailCenter Resource; RidsRgn2MailCenter Resource; RidsRgn3MailCenter Resource; RidsRgn4MailCenter Resource; RidsOipMailCenter Resource  
**Cc:** RidsNrrPmda Resource; RidsNroPmda Resource; RidsNsirPmda Resource; RidsResPmdaMail Resource; RidsFsmePbpaFmb Resource; RidsNmssTa Resource; Golder, Jennifer; Smolik, George; Muessle, Mary; Andersen, James; Jacobs-Baynard, Elizabeth; Allwein, Russell; Peterson, Gordon; Peterson, Gordon; Virgilio, Martin; Virgilio, Martin; Weber, Michael; Weber, Michael; Ash, Darren; Ash, Darren  
**Subject:** Funding Needs for Japan Follow-up - Resent to provide Attachment

Resent to provide the Attachment

All,



The Chairman has requested for the NRC to conduct a Near-term (90 day effort) and a longer-term review (as discussed by Bill B at the Commission meeting today) of regulatory issues affecting U.S. operating reactors based on the events in Japan. The Chairman is interested in seeking supplemental funding to support our efforts for the above effort, in addition to NRC's costs associated with emergency response and technical experts sent to Japan. OCFO is preparing cost data associated with emergency response and technical support to Japan.

On Friday, the OCFO requested some initial estimates to support the reviews (see attached). At this time, we are requesting the offices to review these initial estimates and include some information concerning the work that is envisioned to support these reviews. Listed below are some initial thoughts about the scope of the near-term and long-term reviews. Also, consider what on-going efforts related to the development of our regulatory program could benefit with supplemental funding. For example, it was mentioned in the Commission meeting that NRC is currently working on GSI-199. Should funding be accelerated for this effort and others of this nature.

Near Term Review (90 day effort):

- Evaluate currently available technical and operational information from the Japan event to identify near-term (or immediate) operational or regulatory issues affecting U.S. operating reactors of all designs in areas such as protection against earthquakes, tsunamis, flooding, hurricanes, station blackout and a degraded ability to restore power; severe accident mitigation and emergency preparedness
- Develop recommendations for generic communications, orders, changes to inspection procedures and licensing review guidance, etc.
- Possibly prepare a 30 day quick look report

Longer-Term Review (Following obtaining sufficient technical information from the Japan event)

- Evaluate all technical and policy issues related to the event to identify additional research, generic issues, changes to the reactor oversight process, rulemakings and adjustments to the regulatory framework that should be conducted by the NRC.
- Evaluate interagency issues such as emergency preparedness.
- Applicability of the lessons learned to non-operating reactor and non-reactor facilities.

It is recognized that the full scope of the reviews has yet to be determined or the size of the group that will be conducting the analysis. Therefore, we are looking only for rough cost estimates. You are requested to send the level of funding (dollars and FTE) that is anticipated that could be obligated in FY 2011 for both the near-term and long-term efforts. We are asking the business line leads to coordinate with supporting offices and submit a response by business line and by office. Please send your responses to me and Liz Jacobs-Baynard and copy Jennifer Golder and George Smolik, OCFO NLT than Noon on Tuesday.

If you have any questions, please let me know.

Thank you for your support.

## Weaver, Tonna

---

**From:** Blount, Tom | *NRK*  
**Sent:** Tuesday, March 22, 2011 9:32 AM  
**To:** Compton, Makeeka; Ruland, William; Hiland, Patrick; McGinty, Tim; Casto, Greg; Glitter, Joseph  
**Subject:** TAC For Management supporting the Japanese event

Don't know if you had this question, but I did....so I'm sharing the response I just found in my past e-mail...

Toss if duplicative...

Thanks,

Tom

---

**From:** LIA09 Hoc | *MSK*  
**Sent:** Monday, March 21, 2011 11:51 AM  
**To:** LIA08 Hoc; LIA06 Hoc  
**Cc:** Bailey, Marissa; Bergman, Thomas; Webber, Robert; Thaggard, Mark; Blount, Tom; Adams, John; Tschiltz, Michael; Glitter, Joseph; McGinty, Tim  
**Subject:** FW:

FYI

Liaison Team  
NRC Operations Center

---

**From:** Jones, Jackie | *CFO*  
**Sent:** Monday, March 21, 2011 11:40 AM  
**To:** LIA09 Hoc  
**Cc:** Lombard, Mark  
**Subject:** RE:

You would use the new TAC (ZG0061).

Thanks

Jacqueline Y. Jones  
Senior Program Analyst/Functional Lead  
Office of the Chief Financial Officer  
Financial Services Branch  
Time, Labor, and Payroll Services  
Office: 301-415-7384  
Fax: 301-415-6725  
Mail Stop T9E2  
[jackie.jones@nrc.gov](mailto:jackie.jones@nrc.gov)

---

**From:** LIA09 Hoc  
**Sent:** Monday, March 21, 2011 10:15 AM  
**To:** Jones, Jackie  
**Cc:** Lombard, Mark  
**Subject:**

Jackie,

A follow up to the HRMS email sent last Thursday. For SESers and BCs filling roles in the Operations Center, such as team directors, should we use the Japan TAC or just use our normal management TAC? Please reply to all so I have this on my personal email also.

Thank you,

Mark Lombard  
Liaison Team  
NRC Operations Center

**From:** World Nuclear News [wnn=world-nuclear-news.org@mcsv156.net] on behalf of World Nuclear News [wnn@world-nuclear-news.org]  
**Sent:** Tuesday, March 22, 2011 10:17 AM  
**To:** Panicker, Mathew  
**Subject:** WNN Weekly 15-21 March 2011

[View WNN Weekly in your browser.](#)



**The week's top stories**

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**15-21 March 2011**

**REGULATION & SAFETY:**

Radiation trends in Japan  
21 March 2011

Radiation levels in the wider area around the Fukushima Daiichi nuclear power plant trended downwards for several days, but have recently increased on rainfall. Contamination of food appears limited at present.

Work on Fukushima Daiichi power connections  
21 March 2011

Workers continued to restore external power to the stricken Fukushima Daiichi units, although work was briefly interrupted when smoke was seen coming from unit 3. Efforts at the plant have been helped by assistance from both domestic and foreign companies.

Stabilisation at Fukushima Daiichi  
20 March 2011

Workers on site have succeeded in increasing the stability of the Fukushima Daiichi reactors, with units 5 and 6 now in cold shutdown. Pressure built up within unit 3 but a more significant venting does not seem necessary now.

Food samples show raised radioactivity  
19 March 2011

Levels of radioactivity exceeding the Japanese government-set level have been detected in samples of milk and spinach collected in the region of the Fukushima nuclear power plant. However, the levels measured are said to pose no immediate threat to health.

Fuel pond work at Fukushima  
19 March 2011

Recent work at Fukushima Daiichi has included making holes to allow hydrogen to dissipate from fuel ponds at units 5 and 6, while unit 3's fuel pond is said to have stabilised.

Spraying continues at Fukushima Daiichi  
18 March 2011

Spraying of reactor buildings continued at Fukushima Daiichi today, while workers tried to make a connection to a nearby transmission line. At least some water was supplied to ponds yesterday, but how much is not known.

UK advisor reassures on contamination fears  
18 March 2011

The UK government's chief independent scientific advisor has told the British Embassy in Tokyo that radiation fears from the stricken Fukushima nuclear power plant are a "sideshow" compared with the general devastation caused by the massive earthquake and tsunami that struck on 11 March.

Insight to Fukushima engineering challenges  
18 March 2011

Official notices of the accidents at the Fukushima nuclear power plants give insight into the challenges faced by power plant engineers in the aftermath of last week's natural disasters.

Progress by on-site workers  
17 March 2011

The high levels of radiation braved by workers at the scene in Fukushima Daiichi appear to have reduced after the expansion of the workforce and announcements of infrastructure improvements to come.

Attempts to refill fuel ponds  
17 March 2011

A major struggle took place today to maintain cooling of used nuclear fuel at Fukushima Daiichi 3 and 4. Helicopters made water drops and large fire trucks showered the buildings. Initial indications are that the effort was successful.

Problems for units 3 and 4  
16 March 2011

Chief cabinet secretary Yukio Edano has described problems that occurred on the morning of 16 March with Fukushima Daiichi 3 and 4, as well as plans to pump water into unit 4.

Radiation decreasing, fuel ponds warming  
15 March 2011

Loud noises were heard at Fukushima Daiichi 2 this morning and a major component beneath the reactor may be damaged. Evacuation to 20 kilometres is being completed, while radiation levels decrease from a high in the morning. Concern is growing over the status of fuel cooling ponds at units 4, 5 and 6.

#### CORPORATE:

Billion-euro nuclear shutdown in Germany  
16 March 2011

The German government has declared a three-month moratorium on nuclear power, in which eight reactors will stay offline, checks will take place and nuclear policy may be reconsidered.

#### INDUSTRY TALK:

Australia confident for uranium future  
21 March 2011

Australia's uranium sales are not likely to be affected by a period of uncertainty as governments and reactor operators seek to learn lessons from the emergency at the Fukushima reactors in Japan, according to Australian Uranium Association CEO Michael Angwin.

ARMZ pulls back from acquisition  
18 March 2011

The \$1.2 billion acquisition of emerging uranium mining company Mantra Resources by Russia's AtomRedMetZoloto (ARMZ) is in doubt following the serious events at the Fukushima nuclear power plants in Japan.

Application submitted for Swedish repository  
17 March 2011

Nuclear fuel company SKB has applied for permission to build Sweden's first repository for used nuclear fuel. SKB has also applied for permission to build a plant to encapsulate the

fuel prior to disposal.

Groundbreaking for first UAE reactor  
17 March 2011

A groundbreaking ceremony has been held for the United Arab Emirates' first nuclear power plant at Braka. The 14 March ceremony was attended by South Korean president Lee Myung-bak and Mohamed bin Zayed Al Nahyan, crown prince of Abu Dhabi.

Korea sends boric acid supplies  
16 March 2011

The South Korean government said today it is sending boric acid supplies to Japan to use in efforts to stabilise stricken nuclear reactors. Boron is an efficient neutron absorber that can be injected in to the core of a nuclear reactor to inhibit nuclear reactions.

All Fukushima Daiichi units in cold shutdown  
15 March 2011

All four units at the Fukushima Daiichi nuclear power plant have now achieved cold shutdown - where coolant water is at less than 100°C - with full operation of cooling systems, Tepco reported.

*An archive of all WNN's reporting on the Japanese earthquake and subsequent tsunami and their effects on the Fukushima Daiichi and Daiichi plants can be found on the WNA website.*

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**Weaver, Tonna**

**From:** Ruland, William *WR*  
**Sent:** Tuesday, March 22, 2011 12:17 PM  
**To:** Gray, Kathy  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

yes

**From:** Gray, Kathy *KG*  
**Sent:** Tuesday, March 22, 2011 12:10 PM  
**To:** Ruland, William  
**Cc:** Evans, Michele  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

I also have you on the schedule for April 3, 3pm – 11pm, are you ok with that?

**From:** Ruland, William  
**Sent:** Tuesday, March 22, 2011 12:06 PM  
**To:** Gray, Kathy  
**Cc:** Evans, Michele  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

If possible, could you look for a substitute or swap for me for me for April 2<sup>nd</sup>?

**From:** Gray, Kathy  
**Sent:** Tuesday, March 22, 2011 12:04 PM  
**To:** Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza; Gray, Kathy  
**Subject:** ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011  
**Importance:** High

Please confirm that you are available to provide coverage in the Ops Center, as the RST Director, as follows:

## Reactor Safety Team (RST) Director Schedule

**March 26 – April 2, 2011**

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7am–3pm	Pat Hiland	Pat Hiland	Pat Hiland	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian
3pm–11pm	Bill Ruland	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Bill Ruland	Bill Ruland	Bill Ruland
11pm–7am	Mike Case	Mike Case	Mike Case	Mike Case	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen

Thanks very much.

*m-350*

*Kathy A. Gray*

Information Management Asst.

Operating Experience Branch, DIRS/NRR

Rm. O-7F04, Phone: 301-415-1166

[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)



**Weaver, Tonna**

**From:** Gray, Kathy *mk*  
**Sent:** Tuesday, March 22, 2011 1:20 PM  
**To:** Case, Michael; Dudes, Laura; Hiland, Patrick; Skeen, David; Holian, Brian; Brown, Frederick  
**Cc:** Ruland, William  
**Subject:** RST Director substitute or swap needed - April 2; 3-11pm shift

RST Directors .. anyone available to substitute or swap the 3pm-11pm shift on April 2 for Bill Ruland?

Thanks!

---

**From:** Ruland, William *mk*  
**Sent:** Tuesday, March 22, 2011 12:06 PM  
**To:** Gray, Kathy  
**Cc:** Evans, Michele  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

If possible, could you look for a substitute or swap for me for me for April 2<sup>nd</sup>?

---

**From:** Gray, Kathy *mk*  
**Sent:** Tuesday, March 22, 2011 12:04 PM  
**To:** Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza; Gray, Kathy  
**Subject:** ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011  
**Importance:** High

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7am-3pm	Pat Hiland	Pat Hiland	Pat Hiland	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian
3pm-11pm	Bill Ruland	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Bill Ruland	Bill Ruland	Bill Ruland
11pm-7am	Mike Case	Mike Case	Mike Case	Mike Case	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen

Thanks very much.

*Kathy A. Gray*  
Information Management Asst.  
Operating Experience Branch, DIRS/NRR  
Rm. O-7F04, Phone: 301-415-1166

Kathy.Gray@nrc.gov

## Weaver, Tonna

---

**From:** Ruland, William *NR*  
**Sent:** Tuesday, March 22, 2011 2:16 PM  
**To:** Titus, Brett  
**Subject:** Fw: Request: FW: For Review/Approval: Agenda for NRR All Supervisors Meeting on 3/30  
**Attachments:** FINAL NRR All Supervisors Meeting Agenda 03.30.11.docx

Bill Ruland, from  
USNRC Blackberry

---

**From:** Steger (Tucci), Christine *NR*  
**To:** Ruland, William  
**Cc:** Givvines, Mary  
**Sent:** Tue Mar 22 13:23:53 2011  
**Subject:** Request: FW: For Review/Approval: Agenda for NRR All Supervisors Meeting on 3/30

Hi Bill,

I wanted to follow-up per the e-mail below re: the NRR All Supervisors Meeting next week. Attached is the revised final agenda. I know you have been supporting the Op Center and responding to actions to the events in Japan – I wanted to confirm if you will still be representing the LT during this meeting to present NRR's successes/challenges. Please advise.

Thanks,  
Christine

**Christine A. Steger**  
Communications Analyst  
Program Management, Policy Development  
and Analysis Staff  
Office of Nuclear Reactor Regulation  
Direct: 301-415-2008  
[christine.steger@nrc.gov](mailto:christine.steger@nrc.gov)

---

**From:** Steger (Tucci), Christine  
**Sent:** Wednesday, March 16, 2011 8:48 AM  
**To:** Leeds, Eric; Grobe, Jack; Boger, Bruce; Givvines, Mary; Ruland, William  
**Cc:** Nguyen, Quynh; Meighan, Sean  
**Subject:** For Review/Approval: Agenda for NRR All Supervisors Meeting on 3/30

Good Morning,

Unfortunately, we have been unable to meet in person, so I have attached the draft/suggested outline for the upcoming NRR All Supervisors Meeting scheduled for March 30. At your earliest convenience, please provide me your comments and suggestions.

You will find a suggested outline as well as additional topics for discussion that were submitted by supervisors. To include some of these topics, you may consider using them as "planted questions" for the discussion portion of the meeting.

In light of the events in Japan and NRC involvement, this may be another topic for consideration.

FYI: the BCC is committed to speaking on Enlightened Leadership.

Thanks,  
Christine

**Christine A. Steger**

Communications Analyst

Program Management, Policy Development  
and Analysis Staff

Office of Nuclear Reactor Regulation

Direct: 301-415-2008

[christine.steger@nrc.gov](mailto:christine.steger@nrc.gov)

## **NRR All Supervisors Meeting**

Wednesday, March 30, 2011 (1:30-3:00pm)  
Commission Hearing Room

### **Agenda:**

Eric Leeds (20 minutes)

- Welcome and Introduction of New Branch Chiefs
- Discuss Recent Events in Japan, NRR/NRC response

Q&A (10 Minutes)

Branch Chief Council – David Pelton (10 minutes)

- Enlightened Leadership – Share success stories and feedback

LT Chair – Bill Ruland (10 minutes)

- Safety Accomplishments
- Looking Ahead – Challenges

Jack Grobe (10 minutes)

- Corporate Update
- Changes to Collective Bargaining Agreement
- Financial Status
- Agency Initiatives

Bruce Boger (10 minutes)

- Orientation Training for Branch Chiefs
- Safety Culture Focus Groups
- IRRS Final Report

Q&A (20 Minutes)

## Weaver, Tonna

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**From:** Ruland, William *nrk*  
**Sent:** Tuesday, March 22, 2011 2:28 PM  
**To:** Titus, Brett  
**Subject:** FW: Action: Congressional Correspondence on Japan

---

**From:** Nelson, Robert *nrk*  
**Sent:** Tuesday, March 22, 2011 11:41 AM  
**To:** Mahoney, Michael  
**Cc:** Wilson, George; Westreich, Barry; Thomas, Brian; Bahadur, Sher; Blount, Tom; Brown, Frederick; Cheok, Michael; Evans, Michele; Ferrell, Kimberly; Galloway, Melanie; Giitter, Joseph; Givvines, Mary; Hiland, Patrick; Holian, Brian; Howe, Allen; Lee, Samson; Lubinski, John; McGinty, Tim; Quay, Theodore; Ruland, William; Skeen, David  
**Subject:** Action: Congressional Correspondence on Japan

Please forward to all NRR Division TAs for info. Also inform them that, in my capacity as NRR External Communications Coordinator, I should be kept informed of any requests for communications assistance from OEDO or other sources.

NELSON

---

**From:** Rihm, Roger *RD*  
**Sent:** Tuesday, March 22, 2011 10:42 AM  
**To:** Nguyen, Quynh; Meighan, Sean  
**Cc:** Scales, Kerby; Mathew, Roy; Roquecruz, Carla  
**Subject:** Congressional Correspondence on Japan

I've heard from most of you with questions about proceeding on some of the many letters we have received since the events in Japan. We've just met with OCA and are proceeding as follows: For most of the letters (Markey, Kucinich, Boxer/Carper, and Lowey) I am going to draft an interim response that basically tells them of our near and longer term plans to do a review of facilities, etc., and does NOT attempt to address their many specific questions. That will come after our reviews are complete. For a couple of others that ask some narrower ques, I am going to try to respond more directly (and as final correspondence).

