

(Physical Page Count = 2,107)

Group FP

(Records Withheld In Part  
and In Their Entirety)

Package Total Pages:

Withheld in Entirety: 15

Withheld in Part: 2,106

Total Pages: 2,121

Group FP 1 of 2,107

(The page(s) mentioned above represents 15 pages that have been withheld in their entirety)

(Records Withheld In  
Their Entirety)

APPENDIX A  
RECORDS BEING WITHHELD IN THEIR ENTIRETY  
COMMISSIONER SVINICKI

<u>NO.</u>	<u>DATE</u>	<u>DESCRIPTION/ (PAGE COUNT)/EXEMPTIONS</u>
1.	Undated	Draft Suggested Questions – Write-Up on Task Force Recommendations for Commission Meeting (3 pages) <b>EX. 5 – Predecisional/Deliberative Process</b>
2.	Undated	Draft – Write-up for Commission Briefing on Japan Near Term Task Force Report – Short-Term Actions (4 pages) <b>EX. 5 - Predecisional/Deliberative Process</b>
3.	04/22/11	Draft – Commissioner Svinicki's Comments on CORR-11-0051 (2 pages) <b>EX. 5 -Predecisional/Deliberative Process</b>
4.	05/02/11	Commissioner Svinicki Routing and Transmittal Slip (1 page) <b>EX. 5 - Predecisional/Deliberative Process</b>
	05/02/11	Attachment - CORR: 11-0057 – Correspondence Response Sheet and draft letter (3 pages) <b>EX. 5 - Predecisional/Deliberative Process</b>
5.	06/29/11	Draft Memorandum from Comr Magwood and Comr Ostendorff to Chrm Jaczko, et al., Subject: Engagement of Stakeholders Regarding the Events in Japan (2 pages) <b>EX. 5 - Predecisional/Deliberative Process</b>



U.S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation

***NRR OFFICE INSTRUCTION***

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**Change Notice**

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Office Instruction No.: LIC-106, Revision 1  
Office Instruction Title: Issuance of Safety Orders  
Effective Date:  
Primary Contact: James O'Driscoll  
301-415-1325  
jgo1@nrc.gov  
Responsible Organization: NRR/DPR

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U.S. Nuclear Regulatory Commission  
Office of Nuclear Reactor Regulation

***NRR OFFICE INSTRUCTION***

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~~TOP SECRET FRODO BAGGINS~~

# Emergency Preparedness

- Briefing to GEA & UCO*
- Brian Mc Dermott*
- Bob Kahler*

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## What is Emergency Preparedness?

- Overall objective of EP
  - To ensure that the nuclear power plant licensee is capable of implementing adequate measures to protect public health and safety in the event of a radiological emergency

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~~TOP SECRET FRODO BAGGINS~~



## Components of Onsite Emergency Plan

- Documents
  - Emergency Plan
  - Implementing Procedures
  - Emergency Action Levels (EALs)
- Facilities
  - Equipment
  - Maintenance
  - Power/survivability
  - Communications
- People
  - Emergency Response Organization (ERO)
  - Trained
- Agreements
  - Offsite assistance

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## Emergency Planning Zones (EPZs)

- Plume Exposure Pathway
  - 10 mile radius
- Ingestion Exposure Pathway
  - 50 mile radius

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## Plume Exposure Pathway EPZ

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- Area requiring immediate protective actions
- Approximately 10 miles in radius
- Sized based upon:
  - Projected doses from design basis accident (DBA) do not exceed EPA PAGs outside EPZ
  - Immediate life-threatening doses would generally not occur outside zone for worst-case core melt sequence
  - 10 mile EPZ provides base for expansion if necessary

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## Ingestion Exposure Pathway EPZs

Protect from consumption of contaminated food  
Considerable time to act (typically State level)  
Approximately 50 miles in radius

Sized based upon:

Contamination will not exceed PAGs beyond 50 miles  
Particulate material would be deposited within 50 miles  
Likelihood of exceeding PAGs at 50 miles is comparable to exceeding PAGs at 10 miles

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## Emergency Response Facilities

- Emergency Response Facilities (ERFs)
  - Technical Support Center (TSC)
  - Operations Support Center (OSC)
  - Emergency Operations Facility (EOF)

\*

## Event Classification

- Emergency Classes
  - Notification of Unusual Event (NOUE or UE)
  - Alert
  - Site Area Emergency (SAE)
  - General Emergency (GE)

## Facility Staffing vs Classification

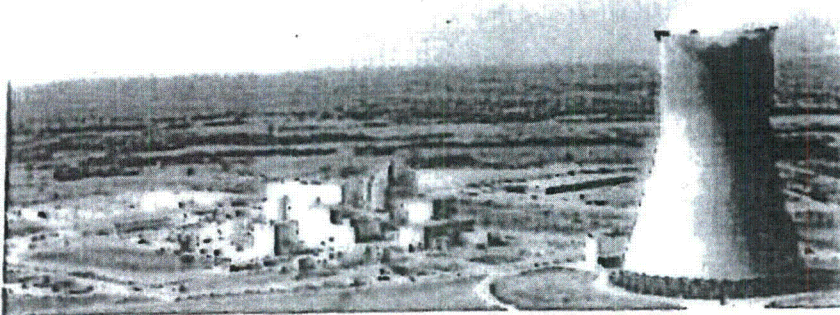
	UE	Alert	SAE	GE
ERO	On-shift staff	Augmented	Augmented	Augmented
Facility	Control Room (control)	TSC/OSC (turnover/control) EOF (staffing)	TSC/OSC (control) EOF (turnover/control)	TSC/OSC/EOF (control)
ORO	Notified	Staffing	Preliminary Protective Actions	Protective Actions

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## EP Regulations and Guidance

- 10 CFR 50 Appendix E
- 10 CFR 50.54(q)
- 10 CFR 50.47(b) -- The 16 Planning Standards
- 10 CFR 50.54(t)
- Supporting Guidance



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## 10 CFR 50 Appendix E

### *“Emergency Planning and Preparedness for Production and Utilization Facilities”*

- Contains requirements for emergency plans for *non-power reactors*
- Emergency Plans are a part of power reactor applicant's Final Safety Analysis Report (FSAR), Chapter 13
- Contains *supporting requirements* for the planning standards in §50.47(b) for power reactors
- Requirements for content of applicant's emergency plan only
  - Must include compliance with standards of §50.47(b)
- Examples
  - Offsite notification capability within 15 minutes of emergency declaration
  - Defines equipment and facility needs
  - Defines exercise and training expectations

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## 10 CFR 50.47(b)

- 16 Planning Standards
  - A high-level set of standards to be applied to emergency planning
    - Further detail on how to comply with the planning standards is contained in NUREG-0654/FEMA-REP-1
  - Must be met in licensee and State and local emergency plans
  - Power reactors only

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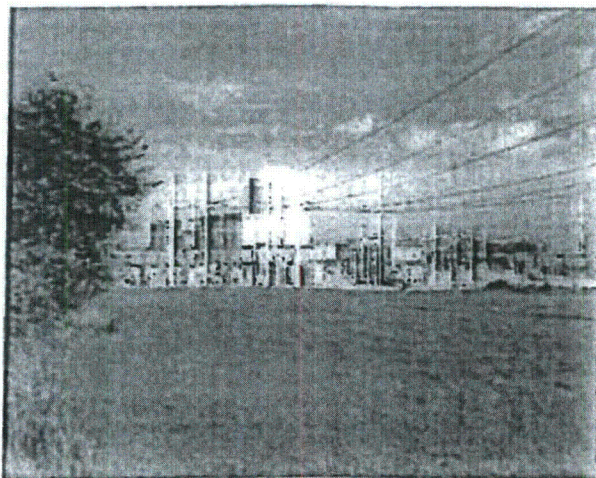
# NUREG-0654/FEMA-REP-1

- “Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants”
- Product of joint NRC/FEMA Steering Committee
- Guidance for complying with 10 CFR 50.47(b) and App E

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## Emergency Preparedness Cornerstone

- 3 Performance Indicators
- Baseline Inspection Program



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## Emergency Preparedness Performance Indicators

- Drill and Exercise Performance (DEP)
- Emergency Response Organization Drill Participation (ERO)
- Alert and Notification System Performance (ANS)

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## Reasonable Assurance

- NRC must find that the state of emergency preparedness provides reasonable assurance that adequate protective measures can and will be taken in the event of a radiological emergency
- or
- Take steps under 10 CFR 50.54(s)(2)(ii) to correct the situation

## Reasonable Assurance

- NRC bases findings on review of FEMA findings and determinations as to whether State and local plans are adequate and capable of being implemented
- In addition, NRC assesses whether the onsite plan is adequate and capable of being implemented
- Adequate emergency plans are in place
  - Adequate staff and facilities to implement plan
  - Emergency Plans are workable

## Withdrawal of Reasonable Assurance -- 10 CFR 50.54(s)

- Timeline
  - A deficiency is found
  - FEMA starts a 120-day clock for the State/locals to correct the problem
  - Licensee, NRC, State, locals notified within 10 days
  - After 60 days, a progress report is made
  - After the 120 days is up, FEMA withdraws reasonable assurance
  - NRC then starts its own 120-day clock for the licensee to correct the problem or face Commission action
  - Total time from deficiency to agency action = 240 days



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## The NRC/FEMA Interface

- Memorandum of Understanding (MOU)
  - Clarifies roles & responsibilities
    - FEMA
    - NRC
    - Joint
  - MOU first issued January 1980
  - Current version issued June 1993
    - Under revision
  - Appendix A to 44 CFR 353

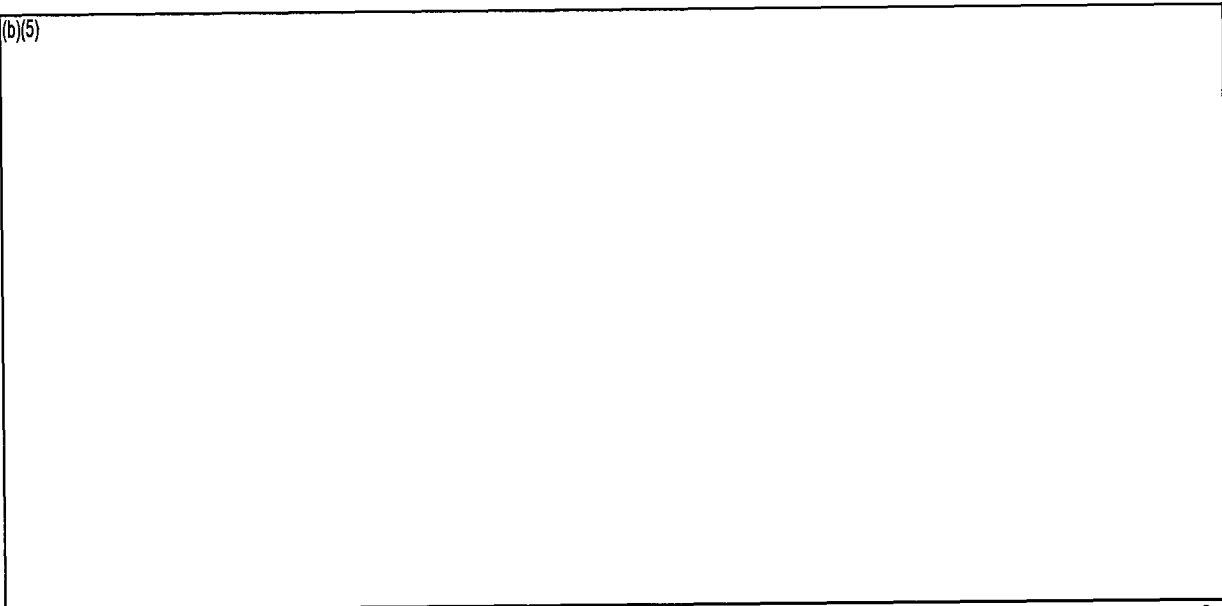
## The Future of EP

- Emergency preparedness rule changes
  - Revision to NUREG-0654/FEMA-REP-1
  - Performance Based EP
  - Outreach
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# Station Blackout Background

- **WASH-1400, "Reactor Safety Study," issued 1975, indicated that station blackout (SBO) could be an important contributor to the total risk from nuclear power plant accidents**
- **In 1980, the Commission designated the issue of station SBO as Unresolved Safety Issue (USI) A-44, "Station Blackout"**
- **NRC issued the final SBO Rule (10 CFR 50.63) on June 21, 1988**
- **SBO Rule requires each plant to be able to cope and recover from an SBO event**

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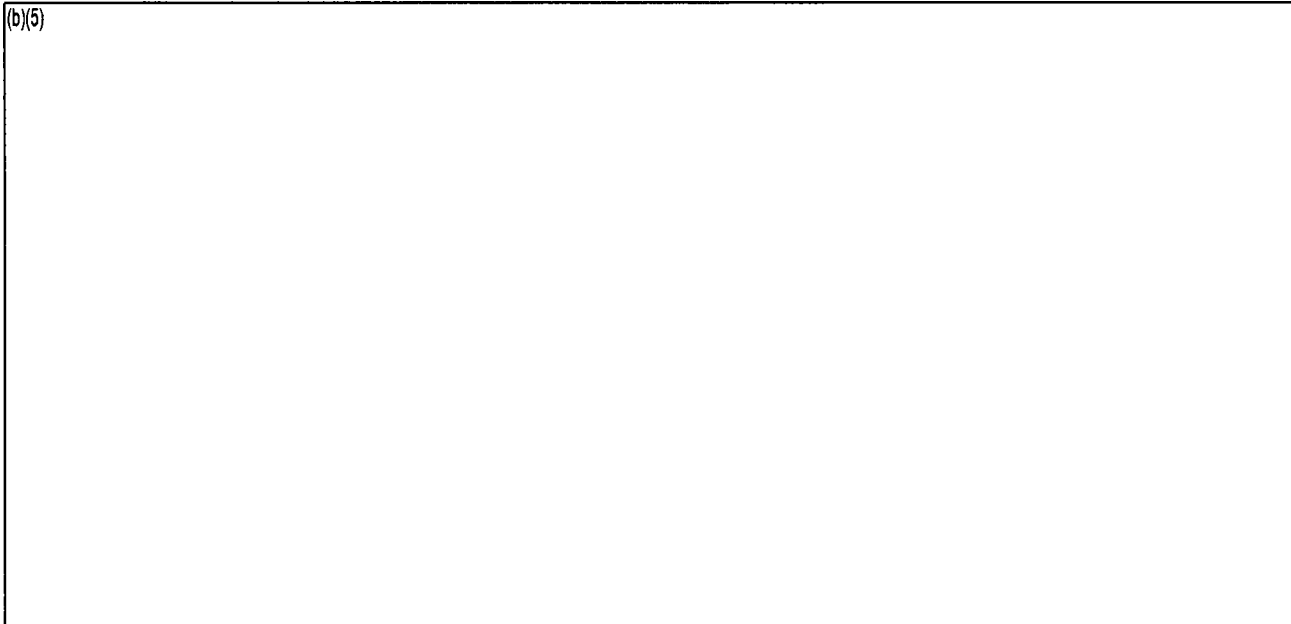


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# **Station Blackout Staff Evaluations**

- **NRC issued Regulatory Guide (RG) 1.155, "Station Blackout," on August 1988 and endorsed NUMARC 87-00 industry guidance to implement the SBO Rule**
- **All 104 plants met the SBO rule requirements at the time of the staff's review**
  - **Safety Evaluations**
  - **Pilot Inspections**
- **License Renewal Application reviews - Staff verifies the scoping and aging management of systems, structures, and components required for SBO in accordance with 10 CFR 54.4(a)(3) and 10 CFR 54.21**

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# **Phase 1 - Readily Available**

- **Existing Programs & Equipment**
- **Best Practices from Initial Response**
- **Lessons Learned from Analyses**

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### **Current U.S. Plant Safety**

- **Similar sequence of events in the U.S. is unlikely**
- **Existing mitigation measures could reduce the likelihood of core damage and radiological releases**
- **No imminent risk from continued operation and licensing activities**

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## **Regulatory Framework**

### **Recommendation 1**

**Establish a logical, systematic, and coherent regulatory framework for adequate protection that appropriately balances defense-in-depth and risk considerations**

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**Protection**

**Recommendation 2**

**Require licensees to reevaluate and upgrade as necessary the design-basis seismic and flooding protection of structures, systems and components**

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**Mitigation**

**Recommendation 4**

**Strengthen SBO mitigation capability for design-basis and beyond-design-basis external events**

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**Mitigation (Cont'd)**

**Recommendation 6**

**Identify insights about hydrogen control and mitigation inside containment or in other buildings, as part of the NRC's longer-term review**

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**Mitigation (Cont'd)**

**Recommendation 7**

**Enhance spent fuel pool makeup capability and instrumentation**

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**Emergency Preparedness (Cont'd)**

**Recommendation 10**

**Pursue additional EP topics related to multiunit events and prolonged SBO, as part of the NRC's longer-term review**

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## **NRC Programs**

### **Recommendation 12**

- **Strengthen regulatory oversight of licensee safety performance by focusing more attention on defense-in-depth requirements**

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## **New Reactor Design Certification Reviews**

- **AP1000 amendment and ESBWR**
  - **Proceed with design certification (DC) rulemaking**
  - **Combined license (COL) licensees confirm recommendations 4 and 7 (SBO and spent fuel pool)**
- **ABWR renewal, EPR, and APWR**
  - **Apply recommendations 4 and 7 before DC rulemaking**

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## **Longer-Term Review Approach**

- **Longer-term review will address:**
  - **Continued review of Fukushima accident**
  - **Areas for study identified by the near-term Task Force report**
  - **Applicability of Fukushima insights to other licensed facilities**
  - **Implementation of near-term actions**

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Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 8:36 AM  
**To:** Reddick, Darani  
**Subject:** Re: 03/12/2011, 0400 NRC Sitrep

Thanks!