Bottom line: there is no need for you to do anything right now. I will ask if/when I need specific assistance. I will work with the OEDO mailroom to adjust green ticket deadlines accordingly.

Call me if you have any questions.

**Roger S. Rihm**  
Communications and Performance Improvement Staff  
Office of the Executive Director for Operations  
US NRC  
301.415.1717  
[roger.rihm@nrc.gov](mailto:roger.rihm@nrc.gov)

**Weaver, Tonna**

---

**From:** Bailey, Stewart *NRK*  
**Sent:** Tuesday, March 22, 2011 2:43 PM  
**To:** Mendiola, Anthony  
**Subject:** RE: Phone call with KAPL-Bettis?

We may need to ask these of Japan. Is there urgency on the SFPs?

---

**From:** Mendiola, Anthony *NRK*  
**Sent:** Tuesday, March 22, 2011 2:42 PM  
**To:** RST08 Hoc  
**Cc:** Bailey, Stewart  
**Subject:** RE: Phone call with KAPL-Bettis?

Got em. Will try to answer..

---

**From:** RST08 Hoc *MSIR*  
**Sent:** Tuesday, March 22, 2011 2:26 PM  
**To:** Mendiola, Anthony  
**Cc:** Bailey, Stewart  
**Subject:** RE: Phone call with KAPL-Bettis?

Just showed up 5 minutes ago.

**Criticality Questions from KAPL and Bettis – In order of priority**

1. What are the criticality controls in the spent fuel pools? Is there soluble poison and/or poisoned storage rack?
2. What is the distance between assemblies in the spent fuel pools?
3. What is the fuel composition at beginning of life for both U and MOX fuels?
4. Control rod materials (Boron, B-Hf, or Ag-In-Cd)
5. When is the fuel most reactive during depletion (i.e. Beginning, middle, or end of life) accounting for the Pu, etc.?
6. How many MOX assemblies are on site and where are they? Information we had were that there is only 32 assemblies and that they are all in Unit 3.
7. Are control rods stored in the fuel stored in the pools?
8. B10 levels in the coolant pools during operations and storage.
9. Any information on the current geometric configuration of fuel or rods (in Rx or pools)?
10. Are we certain that there has been no recriticality?
11. Are there any known building materials in the pool? What materials could this include?
12. What is the spent fuel pool water level if the isolation gates or seal were to fail? Is it known if the gates have integrity to maintain full pool level?

---

**From:** Mendiola, Anthony *NRK*  
**Sent:** Tuesday, March 22, 2011 1:55 PM  
**To:** RST08 Hoc  
**Cc:** Bailey, Stewart  
**Subject:** RE: Phone call with KAPL-Bettis?

Tom,

There was supposed to be an email by now from them, sent to [RST01.hoc@nrc.gov](mailto:RST01.hoc@nrc.gov)

Did it show yet?

Tony

---

**From:** RST08 Hoc  
**Sent:** Tuesday, March 22, 2011 1:35 PM  
**To:** Mendiola, Anthony  
**Cc:** Bailey, Stewart  
**Subject:** RE: Phone call with KAPL-Bettis?

Ok. We are planning for a 3:00 call. Presumably you will be here in the OPS Center at 3 PM.

Tom

---

**From:** Mendiola, Anthony  
**Sent:** Tuesday, March 22, 2011 1:22 PM  
**To:** RST08 Hoc  
**Subject:** RE: Phone call with KAPL-Bettis?  
**Importance:** High

Tom,

They were going to send us a prioritized listing of info needs right away. Then we were going to get with them at 3pm to understand and clarify. Then we would be ready for the 4pm call with INPO and GEH (without KAPL and BETTIS I expect).

Tony

---

**From:** RST08 Hoc  
**Sent:** Tuesday, March 22, 2011 1:16 PM  
**To:** Mendiola, Anthony  
**Subject:** Phone call with KAPL-Bettis?

Did you tell KAPL & Bettis to just send in a report by 3 PM, or did you also state you wanted a call with them?

Depending on how we plan on handling this, it could be confusing to have them on the line at 4 PM with INPO and GEH.

Tom



## Weaver, Tonna

**From:** Skeen, David *MR*  
**Sent:** Tuesday, March 22, 2011 2:48 PM  
**To:** Gray, Kathy; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

All,

I will be unable to support the RST from April 1 – April 14, since I will be in Vienna for the Convention on Nuclear Safety. I can swap with someone and take one of the shifts earlier in the week, if someone would care to swap (maybe Fred or Mike?).

Thanks!

---

**From:** Gray, Kathy *MR*  
**Sent:** Tuesday, March 22, 2011 12:04 PM  
**To:** Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza; Gray, Kathy  
**Subject:** ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011  
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3pm–11pm	Bill Ruland	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Bill Ruland	Bill Ruland	Bill Ruland
11pm–7am	Mike Case	Mike Case	Mike Case	Mike Case	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen

Thanks very much.

*Kathy A. Gray*

Information Management Asst.  
Operating Experience Branch, DIRS/NRR  
Rm. O-7F04, Phone: 301-415-1166  
[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)

## Weaver, Tonna

**From:** Case, Michael *MS*  
**Sent:** Tuesday, March 22, 2011 2:54 PM  
**To:** Skeen, David; Gray, Kathy; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

It looks like I'm very moveable since we're both on mids. Just propose which ones you want to do and I'll do the rest.

---

**From:** Skeen, David *MS*  
**Sent:** Tuesday, March 22, 2011 2:48 PM  
**To:** Gray, Kathy; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

All,

I will be unable to support the RST from April 1 – April 14, since I will be in Vienna for the Convention on Nuclear Safety. I can swap with someone and take one of the shifts earlier in the week, if someone would care to swap (maybe Fred or Mike?).

Thanks!

---

**From:** Gray, Kathy *MS*  
**Sent:** Tuesday, March 22, 2011 12:04 PM  
**To:** Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza; Gray, Kathy  
**Subject:** ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011  
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7am–3pm	Pat Hiland	Pat Hiland	Pat Hiland	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian
3pm–11pm	Bill Ruland	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Bill Ruland	Bill Ruland	Bill Ruland
11pm–7am	Mike Case	Mike Case	Mike Case	Mike Case	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen

Thanks very much.

*Kathy A. Gray*

Information Management Asst.

Operating Experience Branch, DIRS/NRR

Rm. O-7F04, Phone: 301-415-1166

[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)

**Weaver, Tonna**

---

**From:** Meighan, Sean | NRR  
**Sent:** Tuesday, March 22, 2011 3:29 PM  
**To:** Corbett, James  
**Cc:** Nelson, Robert; Ruland, William; Craver, Patti  
**Subject:** FW: FOIA request

Good Afternoon James:

As per our discussion, please see below correspondence with your office in relation to the Japan FOIA request.

Very Respectfully  
Sean

---

**From:** Raphael, Mary Jean | OIS  
**Sent:** Tuesday, March 22, 2011 1:37 PM  
**To:** Meighan, Sean  
**Cc:** Holzle, Catherine; Craver, Patti  
**Subject:** RE: FOIA request

I discussed this with my supervisor, the FOIA/PA Officer, and we are still concerned that doing the search by only e-mails from the 'sent' box may not capture some e-mails. It is not uncommon that we receive e-mails from one office which were originate by another office, and the originating office did not turn up those same e-mails.

If you would like to discuss this further, you may call Donna Sealing, FOIA/PA Officer on 301-415-5804.

---

**From:** Meighan, Sean | NRR  
**Sent:** Tuesday, March 22, 2011 12:02 PM  
**To:** Raphael, Mary Jean  
**Cc:** Holzle, Catherine; Craver, Patti  
**Subject:** RE: FOIA request

Hi Mary Jean:

I have spoken with Patti on below question. We are still not fully aligned in our opinions, so I would like a final determination from the FOIA office.

Answering your below statement "If you are certain that another office will be providing a specific collection of e-mails, then you would not need to provide that collection of e-mails.", I would say that I could not be certain of that. I can say that I would have reasonable assurance that all other offices will do due diligence in their search, and a search of only sent items would reasonably assure we will capture all relevant documents. If I am correct, the FOIA does understand and allow for best effort, and does not promise a perfect response domain.

Can NRR direct their people to only search their sent folders?

Very Respectfully  
Sean

**From:** Raphael, Mary Jean  
**Sent:** Tuesday, March 22, 2011 11:40 AM  
**To:** Meighan, Sean  
**Cc:** Holzle, Catherine; Craver, Patti  
**Subject:** RE: FOIA request

Hi Sean.

The concern I have with only searching the sent box is that often an employee receives an e-mail but does not reply to the e-mail and therefore, that e-mail may not be captured (unless the author provides it). Very often I see e-mails subject to FOIA requests that are sent to many recipients, however, the replies are either sent to just one or two or forwarded to a different person or different group of people entirely. Patti Craver is NRR's FOIA Coordinator and will be able to assist with sorting the NRR e-mails for duplicates (and there will be many I am sure). If you are certain that another office will be providing a specific collection of e-mails, then you would not need to provide that collection of e-mails.

Please feel free to talk to Patti who I sure will be available to sort thru the e-mails NRR locates for these requests weeding out the duplicates. I am also available if you and she would like to discuss further.

Mary Jean

---

**From:** Meighan, Sean  
**Sent:** Tuesday, March 22, 2011 11:27 AM  
**To:** Raphael, Mary Jean  
**Cc:** Holzle, Catherine  
**Subject:** RE: FOIA request

Hi Mary Jean:

The NRR LT has a question on how to respond to a (this) FOIA. We are trying to answer the FOIA fully, but in a logical fashion.

- 1) Is the below direction to our staff an acceptable method to answer this FOIA (since it is a huge request)
  - a. With respect to e-mails, for items responsive to the FOIA, **you need only search your sent folder**. The logic behind this angle of attack on the request is, if all of the NRC is tasked with this FOIA (and we are), a search of the sent folder of all NRC personnel will in fact capture all "all internal communications within the NRC (including its Chairman, four Commissioners and their staff members) pertaining to the Japanese Nuclear incidents caused by the March 11 earthquake and tsunami."

This angle of attack will greatly cut down on documents that we have to print, but will not miss any of the items that the intent of the FOIA is requesting.

Any guidance would be greatly appreciated.

Very Respectfully  
Sean

---

**From:** Holzle, Catherine  
**Sent:** Tuesday, March 22, 2011 10:59 AM  
**To:** Meighan, Sean  
**Cc:** Raphael, Mary Jean  
**Subject:** RE: FOIA request

Sorry, I'm working teleworking today. In any case, it would be best to contact Mary Jean Raphael (415-7090) with your questions. She is responsible for handling the AP FOIA requests on Japan and is working with all the offices who have responsive material.

---

**From:** Meighan, Sean

**Sent:** Tuesday, March 22, 2011 10:55 AM

**To:** Holze, Catherine

**Subject:** FOIA request

Hi Catherine:

The NRR LT has some specific question on how best to answer the AP FOIA. Do you have time for me to stop up?

Very Respectfully  
Sean

## Weaver, Tonna

---

**From:** Meighan, Sean *NR*  
**Sent:** Tuesday, March 22, 2011 3:38 PM  
**To:** Wilson, George; Ruland, William  
**Subject:** FW: Draft scheduling note for SBO  
**Attachments:** Draft.sbo note.docx

George, excellent turn around on this.

Bill: let me know when you are OK with me bringing this to Eric to meet COB deadline. Or let me know if you will take this to Eric.

Very Respectfully  
Sean

---

**From:** Wilson, George *NR*  
**Sent:** Tuesday, March 22, 2011 3:36 PM  
**To:** Hiland, Patrick; Skeen, David; Grobe, Jack; Leeds, Eric; Meighan, Sean; Nguyen, Quynh; Mathew, Roy; Wittick, Brian; Andersen, James  
**Subject:** Draft scheduling note for SBO

See attached

George Wilson  
USNRC  
EICB Branch Chief, Division of Engineering  
Mail Stop O12H2  
301-415-1711

*M-358*

Draft: 03/22/11

## SCHEDULING NOTE

**Title:** BRIEFING ON Status of Events in Japan and U.S. Fleet status on Station Blackout (Public)

**Purpose:** To provide the Commission with an updated status of the Japanese Event and to provide an overview of the Station Blackout Rule.

**Scheduled:** April 28, 2011  
0900 a.m.

**Duration:** Approx. 1 hour and 45 minutes

**Location:** Commissioners' Conference Room, 1<sup>st</sup> floor OWFN

<b>Participants:</b>	<b>Presentation</b>
<b><u>NRC Staff Panel</u></b>	<b>50 mins.*</b>
<b>R. William Borchardt</b> , Executive Director for Operations <u>Topic:</u> Update to Japanese Response	15 mins.*
<b>Jack Grobe</b> , Deputy Director for Engineering and Support Office of Nuclear Reactor Regulation <u>Topic:</u> Station Blackout Overview	5 mins.*
<b>Patrick Hiland</b> , Director for Engineering, Office of Nuclear Reactor Regulation <u>Topic:</u> Station Blackout Rule Background	10 mins.*
<b>George Wilson</b> , Chief of Instrumentation and Control Branch, Division of Engineering, Office of Nuclear Reactor Regulation <u>Topic:</u> Station Blackout Review and Approval Process	20 mins.*
<b>Commission Q &amp; A</b>	<b>50 mins.</b>
<b>Discussion – Wrap-up</b>	



## Weaver, Tonna

**From:** Ruland, William *NR*  
**Sent:** Tuesday, March 22, 2011 3:38 PM  
**To:** Gray, Kathy  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 4/3-10/2011

Confirmed.

**From:** Gray, Kathy *NR*  
**Sent:** Tuesday, March 22, 2011 2:40 PM  
**To:** Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael; Holian, Brian; Dudes, Laura  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza; Gray, Kathy  
**Subject:** ACTION: Confirmation requested for RST Director Schedule - 4/3-10/2011  
**Importance:** High

Please confirm that you are available to provide coverage in the Ops Center, as the RST Director, as follows:

### Reactor Safety Team (RST) Director Schedule

**April 3 – April 10, 2011**

Shift	4/3 (Sun)	4/4 (Mon)	4/5 (Tues)	4/6 (Wed)	4/7 (Thur)	4/8 (Fri)	4/9 (Sat)	4/10 (Sun)
7am–3pm	Brian Holian	Brian Holian	Brian Holian	Mike Case	Mike Case	Mike Case	Mike Case	Dave Skeen
3pm– 11pm	Bill Ruland	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Pat Hiland	Pat Hiland	Pat Hiland
11pm–7am	Laura Dudes	Laura Dudes	Laura Dudes	Laura Dudes	Fred Brown	Fred Brown	Fred Brown	Fred Brown

Thanks very much.

*Kathy A. Gray*

Information Management Asst.  
Operating Experience Branch, DIRS/NRR  
Rm. O-7F04, Phone: 301-415-1166  
[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)

## Weaver, Tonna

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**From:** Smith, Edward *NR*  
**Sent:** Tuesday, March 22, 2011 4:19 PM  
**To:** Purciarello, Gerard  
**Subject:** FW: Request for staff that can support OIP .... Additional Staff requirements outside Ops Center Long Term Staffing

Gerry,

This is the only email that might have any relationship to the Japan situation that I have sent.  
Ed

---

**From:** Smith, Edward  
**Sent:** Thursday, March 17, 2011 9:12 AM  
**To:** Purciarello, Gerard  
**Subject:** RE: Request for staff that can support OIP .... Additional Staff requirements outside Ops Center Long Term Staffing

Might be interested but have no time over the next couple of months. So no thanks for the opportunity.

Ed

---

**From:** Purciarello, Gerard *NR*  
**Sent:** Wednesday, March 16, 2011 5:57 PM  
**To:** Jones, Steve; Smith, Edward; Gardocki, Stanley; Hopkins, Ogbonna; Levine, Michael; Armstrong, Garry  
**Cc:** Casto, Greg  
**Subject:** FW: Request for staff that can support OIP .... Additional Staff requirements outside Ops Center Long Term Staffing  
**Importance:** High

Gentlemen,

See below. If interested and if work load allows, let me know by 9 AM tomorrow. Thanks.

Jerry

---

**From:** Titus, Brett *NR*  
**Sent:** Wednesday, March 16, 2011 1:43 PM  
**To:** Miranda, Samuel; Purciarello, Gerard; Bailey, Stewart; Casto, Greg; Clifford, Paul; Collins, Timothy; Dennig, Robert; Mendiola, Anthony; Ulses, Anthony  
**Cc:** Bahadur, Sher; Ruland, William  
**Subject:** FW: Request for staff that can support OIP .... Additional Staff requirements outside Ops Center Long Term Staffing  
**Importance:** High

For your consideration...please see the request below and let me know if there are people on your staff who fit the criteria. Also, please send a negative response if there are none.

Thanks,

Brett Titus  
301-415-3075

**From:** Astwood, Heather 

**Sent:** Wednesday, March 16, 2011 1:39 PM

**To:** Azeem, Almas; Cartwright, William; Cusumano, Victor; Fields, Leslie; Heida, Bruce; Meighan, Sean; Nguyen, Quynh; Roquecruz, Carla; Susco, Jeremy; Titus, Brett; Valentine, Nicholee

**Cc:** Boger, Bruce

**Subject:** FW: Request for staff that can support OIP .... Additional Staff requirements outside Ops Center Long Term Staffing

**Importance:** High

Dear NRR TAs

Please see the request below. EDO is asking that we support OIP. OIP is asking for names of people who would be interested in helping them with the Japan crisis. They are not sure exactly what the work would entail at this point. It could be doing shifts for OIP in the Ops Center, it could be fielding calls and questions from regulators from other countries or it could be helping with OIP's normal case load.

Eric Leeds would like to support this request. He specifically does not want us to hurt any of NRR's increasing workload but we should help if we can. The time spent assisting OIP could be broken down in a variety of ways. It is unlikely that anyone would be detailed to OIP for a long period of time (i.e. 2 months straight). More likely it would one day a week, or two weeks of one person, then two weeks of a different person. Whatever fits their needs and NRR's need to do our normal case work. The timing is negotiable.

OIP is specifically looking for people who have some international experience. Several members of the international team have already volunteered. Please let me know if there is anyone in your division that would also like to add their names to the list. Note they are asking for the names by COB today. However, I think tomorrow morning would also work.