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Sat Mar 12 08:33:26 2011  
**Subject:** RE: 03/12/2011, 0400 NRC Sitrep

Will do. Thanks.

**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 7:58 AM  
**To:** Reddick, Darani  
**Subject:** RE: 03/12/2011, 0400 NRC Sitrep

(b)(5),(b)(6)

**From:** Reddick, Darani  
**Sent:** Saturday, March 12, 2011 7:45 AM  
**To:** Castleman, Patrick  
**Subject:** RE: 03/12/2011, 0400 NRC Sitrep

(b)(5) I'll let you handle the 3:30 call and look forward to our summary. Have a good day!

**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 7:37 AM  
**To:** Reddick, Darani  
**Subject:** Re: 03/12/2011, 0400 NRC Sitrep

verkill is good!

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Sat Mar 12 07:36:14 2011  
**Subject:** Re: 03/12/2011, 0400 NRC Sitrep

~~NOT FOR PUBLIC DISCLOSURE~~

Doh. I'm already on the call. Oh well, I'll probably just stay listening.

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**To:** Reddick, Darani  
**Sent:** Sat Mar 12 07:29:25 2011  
**Subject:** Re: 03/12/2011, 0400 NRC Sitrep

I'm on it. Thanks!

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Sat Mar 12 07:25:30 2011  
**Subject:** Re: 03/12/2011, 0400 NRC Sitrep

Pat - I just got a call from the HOO that they are having another call this morning at 730. Did you get that message? I'm happy to call in, but if you want to continue with this, here's the info:

(b)(6)

Passcode: (b)(6)#  
0730 today

Thanks,  
DMR

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Sent:** Sat Mar 12 07:15:57 2011  
**Subject:** FW: 03/12/2011, 0400 NRC Sitrep

Commissioner,

Based on this sitrep, the situation continues to deteriorate. The attachment cannot be viewed on blackberry.  
'at

**From:** LIA11 Hoc  
**Sent:** Saturday, March 12, 2011 5:22 AM  
**To:** Hipschman, Thomas; Marshall, Michael; Batkin, Joshua; Castleman, Patrick; Orders, William; Bubar, Patrice; Anovich, Mike; Wittick, Brian; Andersen, James; Trapp, James; Leeds, Eric; Brenner, Eliot; Miller, Charles; Wiggins, Jim; Hanson, Michael; Sheron, Brian; Schmidt, Rebecca; Haney, Catherine; Pace, Patti; Sosa, Belkys; Nieh, Ho; Sharkey, Jeffrey; Harrington, Holly; Michael Dudek; Maler, Bill; Howell, Linda; Dorman, Dan; [Vanessa.Quinn@dhs.gov](mailto:Vanessa.Quinn@dhs.gov); [chelle.Ralston@dhs.gov](mailto:chelle.Ralston@dhs.gov); [Albert.Coons@dhs.gov](mailto:Albert.Coons@dhs.gov); [Harry.Sherwood@dhs.gov](mailto:Harry.Sherwood@dhs.gov); [James.Kish@dhs.gov](mailto:James.Kish@dhs.gov); [amus.O'boyle@dhs.gov](mailto:amus.O'boyle@dhs.gov); [Timothy.Greten@dhs.gov](mailto:Timothy.Greten@dhs.gov); (b)(6)  
**Subject:** 03/12/2011, 0400 NRC Sitrep

Very Respectfully,

on Lising  
NRC Federal Liaison  
1-816-5186

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040

Castleman, Patrick

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**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 7:03 PM  
**To:** Reddick, Darani  
**Subject:** Re: Japan update

Thanks, (b)(6) At last report, they were planning on a call at 7:30 tomorrow morning. I'll definitely cover that. Check the sitrep I just forwarded. It definitely says core damage is not occurring at unit 1, which is a very good thing. Thanks again. Pat

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Sat Mar 12 18:58:18 2011  
**Subject:** Re: Japan update

Sure thing. I'll email everyone a call summary and let you know when the next scheduled call will be. Get some rest!

Darani

**From:** Castleman, Patrick  
**To:** Reddick, Darani  
**Sent:** Sat Mar 12 18:23:40 2011  
**Subject:** Re: Japan update

Darani,

Thanks for the offer. If it's not too much trouble, could you please cover tonight's briefing at 11:30? I'm a little tired and may not be at full strength. I'll definitely cover tomorrow morning's briefing.

at

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Sat Mar 12 17:30:07 2011  
**Subject:** Re: Japan update

Thanks, Pat. I feel bad that you have to field the late night and early morning calls! If you want relief, just holler. :)

**From:** Castleman, Patrick  
Svinicki, Kristine  
Sharkey, Jeffrey; Reddick, Darani; Thomas, John

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Sent: Sat Mar 12 16:17:30 2011  
Subject: Japan update

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Commissioner,

The 1530 conference call just ended. There were 44 participants. Bill Borchardt led the briefing.

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he next call will be at 2330, and again at 0730. Pat

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Reddick, Darani  
**Sent:** Saturday, March 12, 2011 7:26 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 03/12/2011, 0400 NRC Sitrep

**Importance:** High

Pat - I just got a call from the HOO that they are having another call this morning at 730. Did you get that message? I'm happy to call in, but if you want to continue with this, here's the info:

(b)(6)  
Passcode: (b)(6) #  
0730 today

Thanks,  
DMR

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
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**Subject:** FW: 03/12/2011, 0400 NRC Sitrep

Commissioner,

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**To:** Hipschman, Thomas; Marshall, Michael; Batkin, Joshua; Castleman, Patrick; Orders, William; Bubar, Patrice; Ivanovich, Mike; Wittick, Brian; Andersen, James; Trapp, James; Leeds, Eric; Brenner, Elliot; Miller, Charles; Wiggins, Jim; Johnson, Michael; Sheron, Brian; Schmidt, Rebecca; Haney, Catherine; Pace, Patti; Sosa, Belkys; Nieh, Ho; Sharkey, Jeffrey; Harrington, Holly; Michael Dudek; Maier, Bill; Howell, Linda; Dorman, Dan; [Vanessa.Quinn@dhs.gov](mailto:Vanessa.Quinn@dhs.gov); [Michelle.Ralston@dhs.gov](mailto:Michelle.Ralston@dhs.gov); [Albert.Coons@dhs.gov](mailto:Albert.Coons@dhs.gov); [Harry.Sherwood@dhs.gov](mailto:Harry.Sherwood@dhs.gov); [James.Kish@dhs.gov](mailto:James.Kish@dhs.gov); [Samus.O'boyle@dhs.gov](mailto:Samus.O'boyle@dhs.gov); [Timothy.Greten@dhs.gov](mailto:Timothy.Greten@dhs.gov); (b)(6)  
(b)(6) [cmc-01@dot.gov](mailto:cmc-01@dot.gov)  
**Subject:** 03/12/2011, 0400 NRC Sitrep

Very Respectfully,

Don Lising  
NRC Federal Liaison  
1-816-5186

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 10:57 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Latest Q&A  
**Attachments:** Chairman Jaczko\_QA4\_earthquake031111.docx

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Burnell, Scott  
**To:** Franovich, Mike; Orders, William; Snodderly, Michael; Castleman, Patrick  
**Sent:** Sat Mar 12 10:04:34 2011  
**Subject:** Latest Q&A

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Questions and Answers for Chairman Jaczko  
March 11, 2011 Japan Earthquake/Tsunami Aftermath  
As of 10:00 a.m. 3/12/2011

**1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?**

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. In addition, we are ready to provide assistance if there is a specific request. An NRC staffer is participating in the USAID team headed to Japan.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed.

**2. What's going to happen following the steam explosion everyone's seen from the video footage?**

Public Answer: If a similar event occurred at a U.S. nuclear power plant, the NRC would be seeking information to answer several questions, including: What's the status of the reactor core, the reactor vessel and the containment building? What radiation measurement equipment is available and what measurements are being reported? What efforts are being taken to keep the public safe? How did the explosion affect efforts to keep the nearby reactors in a safe condition? And most importantly – What can the NRC do to help?

Additional technical, non-public information:

**3. What should people in Alaska, Hawaii and the West Coast do to protect themselves from fallout?**

Public Answer: The available evidence shows the United States can be expected to avoid any impacts from radioactive material, so no public action is necessary. We believe there is very low risk to the US considering the long distance from the US and the type of event. The NRC continues to analyze the available information, and existing monitoring equipment can detect any materials before they could present a hazard.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment is properly positioned, based on meteorological and other relevant information.

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**4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?**

*Public Answer:* All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area and then goes further. Nuclear power plants are designed to be safe based on historical data and projections regarding the area's maximum credible earthquakes.

The Japanese facilities are similar in design to several US facilities.

*Additional technical, non-public information:*

The reactor design is a Boiling Water Reactor that is similar to some U.S. designs, including Oyster Creek, Nine Mile Point and Dresden Units 2 and 3.

**5. What would U.S. plants do in this situation?**

*Public Answer:* The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implemented requirements for licensees to have additional response capabilities for extreme situations.

*Additional technical, non-public information:*

Our nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures, emergency operating procedures, severe accident guidelines and emergency plans.

**6. Are U.S. power plants designed to withstand tsunamis?**

*Public Answer:* Yes. Plants are built to withstand a variety of environmental hazards and those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure (which varies by plant.)

*Additional, technical, non-public information:*

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977. Nuclear plants are designed to withstand flooding from not only tsunami, but also hurricane and storm surge. Currently the US NRC has a tsunami research program that is focused on developing additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey.

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**7. What happens when/if a plant "melts down"?**

**Public Answer:** In short, nuclear power plants in the United States are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

**Additional, technical, non-public information:**

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

**8. Should people in Japan take KI?**

**Public Answer:** The Japanese people should listen to the public authorities in Japan regarding protective actions. KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. We do not know if this measure is necessary or appropriate in the Japanese situation.

**Additional, technical non-public information.**

There are a range of protective measures that we use ... the most effective is evacuation. Local government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that is used.

**9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?**

**Public Answer:** No

**Additional, technical non-public information:**

Diablo Canyon Units 1 and 2 declared an "unusual event" based on tsunami warning following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

**10. Has this incident changed the NRC perception about earthquake risk?**

**Public Answer:** As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

**Additional, technical, non-public information.**

We expect that there would be lessons learned, etc.

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11. Will this incident affect new reactor licensing?

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

Additional, technical non-public information:

~~NOT FOR PUBLIC DISCLOSURE~~



031

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 8:18 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Just a tweak or two  
**Attachments:** Chairman Jaczko\_QA3\_earthquake031111.docx

This is an updated version of the Q and A I sent earlier.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Burnell, Scott  
**To:** Franovich, Mike; Orders, William; Snodderly, Michael; Castleman, Patrick  
**Cc:** Brenner, Eliot  
**Sent:** Sat Mar 12 07:33:49 2011  
**Subject:** Just a tweak or two

Gentlemen;

Just a couple of things courtesy of the EDO.

Scott

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~~NOT FOR PUBLIC DISCLOSURE~~

Questions and Answers for Chairman Jaczko  
March 11, 2011 Japan Earthquake/Tsunami Aftermath  
As of 7:30 a.m. 3/12/2011

**1. What is the NRC doing about the emergencies at the nuclear power plants in Japan? Are you sending staff over there?**

Public Answer: We are closely following events in Japan, working with other agencies of the federal government, and have been in direct contact with our counterparts in that country. In addition, we are ready to provide assistance if there is a specific request. An NRC staffer is participating in the USAID team headed to Japan.

Additional technical, non-public information:

We are taking the knowledge that the staff has about the design of the US nuclear plants and we are applying this knowledge to the Japan situation. For example, this includes calculations of severe accident mitigation that have been performed.

**2. What's going to happen following the steam explosion everyone's seen from the video footage?**

Public Answer: If a similar event occurred at a U.S. nuclear power plant, the NRC would be seeking information to answer several questions, including: What's the status of the reactor core, the reactor vessel and the containment building? What radiation measurement equipment is available and what measurements are being reported? What efforts are being taken to keep the public safe? How did the explosion affect efforts to keep the nearby reactors in a safe condition? And most importantly – What can the NRC do to help?

Additional technical, non-public information:

**3. What should people in Alaska, Hawaii and the West Coast do to protect themselves from fallout?**

Public Answer: The available evidence shows the United States can be expected to avoid any impacts from radioactive material, so no public action is necessary. We believe there is very low risk to the US considering the long distance from the US and the type of event. The NRC continues to analyze the available information, and existing monitoring equipment can detect any materials before they could present a hazard.

Additional technical, non-public information: NRC is working with DHS, EPA and other federal partners to ensure monitoring equipment is properly positioned, based on meteorological and other relevant information.

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## ~~NOT FOR PUBLIC DISCLOSURE~~

### **4. Can this happen here i.e. an earthquake that significantly damages a nuclear power plant? Are the Japanese plants similar to U.S. plants?**

Public Answer: All U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area and then goes further. Nuclear power plants are designed to be safe based on historical data and projections regarding the area's maximum credible earthquakes.

The Japanese facilities are similar in design to several US facilities.

Additional technical, non-public information:

The reactor design is a Boiling Water Reactor that is similar to some of the designs here in the US.

### **5. What would U.S. plants do in this situation?**

Public Answer: The NRC requires plant designs to include multiple and diverse safety systems, and plants must test their emergency preparedness capabilities on a regular basis. Plant operators are very capable of responding to significant events. In addition, NRC regulations require plants to have plans in place that would allow them to mitigate even "worst case scenarios".

Since 9/11, we have implements requirements for licensees to have additional response capabilities for extreme situations.

Additional technical, non-public information:

Our nuclear plants have procedures in place to address a variety of accident scenarios, including abnormal operating procedures and emergency plans.

### **6. Are U.S. power plants designed to withstand tsunamis?**

Public Answer: Yes. Plants are built to withstand a variety of environmental hazards and those plants that might face a threat from tsunami are required to withstand large waves and the maximum wave height at the intake structure (which varies by plant.)

Additional, technical, non-public information:

Tsunami have been considered in the design of US nuclear plants since the publication of Regulatory Guide 1.59 in 1977. Nuclear plants are designed to withstand flooding from not only isunami, but also hurricane and storm surge. Currently the US NRC has a tsunami research program that is focused on developing additional guidance through cooperation with the National Oceanic and Atmospheric Administration and the United States Geological Survey.

### **7. What happens when/if a plant "melts down"?**

Public Answer: In short, nuclear power plants in the United States are designed to be safe. To prevent the release of radioactive material, there are multiple barriers between the radioactive

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material and the environment, including the fuel cladding, the heavy steel reactor vessel itself and the containment building, usually a heavily reinforced structure of concrete and steel several feet thick.

Additional, technical, non-public information:

The melted core may melt through the bottom of the vessel and flow onto the concrete containment floor. The core may melt through the containment liner and release radioactive material to the environment.

**8. Should people in Japan take KI?**

Public Answer: The Japanese people should listen to the public authorities in Japan regarding protective actions. KI – potassium iodide – is one of the protective measures that might be taken in a radiological emergency in this country. We do not know if this measure is necessary or appropriate in the Japanese situation.

Additional, technical non-public information.

There are a range of protective measures that we use ... the most effective is evacuation. Government officials are responsible for determining the best means to protect their public. KI is another means for protection but evacuation and sheltering are the primary means that is used.

**9. Was there any damage to U.S. reactors from either the earthquake or the resulting tsunami?**

Public Answer: No

Additional, technical non-public information:

Diablo Canyon Units 1 and 2 declared an "unusual event" based on tsunami warning following the Japanese earthquake. They have since exited the "unusual event" declaration, based on a downgrade to a tsunami advisory.

**10. Has this incident changed the NRC perception about earthquake risk?**

Public Answer: As is prudent, the NRC will certainly be looking closely at this incident and the effects on the Japanese nuclear power plant in the future to see if any changes are necessary to NRC regulations.

Additional, technical, non-public information.

We expect that there would be lessons learned, etc.

**11. Will this incident affect new reactor licensing?**

Public Answer: It is not appropriate to hypothesize on such a future scenario at this point.