**Heather Astwood**

International Team Leader

Office of Nuclear Reactor Regulation

U.S. Nuclear Regulatory Commission

301-415-1075

**From:** Muesse, Mary 

**Sent:** Wednesday, March 16, 2011 9:32 AM

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

**Cc:** Williams, Shawn; Andersen, James; Ramsey, Jack

**Subject:** Additional Staff requirements outside Ops Center Long Term Staffing

**Importance:** High

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

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

Thanks

Mary

Mary Muesle

Assistant for Operations - Acting

Office of the Executive Director for Operations

U.S. Nuclear Regulatory Commission

301-415-1703 office

301-415-2700 fax

**From:** Evans, Michele

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

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

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

Everyone,

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

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

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

Thanks for your support.

*Michele*

## Weaver, Tonna

**From:** Hiland, Patrick *INRR*  
**Sent:** Tuesday, March 22, 2011 4:39 PM  
**To:** Gray, Kathy; Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza  
**Subject:** RE: ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011

Ok to all

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**From:** Gray, Kathy *INRR*  
**Sent:** Tuesday, March 22, 2011 12:04 PM  
**To:** Skeen, David; Uhle, Jennifer; Brown, Frederick; Ruland, William; Hiland, Patrick; Case, Michael  
**Cc:** Thorp, John; Thomas, Eric; Cunningham, Liza; Gray, Kathy  
**Subject:** ACTION: Confirmation requested for RST Director Schedule - 3/26-4/2/2011  
**Importance:** High

Please confirm that you are available to provide coverage in the Ops Center, as the RST Director, as follows:

### Reactor Safety Team (RST) Director Schedule

**March 26 – April 2, 2011**

Shift	3/26 (Sat)	3/27 (Sun)	3/28 (Mon)	3/29 (Tues)	3/30 (Wed)	3/31 (Thur)	4/1 (Fri)	4/2 (Sat)
7am–3pm	Pat Hiland	Pat Hiland	Pat Hiland	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Jennifer Uhle	Brian Holian
3pm–11pm	Bill Ruland	Fred Brown	Fred Brown	Fred Brown	Fred Brown	Bill Ruland	Bill Ruland	Bill Ruland
11pm–7am	Mike Case	Mike Case	Mike Case	Mike Case	Dave Skeen	Dave Skeen	Dave Skeen	Dave Skeen

Thanks very much.

*Kathy A. Gray*

Information Management Asst.  
Operating Experience Branch, DIRS/NRR  
Rm. O-7F04, Phone: 301-415-1166  
[Kathy.Gray@nrc.gov](mailto:Kathy.Gray@nrc.gov)

**Caponiti, Kathleen**

---

**From:** Mitchell, Matthew  
**Sent:** Tuesday, March 22, 2011 12:36 PM  
**To:** Cusumano, Victor  
**Subject:** FOIA E-mail #9

---

**From:** Mitchell, Matthew *NR*  
**Sent:** Wednesday, March 16, 2011 2:25 PM  
**To:** Thomas, Eric *NR*  
**Cc:** Jolicoeur, John  
**Subject:** FW: \*\*Update 1:15pm March 16\*\* Information on the Japanese Earthquake and Reactors in that Region

Eric,

I'm forwarding this to you as our point of contact for such issues. I know that others in the NRC received this e-mail from NEI as well. I will also make NRR's NEI Project Manager aware that this message has been received.

Matthew Mitchell, Chief  
NRR/DCI/CVIB

---

**From:** [NEIGA@nei.org](mailto:NEIGA@nei.org) [mailto:[NEIGA@nei.org](mailto:NEIGA@nei.org)]  
**Sent:** Wednesday, March 16, 2011 2:01 PM  
**To:** Mitchell, Matthew  
**Subject:** \*\*Update 1:15pm March 16\*\* Information on the Japanese Earthquake and Reactors in that Region



**UPDATE AS OF 1:15 P.M. EDT, WEDNESDAY, MARCH 16:**

NEI has posted an updated version of the fact sheet [Used Nuclear Fuel Storage at the Fukushima Daiichi Nuclear Power Plant](#). Also available is a new fact sheet called [Industry Taking Action to Ensure Continued Safety at U.S. Nuclear Energy Plants](#).

As always, please go to <http://resources.nei.org/japan> for the latest updates.

Click [here](#) to unsubscribe

*M-362*

Caponiti, Kathleen

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From: Mitchell, Matthew  
Sent: Tuesday, March 22, 2011 12:36 PM  
To: Cusumano, Victor  
Subject: FOIA E-mail #7

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From: Mitchell, Matthew  
Sent: Monday, March 14, 2011 9:39 AM  
To: Cusumano, Victor  
Cc: Thomas, Brian  
Subject: RE: ACTION REQUIRED: Technical Assist for Japan Requested From NRR

The only person from DCI/CVIB that I could remotely recommend would be myself.

However, although I have a BWR background, including 8+ months at Dresden 15 years ago, I don't have any background in severe accident management, which I think would be critical in these circumstances. There have to be a lot of people in this agency more qualified than myself. Further, lack of an active passport might be a problem.

Matt M.

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From: Cusumano, Victor  
Sent: Monday, March 14, 2011 9:24 AM  
To: Hardies, Robert; Karwoski, Kenneth; Lupold, Timothy; McMurtray, Anthony; Mitchell, Matthew; Taylor, Robert  
Cc: Thomas, Brian  
Subject: ACTION REQUIRED: Technical Assist for Japan Requested From NRR

We have been asked to provide four additional technical staff to assist in Japan. These will be addition to the two already sent. If you have anyone with severe incident response training/experience that could travel as part of an NRC team please contact Brian Thomas ASAP.

Vic

VICTOR CUSUMANO  
TECHNICAL ASSISTANT

NRR/DCI  
Phone: 301.415.4011  
Location: 0-09C10

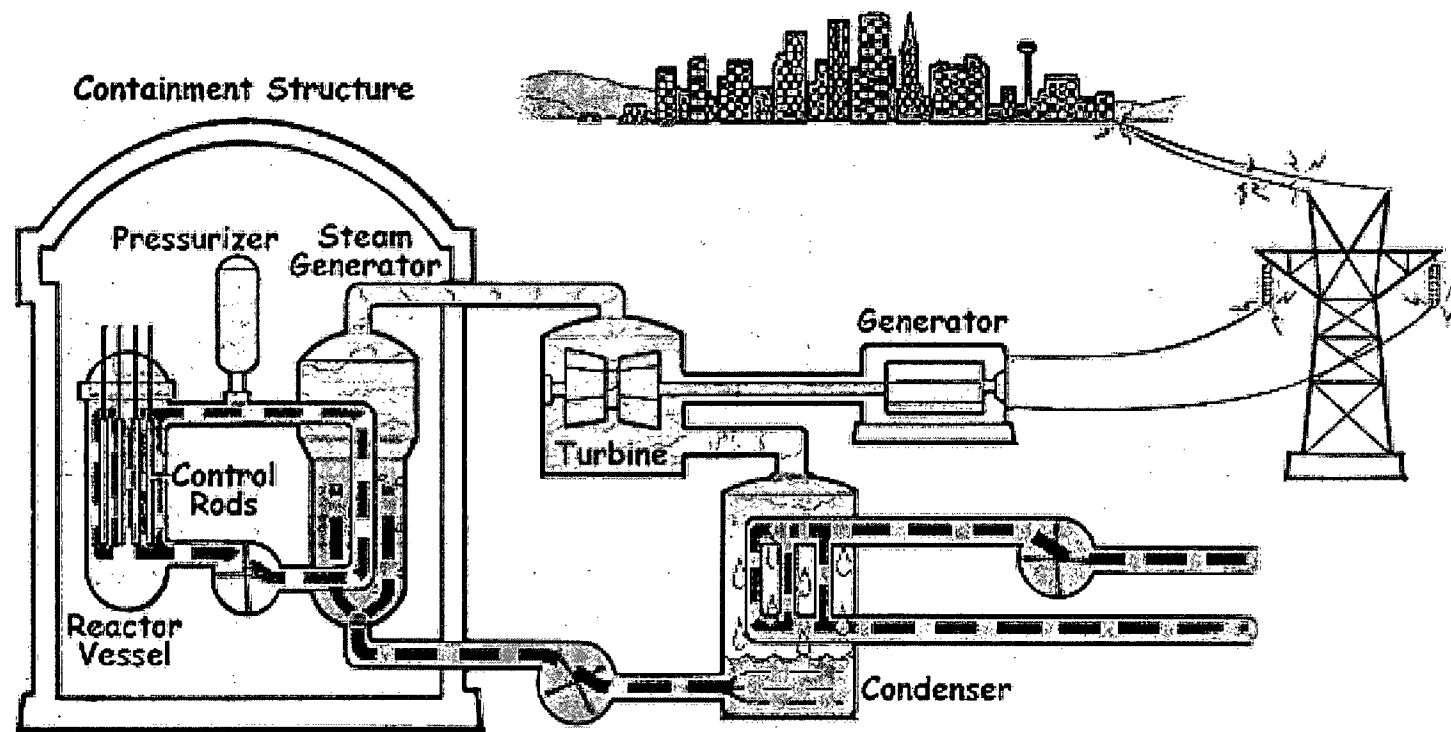
Valentine, Nicholee

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From: Hardesty, Duane  
Sent: Tuesday, March 22, 2011 4:05 PM  
To: Glenn, Nichole  
Subject: Presentation1.pptx  
Attachments: Presentation1.pptx

M-364

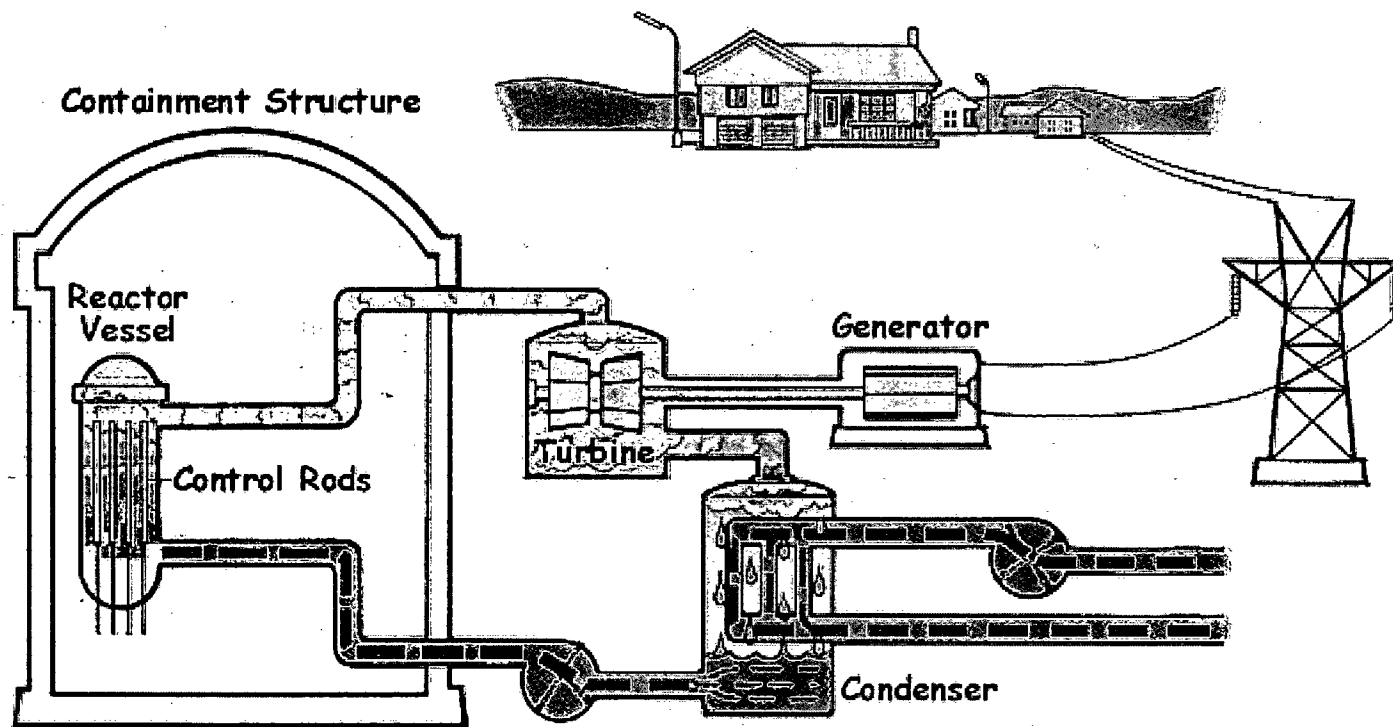




## Generic Pressurized Water Reactor (PWR)

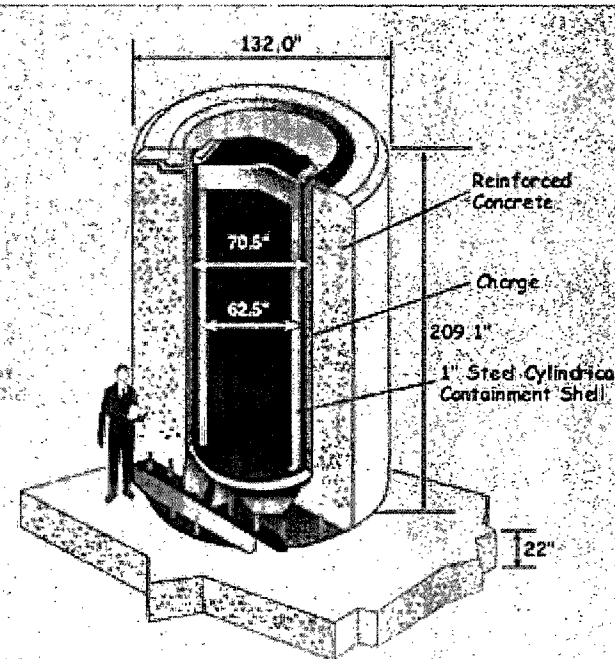
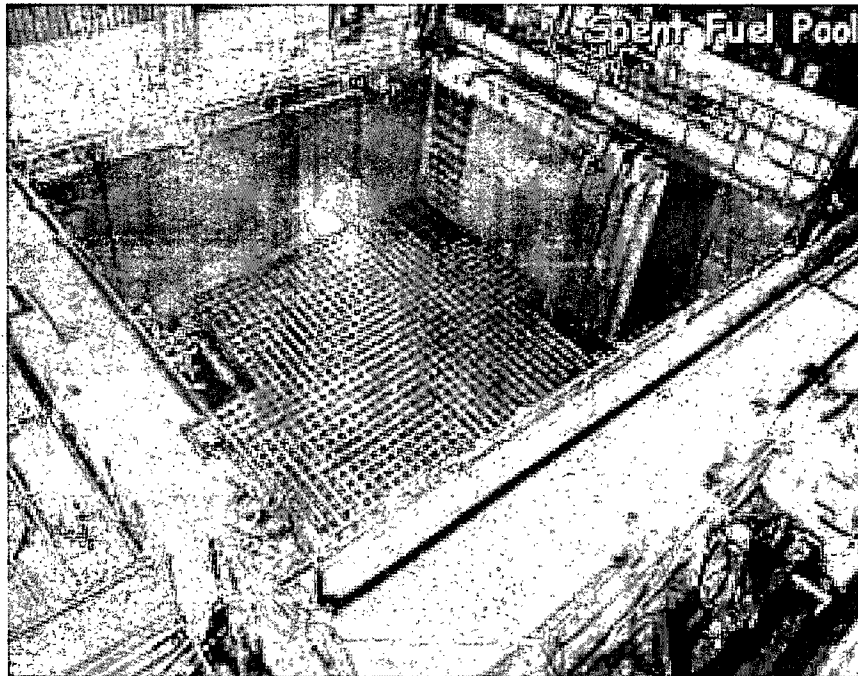
Primary and secondary system are isolated from one another.

Primary water under sufficient pressure to prevent boiling



## Generic Boiling Water Reactor (BWR)

BWRs actually boil the primary water to make turbine steam.

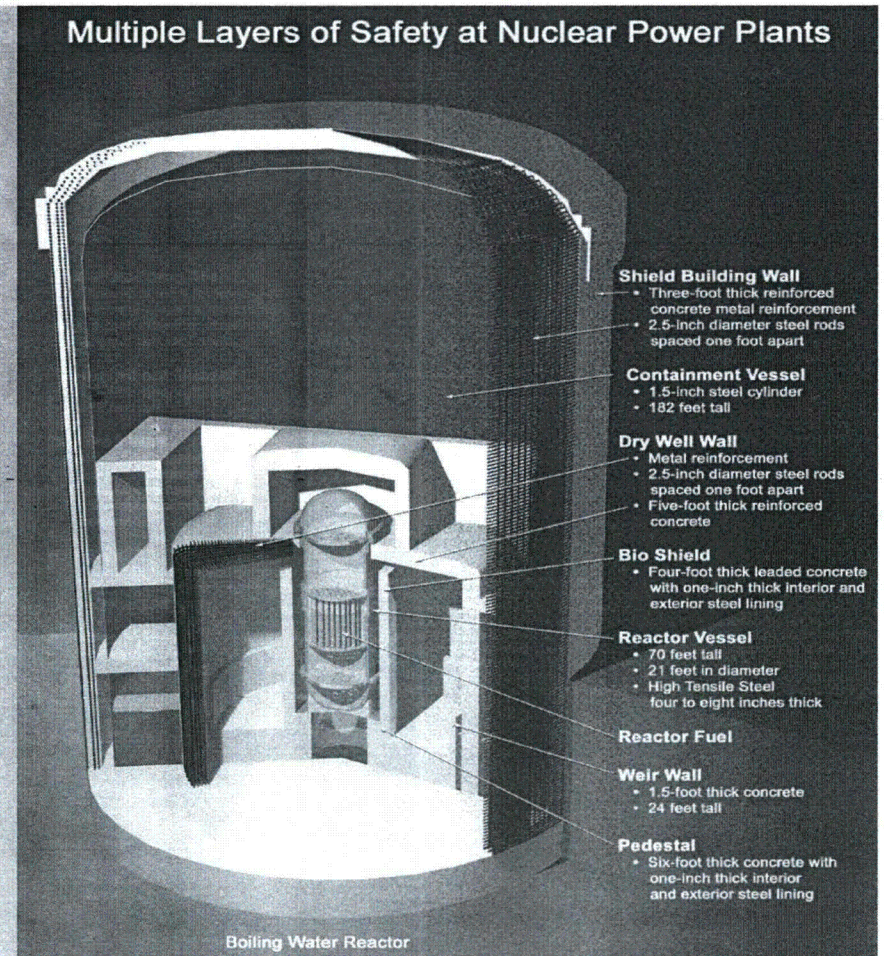
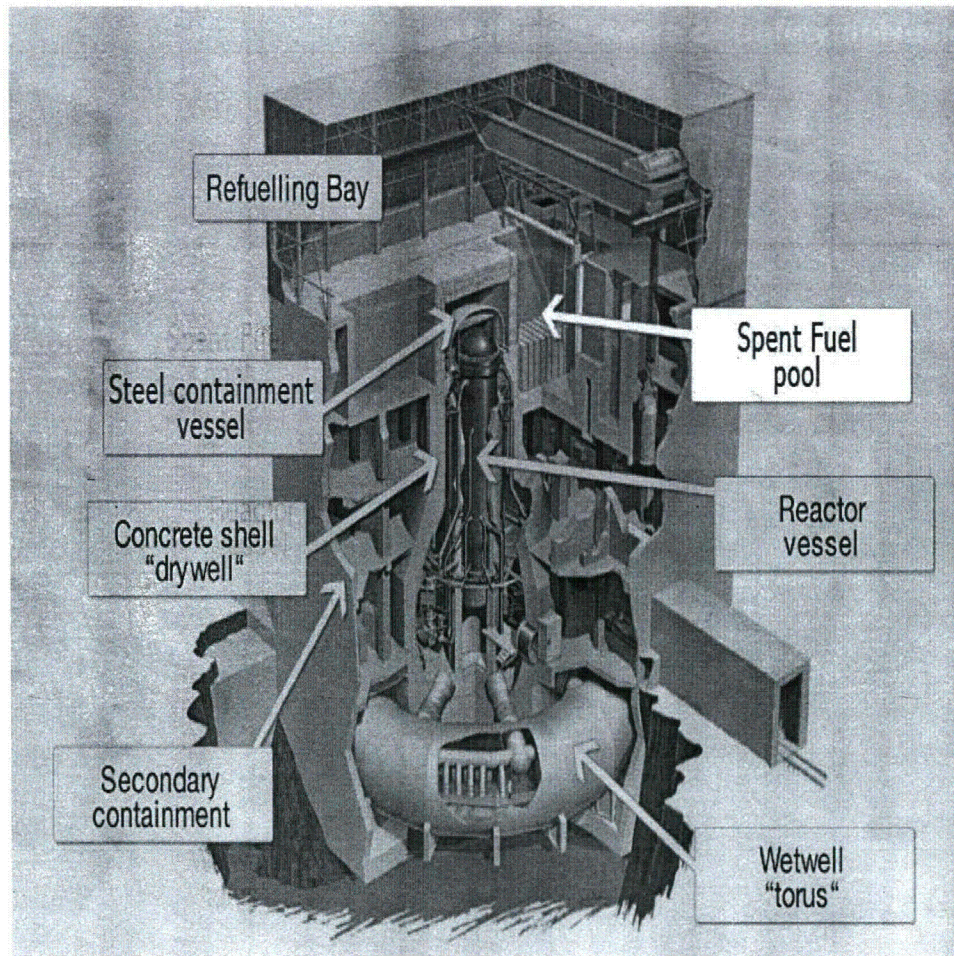


Spent Fuel Storage Cask

## Spent Fuel Storage

In some BWRs, the SFPs are on the top story of the reactor building. Water cools the spent fuel and ~16 ft of water also provides shielding. Casks are an alternate storage – usually for fuel that has been in the pool for > 6 months.



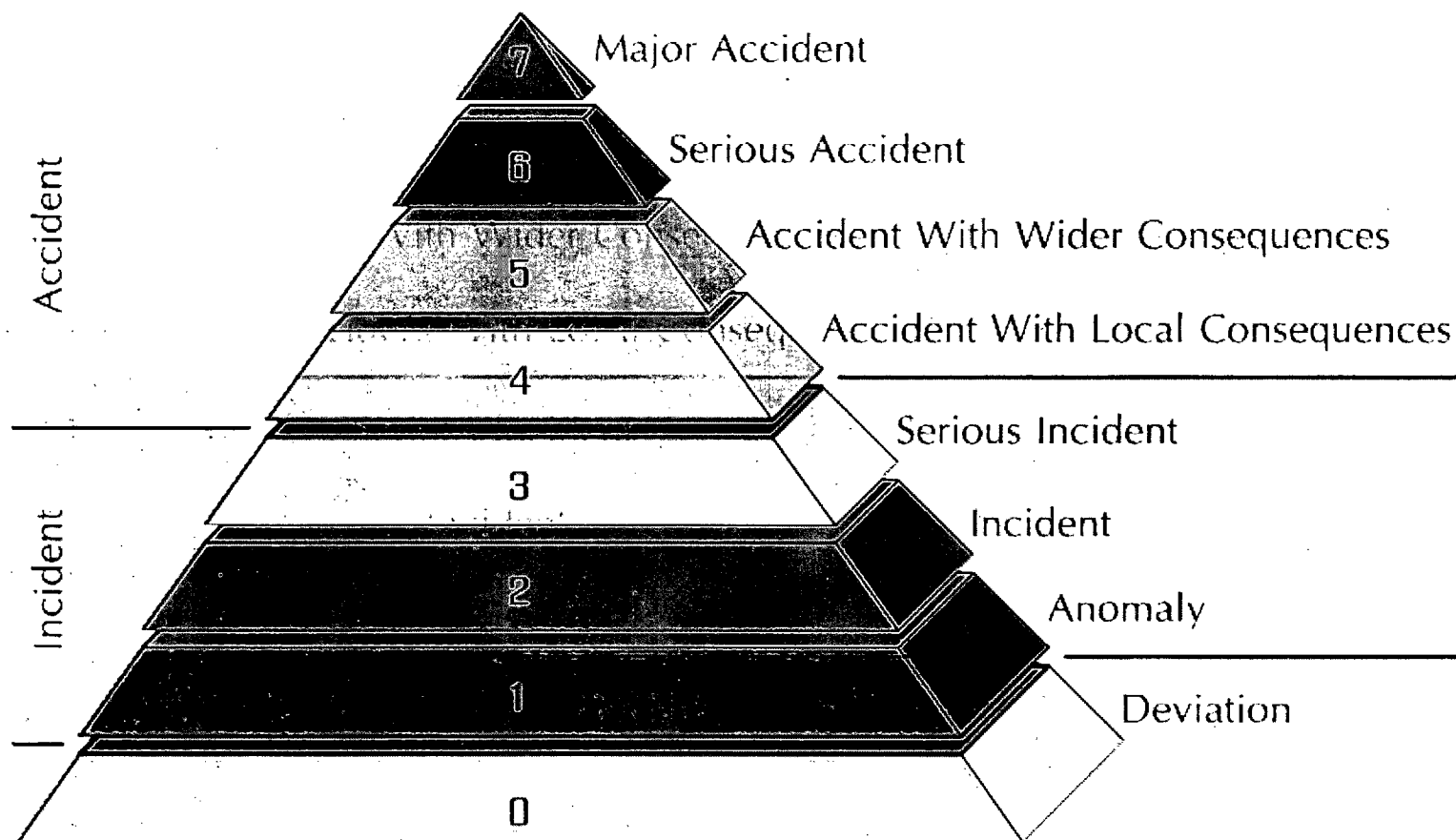


**Cutaway of Boiling Water Reactor (BWR)**



Fukushima Daiichi Summary Table - Units 1-6 (20 March 13:00 UTC)

Legend	No Immediate Concern		Concern		Severe Condition	
	1	2	3	4	5	6
Unit	1	2	3	4	5	6
Power (MWe/th)	460/1380	784/2381	784/2381	784/2381	784/2381	1100/3293
Type of Reactor	BWR-3	BWR-4	BWR-4	BWR-4	BWR-4	BWR-5
Status at the time of event	In service – auto shutdown following earthquake			Shut down for outage before earthquake		
Core and Fuel	Damaged			No fuel rods	Cold shutdown	
Containment Integrity	No damage reported	Damage suspected	No information	Outage configuration	No damage expected	
Off-site power	Substation connected	Power center (in unit) connected	Not available			Not available
Diesel generators	Not available				Two emergency diesel generators powering Units 5 and 6	
Building	Severe damage	Slight damage	Severe damage			No damage reported
Water level in reactor pressure vessel	About half of fuel assembly (stable)			Outage configuration	Above fuel	
Pressure of reactor pressure vessel	Stabilised	Unreliable data	Elevated	Outage configuration	Stabilised	Stabilised
Containment Pressure Drywell	Stable	Stable	Elevated	Outage configuration	No information	
Water injection to reactor pressure vessel	Sea water	Sea water	Sea water	Outage configuration	Freshwater injection in progress	
Water injection to containment vessel	Not available			Not necessary		
Spent fuel pool temperature	No information	Spraying from outside	Spraying from outside	Spraying from outside	Cooling restored	



**International Nuclear Event Scale (INES)**

Valentine, Nicholee

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**From:** Hardesty, Duane  
**Sent:** Tuesday, March 22, 2011 9:36 AM  
**To:** Simms, Sophonia  
**Subject:** RE: Invitation to CPAB Weekly Branch Meeting

Sophonia:  
I would be glad to oblige your team. Will you have a projector in the room?  
Please advise,  
Duane

---

**From:** Simms, Sophonia  
**Sent:** Tuesday, March 22, 2011 8:28 AM  
**To:** Hardesty, Duane  
**Cc:** Glenn, Nichole  
**Subject:** Invitation to CPAB Weekly Branch Meeting

Duane,

If your schedule should permit, we would like you to attend our branch meeting on tomorrow, March 23<sup>rd</sup> to give a brief discussion on reactor concepts (which may be relevant to the events in Japan). Your 15 min. overview will increase our level of awareness. This meeting takes place in O12-B6. Plan to arrive by 9:30 am.

Please advise.

Thanks.

Sophonia

m-365



**Valentine, Nicholee**

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**From:** Purdie, Michael *-NRR*  
**Sent:** Tuesday, March 22, 2011 10:54 AM  
**To:** Regan, Christopher  
**Subject:** FW: Perspective on reports of Contaminated milk

I don't know anyone who likes this much milk, but in case you are one of those people, here is a heads up.

Michael Purdie  
NRR/DPR/PFIB (Rotation)  
O-12E13  
415-0244

---

**From:** Gran, Zachary  
**Sent:** Tuesday, March 22, 2011 9:57 AM  
**To:** Purdie, Michael  
**Subject:** FW: Perspective on reports of Contaminated milk

---

**From:** LaVera, Ronald  
**Sent:** Tuesday, March 22, 2011 9:51 AM  
**To:** NRO\_DCIP\_CHPB; Schaffer, Steven  
**Subject:** Perspective on reports of Contaminated milk

<http://www.npr.org/blogs/health/2011/03/22/134746912/radioactive-milk-only-a-danger-after-58-000-glasses>

---

**From:** Johnson, Andrea  
**Sent:** Tuesday, March 22, 2011 9:26 AM  
**To:** LaVera, Ronald  
**Subject:**

<http://www.npr.org/blogs/health/2011/03/22/134746912/radioactive-milk-only-a-danger-after-58-000-glasses>

Andrea M. Johnson  
Reactor Operations Engineer  
U.S. Nuclear Regulatory Commission  
Office of New Reactors  
Division of Construction Inspection and Operational Programs  
Construction Inspection Program Branch



*M-366*



**Cruz, Holly**

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**From:** Cruz, Holly  
**Sent:** Tuesday, March 22, 2011 10:59 AM  
**To:** 'ELLIOTT Gayle (AREVA)'  
**Subject:** Request for TI

Gayle,

I wanted to make sure you received my message re: your request for TI 2515-183. I apologize, I was not aware a number for the TI had been released. It is my understanding that the document should be made publicly available today or tomorrow. At this time, draft copies are not available. Please let me know if you have any additional questions.

Thanks for your help,

Holly Cruz, Project Manager  
Licensing Processes Branch (PLPB)  
Division of Policy and Rulemaking  
Office of Nuclear Reactor Regulation  
Phone: (301) 415-1053  
Location: O12F12  
M/S: O12E1  
email: [holly.cruz@nrc.gov](mailto:holly.cruz@nrc.gov)



M-367

**Lee, Richard**

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**From:** Wilson, George  
**Sent:** Wednesday, March 23, 2011 5:34 AM  
**To:** Coyne, Kevin; Nelson, Robert; Burnell, Scott; Lee, Richard; Gibson, Kathy  
**Cc:** Wagner, Katie; Demoss, Gary; Beasley, Benjamin; Coe, Doug  
**Subject:** marked up answers for SBO

**First, has there been any update to these numbers?**

NUREG/CR-6890, "Reevaluation of Station Blackout Risk at Nuclear Power Plants," (<http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6890/>) is the most recent update regarding SBO

~~Unknown. However, our understanding is that NUREG 1776 (<http://www.nrc.gov/reading-rm/doc-collections/nuregs/staff/sr1776/>) is the most recent study specific to the station blackout rule that has been prepared by RES.~~

**"Coping time in hours" – is that the amount of battery power? And is it the amount the plant has, or is required to have?**

- 10 CFR 50.63, "Loss of all alternating current power," requires that the station blackout duration shall be based on (i) redundancy of the onsite emergency power ac power sources; (2) the reliability of the onsite emergency ac power sources; (3) the expected frequency of loss of offsite power; and (4) the probably time needed to restore offsite power. RG 1.155, "Station Blackout," (August 1988), provides guidance for determining a plant specific coping time based on these factors. In general, coping times range from 2 to 16 hours, though licensees may propose alternate durations based on plant specific factors relating to the reliability of their ac power systems.
- Licensees must demonstrate that systems have sufficient capacity and capability to ensure core cooling and containment integrity are maintained for the duration of the specified coping time. The capability for coping with a SBO of specified duration must be determined by a coping analysis. Although station batteries are one of the necessary systems, other systems that provide water inventory and containment functions must also be available..

**"Loss of Power events" – if a combined plant with two reactors lists two events, did each shut down for a total of four?**

- For Dual unit site, 2 loss of power events on each unit is counted as 4 events. Do not understand question – can a reference to a specific table or graph be provided by the questioner?

**Also, is there updated figures for the "loss of power events?"**

- NUREG/CR-6890, "Reevaluation of Station Blackout Risk at Nuclear Power Plants," (<http://www.nrc.gov/reading-rm/doc-collections/nuregs/contract/cr6890/>) examined data from 1986-2004 for four categories of loss of offsite power events: plant-centered, switchyard centered, grid-related, and weather-related.
- The NRC also maintains an active data collection program on operating experience. The most recent data for loss of offsite power events can be found at the following website:  
<http://nrcoe.inel.gov/results/index.cfm?fuseaction=LOSP.showMenu>

m-368

George Wilson  
USNRC  
EICB Branch Chief, Division of Engineering  
Mail Stop O12H2  
301-415-1711

**Lee, Richard**

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**From:** Gauntt, Randall O [rogaunt@sandia.gov]  
**Sent:** Wednesday, March 23, 2011 7:39 AM  
**To:** Lee, Richard  
**Subject:** RE: German Document that Describes Accident Progression at Fukushima

Very nice summary.

randy

---

**From:** Lee, Richard [Richard.Lee@nrc.gov]  
**Sent:** Wednesday, March 23, 2011 5:28 AM  
**To:** Gauntt, Randall O; Powers, Dana A; Powers, Dana  
**Subject:** FW: German Document that Describes Accident Progression at Fukushima

Fyi. I think we know everything about the event.

---

**From:** Algama, Don  
**Sent:** Tuesday, March 22, 2011 6:23 PM  
**To:** Lee, Richard; Aissa, Mourad  
**Subject:** German Document that Describes Accident Progression at Fukushima

Richard and Mourad:

Drew just sent me a copy of the German document of their anticipated events that describe the accident progression at Fukushima. Please find it attached.

-Don

M-269

## Esmaili, Hossein

---

**From:** Salay, Michael  
**Sent:** Wednesday, March 23, 2011 8:03 AM  
**To:** RES\_DSA\_FSTB  
**Subject:** RE: Fukushima

Please ensure that anything you guys upload indicates source and provides time so that conflicting information can be checked and timeline constructed. E.g. date image was taken, or time of sensor reading, or report written. This has typically been added in the filename.

Thanks,  
-Mike

Michael Salay  
United States Nuclear Regulatory Commission  
Washington, DC 20555  
MS: C3-C07M  
[michael.salay@nrc.gov](mailto:michael.salay@nrc.gov)  
tel: 301-251-7543  
fax: 301-251-7436

---

**From:** Notafrancesco, Allen  
**Sent:** Tuesday, March 22, 2011 1:33 PM  
**To:** Lee, Richard; Salay, Michael; RES\_DSA\_FSTB  
**Subject:** RE: Fukushima

Mike,

On the site you put MELCOR calcs for a Mark I showing results of a LT SBO thru the time of containment failure, it appears it was taken from the SOARCA work.

Note some uncertainties have not been quantified, particularly I proposed the following scoping study to be performed years ago:

Specifically for BWRs, it appears during the melt progression we are under estimating the potential for "surrounding" metals to be added to the melt, if enough metal is added to the melt the thermal inertia and fission product evolution may be affected. For example, this aspect could affect Mark I containment failure timing caused by liner melt-through. Currently for BWRs, the external lower head structures such as CRDM, supports etc. are not modeled in the MELCOR state-of-the-art model, these components have significant mass and may fragment the melt front, moreover, the calculated temperatures of the steam separators are high enough to collapse these structures, also adding to the melt.

Just to make you aware of this, there are more complexities in the details... by the way the RES ranking process did not push to pursue this....Allen

---

**From:** Lee, Richard  
**Sent:** Tuesday, March 22, 2011 12:22 PM  
**To:** Salay, Michael; RES\_DSA\_FSTB  
**Subject:** RE: Fukushima

Mike:

Let's FSTB staff review this among ourselves before we make it available to those outside of FSTB.

*m-370*

Thanks, Richard

---

**From:** Salay, Michael  
**Sent:** Tuesday, March 22, 2011 9:11 AM  
**To:** RES\_DSA\_FSTB  
**Subject:** Fukushima

Hi guys,

The same questions keep getting raised after issues answers have been provided. It is good to have a central repository for information to reference to improve communications so that the same questions don't keep getting raised.

I set up folders (seen on the left side link) for issues that have arisen in the past few days. If I set it up right, FSTB can modify site and DSA can view and add documents.