Additional, technical non-public information:

~~NOT FOR PUBLIC DISCLOSURE~~

035

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 12, 2011 9:56 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Latest talking points  
**Attachments:** 03\_11\_QUAKE\_talk\_pts6.docx

Commissioner, here are updated talking points. Pat

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

**From:** Burnell, Scott  
**To:** Franovich, Mike; Orders, William; Snodderly, Michael; Castleman, Patrick  
**Sent:** Sat Mar 12 09:41:42 2011  
**Subject:** Latest talking points

And on we go...

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3\_11\_QUAKE\_talk\_pts6.docx

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OPA

TALKING POINTS

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**MARCH 11, 2011 JAPAN EARTHQUAKE AND WEST COAST TSUNAMI**

*As of 3/12/2011 9:45 a.m. EST*

- The Nuclear Regulatory Commission has spoken with its counterpart agency in Japan, offering the assistance of U.S. technical experts. Should the Japanese want to make use of U.S. expertise, NRC staffers with extensive background in boiling water reactors are available to assist efforts in Japan.
  
- The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response.
  
- The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

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- c The NRC has regulations in place that require licensees to design their plants to withstand the effects of tsunamis.  
(10CFR 50, Appendix A, Criterion 2, "Design bases for protection against natural phenomenon" requires licensees to design structures, systems, and components important to safety to withstand the effects of natural phenomenon, including tsunamis.)
- o Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.
- o The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

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044

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 7:32 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0630 Japan event status update  
**Attachments:** USNRC Earthquake-Tsunami Update.031211.0730EST.docx

Resent from blackberry to ensure you get the attachment--webmail doesn't appear to forward the attachment).

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

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

(b)(6)

**Sent:** Sun Mar 13 06:30:40 2011

**Subject:** 0630 Japan event status update

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048

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 10:42 AM  
**To:** Sharkey, Jeffrey  
**Cc:** Reddick, Darani  
**Subject:** Re: Update on Japan Situation

Thanks, Jeff. It is going to be a long trek. I really appreciate Darani's offer to cover last night's call, and her summary was top notch. Pat

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Sharkey, Jeffrey  
**To:** Castleman, Patrick  
**Cc:** Reddick, Darani  
**Sent:** Sun Mar 13 10:37:59 2011  
**Subject:** Re: Update on Japan Situation

Good stuff, Pat.

Thanks to you and Darani for all of your work this weekend in keeping KLS updated on events. We have a long way to go before the situation stabilizes. There will be many calls for action from all quarters. Staying true to the facts is paramount for us as a regulator.

Jeff

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Sent:** Sun Mar 13 08:46:56 2011  
**Subject:** FW: Update on Japan Situation

Commissioner,

Got this ANS blast message in my personal email. The attached backgrounder gives a pretty credible sequence of events at unit 1. Also, the Nuclear Café blog has a good compilation of press reports and links to their sites.

Pat

**From:** (b)(6)  
**Sent:** Sunday, March 13, 2011 8:32 AM  
**To:** Castleman, Patrick  
**Subject:** Fwd: Update on Japan Situation

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

From: Joe Colvin <president@ans.org>

To: Mr. Patrick I. Castleman<sup>(b)(6)</sup>

Sent: Sat, Mar 12, 2011 7:04 pm

Subject: Update on Japan Situation

Dear ANS Members:

I'm sure you are aware of the rapidly developing situation in Japan. The ANS is working on multiple fronts to collect credible information on the incident, and distribute that information through mainstream and social media outlets.

We have communicated with our counterparts at the Atomic Energy Society of Japan to offer any technical or other assistance which may be of help.

We have set up a special page on the ANS blog (<http://ansnuclearcafe.org>) to aggregate media reports and provide additional information when we consider it to be credible.

We are also working to organize television appearances and other media availabilities for our members so that some of the misinformation that has been presented by anti-nuclear groups can be rebutted with facts. Our goal is not necessarily to be the first on the air, but to be the most credible.

Attached you will find some talking points, along with our current analysis of the sequence of events at Fukushima I-1. I encourage you to talk to your social networks to ensure that people have the right facts and the proper perspective on this incident.

Let me know what other actions our Society should be taking during this nuclear incident.

My thoughts and prayers go out to the people of Japan.

Respectfully,

Joe Colvin

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050

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 11:42 AM  
**To:** Fragoyannis, Nancy  
**Subject:** Re: 0630 Japan event status update

You too. I'm off to the gym.

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Fragoyannis, Nancy  
**To:** Castleman, Patrick  
**Sent:** Sun Mar 13 11:41:16 2011  
**Subject:** Re: 0630 Japan event status update

Bill is great - he knows what he is talking about and isn't looking at advancing. Glad he is at the helm. Let's pray the next few days things get better. Hope you have a good day today.

Nancy Fragoyannis  
Sent from NRC Blackberry  
(b)(6)

**From:** Castleman, Patrick  
**To:** Fragoyannis, Nancy  
**Sent:** Sun Mar 13 11:37:38 2011  
**Subject:** RE: 0630 Japan event status update

(b)(5)

**From:** Fragoyannis, Nancy  
**Sent:** Sunday, March 13, 2011 11:26 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 0630 Japan event status update

(b)(5)

Nancy Fragoyannis  
Sent from NRC Blackberry  
(b)(6)

**From:** Castleman, Patrick  
**To:** Fragoyannis, Nancy

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**Sent:** Sun Mar 13 11:20:11 2011  
**Subject:** RE: 0630 Japan event status update

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(b)(5)

**From:** Fragoyannis, Nancy  
**Sent:** Sunday, March 13, 2011 11:15 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 0630 Japan event status

Thanks. Heading in about 10 tonight for the graveyard shift. So really what does this all mean? Still possibility of meltdown? I heard Jim Trapp went to Japan, who else?

Nancy Fragoyannis  
Sent from NRC Blackberry

(b)(6)

**From:** Castleman, Patrick  
**To:** Fragoyannis, Nancy  
**Sent:** Sun Mar 13 07:42:06 2011  
**Subject:** Fw: 0630 Japan event status update

Nancy, close hold please. This is the latest from the ops center. Pat

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

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

(b)(6)

**nt:** Sun Mar 13 06:30:40 2011  
**bject:** 0630 Japan event status update

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043

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Reddick, Darani  
**Sent:** Sunday, March 13, 2011 7:22 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

Sweet - thanks!

**From:** Castleman, Patrick  
**To:** Reddick, Darani  
**Sent:** Sun Mar 13 07:18:30 2011  
**Subject:** RE: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

Good morning Darani,

Thank you so so much for covering last night's call. Your summary was great! I'll be on the 0730 call. Go back to bed.  
:)

Pat

**From:** Reddick, Darani  
**Sent:** Sunday, March 13, 2011 7:13 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

Pat - just want to confirm that you'll be on this morning's call? Thanks.

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Sent:** Sat Mar 12 19:53:16 2011  
**Subject:** Fw: 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

ent from an NRC Blackberry  
Patrick Castleman

(b)(6)

(b)(6)

(b)(6)

**Cc:** HOO Hoc

**Sent:** Sat Mar 12 18:40:32 2011

**Subject:** 1830 EST (March 12, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1830 EST situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the Impacts of the earthquake/tsunami on March 12, 2011.

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

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

-Sara

Sara K. Mroz

Communications and Outreach

Office of Nuclear Security and Incident Response

US Nuclear Regulatory Commission

[sara.mroz@nrc.gov](mailto:sara.mroz@nrc.gov)

[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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051

Sharkey, Jeffrey

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 2:44 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1400 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** USNRC Earthquake-Tsunami Update.031311.1400EDT.docx

Text briefing at 1530.

Content sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

(b)(6)

**Received:** Sun Mar 13 14:33:26 2011  
**Subject:** 1400 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1400 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 13, 2011.  
Please note that this information is "Official Use Only" and is only being shared within the federal family.  
Please call the Headquarters Operations Officer at 301-816-5100 with questions.  
ra

Pat K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
Nuclear Regulatory Commission  

[p.mroz@nrc.gov](mailto:p.mroz@nrc.gov)  
[J.HOC@nrc.gov](mailto:J.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

056

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Reddick, Darani  
**Sent:** Sunday, March 13, 2011 5:45 PM  
**To:** Castleman, Patrick  
**Subject:** Re: Latest conference call

No problem. See you tomorrow.

---

**From:** Castleman, Patrick  
**To:** Reddick, Darani  
**Sent:** Sun Mar 13 17:27:41 2011  
**Subject:** Re: Latest conference call

Darani,

Thank you so so much! I'd really appreciate it if you could cover the call. The number and passcode are the same. It should be an interesting call because we'll probably start getting some good info from the NRC guys on the ground.

See you tomorrow (b)(6) Pat

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

---

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Sun Mar 13 16:49:37 2011  
**Subject:** Re: Latest conference call

Hi Pat,

There's another call at 2330 that you'd like me to cover, let me know.

Darani

---

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Sent:** Sun Mar 13 16:38:28 2011  
**Subject:** Latest conference call

Commissioner,

Bill Borchardt led the 1530 conference call. There were 25 participants.

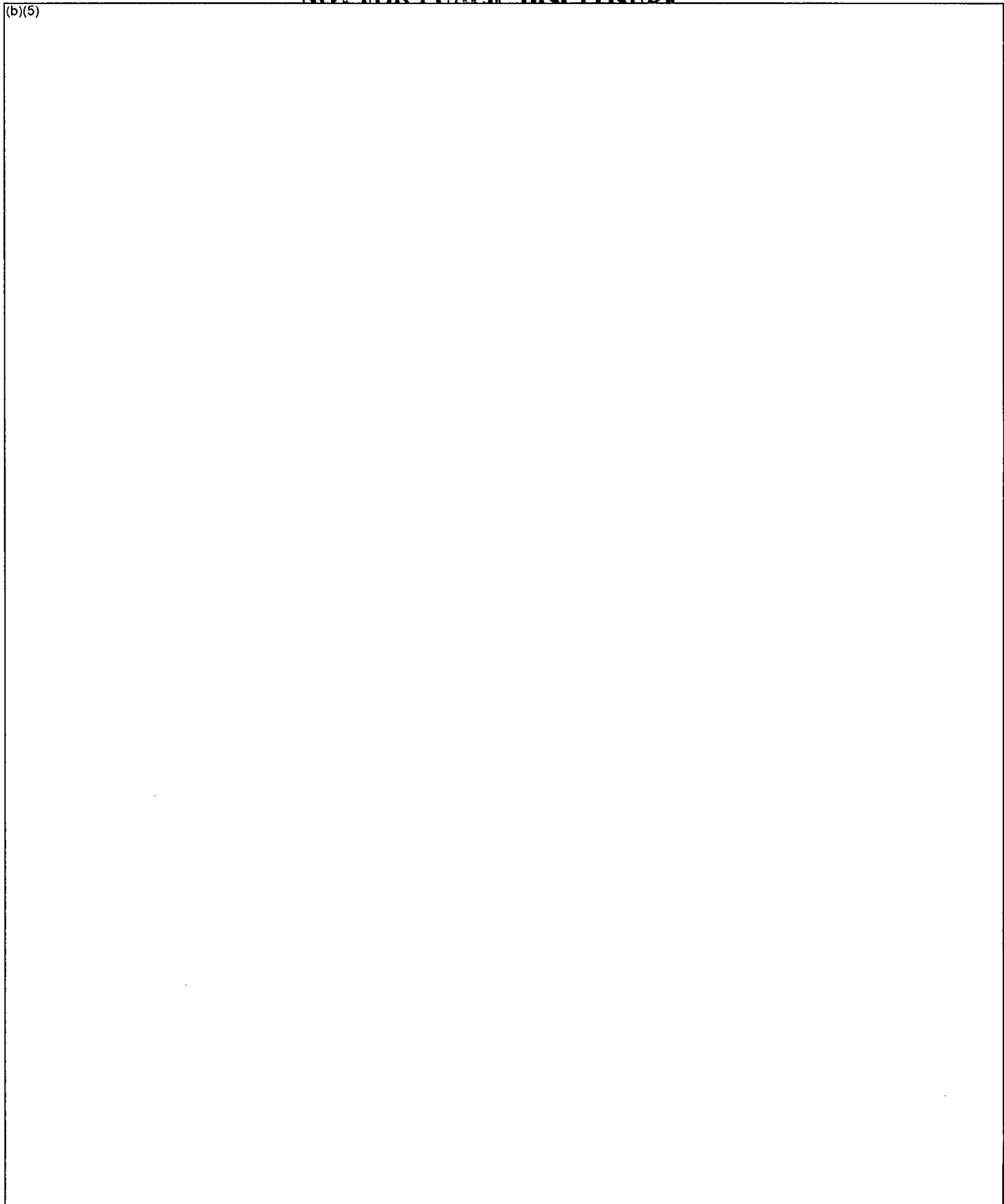
(b)(6)

~~NOT FOR PUBLIC DISCLOSURE~~



~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)



~~NOT FOR PUBLIC DISCLOSURE~~

058

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 10:55 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 2230 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** USNRC Earthquake-Tsunami Update.031311.2230EDT.docx

This is a second update to the previous messages. This is significant. There has been a hydrogen explosion at unit 3 at Fukushima Daichi. No other changes to the sitrep.

Sent from an NRC Blackberry  
 Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

(b)(6)

(b)(6)

**From:** LIA09 Hoc

**Sent:** Sun Mar 13 22:44:56 2011

**Subject:** RE: 2230 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 2230 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 13, 2011. This Update includes information on the status of Fukushima Daiichi, Unit 3.

Please note that this information is "Official Use Only" and is only being shared within the federal family. Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Anderson  
 Office of Nuclear Security and Incident Response  
 Nuclear Regulatory Commission  
[jes.anderson@nrc.gov](mailto:jes.anderson@nrc.gov)  
[J7.HOC@nrc.gov](mailto:J7.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

LIA07.HOC@nrc.gov (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

053

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 4:06 PM  
**To:** Fragoyannis, Nancy  
**Subject:** Fw: 1600 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** USNRC Earthquake-Tsunami Update.031311.1600EDT.docx

Nancy, here is the latest. Pat

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** LIA07 Hoc  
**To:** (b)(6)  
(b)(6)

**From:** Sun Mar 13 15:57:29 2011  
**Subject:** 1600 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1600 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 13, 2011. This Update includes information related to the Commission's evaluation of radiation measurements from the USS Ronald Reagan. Please note that this information is "Official Use Only" and is only being shared within the federal government. Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Patrick K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
Nuclear Regulatory Commission  
pmroz@nrc.gov  
17.HOC@nrc.gov (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

052

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 4:05 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1600 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** USNRC Earthquake-Tsunami Update.031311.1600EDT.docx

(b)(5)

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

(b)(6)

**sent:** Sun Mar 13 15:57:29 2011  
**subject:** 1600 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1600 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 13, 2011. This Update includes information related to NRC's evaluation of radiation measurements from the USS Ronald Reagan.

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

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

ra

Ma K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
Nuclear Regulatory Commission

[kmroz@nrc.gov](mailto:kmroz@nrc.gov)  
[W.HOC@nrc.gov](mailto:W.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

057

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffry

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 10:40 PM  
**To:** Svinicki, Kristine; Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 2200 EDT (March 13, 2011) USNRC Earthquake/Tsunami S  
**Attachments:** USNRC Earthquake-Tsunami Update.031311.2200EDT.docx

This is the same as the last message from a few minutes ago. The only change is an update at the end of the report regarding the radiation readings from USS Ronald Reagan.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

(b)(6)

**From:** Sun Mar 13 22:25:49 2011  
**Subject:** RE: 2200 EDT (March 13, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 2200 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 13, 2011. This Update includes information related to NRC's evaluation of radiation measurements from the USS Ronald Reagan. Please note that this information is "Official Use Only" and is only being shared within the federal family. Please call the Headquarters Operations Officer at 301-816-5100 with questions.

Anderson  
Office of Nuclear Security and Incident Response  
Nuclear Regulatory Commission  
[es.anderson@nrc.gov](mailto:es.anderson@nrc.gov)  
[J7.HOC@nrc.gov](mailto:J7.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

046

~~NOT FOR PUBLIC DISCLOSURE~~

Reddick, Darani

**From:** Castleman, Patrick  
**Sent:** Sunday, March 13, 2011 8:47 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: Update on Japan Situation  
**Attachments:** ANS\_Japan\_Backgrounder.pdf

Commissioner,

I got this ANS blast message in my personal email. The attached backgrounder gives a pretty credible sequence of events at unit 1. Also, the Nuclear Café blog has a good compilation of press reports and links to other sites.

Pat

**From:** [redacted] (b)(6)  
**Sent:** Sunday, March 13, 2011 8:32 AM  
**To:** Castleman, Patrick  
**Subject:** Fwd: Update on Japan Situation

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

**From:** Joe Colvin <president@ans.org>  
**To:** Mr. Patrick I. Castleman (b)(6)  
**Sent:** Sat, Mar 12, 2011 7:04 pm  
**Subject:** Update on Japan Situation

Dear ANS Members:

I'm sure you are aware of the rapidly developing situation in Japan. The ANS is working on multiple fronts to collect credible information on the incident, and distribute that information through mainstream and social media outlets.