The site is  
<http://portal.nrc.gov/edo/res/DSA/FSTB/Fukushima/default.aspx>

located at  
Office of Nuclear Regulatory Research > DSA > Fuel and Source Term Branch (FSTB) > Fukushima

If you guys agree – we can inform Kathy, etc and extend view to others.

By the way, issues and status are posted at:  
<http://portal.nrc.gov/edo/res/DSA/Shared%20Documents/JPN-Status-Request.aspx>

-Mike

Michael Salay  
United States Nuclear Regulatory Commission  
Washington, DC 20555  
MS: C3-C07M  
[michael.salay@nrc.gov](mailto:michael.salay@nrc.gov)  
tel: 301-251-7543  
fax: 301-251-7436

## Sydnor, Russell

---

**From:** Sydnor, Russell  
**Sent:** Wednesday, March 23, 2011 9:00 AM  
**To:** Rivera-Lugo, Richard  
**Subject:** RE: ACTION: FOIA Request on Japan Events

I am assuming that the email sender would provide the requested info. I saw received several emails from others in RES or generic NRC communications but deleted them after reading.

Russell Sydnor  
Branch Chief  
NRC/RES/DE/DICB  
301-251-7405  
[Russell.Sydnor@nrc.gov](mailto:Russell.Sydnor@nrc.gov)

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

**From:** Rivera-Lugo, Richard  
**Sent:** Tuesday, March 22, 2011 11:07 PM  
**To:** Sydnor, Russell  
**Cc:** Richards, Stuart; Parks, Jazel  
**Subject:** RE: ACTION: FOIA Request on Japan Events

Russ,

Please keep in mind that ALL communications addressing in any way the Japan events should be identified for this FOIA request. Casual e-mail exchanges between staff members and/or any other communications related to the events that do not contain relevant information should still be handed to Stephanie with a note indicating it's irrelevance to this particular FOIA request, or providing a justification on why it should not be released to the AP, following guidance on step 6 from the document attached on the original e-mail.

Contact me or Jazel Parks if you have any questions.

Richie

---

**From:** Sydnor, Russell  
**Sent:** Tuesday, March 22, 2011 7:15 PM  
**To:** Rivera-Lugo, Richard  
**Cc:** Richards, Stuart  
**Subject:** RE: ACTION: FOIA Request on Japan Events

Ritchie, I would expect that there would be none from DICB staff, except perhaps for Jeanne who was filling in for Brett and was involved in the Comm Brief preps.

Russ

---

**From:** Rivera-Lugo, Richard  
**Sent:** Tuesday, March 22, 2011 4:17 PM  
**To:** RES\_DE  
**Subject:** ACTION: FOIA Request on Japan Events

DE Staff,

We have been tasked with a FOIA Request from the Associated Press (AP) regarding internal communications within the NRC pertaining to the Japanese nuclear incidents at the Fukushima Dai-ichi, Fukushima Daini, and Onagawa power plants, consequence of the earthquake and tsunami events on March 11, 2011.

As detailed in the letter from AP, "the communications should include emails, faxes, and written correspondence between the commission's chairman, its four commissioners, their staffs, the public affairs team, and employees of other offices such as the Office of Nuclear Reactor Regulation, the Office of Nuclear Security and Incident Response, and the NRC's 24-hour Operations Center". This request covers a time frame from March 11, 2011 through March 16, 2011, when the request was issued.

Please provide hard copies of any records that meet the above criteria to Stephanie West by COB on Tuesday, March 29th. In addition, please identify those records that may contain information you believe should not be released to the public per the exemption instructions detailed in step 6 of the attached document on "How to Respond to a FOIA Request" (e.g., contains sensitive, proprietary, pre-decisional, or personal information).

The 3/29 due date is to provide sufficient time for screening and redacting information that meet FOIA exemption criteria for withholding, so that we can still meet our office due date of 3/30 for providing the records to the FOIA staff.

Please let me know if you have any questions, comments, or concerns related to this request.

Richie

Richard Rivera-Lugo, EIT, MEM

Technical Assistant (Acting)

U.S. Nuclear Regulatory Commission – HQ

RES/DE

Ph. 301-251-7652

Fax 301-251-7420

Mail M.S. C5C07M

E-mail [Richard.Rivera-Lugo@nrc.gov](mailto:Richard.Rivera-Lugo@nrc.gov)<<mailto:Richard.Rivera-Lugo@nrc.gov>>

P Please consider the Environment before printing this e-mail.



## Esmaili, Hossein

---

**From:** Schaperow, Jason  
**Sent:** Wednesday, March 23, 2011 9:01 AM  
**To:** Salay, Michael; Tinkler, Charles; Helton, Donald; Esmaili, Hossein  
**Subject:** RE: Areva Fukushima Assessment

Thanks Michael.

It looks to me that GRS may have the most detailed and most informed timelines of the Fukushima accident:

<http://www.grs.de/en/news/information-updates-japanese-nuclear-power-plants>

---

**From:** Salay, Michael  
**Sent:** Wednesday, March 23, 2011 7:39 AM  
**To:** Schaperow, Jason; Tinkler, Charles; Helton, Donald; Esmaili, Hossein  
**Subject:** Areva Fukushima Assessment

In case you haven't already seen an Areva assessment of the Fukushima event is attached. It contains some chronology info.

-Mike

Michael Salay  
United States Nuclear Regulatory Commission  
Washington, DC 20555  
MS: C3-C07M  
[michael.salay@nrc.gov](mailto:michael.salay@nrc.gov)  
tel: 301-251-7543  
fax: 301-251-7436

M-372

## Esmaili, Hossein

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**From:** Salay, Michael  
**Sent:** Wednesday, March 23, 2011 9:32 AM  
**To:** RES\_DSA\_FSTB  
**Subject:** RE: Severe accident related NUREGs relating to BWRs

Richard (and FSTB),

Some of these docs have been uploaded to sharepoint. I haven't cross checked and haven't uploaded any of the hydrogen stuff. We had already been collecting much of this info. I didn't seem to have write access to the FSTB site but could make links and new attached sites. So we now have a Fukushima site and a source term site. These sites, and the main FSTB site have links to each other in the right hand toolbar. Document collections are listed on the left hand toolbar.

All of FSTB should have write access to the In the source term. After entering a document collection from the left hand toolbar from one of these sites, documents can be uploaded using the "upload" tab at the top of the document list. New directories can be made using the "new" tab at the top of the list.

Links:

Main FSTB site: <http://portal.nrc.gov/edo/res/DSA/FSTB/default.aspx>

Fukushima site: <http://portal.nrc.gov/edo/res/DSA/FSTB/Fukushima/default.aspx>

Source term site: <http://portal.nrc.gov/edo/res/DSA/FSTB/sourceterm/default.aspx>

-Mike

Michael Salay  
United States Nuclear Regulatory Commission  
Washington, DC 20555  
MS: C3-C07M  
[michael.salay@nrc.gov](mailto:michael.salay@nrc.gov)  
tel: 301-251-7543  
fax: 301-251-7436

---

**From:** Lee, Richard  
**Sent:** Wednesday, March 23, 2011 8:11 AM  
**To:** Marksberry, Don  
**Cc:** Salay, Michael; Esmaili, Hossein; Notafrancesco, Allen  
**Subject:** RE: Severe accident related NUREGs relating to BWRs

Thanks, Don.  
I will have this add to share point site under FSTB, and work on getting the documents together.  
Richard

---

**From:** Marksberry, Don  
**Sent:** Wednesday, March 23, 2011 7:58 AM  
**To:** Tinkler, Charles; Stutzke, Martin; Schaperow, Jason; Esmaili, Hossein; Lee, Richard; Salley, MarkHenry; Coyne, Kevin; RST01 Hoc; Helton, Donald  
**Subject:** Severe accident related NUREGs relating to BWRs

m-373

From the old Reactor Safety Team resource library with inputs from Jocelyn Mitchell, Charlie Tinkler, and Farouk Eltawila.

A must read is NUREGCR-5132, Severe Accident Insights Report. (Farouk and Ralph Meyer went on a two week road show to give seminars at HQ, 5 Regional offices and TTC back in 1988.)

Please pass on others to me. I plan to setup a SharePoint page or ADAMS page (if I know how).

These are in ADAMS:

NUREG-0956, Reassessment of the Technical Bases for Estimating Source Terms, Final Report..pdf  
NUREG-1079, Estimates of Early Containment Loads from Core Melt Accidents.pdf  
NUREG-1228, Source Term Estimation During.pdf  
NUREG-1465, Accident Source Terms for Light-Water Nuclear Power Plants, Final Report.pdf  
NUREGCR-2940, Realistic Simulation of Severe Accidents in BWRs-Computer Modeling Requirements.pdf  
NUREGCR-4041, System Analysis Handbook.pdf  
NUREGCR-4177, Vol. 1, Management of Severe Accidents, Perspectives on Managing Severe Accidents in NPPs.pdf  
NUREGCR-4177, Vol. 2, Management of Severe Accidents, Extending Plant Operating Procedures Into the Severe Accident Regime.pdf  
NUREGCR-4214, Rev. 1, Part II, Add 1, Health Effects Models for Nuclear Power Plant Accident Consequence Analysis, Low LET Radiation.pdf  
NUREGCR-4214, Rev. 1, Part II, Add 2, Health Effects Models for Nuclear Power Plant Accident Consequence Analysis - Alphas.pdf  
NUREGCR-4214, Rev. 2, Part I, Health Effects Models for Nuclear Power Plant Accident Consequence Analysis.pdf  
NUREGCR-4883, Review of Research on Uncertainties in Estimates of Source Terms from Severe Accidents in Nuclear Power Plants.pdf  
NUREGCR-4920, Vol. 1, Assessment of Severe Accident Prevention and Mitigation Features - BWR, Mark I Containment.pdf  
NUREGCR-4920, Vol. 3, Assessment of Severe Accident Prevention and Mitigation Features BWR, Mark III Containment Design.pdf  
NUREGCR-4920, Vol. 4, Assessment of Severe Accident Prevention and Mitigation Features PWR, Large Dry Containment Design.pdf  
NUREGCR-4920, Vol. 5, Assessment of Severe Accident Prevention and Mitigation Features PWR, Ice-Condenser Containment Design.pdf  
NUREGCR-5132, Severe Accident Insights Report.pdf  
NUREGCR-5368, Reactivity Accidents, A Reassessment of the Design-Basis Events.pdf  
NUREGCR-5423, The Probability of Liner Failure in a Mark I Containment.pdf  
NUREGCR-5447, Depressurization as an Accident Management Strategy to Minimize the Consequences of DCH.pdf  
NUREGCR-5474\_Assessment of Candidate Accident Management Strategies.pdf  
NUREGCR-5634, Containment and Release Management Strategies for a BWR Mark I Containment.pdf  
NUREGCR-5640, Overview and Comparison of U.S. Commercial Nuclear Power Plants.pdf  
NUREGCR-5682, Specific Topics in Severe Accident Management.pdf  
NUREGCR-5702, Accident Management Information Needs for a BWR with a MARK I Containment.pdf  
NUREGCR-5780, Summary of a Workshop on Severe Accident Management for BWRs.pdf  
NUREGCR-5869, Identification and Assessment of BWR In-Vessel Severe Accident Mitigation Strategies.pdf  
NUREGCR-6042, R2, Perspective of Nuclear Safety.pdf  
NUREGCR-6133, Fragmentation and Quench Behavior of Corium Melt Streams in Water.pdf  
NUREGCR-6158\_Implications for Accident Management of Adding Water to a Degrading Reactor Core.pdf  
NUREGCR-6527, Final Results of the XR2-1 BWR Metallic Melt Relocation Experiment.pdf

Hydrogen

NUREGCR-1263, Detonability of H<sub>2</sub>-Air-Diluent Mixtures (1987).pdf  
NUREGCR-2475, Hydrogen Combustion Characteristics Related to Reactor Accidents (1981).pdf  
NUREGCR-2486, Final Results of the Hydrogen Igniter Experimental Program (1981).pdf  
NUREGCR-2726, Rev. 3, Light Water Reactor Hydrogen Manual.pdf  
NUREGCR-4905, Detonability of H<sub>2</sub>-Air-Diluent Mixtures.pdf  
NUREGCR-4961, A Summary of Hydrogen - Air Detonation Experiments.pdf  
NUREGCR-5079, Experimental Results Pertaining to the Performance of Thermal Igniters (1989).pdf  
NUREGCR-5525, Hydrogen-Air-Diluent Detonation Study for Nuclear Reactor Safety Analyses (1991).pdf  
NUREGCR-6530, Deliberate Ignition of Hydrogen-Air-Steam Mixtures in Condensing Steam Environments (1997).pdf  
NUREGCR-6851, Hydrogen Effects on Air Oxidation of Zircaloy Alloy (2004).pdf  
Pages from NUREGCR-6042, R2, Perspective of Nuclear Safety, Section 4.6 Hydrogen Combustion.pdf

**Yarsky, Peter**

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**From:** Yarsky, Peter  
**Sent:** Wednesday, March 23, 2011 9:47 PM  
**To:** Elkins, Scott  
**Subject:** Topics for Discussion

Scott,

I have a short laundry list of items I need to discuss, Thursday would be great for me if you are available (aside from 12p-4p)

- (1) FOIA request re: Japanese incident
- (2) Form 145 for signature
- (3) PSU senior design presentation next week (if I should plan on going)

Each should be quite short, let me know your availability

Thanks

Peter Yarsky, Ph.D.  
Sr. Reactor Systems Engineer  
RES/DSA/RSAB  
location. CSB-03-A19  
mail stop. CSB-03-A07M  
tel. 301-251-7518  
fax. 301-251-7416

M-374

## Rivera-Lugo, Richard

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**From:** Jervey, Richard  
**Sent:** Wednesday, March 23, 2011 9:49 AM  
**To:** Rivera-Lugo, Richard  
**Subject:** RE: Spreadsheet

**Categories:** Green Category

Sorry for that omission. I worked, or will work 8 hrs on each day.

Regards,

R. A. Jervey  
RES/DE/RGDB  
CS2A07  
301/251-7404

---

**From:** Rivera-Lugo, Richard  
**Sent:** Wednesday, March 23, 2011 9:40 AM  
**To:** Jervey, Richard  
**Subject:** RE: Spreadsheet  
**Importance:** High

Rick,

I need a specific amount of hours per day that you worked (or will work) supporting the Japanese events during this pay period. In other words, the amount of hours that you will report in HRMS with TAC number ZG0061.

Thanks,  
Richie

*Richard Rivera-Lugo*, EIT, MEM  
Technical Assistant (Acting)  
U.S. Nuclear Regulatory Commission – HQ  
RES/DE  
Ph. 301-251-7652  
Fax 301-251-7420  
Mail M.S. C5C07M  
E-mail [Richard.Rivera-Lugo@nrc.gov](mailto:Richard.Rivera-Lugo@nrc.gov)



Please consider the Environment before printing this e-mail.

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**From:** Jervey, Richard  
**Sent:** Tuesday, March 22, 2011 5:41 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** FW: Spreadsheet

Hi Richard, I worked in the Ops center 3/21, and am scheduled for 3/25 and 4/6.

Regards,

*m-275*

Lee, Richard

---

**From:** Wegner, Mary  
**Sent:** Wednesday, March 23, 2011 9:50 AM  
**To:** Lee, Richard  
**Subject:** RE: A request

---

For the documents, you can search ADAMS. Good luck with that

TMI would be the only reactor which could have had that problem in the US. (Hydrogen problems on the main generator are another story.)

Chernobyl would be the only foreign plant I know that would have been in the condition to have a hydrogen explosion.

On experimental reactors, SL1 may have had a hydrogen explosion but I think it was an instantaneous criticality. The Brits lost a military reactor in the 60s but I believe it started with an overheated carbon moderator problems.

**From:** Lee, Richard  
**Sent:** Wednesday, March 23, 2011 9:03 AM  
**To:** Wegner, Mary  
**Subject:** A request

Hi, Mary:

Could you please provide me with documents on summary/highlight on hydrogen explosions that occurred in NPPs (U.S. and foreign) reactor coolant system.

Thanks,  
Richard

M-276

## Rivera-Lugo, Richard

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**From:** Dion, Jeanne  
**Sent:** Wednesday, March 23, 2011 10:28 AM  
**To:** Parks, Jazel  
**Cc:** Rivera-Lugo, Richard; Rini, Brett  
**Subject:** FOIA question

**Categories:** Green Category

Jazel,  
What TAC can we use for the Japan FOIA?

The guidance "how to respond to a FOIA request" says we have to organize the records according to categories (on page 8) and to submit a memo indicating if there is info that should be withheld and the amount of search and review time spent. Does this mean that each person has to submit their own memo on their records? If so are there memo templates from previous FOIAs we could use as a template?

On page 8 of the guidance it says "where an email contains the exchange between two or more offices, the submitting office is responsible for making a disclosure determination on the portions of the email originated by its staff and the indicating the originating offices for the remaining portions" Does this mean if we received an email from an another office we don't have to submit that email- because the other office originated it?

Does the above statement also apply for emails between staff in the same office? Are emails between staff in the same office covered in this FOIA?

Thanks,  
Jeanne

M-277



## Rivera-Lugo, Richard

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**From:** Hurd, Sapna  
**Sent:** Wednesday, March 23, 2011 10:36 AM  
**To:** Rivera-Lugo, Richard  
**Cc:** Richards, Stuart; Case, Michael  
**Subject:** RE: Spreadsheet

**Categories:** Green Category

Richie, Here are the dates that I have worked in total:

3/11, 3/12, 3/13, 3/15, 3/17, 3/18, 3/19, 3/20, 3/22, 3/23, 3/24, 3/25, 3/26

I am not sure of the upcoming schedule yet. Thanks.

Sapna Hurd  
Management Analyst  
Division of Engineering  
Office of Nuclear Regulatory Research  
U.S. NRC  
Ph: 301-251-7687  
5C04

---

**From:** Richards, Stuart  
**Sent:** Tuesday, March 22, 2011 3:15 PM  
**To:** RES\_DE; Boyce, Tom (RES); Csontos, Aladar; Gavrilas, Mirela; Hogan, Rosemary; Koshy, Thomas; Sydnor, Russell  
**Cc:** Rivera-Lugo, Richard; Case, Michael  
**Subject:** RE: Spreadsheet

If you are working to support the agency response to the events in Japan, please provide the information requested below by noon tomorrow to Richie Rivera-Lugo.

Thanks  
Stu

---

**From:** Valentin, Andrea  
**Sent:** Tuesday, March 22, 2011 3:02 PM  
**To:** Case, Michael; Richards, Stuart; Gibson, Kathy; Coe, Doug; Coyne, Kevin; Kardaras, Tom  
**Cc:** Sheron, Brian  
**Subject:** Spreadsheet  
**Importance:** High

Hello All,

I am collecting the names and dates to send to CFO for work being done in support of the Japan response. CFO needs this info since HRMS may not allow the employee to enter time worked unless some changes are made to the system. The memo dated 3/16 said that they need this information ASAP to avoid difficulties processing the appropriate payments.

I plan to submit this interim list by COB tomorrow so CFO can get started on what they need to do. I can always send additional names later. Please remember to send me both names and dates worked (or planned schedule if it has not occurred yet).

M-378

Thanks,  
Andrea

Basu, Sudhamay

---

**From:** Farmer, Mitchell T. [farmer@anl.gov]  
**Sent:** Wednesday, March 23, 2011 10:46 AM  
**To:** Lee, Richard  
**Cc:** Basu, Sudhamay; Salay, Michael  
**Subject:** RE: MCCI Info for RST and NISA - Fukushima

Right now Richard I wish you really would so Farouk would really fire me so I could get out of this place!!! Or can you just do it instead??

---

**From:** Lee, Richard [mailto:Richard.Lee@nrc.gov]  
**Sent:** Wednesday, March 23, 2011 9:45 AM  
**To:** Farmer, Mitchell T.  
**Cc:** Basu, Sudhamay; Salay, Michael  
**Subject:** RE: MCCI Info for RST and NISA - Fukushima

Thanks, Mitch:  
Won't report you to Farouk for the time being..  
Richard

---

**From:** Farmer, Mitchell T. [mailto:farmer@anl.gov]  
**Sent:** Wednesday, March 23, 2011 10:39 AM  
**To:** Salay, Michael  
**Cc:** Lee, Richard; Basu, Sudhamay  
**Subject:** RE: MCCI Info for RST and NISA - Fukushima

Hi Mike,  
I'm having the final versions uploaded to a temproray website right now so you can send on to Japan. (It's about 30 MB) - this is project final as well as MCCI final which I think you are most interested in.  
Mitch

---

**From:** Salay, Michael [mailto:Michael.Salay@nrc.gov]  
**Sent:** Wednesday, March 23, 2011 9:08 AM  
**To:** Farmer, Mitchell T.  
**Cc:** Lee, Richard; Basu, Sudhamay  
**Subject:** MCCI Info for RST and NISA - Fukushima  
**Importance:** High

Mitch,

The RST has requested documentation

Would you provide me with a copy of a report that provides an up to date summary of the status of knowledge on MCCI – e.g. conditions under which it occurs? Since Japan is a member country to the OECD MCCI project they should have access to the recent info. (I discussed with Sud Basu)

I thought of the mcci-2 final\_7\_draft (Nov 2010). After glancing over seems to be more experiment-centric. If you think that is the best summary I'll send with a notice of restrictions on access. If you have something that you think would be more useful, please send.

Thanks,  
-Mike

Michael Salay

M-379

United States Nuclear Regulatory Commission  
Washington, DC 20555  
MS: C3-C07M  
[michael.salay@nrc.gov](mailto:michael.salay@nrc.gov)  
tel: 301-251-7543  
fax: 301-251-7436

## Rivera-Lugo, Richard

---

**From:** Moyer, Carol  
**Sent:** Wednesday, March 23, 2011 11:08 AM  
**To:** Rivera-Lugo, Richard  
**Subject:** RE: ACTION: FOIA Request

**Categories:** Green Category

Richie,

I dutifully complied with this request yesterday afternoon. But it does strike me as ridiculously wasteful for everyone who received Annie's seismic update e-mail, sent to RES Distribution, to print a paper copy of it and provide it to Stephanie. Is this really how we are being asked to spend tax dollars?!

Just my \$0.02 (and then some),  
-Carol

---

**From:** Rivera-Lugo, Richard  
**Sent:** Tuesday, March 22, 2011 4:18 PM  
**To:** RES\_DE  
**Subject:** ACTION: FOIA Request on Japan Events  
**Importance:** High

DE Staff,

We have been tasked with a FOIA Request from the Associated Press (AP) regarding internal communications within the NRC pertaining to the Japanese nuclear incidents at the Fukushima Dai-ichi, Fukushima Daini, and Onagawa power plants, consequence of the earthquake and tsunami events on March 11, 2011.

As detailed in the letter from AP, "*the communications should include emails, faxes, and written correspondence between the commission's chairman, its four commissioners, their staffs, the public affairs team, and employees of other offices such as the Office of Nuclear Reactor Regulation, the Office of Nuclear Security and Incident Response, and the NRC's 24-hour Operations Center*". **This request covers a time frame from March 11, 2011 through March 16, 2011, when the request was issued.**

**Please provide hard copies of any records that meet the above criteria to Stephanie West by COB on Tuesday, March 29th.** In addition, please identify those records that may contain information you believe should not be released to the public per the exemption instructions detailed in step 6 of the attached document on "*How to Respond to a FOIA Request*" (e.g., contains sensitive, proprietary, pre-decisional, or personal information).

The 3/29 due date is to provide sufficient time for screening and redacting information that meet FOIA exemption criteria for withholding, so that we can still meet our office due date of 3/30 for providing the records to the FOIA staff.

Please let me know if you have any questions, comments, or concerns related to this request.

Richie

*Richard Rivera-Lugo*, EIT, MEM  
Technical Assistant (Acting)  
U.S. Nuclear Regulatory Commission – HQ  
RES/DE

Ph. 301-251-7652

Fax 301-251-7420

Mail M.S. C5C07M

E-mail [Richard.Rivera-Lugo@nrc.gov](mailto:Richard.Rivera-Lugo@nrc.gov)



Please consider the Environment before printing this e-mail.

**Lee, Richard**

---

**From:** Scott, Harold  
**Sent:** Wednesday, March 23, 2011 12:01 PM  
**To:** Lee, Richard  
**Cc:** Salay, Michael  
**Subject:** RE: oxidation of Zr in air

I will load the German report on air oxidation of Zr-2 (BWR cladding) to the site.

This work was performed for the Sandia spent fuel fire project. Showed similar behavior with Zr-4.

---

**From:** Lee, Richard  
**Sent:** Wednesday, March 23, 2011 7:25 AM  
**To:** RES\_DSA\_FSTB  
**Cc:** Voglewede, John  
**Subject:** oxidation of Zr in air

Attached for your information. Sud Basu was the PM on this work.  
Mike: When you have a chance, load onto the FSTB share point site. Thx.

m-381

**Rivera-Lugo, Richard**

---

**From:** Kardaras, Tom  
**Sent:** Wednesday, March 23, 2011 3:52 PM  
**To:** RES Distribution  
**Subject:** FYI: FOIA Requests for Japan Crisis Material

**Categories:** Green Category

RES staff should make every reasonable effort to comply with FOIA requests for Japan Crisis Material. The agency has already taken steps to alert requestors of the likelihood for longer than usual response times from the Agency. Additionally, it is not necessary to include communications related to administrative items such as work hour changes, exchanges involving passing public information or news reports on the earthquake, even though such communication may not have occurred absent the event in Japan. If you have further questions regarding this matter please contact Jazel Parks, the RES FOIA coordinator on 301.251.7690 or via email at [jazel.parks@nrc.gov](mailto:jazel.parks@nrc.gov).

Regards,  
Tom Kardaras, Deputy Director (Acting)  
Program Management, Policy Development and Analysis Staff  
Office of Nuclear Regulatory Research  
(o) 301-251-7667

M-382



## Rivera-Lugo, Richard

---

**From:** Parks, Jazel  
**Sent:** Wednesday, March 23, 2011 4:45 PM  
**To:** RES Distribution  
**Subject:** To ease the burden on the Japan FOIA

**Categories:** Green Category

This is (should be) the last mass email for the Japan FOIA today, ☺

For people responding to the FOIA request,

If you are the originator of the email communication, you should be the person responsible for sending the E-Mail for review. People that are the recipients of the E-Mail should not provide me with the same email. This should cut down on duplication.

Hope this helps,

If you have any questions, please feel free to contact me.

Thanks,

**Jazel Parks**

Research Information Specialist

RES/PMDDA/ITIB

(P) 301-251-7690

(F) 301-251-7426

(M/S) C6D20M

M-383

**From:** RST01 Hoc - ops center  
**Sent:** Wednesday, March 23, 2011 12:05 PM  
**To:** Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Arndt, Steven; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Shea, James; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard  
**Subject:** FW: RST Schedule 3/26-4/2

All,

Please look at current watchbills from the OST. Ed Fuller has signed up for swing shifts for Accident Analyst on 3/29 and 4/5. Other than that, please reply to RST01 so we can start filling in the holes on the watchbill.

Thanks for all of your support.

Eric Thomas  
 RST Coordinator

---

**From:** OST02 HOC  
**Sent:** Wednesday, March 23, 2011 8:44 AM  
**To:** RST01 Hoc  
**Subject:** RST Schedule 3/26-4/2

Reactor Safety Team				
<b>RST Director</b>				
	Sat	26-Mar	7am - 3pm	Pat Hiland
	Sat	26-Mar	3pm-11pm	Bill Ruland
	Sat-Sun	3/26-3/27	11pm - 7am	Mike Case
	Sun	27-Mar	7am - 3pm	Pat Hiland
	Sun	27-Mar	3pm-11pm	Fred Brown
	Sun-Mon	3/27-3/28	11pm - 7am	Mike Case
	Mon	28-Mar	7am - 3pm	Pat Hiland
	Mon	28-Mar	3pm-11pm	Fred Brown
	Mon-Tue	3/28-3/29	11pm - 7am	Mike Case
	Tue	29-Mar	7am - 3pm	Jennifer Uhle
	Tue	29-Mar	3pm-11pm	Fred Brown
	Tue-Wed	3/29-3/30	11pm - 7am	Mike Case
	Wed	30-Mar	7am - 3pm	Jennifer Uhle
	Wed	30-Mar	3pm-11pm	Fred Brown
	Wed-Thur	3/30-3/31	11pm - 7am	Dave Skeen
	Thur	31-Mar	7am - 3pm	Jennifer Uhle
	Thur	31-Mar	3pm-11pm	Bill Ruland
	Thur-Fri	3/31-4/1	11pm - 7am	Dave Skeen

m-384

Fri	1-Apr	7am - 3pm	Jennifer Uhle
Fri	1-Apr	3pm-11pm	Bill Ruland
Fri-Sat	4/1-4/2	11pm-7am	Dave Skeen
<b>RST Coordinator</b>			
Fri-Sat	3/25-3/26	11pm-7am	Frank Collins
Sat	26-Mar	7am - 3pm	Eric Thomas
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Peter Alter
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	Frank Collins
Mon	28-Mar	7am - 3pm	Rick Hasselberg
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	Mike Morlang
Tue	29-Mar	7am - 3pm	Peter Alter
Tue	29-Mar	3pm-11pm	Greg Schoenebeck
Tue-Wed	3/29-3/30	11pm - 7am	Mike Morlang
Wed	30-Mar	7am - 3pm	Rick Hasselberg
Wed	30-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/30-3/31	11pm - 7am	Frank Collins
Thur	31-Mar	7am - 3pm	Peter Alter
Thur	31-Mar	3pm-11pm	Greg Schoenebeck
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Rick Hasselberg
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	Frank Collins
<b>Severe Accident/PRA</b>			
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Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	Jeff Circle
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	Hossein Esmaili
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	Jim Gilmer?
Wed	30-Mar	3pm-11pm	Hossein Esmaili
Wed-Thur	3/30-3/31	11pm - 7am	

Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	Hossein Esmaili
Thur-Fri	3/31-4/1	11pm - 7am	Ray Skarda
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	Ray Skarda
<b>BWR Expertise</b>			
Sat	26-Mar	7am - 3pm	Mike Brown
Sat	26-Mar	3pm-11pm	Chuck Norton
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Mike Brown
Sun	27-Mar	3pm-11pm	Chuck Norton
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	Mike Brown
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Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	Mike Brown
Tue	29-Mar	3pm-11pm	Chuck Norton
Tue-Wed	3/29-3/30	11pm - 7am	
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Wed-Thur	3/30-3/31	11pm - 7am	
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Thur	31-Mar	3pm-11pm	Chuck Norton
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Mike Brown
Fri	1-Apr	3pm-11pm	Chuck Norton
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Comm/ERDS Operator</b>			
Sat	26-Mar	7am - 3pm	Donna Williams
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	Mark Padovan
Sun	27-Mar	3pm-11pm	Bill Roggenbrodt
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	Mark Padovan
Mon	28-Mar	3pm-11pm	Bill Roggenbrodt
Mon-Tue	3/28-3/29	11pm - 7am	Andy Kugler
Tue	29-Mar	7am - 3pm	Mark Padovan
Tue	29-Mar	3pm-11pm	Bill Roggenbrodt
Tue-Wed	3/29-3/30	11pm - 7am	Andy Kugler
Wed	30-Mar	7am - 3pm	Mark Padovan

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Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	Andy Kugler
Thur	31-Mar	3pm-11pm	Bill Roggenbrodt
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Mark Padovan
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Support (Seismology Q&amp;A)</b>			
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	
Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Support (Structural)</b>			
Sat	26-Mar	7am - 3pm	Off (On Call)
Sat	26-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/26-3/27	11pm - 7am	Off (On Call)
Sun	27-Mar	7am - 3pm	Off (On Call)
Sun	27-Mar	3pm-11pm	Off (On Call)
Sun-Mon	3/27-3/28	11pm - 7am	Off (On Call)
Mon	28-Mar	7am - 3pm	Off (On Call)
Mon	28-Mar	3pm-11pm	Off (On Call)
Mon-Tues	3/28-3/29	11pm - 7am	Off (On Call)
Tues	29-Mar	7am - 3pm	Off (On Call)
Tues	29-Mar	3pm-11pm	Off (On Call)

Tues-Wed	3/29-3/30	11pm - 7am	Off (On Call)
Wed	30-Mar	7am - 3pm	Off (On Call)
Wed	30-Mar	3pm-11pm	Off (On Call)
Wed-Thur	3/30-3/31	11pm - 7am	Off (On Call)
Thur	31-Mar	7am - 3pm	Off (On Call)
Thur	31-Mar	3pm-11pm	Off (On Call)
Thur-Fri	3/31-4/1	11pm - 7am	Off (On Call)
Fri	1-Apr	7am - 3pm	Off (On Call)
Fri	1-Apr	3pm-11pm	Off (On Call)
Fri-Sat	4/1-4/2	11pm-7am	Off (On Call)

From:  
Sent:  
To:

OST02 HOC - ops center

Wednesday, March 23, 2011 1:22 PM

Abrams, Charlotte; Abu-Eid, Bobby; Adams, John; Afshar-Tous, Mugeh; Ahn, Hosung; Alemu, Bezakulu; Algama, Don; Alter, Peter; Anderson, Brian; Anderson, James; Arndt, Steven; Arribas-Colon, Maria; Ashkeboussi, Nima; Athey, George; Baker, Stephen; Ballam, Nick; Barnhurst, Daniel; Barr, Cynthia; Barss, Dan; Bazian, Samuel; Bens, Michelle; Bergman, Thomas; Berry, Rollie; 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; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coggins, Angela; Collins, Frank; Cool, Donald; Correia, Richard; Costa, Arlon; Couret, Ivonne; 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; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; 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; Giitter, Joseph; Gilmer, James; Gordon, Dennis; Gott, William; Grant, Jeffery; Greenwood, Carol; Grimes, Kelly; Grobe, Jack; Gross, Allen; Gulla, Gerald; Hale, Jerry; Hardesty, Duane; Hardin, Kimberly; Hardin, Leroy; Harrington, Holly; Harris, Tim; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Hayden, Elizabeth; Helton, Donald; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Howard, Arlette; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Imboden, Andy; Isom, James; Jackson, Karen; Jacobson, Jeffrey; Jervy, Richard; Jessie, Janelle; 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; Lichtz, Taylor; Lising, Jason; Lombard, Mark; 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; McMurtry, 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; Nerret, Amanda; Nguyen, Caroline; Norris, Michael; Norton, Charles; Opara, Stella; Ordaz, Vonna; 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; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Robinson, Edward; Rodriguez-Luccioni, Hector; Roggenbrodt, William; Ropon, Kimberly; Rosales-Cooper, Cindy; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Ryan, Michelle; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; 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; Smiroldo, Elizabeth; Smith, Brooke; Smith, Stacy; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Summers, Robert; Sun, Casper; 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; 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; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Jacob; Zimmerman, Roy

m 285

**Subject:**

Revised -- EAP Briefing to all Participants Working the Japan Event

NRC's Employee Assistance Program (EAP) will be briefing the Ops Center Staff on the issue of critical incident stress on Thursday, March 24<sup>th</sup> at: 7:00a.m.-7:30a.m., 2:00p.m. – 2:30p.m., and 3:00p.m.-3:30p.m.. We understand the high level of stress that staff has experienced during the current traumatic Japanese incident and we want to bring you the support you deserve during this heightened time of stress. We strongly encourage all employees to attend! The briefing will be held in T4B3.

*Michele Evans, Acting Deputy Director  
Office of Nuclear Security and Incident Response*



**Marksberry, Don**

**From:** Shea, James  
**Sent:** Wednesday, March 23, 2011 4:26 PM  
**To:** Arndt, Steven; RST01 Hoc; Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard  
**Subject:** RE: RST Schedule 3/26-4/2

You could put me in for BWR analyst on Midnights starting on Monday March 28<sup>th</sup> 00.00am thru that week.

Jim

---

**From:** Arndt, Steven  
**Sent:** Wednesday, March 23, 2011 12:15 PM  
**To:** RST01 Hoc; Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Shea, James; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard  
**Subject:** RE: RST Schedule 3/26-4/2

I can do the Accident Analysis Mid's starting Mon-Tue 3/28-3/29 for three or four days.

Steven Arndt

---

**From:** RST01 Hoc *-OPS center*  
**Sent:** Wednesday, March 23, 2011 12:05 PM  
**To:** Alter, Peter; Morlang, Gary; Hasselberg, Rick; Berry, Rollie; Collins, Frank; Thomas, Eric; Schoenebeck, Greg; McGovern, Denise; Rini, Brett; Bukharin, Oleg; Sloan, Scott; Circle, Jeff; Esmaili, Hossein; Ward, Leonard; Laur, Steven; Salay, Michael; Fuller, Edward; Schaperow, Jason; Marksberry, Don; Gilmer, James; Miranda, Samuel; Arndt, Steven; Helton, Donald; Norton, Charles; Kolb, Timothy; Brown, Eva; Shea, James; Vick, Lawrence; Brown, Michael; Williams, Donna; Roggenbrodt, William; Thorp, John; Kugler, Andrew; Williams, Joseph; Padovan, Mark; Isom, James; Hart, Ken; Bloom, Steven; Jervey, Richard  
**Subject:** FW: RST Schedule 3/26-4/2

All,

Please look at current watchbills from the OST. Ed Fuller has signed up for swing shifts for Accident Analyst on 3/29 and 4/5. Other than that, please reply to RST01 so we can start filling in the holes on the watchbill.