We have communicated with our counterparts at the Atomic Energy Society of Japan to offer any technical or other assistance which may be of help.

We have set up a special page on the ANS blog (<http://ansnuclearcafe.org>) to aggregate media reports and provide additional information when we consider it to be credible.

We are also working to organize television appearances and other media availabilities for our members so that some of the misinformation that has been presented by anti-nuclear groups can be rebutted with facts. Our goal is not necessarily to be the first on the air, but to be the most credible.

Attached you will find some talking points, along with our current analysis of the sequence of events at Fukushima I-1. I encourage you to talk to your social networks to ensure that people have the right facts and the proper perspective on this incident.

Let me know what other actions our Society should be taking during this nuclear incident.

~~NOT FOR PUBLIC DISCLOSURE~~

My thoughts and prayers go out to the people of Japan.

Respectfully,

Joe Colvin

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

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

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

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

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

### **What happened?**

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

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

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

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

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

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

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

**What is the ANS doing?**

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

ANS has established an incident communications response team.

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

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

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

065

Sharkey, Jeffrey

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Hollaway, William R. [WHollaway@gibsondunn.com]  
**Sent:** Monday, March 14, 2011 12:13 PM  
**To:** Sharkey, Jeffrey  
**Subject:** RE: Commissioner Svinicki's Participation in the SAIS/Nikkei/GDC Symposium on "US-Japan Energy Cooperation"

eff,

There haven't been any updates or changes yet, but I expect that we will know more in the coming week as additional information comes out of Japan.

There is no doubt that this is a transformational event and that there will be much interest in discussing it.

We will let you know as soon as we know more.

Bill

William R. Hollaway, Ph.D.  
Partner

GIBSON DUNN

Gibson, Dunn & Crutcher LLP  
150 Connecticut Avenue, N.W., Washington, DC 20036-5306  
Tel +1 202.955.8592 • Fax +1 202.530.9654  
Hollaway@gibsondunn.com • www.gibsondunn.com

**From:** Sharkey, Jeffrey [mailto:Jeffrey.Sharkey@nrc.gov]  
**Sent:** Monday, March 14, 2011 8:23 AM  
**To:** Hollaway, William R.  
**Subject:** RE: Commissioner Svinicki's Participation In the SAIS/Nikkei/GDC Symposium on "US-Japan Energy Cooperation"

I,

Please advise if there are any updates/changes to the plans for the symposium, in light of the ongoing crisis in Japan.

Our thoughts and prayers are with the Japanese people.

If

**From:** Hollaway, William R. [mailto:WHollaway@gibsondunn.com]  
**Sent:** Wednesday, March 02, 2011 11:21 AM  
**To:** Sharkey, Jeffrey  
Lepre, Janet  
**Subject:** RE: Commissioner Svinicki's Participation In the SAIS/Nikkei/GDC Symposium on "US-Japan Energy Cooperation"

Thanks for your prompt response. We are thrilled that Kristine will be participating in the Symposium.

I was out at a meeting now and will give you a call later today to follow up.

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Bill

~~NOT FOR PUBLIC DISCLOSURE~~

William R. Hollaway

GIBSON DUNN

Gibson, Dunn & Crutcher LLP  
1050 Connecticut Avenue, N.W., Washington, DC 20036-5306  
Tel +1 202.955.8592 • Fax +1 202.530.9654  
rhollaway@gibsondunn.com • www.gibsondunn.com

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**From:** Sharkey, Jeffrey [<mailto:Jeffrey.Sharkey@nrc.gov>]  
**Sent:** Wednesday, March 02, 2011 10:23 AM  
**To:** Hollaway, William R.  
**Cc:** Lepre, Janet  
**Subject:** Commissioner Svinicki's Participation In the SAIS/Nikkel/GDC Symposium on "US-Japan Energy Cooperation"

Good morning, Bill.

By way of introduction, I am Commissioner Svinicki's chief of staff here at NRC. This is a follow up to a message I left in your office voice mail to confirm Kristine's participation in the symposium.

Kristine welcomes the opportunity to participate as a member on the nuclear issues panel. She is not in the office today, but asked that I contact you to coordinate logistics with your staff. I'm sorry to have missed your call yesterday afternoon, but understand you spoke with Jan Lepre (cc'd here), Kristine's Administrative Assistant. Jan and I will handle logistics on our end, and anticipate that I will accompany Kristine to the symposium.

Attached please find Commissioner Svinicki's official photo and bio, as well as an abbreviated bio for introducing her as a panelist.

I stand ready to assist in any additional logistics necessary to support Kristine's participation.

Best regards,

J

Jeffrey M. Sharkey  
Chief of Staff  
Office of Commissioner Kristine L. Svinicki  
Nuclear Regulatory Commission  
-415-1867 (work)  
(b)(6)  
-415-1863 (fax)

=====  
~~This message may contain confidential and privileged information. If it has been sent to you in error, please reply to advise the sender of the error and immediately delete this message.~~  
=====

~~NOT FOR PUBLIC DISCLOSURE~~

066

Reddick, Darani

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Monday, March 14, 2011 2:14 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1330 EDT (March 14, 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** USNRC Earthquake-Tsunami Update.031411.1330EDT.docx

The major change here is that they are injecting water into all three affected units. Also, all three containments are functioning.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

(b)(6)

**Cc:** LIA09 Hoc; LIA11 Hoc

**Sent:** Mon Mar 14 14:06:39 2011

**Subject:** 1330 EDT (March 14, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1330 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 14, 2011. This Update includes information on the Japanese request for US assistance in cooling Fukushima Daiichi Units 1, 2, and 3.

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

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

~~NOT FOR PUBLIC DISCLOSURE~~

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

~~NOT FOR PUBLIC DISCLOSURE~~

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070

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, March 14, 2011 5:26 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Re: 1530 Conference Call

I will request them.

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

**From:** Svinicki, Kristine  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Sent:** Mon Mar 14 17:17:02 2011  
**Subject:** RE: 1530 Conference Call

Thanks.

Members of the Commission have not received updated Q&As or talking points in some days. It might be good for us to have the current version.

**From:** Castleman, Patrick  
**Sent:** Monday, March 14, 2011 4:12 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** 1530 Conference Call

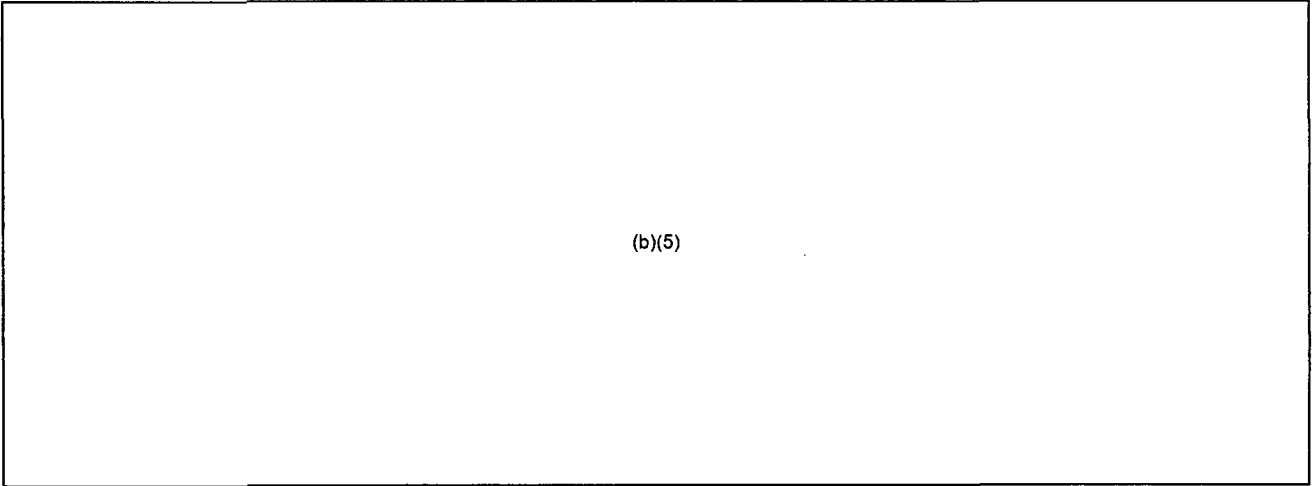
Commissioner,

Party Virgilio briefed the 1530 conference call, which had 28 participants.

(b)(5)



~~NOT FOR PUBLIC DISCLOSURE~~



(b)(5)

Pat

~~NOT FOR PUBLIC DISCLOSURE~~

072

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, March 14, 2011 9:28 PM  
**To:** Reddick, Darani  
**Subject:** Fw: ACTION: Commissioners Assistants Briefing Notification

Hi, Darani,

Forwarding this FYI, knowing that you are already aware. Thanks again for covering this call. Just saw on the news that there are new developments that may not be good.

Pat

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** [ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov) <[ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov)>  
**To:** Castleman, Patrick  
**Sent:** Mon Mar 14 21:10:50 2011  
**Subject:** ACTION: Commissioners Assistants Briefing Notification

There will be an Commissioners Assistants Briefing given by the NRC HQ at 23:30 concerning the Reactor Events in Japan. Call (b)(6) approximately 5 minutes before the scheduled start time. When prompted, enter security code (b)(6) You may call 301-816-5164 at this time and follow the voice prompts if you do not wish to receive this notification from our Automatic Notification System.

~~NOT FOR PUBLIC DISCLOSURE~~

067

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

From: Lepre, Janet  
Sent: Monday, March 14, 2011 3:50 PM  
To: Svinicki, Kristine  
Cc: Sharkey, Jeffry  
Subject: FW: Why are you silent?  
Attachments: FW: Why are you silent?

YI, please see the attached e-mail from Roger Mattson.

an

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

From: CMRSVINICKI Resource  
Sent: Monday, March 14, 2011 3:29 PM  
To: Lepre, Janet; Harves, Carolyn  
Subject: FW: Why are you silent?

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

From: Roger Mattson [mailto:(b)(6)]  
Sent: Monday, March 14, 2011 2:43 PM  
To: CMRAPOSTOLAKIS Resource; CMRSVINICKI Resource; CMRMAGWOOD Resource; CMROSTENDORFF Resource; [CMRJACZKO@nrc.gov](mailto:CMRJACZKO@nrc.gov)  
Cc: OPA Resource  
Subject: Why are you silent?

Dear NRC Commissioners,

Having lived through the accident and the public relations nightmare of TMI, I have a special empathy for your current situation. However, I am writing to tell you that you are making a tragic mistake with respect to Fukushima.

Americans from coast to coast are concerned for the events unfolding there. Many of them write and call me asking for answers. However, I can speak to only a few of them and even then I have no reliable information. Meanwhile the media are full of wannabe experts operating on too little information. Confusion reigns and you remain silent. That is the mistake of which I speak.

I am sure that you too have a dearth of information, but you have more than the rest of us. And you can, if you choose, tell us what is really going on. In addition, sketchy information is beginning to leak out that causes more questions than it provides answers. For example, where is the fuel handling crane that we see missing from the satellite photos after the hydrogen explosion in Unit 3? Are all three reactor vessels at high pressure discharging steam through the SRVs to the torus or are they all at lower pressure discharging steam through the MSIVs to the rbines? Why isn't the sea water getting into the reactor vessels? If plant radiation is being detected 100 miles offshore, why have the IAEA and the Japanese classified this as a local event? I could go on, but you get the picture.

Once upon a time, in the heat of the moment, I asked NRC Chairman Hendrie who he was protecting by not ordering a precautionary evacuation at TMI. That simple question got us off the dime and we at least moved children and pregnant women away from the plant.

Ask you now: who are you protecting by remaining silent?

If it is the industry, then you are on the wrong course. The industry is way ahead of you in informing the public to the best of its ability. Marvin Fertel, NEI's president, is a hero in my book for going on "Meet the Press" yesterday, but I regret that his information is more sketchy than yours.

If it is your reputation, then you run a great risk. Your reputation and the respect that the American people have long had for the NRC are eroding hour by hour as this tragedy unfolds.

If it is our relations with the Japanese, then tell them that you must speak now to fulfill your obligations to Americans and then offer any aid with the accident and its aftermath that you can possibly provide.

In the meanwhile, other federal agencies are doing their best to keep us informed, e.g., NOAA, NASA, and USGS. But you are the keepers of nuclear safety wisdom. We look to you for that, more than anyone else.

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

ne of you should hold a news conference yet today and tell us what you know and what you do not know.

peak! Please.

oger

nger, J. Mattson, PhD

(b)(6)

A rectangular box with a black border, used to redact information. The text "(b)(6)" is written in the top-left corner of the box.

~~NOT FOR PUBLIC DISCLOSURE~~

078

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 7:27 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: FYI: Talking Points & Q&As  
**Attachments:** Talking Points 2.pdf; Talking Points for Chairman 245 PM 3-14-11.doc; State Q&A Rev 1.pdf

As requested.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** Harves, Carolyn  
**To:** Sharkey, Jeffrey; Thoma, John; Reddick, Darani; Castleman, Patrick  
**Cc:** Lepre, Janet  
**Sent:** Tue Mar 15 07:06:17 2011  
**Subject:** FW: FYI: Talking Points & Q&As

**From:** LIA07 Hoc  
**Sent:** Monday, March 14, 2011 6:27 PM  
**To:** Pace, Patti; Speiser, Herald; Gibbs, Catina; Lepre, Janet; Harves, Carolyn; Blake, Kathleen; Savoy, Carmel; Crawford, Carrie; Jimenez, Patricia; Herr, Linda; Bozin, Sunny  
**Subject:** FYI: Talking Points & Q&As

Per request, attached are the latest talking points and Q&As for all Commissioners' offices.

~~NOT FOR PUBLIC DISCLOSURE~~

Quaketalking points march 14.docx

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OPA  
TALKING POINTS

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JAPAN NUCLEAR SITUATION

As of 3/14/2011 3 P.M. EST

In a White House briefing this morning, Chairman Jaczko said the type and design of the Japanese reactors and the way events have unfolded give us confidence in saying radiation at harmful levels will not reach the U.S.

Jaczko also said today that we believe the protective steps the Japanese are taking are comparable to ones we would use here and that we advise Americans in Japan to follow the guidance of Japanese officials.

According to Chairman Jaczko, the NRC is always looking to learn information that can be applied to the U.S. reactors and we will certainly be looking at the information that comes from this incident.

The Japanese government has formally asked for assistance from the United States as it continues to respond to nuclear power plant cooling issues triggered by an earthquake and tsunami on March 11. The NRC is assembling a team to send over in response to the request for help.

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

The NRC already has two experts in boiling-water reactors (BWR) in Tokyo offering technical assistance. They are part of a USAID team.

The NRC is working with other U.S. agencies to monitor radioactive releases from Japan and to predict their path. All the available information indicates weather conditions have taken the small releases from the Fukushima reactors out to sea away from the population.

Given the results of the monitoring and distance between Japan and Hawaii, Alaska, the U.S. Territories and the U.S. West Coast, the NRC does NOT expect the U.S. to experience any harmful levels of radioactivity.

Nuclear power plants are built to withstand environmental hazards, including earthquakes. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster.

The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically reported for the site and surrounding area. The NRC then adds a margin for error to account for the historical data's limited accuracy. In other words, U.S. nuclear power plants are designed to be safe based on historical data from the area's maximum credible earthquake.

The NRC is coordinating its actions with other federal agencies as part of the U.S. government response. The NRC's headquarters Operations Center is activated and monitoring the situation on a 24-hour basis.



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Date: 3/13/2011

Time: 1:55am

State Q&A's:

Q. What is the radiological consequence of the event in Japan for the U.S.?

A. At this time, there is no indication that materials from the incidents in Japan have the potential to have any significant radiological effect on the U.S.

Q. Are there any protective measures that residents in the U.S. should be considering?

A. No, not given current information.

Q. What is the Federal family, i.e., NRC-EPA-DOE, doing to monitor the radiological consequence of the event in Japan on the United States?

A. The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response. The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States.

U.S. nuclear power plants have sensitive equipment to monitor the status of radiological conditions. Additionally, personnel at nuclear power plants have specific knowledge in radiological field monitoring techniques and could assist State and Federal personnel in environmental sampling activities, should that be necessary to evaluate public health and safety concerns.

EPA has permanent stationary radiological monitoring stations on the West coast. In the event of a confirmed radiological release with a potential to impact the U.S., EPA is the Federal agency responsible for radiological monitoring. DOE would be responsible for aerial monitoring, should there be a confirmed radiological release.

Non-Public Info For States Only: Questions about any radiological impact on the U.S. West coast is Adora Andy, the Deputy Associate Administrator for EPA's Office of External Affairs: cell is (b)(6) email [andy.adora@epa.gov](mailto:andy.adora@epa.gov)

Key Messages:

The NRC is coordinating its actions with other Federal agencies as part of the U.S. government response. The NRC is examining all available information as part of the effort to analyze the event and understand its implications both for Japan and the United States. The NRC's headquarters Operations Center in Rockville, MD has been stood up since the beginning of the emergency in Japan and is operating on a 24-hour basis.