Thanks for all of your support.

Eric Thomas  
RST Coordinator

---

**From:** OST02 HOC  
**Sent:** Wednesday, March 23, 2011 8:44 AM

To: RST01 Hoc

Subject: RST Schedule 3/26-4/2

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RST Director			
Sat	26-Mar	7am - 3pm	Pat Hiland
Sat	26-Mar	3pm-11pm	Bill Ruland
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Wed	30-Mar	3pm-11pm	Greg Schoenebeck
Wed-Thur	3/30-3/31	11pm - 7am	Frank Collins

6-4/2	Thur	31-Mar	7am - 3pm	Peter Alter
	Thur	31-Mar	3pm-11pm	Greg Schoenebeck
	Thur-Fri	3/31-4/1	11pm - 7am	
	Fri	1-Apr	7am - 3pm	Rick Hasselberg
	Fri	1-Apr	3pm-11pm	
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Mon-Tue	3/28-3/29	11pm - 7am	Andy Kugler
Tue	29-Mar	7am - 3pm	Mark Padovan
Tue	29-Mar	3pm-11pm	Bill Roggenbrodt
Tue-Wed	3/29-3/30	11pm - 7am	Andy Kugler
Wed	30-Mar	7am - 3pm	Mark Padovan
Wed	30-Mar	3pm-11pm	Bill Roggenbrodt
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	Andy Kugler
Thur	31-Mar	3pm-11pm	Bill Roggenbrodt
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	Mark Padovan
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Support (Seismology Q&amp;A)</b>			
Sat	26-Mar	7am - 3pm	
Sat	26-Mar	3pm-11pm	
Sat-Sun	3/26-3/27	11pm - 7am	
Sun	27-Mar	7am - 3pm	
Sun	27-Mar	3pm-11pm	
Sun-Mon	3/27-3/28	11pm - 7am	
Mon	28-Mar	7am - 3pm	
Mon	28-Mar	3pm-11pm	
Mon-Tue	3/28-3/29	11pm - 7am	
Tue	29-Mar	7am - 3pm	
Tue	29-Mar	3pm-11pm	

Tue-Wed	3/29-3/30	11pm - 7am	
Wed	30-Mar	7am - 3pm	
Wed	30-Mar	3pm-11pm	
Wed-Thur	3/30-3/31	11pm - 7am	
Thur	31-Mar	7am - 3pm	
Thur	31-Mar	3pm-11pm	
Thur-Fri	3/31-4/1	11pm - 7am	
Fri	1-Apr	7am - 3pm	
Fri	1-Apr	3pm-11pm	
Fri-Sat	4/1-4/2	11pm-7am	
<b>RST Support (Structural)</b>			
Sat	26-Mar	7am - 3pm	Off (On Call)
Sat	26-Mar	3pm-11pm	Off (On Call)
Sat-Sun	3/26-3/27	11pm - 7am	Off (On Call)
Sun	27-Mar	7am - 3pm	Off (On Call)
Sun	27-Mar	3pm-11pm	Off (On Call)
Sun-Mon	3/27-3/28	11pm - 7am	Off (On Call)
Mon	28-Mar	7am - 3pm	Off (On Call)
Mon	28-Mar	3pm-11pm	Off (On Call)
Mon-Tues	3/28-3/29	11pm - 7am	Off (On Call)
Tues	29-Mar	7am - 3pm	Off (On Call)
Tues	29-Mar	3pm-11pm	Off (On Call)
Tues-Wed	3/29-3/30	11pm - 7am	Off (On Call)
Wed	30-Mar	7am - 3pm	Off (On Call)
Wed	30-Mar	3pm-11pm	Off (On Call)
Wed-Thur	3/30-3/31	11pm - 7am	Off (On Call)
Thur	31-Mar	7am - 3pm	Off (On Call)
Thur	31-Mar	3pm-11pm	Off (On Call)
Thur-Fri	3/31-4/1	11pm - 7am	Off (On Call)
Fri	1-Apr	7am - 3pm	Off (On Call)
Fri	1-Apr	3pm-11pm	Off (On Call)
Fri-Sat	4/1-4/2	11pm-7am	Off (On Call)

From:  
Sent:  
To:

OST02 HOC -OPS center

Wednesday, March 23, 2011 11:04 AM

Abrams, Charlotte; Abu-Eid, Bobby; Adams, John; Afshar-Tous, Mugeh; Ahn, Hosung; Alemu, Bezakulu; Algama, Don; Alter, Peter; Anderson, Brian; Anderson, James; Arndt, Steven; Arribas-Colon, Maria; Ashkeboussi, Nima; Athey, George; Baker, Stephen; Ballam, Nick; Barnhurst, Daniel; Barr, Cynthia; Barss, Dan; Bazian, Samuel; Bensi, 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; Carpenter, Cynthia; Carter, Mary; Case, Michael; Casto, Greg; Cecere, Bethany; Cervera, Margaret; Chazell, Russell; Chen, Yen-Ju; Cheok, Michael; Chokshi, Niles; Chowdhury, Prosanta; Circle, Jeff; Clement, Richard; Clinton, Rebecca; Coggins, Angela; Collins, Frank; Cool, Donald; Correia, Richard; Costa, Arlon; Couret, Ivonne; 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; Emche, Danielle; English, Lance; Erlanger, Craig; Esmaili, Hossein; Figueroa, Roberto; Fiske, Jonathan; Flannery, Cindy; Floyd, Daphene; Foggie, Kirk; Foster, Jack; Fragoyannis, Nancy; Franovich, Rani; Frazier, Alan; Freshman, Steve; Fuller, Edward; Galletta, Thomas; Gambone, Kimberly; Gartman, Michael; Gibson, Kathy; Giitter, Joseph; Gilmer, James; Gordon, Dennis; Gott, William; Grant, Jeffery; Greenwood, Carol; Grimes, Kelly; Grobe, Jack; Gross, Allen; Gulla, Gerald; Hale, Jerry; Hardesty, Duane; Harrington, Holly; Harris, Tim; Hart, Ken; Hart, Michelle; Harvey, Brad; Hasselberg, Rick; Hayden, Elizabeth; Helton, Donald; Henderson, Karen; Hiland, Patrick; Holahan, Patricia; Holahan, Vincent; Holian, Brian; Howard, Arlette; Howard, Tabitha; Huffert, Anthony; Hurd, Sapna; Huyck, Doug; Imboden, Andy; Isom, James; Jackson, Karen; Jacobson, Jeffrey; Jerve, Richard; Jessie, Janelle; 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; 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; McMurtry, 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; Nerret, Amanda; Nguyen, Caroline; Norris, Michael; Norton, Charles; Opara, Stella; Ordaz, Vonna; 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; Reis, Terrence; Resner, Mark; Riley (OCA), Timothy; Riner, Kelly; Rini, Brett; Robinson, Edward; Rodriguez-Luccioni, Hector; Roggenbrodt, William; Ropon, Kimberly; Rosales-Cooper, Cindy; Rosenberg, Stacey; Ross-Lee, MaryJane; Roundtree, Amy; Ruland, William; Ryan, Michelle; Salay, Michael; Salter, Susan; Salus, Amy; Sanfilippo, Nathan; 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; Smirolodo, Elizabeth; Smith, Brooke; Smith, Stacy; Smith, Theodore; Stahl, Eric; Stang, Annette; Steger (Tucci), Christine; Stieve, Alice; Stone, Rebecca; Stransky, Robert; Sturz, Fritz; Sullivan, Randy; Summers, Robert; Sun, Casper; 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; 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; Williamson, Linda; Willis, Dori; Wimbush, Andrea; Wittick, Brian; Wray, John; Wright, Lisa (Gibney); Wright, Ned; Wunder, George; Young, Francis; Zimmerman, Jacob; Zimmerman, Roy

EAP Breifing to all Participants Working the Japan Event

Subject:

M-387

Importance:

High

NRC's Employee Assistance Program (EAP) will be briefing the Ops Center Staff on the issue of critical incident stress on Thursday, March 24<sup>th</sup> at the end of each shift rotation: 7:00a.m.-7:30a.m. and 3:00p.m.-3:30p.m.. We understand the high level of stress that staff has experienced during the current traumatic Japanese incident and we want to bring you the support you deserve during this heightened time of stress. We strongly encourage all employees to attend! The briefing will be held in T4B3.

*Michele Evans, Acting Deputy Director  
Office of Nuclear Security and Incident Response*

Beasley, Benjamin

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From: Hiland, Patrick -NR  
Sent: Wednesday, March 23, 2011 4:40 PM  
To: Burnell, Scott  
Subject: TALKING POINTS FOR GI-199

Scott the below is offered as talking points for GI-199. Any questions, please contact Meena Khanna.

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**GENERIC ISSUE 199, "IMPLICATIONS OF UPDATED PROBABILISTIC SEISMIC HAZARD ESTIMATES IN CENTRAL AND EASTERN UNITED STATES ON EXISTING PLANTS"**

Objective of GI-199

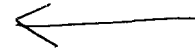
The objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern U.S. (CEUS) was warranted consistent with NRC directives.

- Results of the GI-199 safety risk assessment are not final estimates of plant-specific seismic risk.
- The seismic hazard data and plant-level fragility assumptions were conservative estimates useful as a screening tool.
- The NRC does not rank plants by seismic risk.

Key Messages:

- Safety/Risk Assessment for GI-199 was completed in August 2010. It is publically available in ADAMS at ML100270582.
- Plants have adequate safety margin for seismic issues and are within their licensing basis.
- Overall seismic risk estimates remain small and adequate protection is maintained.
- Updates to seismic data and models indicate increased seismic hazard estimates for some operating nuclear power plant sites in the Central and Eastern United States.
- NRC has separate criteria for immediate action and for evaluating whether plant improvements may be imposed through a back-fit.
- The Safety/Risk Assessment used readily available information and found that for about one-quarter of the currently operating plants, the change in seismic hazard is enough to warrant further review.
- Action may include obtaining additional, updated information and developing methods to determine if plant improvements to reduce seismic risk are warranted.

Status of Operating Plants and Need for Actions due to Japanese Event:



- Existing plants were designed with considerable margin to be able to withstand ground motions from the largest earthquake expected in the area around the plant.
- During the mid-to late-1990s, the NRC staff reassessed the margin beyond the design basis as part of the Individual Plant Examination of External Events [IPEEE] program.
- The NRC's GI-199 safety/risk assessment concluded that the probability of exceeding the design basis ground motion may have increased by a small amount at some plants. Those results also indicate that the increased risks are lower than NRC's guidelines for taking immediate action.
- US plants are designed for appropriate earthquake levels and are safe.

Timeline for Preparation and Issuance of Generic Letter:

M-288



The NRC is conducting a regulatory assessment, which includes reviewing the seismic capacity for plants located in central and eastern United States based on the latest data and analysis techniques.

- NRC is working on developing a Generic Letter (GL) to request information from all affected plants (96 plants east of the Rockies).
- The GL is scheduled to be issued for public comment in the late spring 2011.
- Processes for review of the GL include a review by the NRC's Committee to Review Generic Requirements, and a review by the Advisory Committee on Reactor Safeguards (ACRS) both before and after the public comment period.
- GL should be issued by end of 2011, near the time the new consensus seismic hazard models become available.
- Consensus hazard models are being developed by NRC, DOE, and EPRI. In addition the USGS will review the model.
- Information requested from licensees will likely require 3 to 6 months to prepare. NRC's review will be on-going as information is collected.
- Based on NRC's review, a determination will be made regarding beneficial back-fits.

## Beasley, Benjamin

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**From:** Hiland, Patrick *-NRR*  
**Sent:** Wednesday, March 23, 2011 1:53 PM  
**To:** Coe, Doug  
**Cc:** Burnell, Scott; Hayden, Elizabeth; Skeen, David; Beasley, Benjamin; Kauffman, John; Killian, Lauren; Khanna, Meena  
**Subject:** RE: ACTION: Talking points on GI-199

Below is what was put together last week along with Comm Plan. I'll ask Meena to co-ordinate response to Eric Leeds and Scott Burnell.

### GENERIC ISSUE 199, "IMPLICATIONS OF UPDATED PROBABILISTIC SEISMIC HAZARD ESTIMATES IN CENTRAL AND EASTERN UNITED STATES ON EXISTING PLANTS"

#### Objective of GI-199

The objective of the GI-199 Safety/Risk Assessment was to perform a conservative, screening-level assessment to evaluate if further investigations of seismic safety for operating reactors in the central and eastern U.S. (CEUS) are warranted consistent with NRC directives.

- The results of the GI-199 safety risk assessment should not be interpreted as definitive estimates of plant-specific seismic risk.
- The nature of the information used (both seismic hazard data and plant-level fragility information) make these estimates useful only as a screening tool. The NRC does not rank plants by seismic risk.

#### Key Messages from the GI-199 Communications Plan (slightly revised) are:

- (1) In August 2010, the Safety/Risk Assessment for GI-199 was completed. That assessment found that operating nuclear power plants are safe: Plants have adequate safety margin for seismic issues. The NRC's Safety/Risk Assessment confirmed that overall seismic risk estimates remain small and that adequate protection is maintained.
- (2) Though still small, some seismic hazard estimates have increased: Updates to seismic data and models indicate increased seismic hazard estimates for some operating nuclear power plant sites in the Central and Eastern United States.
- (3) Assessment of GI-199 will continue: Plants are safe (see key message 1), but the NRC has separate criteria for evaluating whether plant improvements may be imposed. The NRC's Safety/Risk Assessment used readily available information and found that for about one-quarter of the currently operating plants, the estimated core damage frequency change is large enough to warrant further attention. Action may include obtaining additional, updated information and developing methods to determine if plant improvements to reduce seismic risk are warranted.

Note: GI-199 Communication Plan is available in ADAMs: ML081850477.

#### Status of Operating Plants and Need of Additional Actions due to Japanese Event:

- Currently operating nuclear plants in the United States remain safe, with no need for immediate action.
- This determination is based on NRC staff reviews of updated seismic hazard information and the conclusions of the Generic Issue 199 Safety/Risk Assessment Panel.
- Existing plants were designed with considerable margin to be able to withstand the ground motions from the "deterministic" or "scenario earthquake" that accounted for the largest earthquake expected in the area around the plant.
- During the mid-to late-1990s, the NRC staff reassessed the margin beyond the design basis as part of the Individual Plant Examination of External Events (IPEEE) program.

- The results of the GI-199 assessment demonstrate that the probability of exceeding the design basis ground motion may have increased at some sites, but only by a relatively small amount. In addition, the Safety/Risk Assessment stage results indicate that the probabilities of seismic core damage are lower than the guidelines for taking immediate action.
- In summary, US plants are designed for appropriate earthquake levels and are safe. As addressed above, the NRC is conducting a program called Generic Issue 199, which is reviewing the adequacy of the earthquake design of US NPPs in central and eastern North America based on the latest data and analysis techniques. The NRC will look closely at all aspects of the response of the plants in Japan to the earthquake and tsunami to determine if any actions need to be taken in US plants and if any changes are necessary to NRC regulations.

Timeline for Preparation and Issuance of GI-199 Generic Letter:

- The NRC is working on developing a Generic Letter (GL) to request information of all affected plants (96 plants that are east of the Rockies).
- The GL is planned to be issued in draft form within the next 2 months to stimulate discussions with industry in a public meeting.
- Process will be followed, i.e., Committee to Review Generic Requirements, Advisory Committee on Reactor Safeguards Meeting and then GL will be issued as a draft for formal public comments (60 days), followed by a second meeting with ACRS.
- We expect to issue the GL by the end of this calendar year, as the new consensus seismic hazard estimates become available. (This effort is being coordinated with US NRC, DOE, EPRI, and USGS).
- The information from licensees will likely require 3 to 6 months to complete. Staff's review will commence after receiving licensees' responses. Based on staff's review, a determination can be made regarding cost beneficial backfits where it can be justified.

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**From:** Coe, Doug  
**Sent:** Wednesday, March 23, 2011 1:45 PM  
**To:** Beasley, Benjamin; Kauffman, John; Killian, Lauren  
**Cc:** Burnell, Scott; Hayden, Elizabeth; Skeen, David; Hiland, Patrick  
**Subject:** RE: ACTION: Talking points on GI-199

Ben/John/Lauren,

Can we help out OPA by extracting bullets per Eric Leed's request? Just pull directly from the Comm plan but put into a brief but logical flow of bullets.

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**From:** Hiland, Patrick  
**Sent:** Wednesday, March 23, 2011 1:39 PM  
**To:** Leeds, Eric  
**Cc:** Khanna, Meena; Burnell, Scott; Hayden, Elizabeth; Grobe, Jack; Skeen, David; Coe, Doug; Beasley, Benjamin  
**Subject:** RE: ACTION: Talking points on GI-199

We have a communication plan; I'll retrieve and make sure up to date.

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**From:** Leeds, Eric  
**Sent:** Wednesday, March 23, 2011 1:38 PM  
**To:** Hiland, Patrick; Skeen, David  
**Cc:** Khanna, Meena; Burnell, Scott; Hayden, Elizabeth; Grobe, Jack  
**Subject:** ACTION: Talking points on GI-199

DE –

Please provide OPA with talking points on GI-199. Scott Burnell is their POC. They need high level info – the schedule for review, upcoming public meetings, why it's ok to wait, what we'll do with the info once we get it, etc. I don't think we need hard-core technical bullets on response spectra, etc, but we do need to be able to tell the public WHY things are ok right now (not just repeat reactors are safe right now), and what we'll do going forward.

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

**Lee, Richard**

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**From:** Algama, Don  
**Sent:** Thursday, March 24, 2011 8:56 AM  
**To:** Lee, Richard  
**Subject:** NRC Ops Center Schedule

Richard:

I have been assigned three shifts:

March 26: 1500-1100hrs  
March 31: 2300hrs-0700hrs  
April 1: 2300hrs-0700hrs

-Don

M-390

## Rivera-Lugo, Richard

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**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 24, 2011 10:57 AM  
**To:** Raphael, Mary Jean  
**Subject:** RE: Question about the AP FOIA Request

**Categories:** Green Category

Thank you Mary Jean.