NRC officials in Rockville, MD have spoken with the agency's counterpart in Japan and offered the assistance of U.S. technical experts. Two officials from NRC with expertise in boiling water nuclear reactors have deployed to Japan as part of a U.S. International Agency for International Development (USAID) team. USAID is the federal government agency primarily responsible for providing assistance to countries recovering from disaster administering.

U.S. nuclear power plants are built to withstand environmental hazards, including earthquakes and tsunamis. Even those plants that are located outside of areas with extensive seismic activity are designed for safety in the event of such a natural disaster. The NRC requires that safety-significant structures, systems, and components be designed to take into account the most severe natural phenomena historically estimated for the site and surrounding area.

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The NRC will not provide information on the status of Japan's nuclear power plants. See NRC's web site at [www.nrc.gov](http://www.nrc.gov) or blog at <http://public-blog.nrc-gateway.gov> for the latest information on NRC actions.

For background information on generic operations at a boiling-water reactor, including an animated graphic, visit the NRC's website at [www.nrc.gov](http://www.nrc.gov)

**Other sources of information:**

USAID -- [www.usaid.gov](http://www.usaid.gov)

U.S. Dept. of State -- [www.state.gov](http://www.state.gov)

FEMA -- [www.fema.gov](http://www.fema.gov)

White House -- [www.whitehouse.gov](http://www.whitehouse.gov)

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

International Atomic Energy Agency -- [www.iaea.org/press](http://www.iaea.org/press)

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NRC Talking Points- Current as of 3/14/11, 2:45 PM EST

Reactor Status

- Fukushima Daiichi Units 1 - 6 (no AC power, limited DC power).

Unit 1

- Partial core damage from exposed fuel.
- As of 2200 on March 14, Japan time, sea water is being injected.
- The reactor was described as "more stable."
- Containment described as "functional."
- Hydrogen explosion has damaged reactor building roof.

Unit 2

- Hydrogen explosion possibility has been mitigated because a part of the reactor building roof has been removed.
- RCIC has failed.
- Coolant was stopped for quite some time so core damage is assumed. Core was most likely totally uncovered for some time.
- As of 2200 on March 14, Japan time, sea water is being injected.
- Unit 2 containment is described as "functioning."

Unit 3

- Condition described as essentially the same as Unit 1.
- As of 2200 on March 14, Japan time, sea water is being injected.
- Hydrogen explosion has damaged reactor building roof.
- Containment described as "functional."

- Units 4 - 6 stable.

• Other Japanese Nuclear Sites:

- Fukushima Daini Units 1 - 4: stable offsite power available, preparing to vent, evacuation to 10 km, ultimate heat sink unavailable.
- Onagawa Units 1 - 3: shutdown, stable, turbine building basement fire extinguished.
- Kashiwazaki Kariwa Nuclear Power Station (Advanced Reactors): Units 1, 5, 6, 7: normal operation / Units 2 to 4: regular outage.

- Currently no concerns regarding spent nuclear fuel pools.

General Talking Points

Tepco and US Forces in Japan (USFJ) are working together to allocate firefighting and heavy equipment capable of pumping seawater from the ocean into containment.

- A list of additional equipment to provide for accident mitigation has been developed by NRC and provided to USAID.

Disaster Assistance Response Team arrived Sunday:

- Two NRC team members are in Tokyo working with Ambassador Roos and getting direct information from Japanese officials.
- Additional NRC experts are being dispatched to support the Ambassador and Japanese government.

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- NRC continues coordination with other Federal agencies and outreach to Congress and State.
- Press releases with message for US citizens: No harmful levels of radiation expected to reach US. Japanese protective action recommendations consistent with US. US citizens in Japan should follow Japanese government directions.
- NRC continues to develop projections of the accident's progression, dose estimates and Q&As, including those addressing the safety of reactors in operation in the US.

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074

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 6:04 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0600 EDT (March 15 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** NRC Status Update 3-15.11-0600am.pdf

The 0730 call has been moved to 0600.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc

(b)(6)

**From:** Tue Mar 15 06:01:58 2011  
**Subject:** 0600 EDT (March 15 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a March 15, 2011, 0600 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami. This Update includes information related to NRC's evaluation of radiation measurements from the USS Ronald Reagan.

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

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

becca

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

Rebecca Stone  
Office of Nuclear Security & Incident Response  
US Nuclear Regulatory Commission  
Lia07.HOC@nrc.gov (Operations Center)  
Rebecca.Stone@nrc.gov

~~NOT FOR PUBLIC DISCLOSURE~~

077

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 7:25 AM  
**To:** Harves, Carolyn; Sharkey, Jeffrey; Thoma, John; Reddick, Darani  
**Cc:** Lepre, Janet  
**Subject:** Re: FYI: Talking Points & Q&As

Thanks, Carolyn. All, I took the 6 am call and am leaving home now.

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Harves, Carolyn  
**To:** Sharkey, Jeffrey; Thoma, John; Reddick, Darani; Castleman, Patrick  
**Cc:** Lepre, Janet  
**Sent:** Tue Mar 15 07:06:17 2011  
**Subject:** FW: FYI: Talking Points & Q&As

**From:** LIA07 Hoc  
**Sent:** Monday, March 14, 2011 6:27 PM  
**To:** Pace, Patti; Speiser, Herald; Gibbs, Catina; Lepre, Janet; Harves, Carolyn; Blake, Kathleen; Savoy, Carmel; Crawford, Carrie; Jimenez, Patricia; Herr, Linda; Bozin, Sunny  
**Subject:** FYI: Talking Points & Q&As

Per request, attached are the latest talking points and Q&As for all Commissioners' offices.

~~NOT FOR PUBLIC DISCLOSURE~~

080

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 10:16 AM  
**To:** Milligan, Patricia  
**Subject:** RE: And another one...

Call when you have time.

**From:** Milligan, Patricia  
**Sent:** Tuesday, March 15, 2011 10:14 AM  
**To:** Castleman, Patrick  
**Subject:** Re: And another one...

Yep  
Sent from my NRC Blackberry  
Patricia A Milligan, CHP RPh  
(b)(6)

**From:** Castleman, Patrick  
**To:** Milligan, Patricia  
**Sent:** Tue Mar 15 10:12:04 2011  
**Subject:** RE: And another one...

No doubt. I've been doing the conference calls and feeding info to my boss. Are you on the PMT?

**From:** Milligan, Patricia  
**Sent:** Tuesday, March 15, 2011 10:10 AM  
**To:** Castleman, Patrick  
**Subject:** Re: And another one...

Working backshift at ops center. Interesting events. Self inflicted wounds  
Sent from my NRC Blackberry  
Patricia A Milligan, CHP RPh  
(b)(6)

**From:** Castleman, Patrick  
**To:** Milligan, Patricia  
**Sent:** Tue Mar 15 10:09:18 2011  
**Subject:** And another one...

your favorite people:

**Suppliers Said To Be Running Out Of KI Stocks.** The Wall Street Journal (3/15, Rockoff) reports that the manufacturers

are running low of potassium iodide supplies, as Americans take steps to guard against radiation contamination of the thyroid gland. Anbex Inc., a leading supplier, rapidly exhausted its stocks of 14-tablet KI packages and Alan Morris, who heads up the firm said they were receiving about three orders a minute for the packages.

~~NOT FOR PUBLIC DISCLOSURE~~



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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 3:57 PM  
**To:** Reddick, Darani  
**Subject:** RE: NYTimes

(b)(5)

**From:** Reddick, Darani  
**Sent:** Tuesday, March 15, 2011 3:54 PM  
**To:** Castleman, Patrick  
**Subject:** NYTimes

"Hydrogen gas bubbling up from chemical reactions set off by the hot fuel rods produced a powerful explosion on Tuesday morning that blew a 26-foot-wide hole in the side of reactor No. 4 at the Fukushima Daiichi nuclear power plant." Huh? News to me...

~~NOT FOR PUBLIC DISCLOSURE~~

092

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Svinicki, Kristine  
**Sent:** Tuesday, March 15, 2011 8:22 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Was there an afternoon call today?

Got it. Thanks.

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 7:55 PM  
**To:** Svinicki, Kristine; Sharkey, Jeffrey; Reddick, Darani  
**Subject:** Re: Was there an afternoon call today?

They have changed the schedule. We now have calls at 0800 and 2000. I will be on the call in just a few minutes and will report afterward.

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Svinicki, Kristine  
**To:** Castleman, Patrick; Sharkey, Jeffrey; Reddick, Darani  
**Sent:** Tue Mar 15 19:51:42 2011  
**Subject:** Was there an afternoon call today?

Or will we wait a solid day to hear an update? Is there an 11:30?

**From:** LIA07 Hoc  
**Sent:** Tuesday, March 15, 2011 1:55 PM  
**To:** LIA07 Hoc  
**Cc:** LIA09 Hoc; LIA11 Hoc; LIA01 Hoc; HOO Hoc  
**Subject:** 1330 EDT (March 15, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 1330 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 15, 2011. This Update includes information on dose rates near Fukushima Daiichi, Fukushima Daiichi plant parameters, and NRC PMT hypothetical Worst Case Analyses. Please note that this information is "Official Use Only" and is only being shared within the federal family.

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

1 Anderson  
Office of Nuclear Security and Incident Response  
Nuclear Regulatory Commission  
[jes.anderson@nrc.gov](mailto:jes.anderson@nrc.gov)  
[Q7.HOC@nrc.gov](mailto:Q7.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 16, 2011 6:32 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** Re: Japan update

Commissioner,

I will attempt to procure it.

Pat

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** Svinicki, Kristine  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Sent:** Wed Mar 16 18:26:42 2011  
**Subject:** RE: Japan update

I would like a copy of the INPO event report with recommended actions, if we can get our hands on it.

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 15, 2011 8:59 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Japan update

Commissioner,

Jack Grobe led the 2000 conference call. There were 20 participants.

(b)(5)

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)

Pat

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 16, 2011 6:37 PM  
**To:** LIA07 Hoc  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** INPO Event Report

We would like to have a copy of the INPO event report on the Fukushima event. Please advise if you can provide this or, if not, where we can get it. Thanks.

Pat Castleman  
Office of Commissioner Svinicki

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 16, 2011 6:46 PM  
**To:** LIA07 Hoc  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** Re: FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam

Thank you very much for the quick response!

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

---

**From:** LIA07 Hoc  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Sent:** Wed Mar 16 18:45:10 2011  
**Subject:** FW: FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam

Here is the event report ...

"Please be advised that this voluntarily provided document is copyrighted and Limited Distribution, and is not releaseable to the public (even under FOIA requests) as it has been granted exclusion from FOIA under the previous Affidavit sent and accepted by the NRC."

**From:** RST01 Hoc  
**Sent:** Wednesday, March 16, 2011 6:43 PM  
**To:** LIA07 Hoc  
**Subject:** FW: FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam  
**Importance:** High

**From:** Weber, Michael  
**Sent:** Wednesday, March 16, 2011 6:32 PM  
**To:** RST01 Hoc; LIA05 Hoc  
**Subject:** FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam  
**Importance:** High

**From:** Wittick, Brian  
**Sent:** Wednesday, March 16, 2011 7:42 AM  
**To:** Nguyen, Quynh; Meighan, Sean; Andersen, James; Virgilio, Martin; Weber, Michael; Muessle, Mary; Williams, Donna; Szke, Daniel  
**Subject:** OIP Distribution  
**Subject:** FW: Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by

Earthquake and Tsunami  
**Importance:** High

~~NOT FOR PUBLIC DISCLOSURE~~

Attached please find the INPO Level 1 Event Report

Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

**From:** Mortensen, George K (INPO) [<mailto:MortensenGK@INPO.org>]  
**Sent:** Wednesday, March 16, 2011 6:10 AM  
**To:** Boger, Bruce; Wittick, Brian  
**Subject:** FW: Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami  
**Importance:** High

Bruce,  
Attached is the INPO Event Report – Level 1 (previous SOER level document) released by INPO to U.S. utilities yesterday. Please be advised that this voluntarily provided document is copyrighted and Limited Distribution, and is not releaseable to the public (even under FOIA requests) as it has been granted exclusion from FOIA under the previous Affidavit sent and accepted by the NRC.

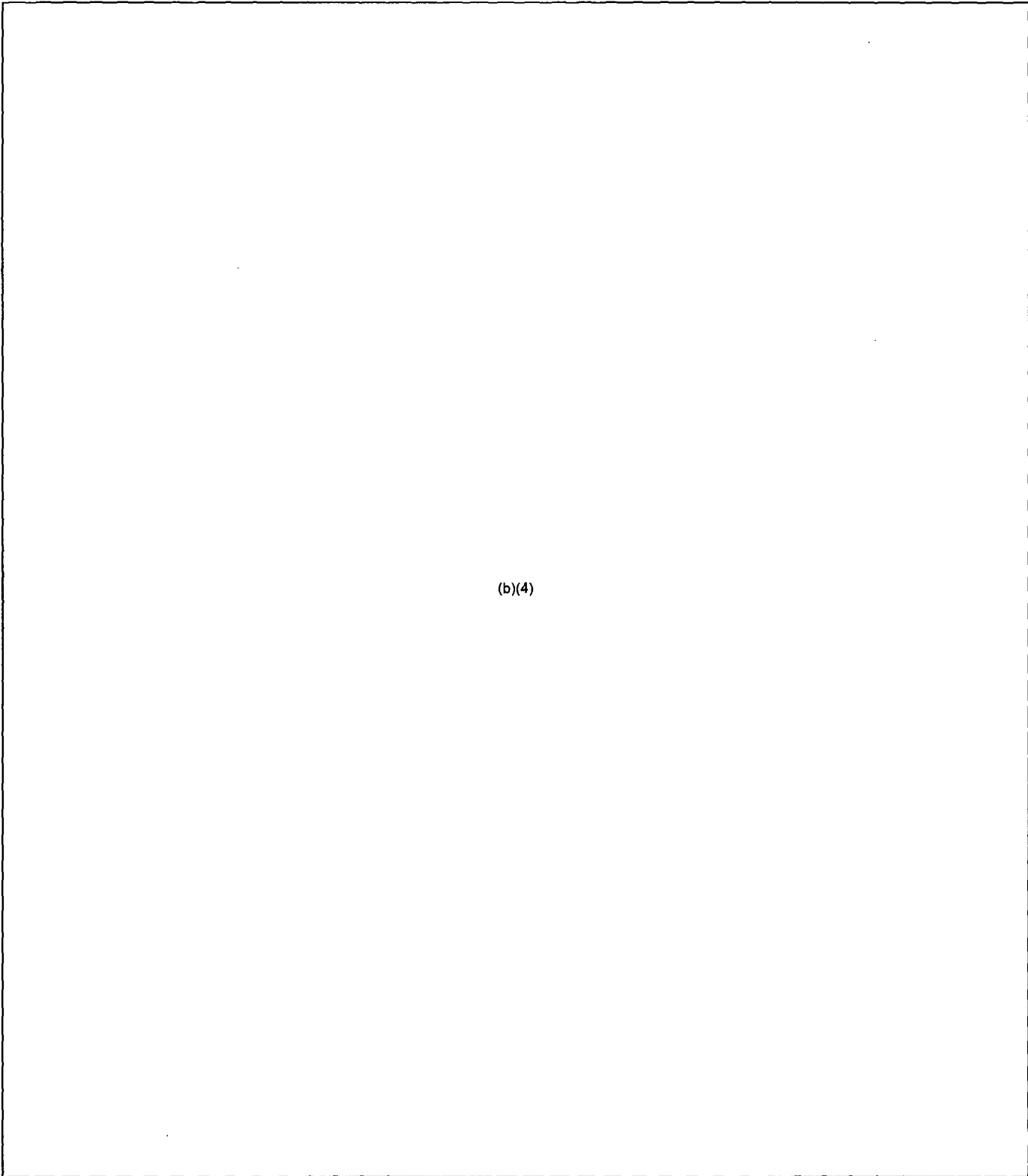
Please contact me with any specific questions, we are sending the document to you directly to expedite the normal document routing process through NRC's Operating Experience branch. It is my understanding that a copy was also sent yesterday (from Bill Webster) to the EDO.

Best Wishes!  
George Mortensen  
NPO – External Relations Program Manager

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<b>INPO Event Report</b>	<b>Level 1</b>	<b>11-1</b>
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(b)(4)

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(b)(4)

(b)(4)

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 16, 2011 7:02 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** Re: FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam

There will be a TA brief at 2000. I will call in.