Richie

---

**From:** Raphael, Mary Jean  
**Sent:** Thursday, March 24, 2011 10:54 AM  
**To:** Parks, Jazel; Rivera-Lugo, Richard; Kardaras, Tom  
**Cc:** Hogan, Rosemary; Case, Michael; Richards, Stuart  
**Subject:** RE: Question about the AP FOIA Request

Richard,

As I indicated on the phone a few minutes ago, the scope of this request (2011-0119) is for all internal communications within the NRC pertaining to the Japanese nuclear incidents (1<sup>st</sup> paragraph). The 2<sup>nd</sup> paragraph is an example given by the requester of types of communications and offices to include, but is not limited to those offices.

Thank you  
Mary Jean

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**From:** Parks, Jazel  
**Sent:** Thursday, March 24, 2011 10:28 AM  
**To:** Rivera-Lugo, Richard; Kardaras, Tom  
**Cc:** Hogan, Rosemary; Case, Michael; Richards, Stuart; Raphael, Mary Jean  
**Subject:** RE: Question about the AP FOIA Request

I have sent an email to Mary Jean and she should respond shortly

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**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 24, 2011 10:23 AM  
**To:** Parks, Jazel; Kardaras, Tom  
**Cc:** Hogan, Rosemary; Case, Michael; Richards, Stuart  
**Subject:** Question about the AP FOIA Request  
**Importance:** High

Jazel and Tom,

This morning Rosemary brought up a very interesting question about the FOIA request from the Associated Press (AP) based on the letter sent to the NRC. The letter states the following (also attached for your convenience):

“Pursuant to the federal Freedom of Information Act, 5 U.S.C. § 552, I request access to and copies of all internal communications within the NRC (including its chairman, four commissioners and their staff members) pertaining to the Japanese nuclear incidents caused by the March II earthquake and tsunami. This includes problems at the following three facilities: Fukushima Dai-ichi, Fukushima Daini, and Onagawa. .

**Lee, Richard**

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**From:** ogino-masao@jnes.go.jp  
**Sent:** Thursday, March 24, 2011 1:22 AM  
**To:** Lee, Richard  
**Subject:** Re:request for Fukushima input deck

Dear Richard,

I am sorry for the late response.

As you know, we are very busy all days for supporting the government after the incident of the Fukushima nuclear plants.

Regarding your request providing you with a computer code input deck on any of Fukushima Dai-ichi units, I am very sorry for helpless not to provide you with the specific plant data which are treated as proprietary data in JNES under the agreement between JNES (and government) and plant owners.

Best regards

Masao

>Dear Dr. Ogino:

>

>NRC would like to request JNES to provide us with a computer code input deck (SCDAP/RELAP5, MAAP, MELCOR.,etc.,) on any of Fukushima Dai-ichi units. Of course, we refer a MELCOR input deck. We are looking for plant information (volumes, elevations, etc.,

>) needed to model the plant. The core part may contain fuel proprietary data, but we are not concern about this part because we can substitute the core part with other core information (e.g., Peach Bottom).

>

>Look forward to hearing from you.

>

>Best regards,

>Richard

M-392

## Rivera-Lugo, Richard

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**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 24, 2011 3:07 PM  
**To:** Roche, Robert  
**Subject:** FW: Nominees for 3rd Team to Japan  
**Attachments:** Background 3rd team to Japan .docx

**Categories:** Green Category

→ This attachment was provided in a previous message.

YO NOMINO A RORO!!!! LOL!

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**From:** Hogan, Rosemary  
**Sent:** Thursday, March 24, 2011 3:06 PM  
**To:** Ake, Jon; Anooshehpour, Rasool; Candra, Hernando; Graves, Herman; Herrity, Thomas; Kammerer, Annie; Pires, Jose; Rivera-Lugo, Richard; Roche, Robert; Sircar, Madhumita; Stovall, Scott; Weaver, Thomas; Murphy, Andrew  
**Subject:** FW: Nominees for 3rd Team to Japan

Anyone fit the bill?

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**From:** Case, Michael  
**Sent:** Thursday, March 24, 2011 1:58 PM  
**To:** Hogan, Rosemary; Boyce, Tom (RES); Csontos, Aladar; Koshy, Thomas; Sydnor, Russell; Gavrilas, Mirela  
**Cc:** Richards, Stuart; Rivera-Lugo, Richard  
**Subject:** FW: Nominees for 3rd Team to Japan

Hey folks. Can you take a look at the attached to see if we have any nominees for the 3<sup>rd</sup> team to Japan? They are looking for severe accident, SAMG, B.5.b, and accident recovery skills that are not traditional DE skills but we may have folks out there with hidden talents.

Let me know names as soon as you can but before Monday 0900.

For your info, they are putting together the task force doing the 90 day evaluation of the Japan event. So far, Marty Virgilio is the head and is joined on the team by Gary Holahan, Charlie Miller, Jack Grobe, Bruce Mallet, an OGC rep, an admin rep and Nathan Sanfilippo from the EDO's staff.

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**From:** Case, Michael  
**Sent:** Thursday, March 24, 2011 1:47 PM  
**To:** Coyne, Kevin; Correia, Richard; Gibson, Kathy; Richards, Stuart; Case, Michael  
**Cc:** Rini, Brett; Sheron, Brian; Uhle, Jennifer  
**Subject:** Nominees for 3rd Team to Japan

The Agency is trying to put together another team to go to Japan leaving on or about April 2<sup>nd</sup> and returning April 16<sup>th</sup>. They are seeking individuals willing to go with skills in the following areas:

Severe Accident Management Knowledge  
B.5.b Knowledge  
Accident Recovery Knowledge  
Political Savvy

Additional background info is on the attached sheet. **Please forward your nominees to Brian/Jennifer/Brett by 0800 Monday** (due at noon to Michele Evans). DSA currently has one nominee that will be forwarded

M-393



March 24, 2011

## **Background Information for Third Team to Japan**

### **Overall:**

We are planning to replace the current site team with a six person team that would include four members with a collective, good understanding of severe accident management, B5b and accident recovery, and two members with the management and political savvy to deal with the ambassador and Japanese regulators, military and cabinet. (One of these will be an Executive SES level to replace Dan Dorman)

Next phase would be to replace that 6 person team with a two person team. (Composition TBD)

### **Specific Request of OD/RAs:**

1. Identify staff with all or some of following skill sets who are willing to travel to Japan on or about April 2. The staff would return on about April 16.
  - a. Severe Accident management knowledge
  - b. B5b knowledge
  - c. Accident Recovery knowledge
  - d. Political Savvy

Please provide nominees to Michele Evans **by noon on Monday, March 28**. Brief summary of staff's background as it applies to the above skill sets and any endorsement by OD/RA will be greatly appreciated.

2. Not immediately needed would be nominees for the 4<sup>th</sup> team of two who may depart USA on or before April 13. Composition is TBD.

**Please Note:** Identification of the Next Executive to send to replace Dan Dorman, is being made by DEDOs, and is not part of this request.

Basu, Sudhamay

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**From:** Malik, Shah  
**Sent:** Thursday, March 24, 2011 4:03 PM  
**To:** Srinivasan, Makuteswara; Hull, Amy; Ray, Neil; Basu, Sudhamay; Carlson, Donald  
**Cc:** Csontos, Aladar; Prokofiev, Iouri  
**Subject:** NYTimes Op-ed "It Could Happen Here" By Frank Von Hippel, Princeton Univ

<http://www.nytimes.com/2011/03/24/opinion/24Von-Hippel.html>

## It Could Happen Here

March 23, 2011

**By FRANK N. VON HIPPEL**  
**Princeton, N.J.**

(Frank N. von Hippel, a nuclear physicist, is a professor of public and international affairs at Princeton and co-chairman of the International Panel on Fissile Materials. From 1993 to 1994 he was responsible for national security issues in the White House Office of Science and Technology Policy.)

.....

Fukushima also shows why we need to develop reactors that are more inherently safe. **Almost all the world's power reactors, including those at Fukushima, are descended from the much smaller reactors developed in the 1950s by the United States for submarines.** As we saw in the Fukushima accident, **they depend on pumps to keep them from catastrophic failure, a major weak point.** New designs less dependent on pumps have been developed, but there has not yet been enough research to make certain that they would work effectively.

One promising design is the high-temperature gas-cooled graphite reactor; **its fuel is in the form of small particles surrounded by layers of material that could contain their radioactivity if a cooling system fails.** The United States built two such prototypes in the 1960s, and Germany built one in the 1980s. With the virtual end of new reactor orders in the United States and Western Europe, as well as their small generating capacity compared to current water-cooled reactors, they were not pursued further.

**China, however,** which accounted for over 60 percent of the world's nuclear power plant construction during the past five years, **is now planning two prototypes and, if these work, 36 more.** Such a demonstration could help determine the commercial viability of gas-cooled graphite reactors worldwide, and the Department of Energy should offer the expertise of its national laboratories to help China make this effort a success.

.....

M-394

**Lee, Richard**

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**From:** Aissa, Mourad  
**Sent:** Thursday, March 24, 2011 4:22 PM  
**To:** Algama, Don; Lee, Richard  
**Subject:** RE: NEI Use Fuel Conference

Don,  
Please do find out. Keep in mind NEI is an industry advocate and our attendance (if we are invited) has to be under the NRC protocol.  
Mourad

---

**From:** Algama, Don  
**Sent:** Thursday, March 24, 2011 4:06 PM  
**To:** Lee, Richard; Aissa, Mourad  
**Subject:** NEI Use Fuel Conference

Richard and Mourad:

I got word that NEI is having a used fuel conference in Baltimore on the 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> of May (?). Would you like me to find out more information?

-Don

M-395

## Betancourt, Luis

---


**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 4:47 PM  
**To:** Sydnor, Russell  
**Subject:** FW: Spanish translation

Hi Russ,

Just to let you know OPA requested my help to translate to Spanish the NRC FAQs related Japanese Earthquake and Tsunami. Robert Roche and Richard Rivera-Lugo will be helping me in this task.

<b>LUIS BETANCOURT</b> DIGITAL I&C ENGINEER (EIT) RES/DE/DICB   301-251-7409   MS C-2A07M   <a href="mailto:Luis.Betancourt@nrc.gov">Luis.Betancourt@nrc.gov</a>
---

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**From:** Couret, Ivonne  
**Sent:** Thursday, March 24, 2011 2:47 PM  
**To:** Betancourt, Luis  
**Cc:** Rivera-Lugo, Richard  
**Subject:** RE: Spanish translation

That is fine for tomorrow. Remember try to make it simple not difficult it is for the public who have no clue on nuclear. Thanks again, Ivonne

---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 2:46 PM  
**To:** Couret, Ivonne  
**Cc:** Rivera-Lugo, Richard  
**Subject:** RE: Spanish translation

Hi Ivonne,

I'm going through the translation and looking at it will take me more time than I anticipated. I asked Richard Rivera-Lugo, one of the Structural Engineers at RES to help me get a better translation since this is more of his background. I wanted to asked you if we can give you the revised translation tomorrow morning?

Let me know what you think.

Thanks,

<b>LUIS BETANCOURT</b> DIGITAL I&C ENGINEER (EIT) RES/DE/DICB   301-251-7409   MS C-2A07M   <a href="mailto:Luis.Betancourt@nrc.gov">Luis.Betancourt@nrc.gov</a>
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**From:** Couret, Ivonne  
**Sent:** Thursday, March 24, 2011 1:48 PM  
**To:** Betancourt, Luis  
**Subject:** RE: Spanish translation

M-396

Thanks, Ivonne


---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 1:44 PM  
**To:** Couret, Ivonne  
**Subject:** RE: Spanish translation

Ok. I'll send you something by the end of the day.

<b>LUIS BETANCOURT</b> DIGITAL I&C ENGINEER (EIT) RES/DE/DICB   301-251-7409   MS C-2A07M   <a href="mailto:Luis.Betancourt@nrc.gov">Luis.Betancourt@nrc.gov</a>
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**From:** Couret, Ivonne  
**Sent:** Thursday, March 24, 2011 1:43 PM  
**To:** Betancourt, Luis  
**Subject:** RE: Spanish translation

Sooner is better than later. If so, mark time with Japan. Ivonne


---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 1:43 PM  
**To:** Couret, Ivonne  
**Cc:** Medina, Veronika  
**Subject:** RE: Spanish translation

Sure! By when do you need it?

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**From:** Couret, Ivonne  
**Sent:** Thursday, March 24, 2011 1:42 PM  
**To:** Betancourt, Luis  
**Cc:** Medina, Veronika  
**Subject:** FW: Spanish translation

Do you have time to do a quick read of this translation and make tweaks. Veronika has been generous to clean up from the literal translation. We want to make this available to the public. Thanks, Ivonne

---

**From:** Medina, Veronika  
**Sent:** Thursday, March 24, 2011 1:08 PM  
**To:** Couret, Ivonne  
**Subject:** Spanish translation


Ivonne,

Attached please find the last Spanish translation.

Voy a hacer un meeting request para mañana de un periodo de 2 horas para revisar las traducciones

**LUIS BETANCOURT** DIGITAL I&C ENGINEER (EIT)  
RES/DE/DICB | 301-251-7409 | MSC-2A07M | [Luis.Betancourt@nrc.gov](mailto:Luis.Betancourt@nrc.gov)

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**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 24, 2011 3:06 PM  
**To:** Betancourt, Luis  
**Subject:** RE: Spanish translation

Wow esta version final del Q&A es mucho mas larga que la ultima versión que yo llegue a ver entre los 14,000 e-mails que he recibido...

Pero vamos a ver que se puede hacer

---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 2:53 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** FW: Spanish translation

FYI

**LUIS BETANCOURT** DIGITAL I&C ENGINEER (EIT)  
RES/DE/DICB | 301-251-7409 | MSC-2A07M | [Luis.Betancourt@nrc.gov](mailto:Luis.Betancourt@nrc.gov)

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**To:** Couret, Ivonne  
**Subject:** Spanish translation

Ivonne,

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Veronika

## Rivera-Lugo, Richard

---

**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 24, 2011 4:33 PM  
**To:** Betancourt, Luis; Roche, Robert  
**Subject:** RE: Spanish translation

**Categories:** Green Category


Dentro de lo que he visto en comunicaciones o libros en español recuerdo los términos "movimiento de tierra" o "movimiento telúrico". No estoy tan seguro de que "temblor de tierra" sea el término mas apropiado... Pero lo podemos discutir en mas detalles mañana ya que como les dije, no he comenzado a leer el documento todavía...

---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 4:22 PM  
**To:** Roche, Robert; Rivera-Lugo, Richard  
**Subject:** RE: Spanish translation

Creo que esa es una mejor traducción que movimiento de tierra

<b>LUIS BETANCOURT</b> DIGITAL I&C ENGINEER (EIT) RES/DE/DICB   301-251-7409   MS C-2A07M   <a href="mailto:Luis.Betancourt@nrc.gov">Luis.Betancourt@nrc.gov</a>
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**From:** Roche, Robert  
**Sent:** Thursday, March 24, 2011 4:20 PM  
**To:** Rivera-Lugo, Richard; Betancourt, Luis  
**Subject:** RE: Spanish translation

Que creen del término **temblor de tierra** para todo lo q se tradujo como movimiento de suelo o movimiento de la tierra q es la traducción literal de ground motion.

---

**From:** Rivera-Lugo, Richard  
**Sent:** Thursday, March 24, 2011 4:18 PM  
**To:** Betancourt, Luis; Roche, Robert  
**Subject:** RE: Spanish translation

Got the document. Haré todo lo posible por al menos empezar a traducir esta noche en mi casa.

Richie

---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 3:30 PM  
**To:** Roche, Robert; Rivera-Lugo, Richard  
**Subject:** RE: Spanish translation

Ok. Esta es la copia que yo estoy trabajando en español. Aquí está la distribución de las preguntas:

- Luis – 1 through 7
- Robert – 8 through 14
- Richard – 15 through 20

**Rivera-Lugo, Richard**

**From:** PEER Center [peer\_center=berkeley.edu@mcsv3.net] on behalf of PEER Center [peer\_center@berkeley.edu]  
**Sent:** Thursday, March 24, 2011 6:48 PM  
**To:** Rivera-Lugo, Richard  
**Subject:** Early Field Survey of Damage from Japan's March 11th Earthquake and Tsunami, presentation by Kit Miyamoto - Video Now Posted!

**Categories:** Green Category

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## PEER News Alerts

PACIFIC EARTHQUAKE ENGINEERING RESEARCH CENTER

### Early Field Survey of Damage from Japan's March 11th Earthquake and Tsunami

Video of presentation by Kit Miyamoto is now available

Dr. Kit Miyamoto, CEO of Miyamoto International, was in Tokyo, Japan during the March 11, 2011 M9 Tohoku Taihei Yo Oki Earthquake. A few days earlier he had been attending the CUEE earthquake engineering conference hosted at the Tokyo Institute of Technology. Following the earthquake, his firm dispatched a team to the affected area to survey the damage and collect data for Japanese and international organizations.

At 5:00 pm on Wednesday March 23 in Room 502 Davis Hall at UC Berkeley, he gave a presentation of his impressions and assessment of the damaged caused by the earthquake and subsequent tsunami.

The presentation slides and a video of the presentation are now posted at:

<http://peer.berkeley.edu/events/2011/03/early-field-survey-miyamoto-japan-eqk/>

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M-297





**Betancourt, Luis**

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**From:** Couret, Ivonne  
**Sent:** Thursday, March 24, 2011 3:14 PM  
**To:** Betancourt, Luis  
**Cc:** Rivera-Lugo, Richard  
**Subject:** RE: Spanish translation

Thanks

---

**From:** Betancourt, Luis  
**Sent:** Thursday, March 24, 2011 2:51 PM  
**To:** Couret, Ivonne  
**Cc:** Rivera-Lugo, Richard  
**Subject:** RE: Spanish translation

Thanks! We will have something by tomorrow.

<b>LUIS BETANCOURT</b> DIGITAL I&C ENGINEER (EIT) RES/DE/DICB   301-251-7409   MS C-2A07M   <a href="mailto:Luis.Betancourt@nrc.gov">Luis.Betancourt@nrc.gov</a>
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M 398

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**Sent:** Thursday, March 24, 2011 1:48 PM  
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Thanks, Ivonne


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**Cc:** Medina, Veronika  
**Subject:** RE: Spanish translation

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