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Sent:** Wed Mar 16 18:47:00 2011  
**Subject:** Fw: FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** LIA07 Hoc  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Sent:** Wed Mar 16 18:45:10 2011  
**Subject:** FW: FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunam

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**To:** LIA07 Hoc  
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**Importance:** High

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Weber, Michael  
**Sent:** Wednesday, March 16, 2011 6:32 PM  
**To:** RST01 Hoc; LIA05 Hoc  
**Subject:** FYI - Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami  
**Importance:** High

**From:** Wittick, Brian  
**Sent:** Wednesday, March 16, 2011 7:42 AM  
**To:** Nguyen, Quynh; Meighan, Sean; Andersen, James; Virgilio, Martin; Weber, Michael; Muessle, Mary; Williams, Donna; Merzke, Daniel  
**Cc:** OIP Distribution  
**Subject:** FW: Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami  
**Importance:** High

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Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w); (b)(6) (c)

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**Subject:** FW: Release of INPO Event Report Level 1 -- Fukushima Daiichi Nuclear Station Fuel Damage Caused by Earthquake and Tsunami  
**Importance:** High

Bruce,  
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Best Wishes!  
George Mortensen  
EO -- External Relations Program Manager

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 5:49 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: Seismic Q&As March 17th 2am update  
**Attachments:** Seismic Questions for Incident Response 3-17-11 2am.pdf

**From:** Kammerer, Annie  
**Sent:** Thursday, March 17, 2011 2:36 AM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rlhm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Glitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas  
**Subject:** Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

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

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

Cheers,  
Annie

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

(b)(6) mobile  
BB

**From:** Kammerer, Annie  
**Sent:** Tuesday, March 15, 2011 3:41 AM  
**To:** Hiland, Patrick; Skeen, David  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael  
**Subject:** latest version of Q&As

All,

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

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Annie

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

(b)(6) mobile  
BB

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 6:22 AM  
**To:** Sharkey, Jeffrey; Svinicki, Kristine  
**Cc:** Reddick, Darani; Thoma, John  
**Subject:** Re: Seismic Q&As March 17th 2am update

Will do.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** Sharkey, Jeffrey  
**To:** Castleman, Patrick; Svinicki, Kristine  
**Cc:** Reddick, Darani; Thoma, John  
**Sent:** Thu Mar 17 06:18:33 2011  
**Subject:** Re: Seismic Q&As March 17th 2am update

Pat,

This morning, please follow up with Ms. Kammerer to request copies of the materials (plume models, dose projections, etc) that were used by NRC in making the recommendation to evacuate USP out to 50 miles. This information should be provided to all Commissioners. The Q&As by themselves are not sufficient in keeping the Commission fully and currently informed, IMHO.

Thanks,

Jeff

---

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Sent:** Thu Mar 17 05:48:48 2011  
**Subject:** FW: Seismic Q&As March 17th 2am update

**From:** Kammerer, Annie  
**Sent:** Thursday, March 17, 2011 2:36 AM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Glitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Jhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Inodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Loska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Eber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas  
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Annie

Dr. Annie Kammerer, PE  
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**To:** Hiland, Patrick; Skeen, David  
**cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Layden, Elizabeth; Pires, Jose; Graves, Herman; Candia, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael  
**Subject:** latest version of Q&As

All,

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FP 114 of 2107



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

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Annie

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

(b)(6) mobile  
BB

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 6:28 AM  
**To:** Svinicki, Kristine; Sharkey, Jeffrey; Darani Reddick; John Thoma  
**Subject:** FW: ACTION: Commissioners Assistants Briefing Notification

This morning's briefing has been moved to 0800.

---

**From:** [ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov) [ANS.HOC@nrc.gov]  
**Sent:** Thursday, March 17, 2011 6:15 AM  
**Subject:** ACTION: Commissioners Assistants Briefing Notification

There will be a Commissioners Assistants Briefing given by the Executive Team at 0800 EST on March 17, 2011 concerning the nuclear events in Japan. Call  approximately 5 minutes before the scheduled start time. When prompted, enter the security code , repeat . Please respond to the voice prompts indicating whether you plan to participate in the briefing.

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 7:02 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: ACTION: Commissioners Assistants Briefing Notification

They have moved the briefing back to 0730.

**From:** [ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov) [mailto:ANS.HOC@nrc.gov]  
**Sent:** Thursday, March 17, 2011 7:01 AM  
**Subject:** ACTION: Commissioners Assistants Briefing Notification

The commissioner's Assistants Briefing has been changed from 0800 to 0730 on 03/17/11. Call (b)(6) approximately 5 minutes before the scheduled time. When prompted, enter the security code (b)(6) followed by the # sign.

~~NOT FOR PUBLIC DISCLOSURE~~

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Svinicki, Kristine

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 11:50 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: RASCAL Runs justifying U.S. PARs  
**Attachments:** RASCAL Run of 03152011\_0251AM (used in 03162011 NRC Press Release).pdf; RASCAL Run of 03162011\_1224PM (used in 03162011 NRC Press Release).pdf; RASCAL Run of 03152011\_0256AM.pdf

Commissioner,

(b)(5)

Pat

**From:** Wittick, Brian  
**Sent:** Thursday, March 17, 2011 11:36 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

Thanks,  
 Brian Wittick  
 Executive Technical Assistant for Reactors  
 Office of the Executive Director for Operations  
 U.S. Nuclear Regulatory Commission  
 301-415-2496 (w); (b)(6) (c)

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Re-run of 1/3/15/11 2:51 run found in  
 press release. Ignore run date/time on  
 this copy.

**Summary Report**

Case description: Fukushima Unit 2 mid night release 14MAR  
 Run date/time: 2011/03/15 03:04

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**Maximum Dose Values (rem) - Close-In**

Dist from release miles (kilometers)	0.5 (0.8)	1. (1.61)	1.5 (2.41)	2. (3.22)	3. (4.83)	5. (8.05)	7. (11.27)	10. (16.09)
Total EDE	<u>5.4E+03</u>	<u>2.0E+03</u>	<u>1.2E+03</u>	<u>8.2E+02</u>	<u>4.8E+02</u>	<u>2.4E+02</u>	<u>1.6E+02</u>	<u>9.5E+01</u>
Thyroid CDE	<u>2.8E+04</u>	<u>1.1E+04</u>	<u>6.2E+03</u>	<u>4.3E+03</u>	<u>2.5E+03</u>	<u>1.3E+03</u>	<u>8.4E+02</u>	<u>5.1E+02</u>
Inhalation CEDE	<u>3.7E+03</u>	<u>1.4E+03</u>	<u>8.0E+02</u>	<u>5.6E+02</u>	<u>3.3E+02</u>	<u>1.7E+02</u>	<u>1.1E+02</u>	<u>6.7E+01</u>
Cloudshine	<u>1.9E+01</u>	<u>9.3E+00</u>	<u>5.8E+00</u>	<u>4.1E+00</u>	<u>2.5E+00</u>	<u>1.4E+00</u>	<u>9.7E-01</u>	<u>6.2E-01</u>
4-day Groundshine	<u>1.7E+03</u>	<u>6.5E+02</u>	<u>3.8E+02</u>	<u>2.6E+02</u>	<u>1.5E+02</u>	<u>7.3E+01</u>	<u>4.6E+01</u>	<u>2.8E+01</u>
Inter Phase 1st Yr	<u>2.4E+04</u>	<u>9.3E+03</u>	<u>5.4E+03</u>	<u>3.8E+03</u>	<u>2.2E+03</u>	<u>1.0E+03</u>	<u>6.6E+02</u>	<u>3.9E+02</u>
Inter Phase 2nd Yr	<u>1.1E+04</u>	<u>4.4E+03</u>	<u>2.6E+03</u>	<u>1.8E+03</u>	<u>1.0E+03</u>	<u>4.9E+02</u>	<u>3.1E+02</u>	<u>1.8E+02</u>

- Notes:
- Doses exceeding PAGs are underlined.
  - Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
  - Intermediate-Phase EPA PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
  - \*\*\* indicates values less than 1 mrem
  - To view all values - use Detailed Results | Numeric Table
  - Total EDE = Inhalation CEDE + Cloudshine + 4-Day Groundshine

**Maximum Dose Values (rem) - To 50 mi**

Dist from release miles (kilometers)	15 (24.1)	20 (32.2)	30 (48.3)	40 (64.4)	50 (80.5)
Total EDE	<u>8.6E+01</u>	<u>6.3E+01</u>	<u>3.7E+01</u>	<u>1.8E+01</u>	<u>8.1E+00</u>
Thyroid CDE	<u>3.3E+02</u>	<u>2.7E+02</u>	<u>1.3E+02</u>	<u>5.9E+01</u>	<u>2.5E+01</u>
Inhalation CEDE	<u>3.9E+01</u>	<u>3.1E+01</u>	<u>1.3E+01</u>	<u>4.4E+00</u>	<u>1.3E+00</u>
Cloudshine	<u>4.5E-01</u>	<u>3.8E-01</u>	<u>1.7E-01</u>	<u>7.4E-02</u>	<u>2.9E-02</u>
4-day Groundshine	<u>4.7E+01</u>	<u>3.2E+01</u>	<u>2.4E+01</u>	<u>1.3E+01</u>	<u>6.7E+00</u>
Inter Phase 1st Yr	<u>7.1E+02</u>	<u>4.7E+02</u>	<u>3.8E+02</u>	<u>2.2E+02</u>	<u>1.3E+02</u>
Inter Phase 2nd Yr	<u>3.4E+02</u>	<u>2.3E+02</u>	<u>1.8E+02</u>	<u>1.1E+02</u>	<u>6.9E+01</u>

- Notes:
- Doses exceeding PAGs are underlined.
  - Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
  - Intermediate-Phase PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
  - \*\*\* indicates values less than 1 mrem
  - To view all values - use Detailed Results | Numeric Table
  - Total EDE = CEDE Inhalation + Cloudshine + 4-Day Groundshine
  - Total Acute Bone = Bone Inhalation + Cloudshine + Period Groundshine

**Case Summary**

**Event Type** Nuclear Power Plant

**Location**

Name: Fukushima Unit 2  
 City, county, state: <undefined>, <undefined>, <undefined>  
 Lat / Long / Elev: 37.4214° N, 141.0325° E, 0 m  
 UTC Offset: 9 hours  
 Population: not available

**Reactor Parameters**

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**Summary Report**

Reactor power: 2350 MWt  
Average fuel burn-up: 30000 MWD / MTU  
Containment type: BWR Mark I  
Containment volume: 2.50E+05 ft<sup>3</sup>  
Design pressure: 60 lb/in<sup>2</sup>  
Design leak rate: 0.54 %/d  
Coolant mass: 1.25E+05 kg  
Assemblies in core: 550

**Source Term**

Type: Time Core Is Uncovered  
Shutdown: 2011/03/11 14:46  
Core uncovered: 2011/03/15 00:00  
Core recovered: No

**Release Pathway**

Type: BWR - Release Through Dry Well  
via direct, unfiltered pathway  
Description: Unit 2 mid-night release 3-14-11  
Release height: 10. m

Release events  
2011/03/15 00:00  
2011/03/15 00:00

Sprays Off  
Leak rate (% vol) Total failure

**Meteorology**

Type: Actual Observations  
Dataset name: Fukushima 2011 03-14 1600  
Dataset desc: Obs/fcsts for Fukushima Unit 1

Summary of data at release point:	Type	Dir deg	Speed m/s	Stab class	Precip	Temp °C
2011/03/12 14:00	Obs	265	1.0	B	?	
2011/03/12 15:00	Obs	265	1.0	B	?	
2011/03/12 16:00	Obs	277	1.3	B	?	
2011/03/12 17:00	Obs	260	2.4	B	?	
2011/03/12 18:00	Obs	241	1.4	E	?	
2011/03/12 19:00	Obs	236	2.1	E	?	
2011/03/12 20:00	Obs	239	2.1	E	?	
2011/03/12 21:00	Obs	229	3.8	E	?	
2011/03/12 22:00	Obs	224	5.1	E	?	
2011/03/12 23:00	Obs	226	3.9	E	?	
2011/03/13 00:00	Obs	228	4.1	E	?	
2011/03/13 01:00	Obs	235	2.6	E	?	
2011/03/13 02:00	Obs	233	3.9	E	?	
2011/03/13 03:00	Obs	225	1.8	E	?	
2011/03/13 04:00	Obs	225	1.3	E	?	
2011/03/13 05:00	Obs	225	2.2	E	?	
2011/03/13 06:00	Obs	225	2.2	E	?	
2011/03/13 07:00	Obs	248	2.7	E	?	
2011/03/13 08:00	Obs	248	2.7	E	?	
2011/03/13 09:00	Obs	270	3.1	E	?	
2011/03/13 12:00	Obs	271	7.4	D	?	
2011/03/13 13:00	Obs	276	6.2	D	?	
2011/03/13 14:00	Obs	312	2.8	B	?	
2011/03/14 18:00	Obs	258	4.8	unk	?	
2011/03/14 19:00	Obs	268	5.0	unk	?	

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Summary Report

2011/03/14 20:00	Obs	330	2.2	unk	?
2011/03/14 21:00	Fcst	337	4.6	unk	?
2011/03/14 22:00	Fcst	323	7.2	unk	?
2011/03/14 23:00	Fcst	305	6.6	unk	?
2011/03/15 00:00	Fcst	015	8.6	unk	?
2011/03/15 02:00	Fcst	002	7.5	unk	?
2011/03/15 03:00	Fcst	347	5.2	E	None
2011/03/15 04:00	Fcst	332	5.6	E	None
2011/03/15 05:00	Fcst	332	4.0	E	None
2011/03/15 06:00	Fcst	344	3.5	E	Lgt rain
2011/03/15 07:00	Fcst	026	3.8	E	Lgt rain
2011/03/15 08:00	Fcst	044	4.4	E	Lgt rain
2011/03/15 09:00	Fcst	020	4.2	E	Lgt rain
2011/03/15 10:00	Fcst	010	3.4	E	None
2011/03/15 11:00	Fcst	030	3.5	D	Lgt rain
2011/03/15 12:00	Fcst	027	3.0	D	Lgt rain
2011/03/15 13:00	Fcst	037	3.4	D	Lgt rain
2011/03/15 14:00	Fcst	053	3.7	B	None
2011/03/15 15:00	Fcst	058	3.7	B	None
2011/03/15 16:00	Fcst	067	3.2	C	Lgt rain
2011/03/15 17:00	Fcst	081	3.9	C	Lgt rain
2011/03/15 18:00	Fcst	089	4.7	B	None
2011/03/15 19:00	Fcst	085	4.4	B	None
2011/03/15 20:00	Fcst	083	4.4	B	Lgt rain
2011/03/15 21:00	Fcst	074	4.5	C	Lgt rain
2011/03/15 22:00	Fcst	054	5.0	D	Lgt rain
2011/03/15 23:00	Fcst	029	5.6	D	Rain
2011/03/16 00:00	Fcst	011	5.1	D	Lgt rain
2011/03/16 01:00	Fcst	346	4.3	C	Lgt rain
2011/03/16 02:00	Fcst	350	5.3	D	Lgt rain
2011/03/16 03:00	Fcst	323	5.6	D	Lgt rain
2011/03/16 04:00	Fcst	316	5.4	D	None
2011/03/16 05:00	Fcst	298	4.8	D	None
2011/03/16 06:00	Fcst	314	5.6	D	None
2011/03/16 07:00	Fcst	312	4.7	D	None
2011/03/16 08:00	Fcst	331	4.9	D	None
2011/03/16 09:00	Fcst	353	4.1	D	None

Dataset options: Est. missing stability using: Wind speed, time of day, etc.  
Adjust stability for consistency: No  
Modify winds for topography: Yes

Calculations

Case description: Fukushima Unit 2 mid night release 14MAR  
End of calculations: 2011/03/15 16:00  
Start of release to atmosphere + 16 h  
Distance of calculation: Close-in + to 50 miles  
Close-in distances: 0.5, 1.0, 1.5, 2.0, 3.0, 5.0, 7.0, 10.0 miles

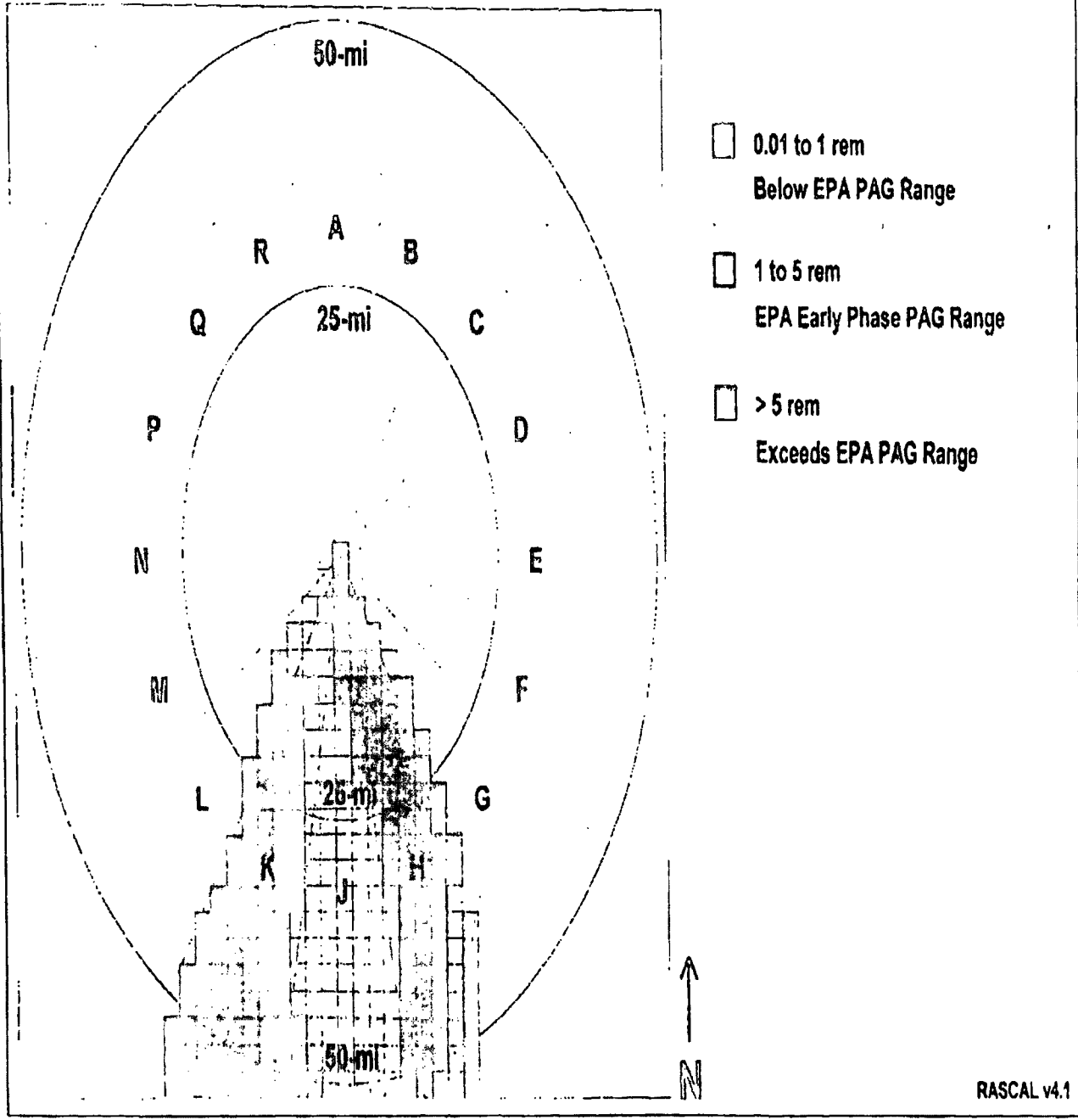
**Total Effective Dose Equivalent**

Accumulated between 2011/03/15 00:00 and 2011/03/15 16:00

Fukushima Unit 2 mid night release 14MAR

Fukushima Unit 2

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Refer to OEDO



Re-run of 3/16/11 run @ 12:24pm  
found in press release. Ignore rounded  
time on this copy

Summary Report

Case description: Fukushima U2, U3 and U4 SFP approximate site release  
Run date/time: 2011/03/17 08:48

Maximum Dose Values (rem) - Close-In

Dist from release miles (kilometers)	0.5 (0.8)	1 (1.61)	1.5 (2.41)	2 (3.22)	3 (4.83)	5 (8.05)	7 (11.27)	10 (16.09)
Total EDE	<u>5.4E+03</u>	<u>1.5E+03</u>	<u>6.7E+02</u>	<u>3.9E+02</u>	<u>1.8E+02</u>	<u>7.5E+01</u>	<u>4.0E+01</u>	<u>1.4E+01</u>
Thyroid CDE	<u>2.9E+04</u>	<u>7.9E+03</u>	<u>3.6E+03</u>	<u>2.1E+03</u>	<u>9.6E+02</u>	<u>4.0E+02</u>	<u>2.1E+02</u>	<u>7.5E+01</u>
Inhalation CEDE	3.8E+03	1.0E+03	4.8E+02	2.8E+02	1.3E+02	5.4E+01	2.9E+01	1.0E+01
Cloudshine	2.2E+01	8.0E+00	3.9E+00	2.3E+00	8.0E-01	2.6E-01	2.1E-01	1.1E-01
4-day Groundshine	1.5E+03	4.1E+02	1.9E+02	1.1E+02	5.0E+01	2.1E+01	1.1E+01	4.4E+00
Inter Phase 1st Yr	<u>2.6E+04</u>	<u>7.0E+03</u>	<u>3.2E+03</u>	<u>1.9E+03</u>	<u>8.5E+02</u>	<u>3.5E+02</u>	<u>1.9E+02</u>	<u>7.5E+01</u>
Inter Phase 2nd Yr	<u>1.3E+04</u>	<u>3.5E+03</u>	<u>1.6E+03</u>	<u>9.2E+02</u>	<u>4.2E+02</u>	<u>1.8E+02</u>	<u>9.5E+01</u>	<u>3.8E+01</u>

- Notes:
- Doses exceeding PAGs are underlined.
  - Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
  - Intermediate-Phase EPA PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
  - \*\*\* indicates values less than 1 mrem
  - To view all values - use Detailed Results | Numeric Table
  - Total EDE = Inhalation CEDE + Cloudshine + 4-Day Groundshine

Maximum Dose Values (rem) - To 50 mi

Dist from release miles (kilometers)	15 (24.1)	20 (32.2)	30 (48.3)	40 (64.4)	50 (80.5)
Total EDE	<u>1.5E+01</u>	<u>1.3E+01</u>	<u>1.1E+01</u>	<u>1.0E+01</u>	<u>9.9E+00</u>
Thyroid CDE	<u>8.6E+01</u>	<u>7.0E+01</u>	<u>5.2E+01</u>	<u>4.9E+01</u>	<u>4.8E+01</u>
Inhalation CEDE	1.1E+01	9.2E+00	7.7E+00	7.6E+00	7.3E+00
Cloudshine	1.2E-01	9.7E-02	7.3E-02	7.0E-02	6.6E-02
4-day Groundshine	4.1E+00	3.4E+00	2.8E+00	2.7E+00	2.5E+00
Inter Phase 1st Yr	<u>7.1E+01</u>	<u>6.0E+01</u>	<u>4.7E+01</u>	<u>4.5E+01</u>	<u>4.3E+01</u>
Inter Phase 2nd Yr	<u>3.6E+01</u>	<u>3.0E+01</u>	<u>2.3E+01</u>	<u>2.2E+01</u>	<u>2.1E+01</u>

- Notes:
- Doses exceeding PAGs are underlined.
  - Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
  - Intermediate-Phase PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
  - \*\*\* indicates values less than 1 mrem
  - To view all values - use Detailed Results | Numeric Table
  - Total EDE = CEDE Inhalation + Cloudshine + 4-Day Groundshine
  - Total Acute Bone = Bone Inhalation + Cloudshine + Period Groundshine

Case Summary

Event Type: Nuclear Power Plant

Location:  
 Name: Fukushima U4  
 City, county, state: <undefined>, <undefined>, <undefined>  
 Lat / Long / Elev: 37.4214° N, 141.0325° E, 0 m  
 UTC Offset: 9 hours  
 Population: not available

Reactor Parameters

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**Summary Report**

Reactor power: 3760 MWt  
Average fuel burn-up: 30000 MWD / MTU  
Containment type: BWR Mark I  
Containment volume: 2.50E+05 ft<sup>3</sup>  
Design pressure: 60 lb/in<sup>2</sup>  
Design leak rate: 0.54 %/d  
Coolant mass: 1.25E+05 kg  
Assemblies in core: 917

**Source Term**

Type: Time Core Is Uncovered  
Shutdown: 2011/03/11 14:46  
Core uncovered: 2011/03/16 19:50  
Core recovered: No

**Release Pathway**

Type: BWR - Release Through Dry Well  
via direct, unfiltered pathway  
Description: Fukushima - U2, U3 and U4 SFP release approximation  
Release height: 10. m

**Release events**

2011/03/16 19:50 Leak rate (% vol) Total failure  
2011/03/16 19:50 Sprays Off

**Meteorology**

Type: Actual Observations  
Dataset name: Fukushima 2011-03-16 0935  
Dataset desc: Obs/fcsts for Fukushima Unit 1

Summary of data at release point:	Type	Dir deg	Speed m/s	Stab class	Precip	Temp °C
2011/03/12 14:00	Obs	265	1.0	B	?	
2011/03/12 15:00	Obs	265	1.0	B	?	
2011/03/12 16:00	Obs	277	1.3	B	?	
2011/03/12 17:00	Obs	260	2.4	B	?	
2011/03/12 18:00	Obs	241	1.4	E	?	
2011/03/12 19:00	Obs	236	2.1	E	?	
2011/03/12 20:00	Obs	239	2.1	E	?	
2011/03/12 21:00	Obs	229	3.8	E	?	
2011/03/12 22:00	Obs	224	5.1	E	?	
2011/03/12 23:00	Obs	226	3.9	E	?	
2011/03/13 00:00	Obs	228	4.1	E	?	
2011/03/13 01:00	Obs	235	2.6	E	?	
2011/03/13 02:00	Obs	233	3.9	E	?	
2011/03/13 03:00	Obs	225	1.8	E	?	
2011/03/13 04:00	Obs	225	1.3	E	?	
2011/03/13 05:00	Obs	225	2.2	E	?	
2011/03/13 06:00	Obs	225	2.2	E	?	
2011/03/13 07:00	Obs	248	2.7	E	?	
2011/03/13 08:00	Obs	248	2.7	E	?	
2011/03/13 09:00	Obs	270	3.1	E	?	
2011/03/13 12:00	Obs	271	7.4	D	?	
2011/03/13 13:00	Obs	276	6.2	D	?	
2011/03/13 14:00	Obs	312	2.8	B	?	
2011/03/14 18:00	Obs	258	4.8	unk	?	
2011/03/14 19:00	Obs	268	5.0	unk	?	

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Summary Report

2011/03/14 20:00	Obs	330	2.2	unk	?
2011/03/14 21:00	Fcst	337	4.6	unk	?
2011/03/14 22:00	Fcst	323	7.2	unk	?
2011/03/14 23:00	Fcst	305	6.6	unk	?
2011/03/15 00:00	Fcst	015	8.6	unk	?
2011/03/15 02:00	Fcst	002	7.5	unk	?
2011/03/15 03:00	Fcst	347	5.2	E	None
2011/03/15 04:00	Fcst	332	5.6	E	None
2011/03/15 05:00	Fcst	332	4.0	E	None
2011/03/15 06:00	Fcst	344	3.5	E	Lgt rain
2011/03/15 07:00	Fcst	026	3.8	E	Lgt rain
2011/03/15 08:00	Fcst	044	4.4	E	Lgt rain
2011/03/15 09:00	Fcst	020	4.2	E	Lgt rain
2011/03/15 10:00	Fcst	010	3.4	E	None
2011/03/15 11:00	Fcst	030	3.5	D	Lgt rain
2011/03/15 12:00	Fcst	027	3.0	D	Lgt rain
2011/03/15 13:00	Fcst	037	3.4	D	Lgt rain
2011/03/15 14:00	Fcst	053	3.7	B	None
2011/03/15 15:00	Fcst	058	3.7	B	None
2011/03/15 16:00	Fcst	067	3.2	C	Lgt rain
2011/03/15 17:00	Fcst	081	3.9	C	Lgt rain
2011/03/15 18:00	Fcst	089	4.7	B	None
2011/03/15 19:00	Fcst	085	4.4	B	None
2011/03/15 20:00	Fcst	083	4.4	B	Lgt rain
2011/03/15 21:00	Fcst	074	4.6	C	Lgt rain
2011/03/15 22:00	Fcst	054	5.0	D	Lgt rain
2011/03/15 23:00	Fcst	029	5.6	D	Rain
2011/03/16 00:00	Fcst	011	5.1	D	Lgt rain
2011/03/16 01:00	Fcst	346	4.3	C	Lgt rain
2011/03/16 02:00	Fcst	350	5.3	D	Lgt rain
2011/03/16 03:00	Fcst	323	5.6	D	Lgt rain
2011/03/16 04:00	Fcst	316	5.4	D	None
2011/03/16 05:00	Fcst	298	4.8	D	None
2011/03/16 06:00	Fcst	314	5.6	D	None
2011/03/16 07:00	Fcst	312	4.7	D	None
2011/03/16 08:00	Fcst	331	4.9	D	None
2011/03/16 09:00	Fcst	299	4.2	D	None
2011/03/16 10:00	Fcst	312	5.4	C	None
2011/03/16 11:00	Fcst	309	7.5	C	None
2011/03/16 12:00	Fcst	304	7.2	C	None
2011/03/16 13:00	Fcst	314	8.8	C	None
2011/03/16 14:00	Fcst	325	10.4	C	None
2011/03/16 15:00	Fcst	324	12.3	C	None
2011/03/16 16:00	Fcst	304	14.7	D	None
2011/03/16 17:00	Fcst	299	14.2	D	None
2011/03/16 18:00	Fcst	297	11.3	D	None
2011/03/16 19:00	Fcst	316	9.8	D	None
2011/03/16 20:00	Fcst	309	9.4	D	None
2011/03/16 21:00	Fcst	294	9.5	D	None
2011/03/16 22:00	Fcst	299	7.6	D	None
2011/03/16 23:00	Fcst	300	9.7	D	None
2011/03/17 00:00	Fcst	294	5.0	D	None
2011/03/17 01:00	Fcst	286	7.0	D	None
2011/03/17 02:00	Fcst	287	6.6	D	None
2011/03/17 03:00	Fcst	293	6.5	D	None
2011/03/17 04:00	Fcst	300	6.3	D	None
2011/03/17 05:00	Fcst	311	5.9	D	None
2011/03/17 06:00	Fcst	295	7.4	D	None

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Summary Report

2011/03/17 07:00	Fcst	303	8.4	C	None
2011/03/17 08:00	Fcst	333	4.8	C	None
2011/03/17 09:00	Fcst	321	5.9	C	None
2011/03/17 10:00	Fcst	307	5.0	C	None
2011/03/17 11:00	Fcst	292	8.4	C	None
2011/03/17 12:00	Fcst	315	9.3	C	None
2011/03/17 13:00	Fcst	299	11.1	C	None
2011/03/17 14:00	Fcst	292	11.8	C	None
2011/03/17 15:00	Fcst	286	10.7	C	None
2011/03/17 16:00	Fcst	298	9.3	D	None
2011/03/17 17:00	Fcst	286	8.5	D	None
2011/03/17 18:00	Fcst	285	10.6	D	None
2011/03/17 19:00	Fcst	288	11.1	D	None
2011/03/17 20:00	Fcst	301	11.3	D	None
2011/03/17 21:00	Fcst	311	10.1	D	None
2011/03/17 22:00	Fcst	307	8.4	D	None
2011/03/17 23:00	Fcst	303	8.7	D	None
2011/03/18 00:00	Fcst	311	7.1	D	None
2011/03/18 01:00	Fcst	316	3.4	D	None
2011/03/18 02:00	Fcst	310	6.0	D	None
2011/03/18 03:00	Fcst	319	7.4	D	None
2011/03/18 04:00	Fcst	316	6.3	D	None
2011/03/18 05:00	Fcst	307	4.9	D	None
2011/03/18 06:00	Fcst	311	4.4	D	None
2011/03/18 07:00	Fcst	326	5.1	C	None
2011/03/18 08:00	Fcst	343	5.4	C	None
2011/03/18 09:00	Fcst	344	6.1	C	None

Dataset options: Est. missing stability using: Wind speed, time of day, etc.  
Adjust stability for consistency: No  
Modify winds for topography: Yes

Calculations

Case description: Fukushima U2, U3 and U4 SFP approximate site release  
End of calculations: 2011/03/17 10:50  
Start of release to atmosphere + 15 h  
Distance of calculation: Close-in + to 50 miles  
Close-in distances: 0.5, 1.0, 1.5, 2.0, 3.0, 5.0, 7.0, 10.0 miles

# Total Effective Dose Equivalent

Accumulated between 2011/03/16 19:50 and 2011/03/17 10:50

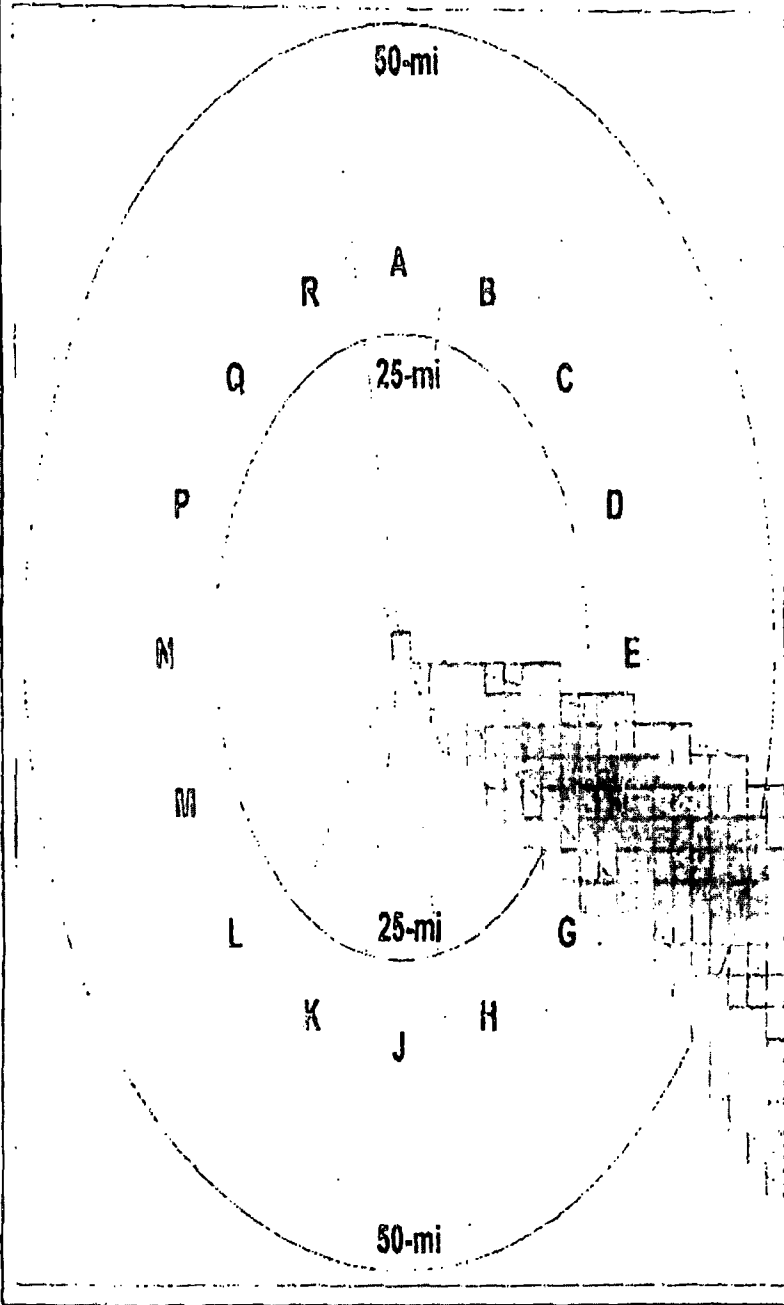
Fukushima U2, U3 and U4 SFP approximate site release

Fukushima U4

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Refer to OEDO



- 0.01 to 1 rem  
Below EPA PAG Range
- 1 to 5 rem  
EPA Early Phase PAG Range
- > 5 rem  
Exceeds EPA PAG Range

RASCAL v4.1

RASCAL run to justify expansion to 50 mile EPZ

Summary Report

Case description: Fukushima Unit 2 mid day release 15MAR  
 Run date/time: 2011/03/15 02:56

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Maximum Dose Values (rem) - Close-In

Dist from release miles (kilometers)	0.5 (0.8)	1. (1.61)	1.5 (2.41)	2. (3.22)	3. (4.83)	5. (8.05)	7. (11.27)	10. (16.09)
Total EDE	<u>4.1E+03</u>	<u>1.7E+03</u>	<u>1.0E+03</u>	<u>7.2E+02</u>	<u>4.4E+02</u>	<u>8.7E+01</u>	<u>4.5E+01</u>	<u>4.1E+00</u>
Thyroid CDE	<u>9.9E+03</u>	<u>2.9E+03</u>	<u>1.4E+03</u>	<u>8.2E+02</u>	<u>4.4E+02</u>	<u>1.0E+02</u>	<u>6.2E+01</u>	<u>7.2E+00</u>
Inhalation CEDE	1.2E+03	3.3E+02	1.5E+02	8.7E+01	4.4E+01	8.8E+00	4.8E+00	4.7E-01
Cloudshine	8.4E+00	3.1E+00	1.5E+00	7.5E-01	2.9E-01	2.0E-01	1.4E-01	5.8E-02
4-day Groundshine	2.9E+03	1.4E+03	8.6E+02	6.3E+02	3.9E+02	7.8E+01	4.0E+01	3.6E+00
Inter Phase 1st Yr	<u>4.5E+04</u>	<u>2.1E+04</u>	<u>1.3E+04</u>	<u>9.9E+03</u>	<u>6.1E+03</u>	<u>1.2E+03</u>	<u>6.1E+02</u>	<u>5.4E+01</u>
Inter Phase 2nd Yr	<u>2.2E+04</u>	<u>1.1E+04</u>	<u>6.6E+03</u>	<u>4.9E+03</u>	<u>3.0E+03</u>	<u>5.9E+02</u>	<u>3.0E+02</u>	<u>2.6E+01</u>

- Notes:
- Doses exceeding PAGs are underlined.
  - Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
  - Intermediate-Phase EPA PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
  - \*\*\* indicates values less than 1 mrem
  - To view all values - use Detailed Results | Numeric Table
  - Total EDE = Inhalation CEDE + Cloudshine + 4-Day Groundshine

Maximum Dose Values (rem) - To 50 mi

Dist from release miles (kilometers)	15 (24.1)	20 (32.2)	30 (48.3)	40 (64.4)	50 (80.5)
Total EDE	<u>2.1E+00</u>	<u>2.8E+00</u>	<u>2.7E+00</u>	5.6E-01	1.7E-01
Thyroid CDE	<u>2.0E+01</u>	<u>1.7E+01</u>	<u>1.1E+01</u>	<u>5.0E+00</u>	3.5E+00
Inhalation CEDE	1.3E+00	1.0E+00	6.2E-01	2.0E-01	1.4E-01
Cloudshine	2.9E-02	2.5E-02	1.7E-02	8.1E-03	5.8E-03
4-day Groundshine	1.6E+00	2.5E+00	2.0E+00	3.6E-01	3.7E-02
Inter Phase 1st Yr	<u>2.5E+01</u>	<u>3.8E+01</u>	<u>2.3E+01</u>	<u>2.1E+00</u>	3.2E-01
Inter Phase 2nd Yr	<u>1.2E+01</u>	<u>1.9E+01</u>	<u>1.0E+01</u>	<u>6.6E-01</u>	1.2E-01

- Notes:
- Doses exceeding PAGs are underlined.
  - Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
  - Intermediate-Phase PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
  - \*\*\* indicates values less than 1 mrem
  - To view all values - use Detailed Results | Numeric Table
  - Total EDE = CEDE Inhalation + Cloudshine + 4-Day Groundshine
  - Total Acute Bone = Bone Inhalation + Cloudshine + Period Groundshine

Case Summary

Event Type Nuclear Power Plant

Location  
 Name: Fukushima Unit 2  
 City, county, state: <undefined>, <undefined>, <undefined>  
 Lat / Long / Elev: 37.4214° N, 141.0325° E, 0 m  
 Time zone: <undefined>  
 Population: not available

Reactor Parameters

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**Summary Report**

Reactor power: 2350 MWt  
Average fuel burn-up: 30000 MWD / MTU  
Containment type: BWR Mark I  
Containment volume: 2.50E+05 ft<sup>3</sup>  
Design pressure: 60 lb/in<sup>2</sup>  
Design leak rate: 0.54 %/d  
Coolant mass: 1.25E+05 kg  
Assemblies in core: 550

**Source Term**

Type: Time Core Is Uncovered  
Shutdown: 2011/03/11 14:46  
Core uncovered: 2011/03/15 00:00  
Core recovered: No

**Release Pathway**

Type: BWR - Release Through Dry Well  
via direct, unfiltered pathway  
Description: Unit 2 mid-day release 3-15-11  
Release height: 10. m

**Release events**

2011/03/15 00:00 Sprays Off  
2011/03/15 11:45 Leak rate (% vol) Total failure

**Meteorology**

Type: Actual Observations  
Dataset name: Fukushima 2011 03-14 1600  
Dataset desc: Obs/fcsts for Fukushima Unit 1

Summary of data at release point:	Type	Dir deg	Speed m/s	Stab class	Precip	Temp °C
2011/03/12 14:00	Obs	265	1.0	B	?	
2011/03/12 15:00	Obs	265	1.0	B	?	
2011/03/12 16:00	Obs	277	1.3	B	?	
2011/03/12 17:00	Obs	260	2.4	B	?	
2011/03/12 18:00	Obs	241	1.4	E	?	
2011/03/12 19:00	Obs	236	2.1	E	?	
2011/03/12 20:00	Obs	239	2.1	E	?	
2011/03/12 21:00	Obs	229	3.8	E	?	
2011/03/12 22:00	Obs	224	5.1	E	?	
2011/03/12 23:00	Obs	226	3.9	E	?	
2011/03/13 00:00	Obs	228	4.1	E	?	
2011/03/13 01:00	Obs	235	2.6	E	?	
2011/03/13 02:00	Obs	233	3.9	E	?	
2011/03/13 03:00	Obs	225	1.8	E	?	
2011/03/13 04:00	Obs	225	1.3	E	?	
2011/03/13 05:00	Obs	225	2.2	E	?	
2011/03/13 06:00	Obs	225	2.2	E	?	
2011/03/13 07:00	Obs	248	2.7	E	?	
2011/03/13 08:00	Obs	248	2.7	E	?	
2011/03/13 09:00	Obs	270	3.1	E	?	
2011/03/13 12:00	Obs	271	7.4	D	?	
2011/03/13 13:00	Obs	276	6.2	D	?	
2011/03/13 14:00	Obs	312	2.8	B	?	
2011/03/14 18:00	Obs	258	4.8	unk	?	
2011/03/14 19:00	Obs	268	5.0	unk	?	

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Summary Report

2011/03/14 20:00	Obs	330	2.2	unk	?
2011/03/14 21:00	Fcst	337	4.6	unk	?
2011/03/14 22:00	Fcst	323	7.2	unk	?
2011/03/14 23:00	Fcst	305	6.6	unk	?
2011/03/15 00:00	Fcst	015	8.6	unk	?
2011/03/15 02:00	Fcst	002	7.5	unk	?
2011/03/15 03:00	Fcst	347	5.2	E	None
2011/03/15 04:00	Fcst	332	5.6	E	None
2011/03/15 05:00	Fcst	332	4.0	E	None
2011/03/15 06:00	Fcst	344	3.5	E	Lgt rain
2011/03/15 07:00	Fcst	026	3.8	E	Lgt rain
2011/03/15 08:00	Fcst	044	4.4	E	Lgt rain
2011/03/15 09:00	Fcst	020	4.2	E	Lgt rain
2011/03/15 10:00	Fcst	010	3.4	E	None
2011/03/15 11:00	Fcst	030	5.5	D	Lgt rain
2011/03/15 12:00	Fcst	027	3.0	D	Lgt rain
2011/03/15 13:00	Fcst	037	3.4	D	Lgt rain
2011/03/15 14:00	Fcst	053	3.7	B	None
2011/03/15 15:00	Fcst	058	3.7	B	None
2011/03/15 16:00	Fcst	067	3.2	C	Lgt rain
2011/03/15 17:00	Fcst	081	3.9	C	Lgt rain
2011/03/15 18:00	Fcst	089	4.7	B	None
2011/03/15 19:00	Fcst	085	4.4	B	None
2011/03/15 20:00	Fcst	083	4.4	B	Lgt rain
2011/03/15 21:00	Fcst	074	4.6	C	Lgt rain
2011/03/15 22:00	Fcst	054	5.0	D	Lgt rain
2011/03/15 23:00	Fcst	029	5.6	D	Rain
2011/03/16 00:00	Fcst	011	5.1	D	Lgt rain
2011/03/16 01:00	Fcst	346	4.3	C	Lgt rain
2011/03/16 02:00	Fcst	350	5.3	D	Lgt rain
2011/03/16 03:00	Fcst	323	5.6	D	Lgt rain
2011/03/16 04:00	Fcst	316	5.4	D	None
2011/03/16 05:00	Fcst	298	4.8	D	None
2011/03/16 06:00	Fcst	314	5.6	D	None
2011/03/16 07:00	Fcst	312	4.7	D	None
2011/03/16 08:00	Fcst	331	4.9	D	None
2011/03/16 09:00	Fcst	353	4.1	D	None

Dataset options: Est. missing stability using: Wind speed, time of day, etc.  
Adjust stability for consistency: No  
Modify winds for topography: Yes

Calculations  
Case description: Fukushima Unit 2 mid day release 15MAR  
End of calculations: 2011/03/16 03:45  
Start of release to atmosphere + 16 h  
Distance of calculation: Close-in + to 50 miles  
Close-in distances: 0.5, 1.0, 1.5, 2.0, 3.0, 5.0, 7.0, 10.0 miles

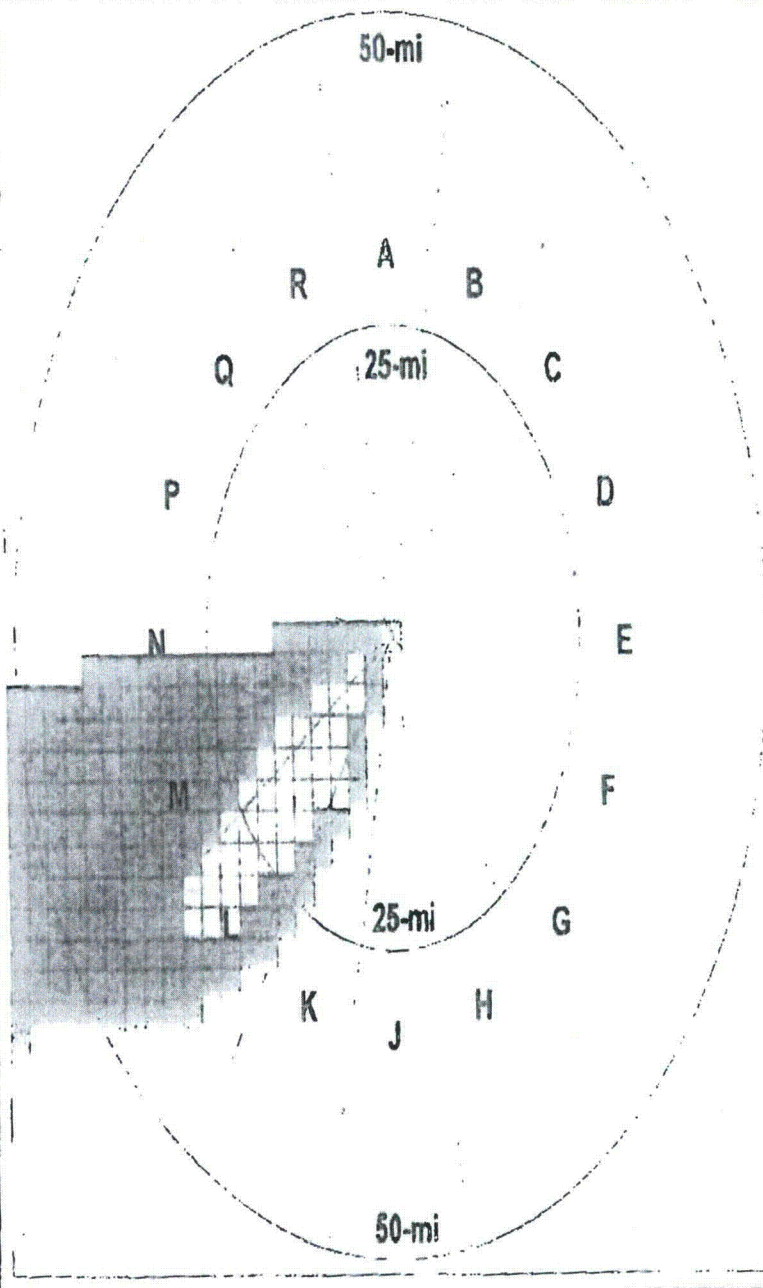


# Total Effective Dose Equivalent

Accumulated between 2011/03/15 11:45 and 2011/03/16 03:45

Fukushima Unit 2 mid day release 15MAR

Fukushima Unit 2



- 0.01 to 1 rem  
Below EPA PAG Range
- 1 to 5 rem  
EPA Early Phase PAG Range
- > 5 rem  
Exceeds EPA PAG Range

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Refer to OEDO

RASCAL v4.1

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 3:56 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Thanks, Alan!

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 3:50 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Pat,

We have passed this along to the right people in the Ops Center and they are looking into it along with a long list of other action items. We will let you know when we hear something back.

Regards,

Alan L. Frazier  
Executive Technical Assistant  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-1763

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 11:54 AM  
**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel; Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

There is a problem with the press release. It says that the second set of values is from a four unit site. Actually, it appears that the second set of values is derived from the SPENT FUEL POOLS of Fukushima Daiichi Units 2, 3, and 4. Shouldn't our press release be fixed?

**From:** Wittick, Brian  
**Sent:** Thursday, March 17, 2011 11:36 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

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FP 132 of 2107

Thanks,  
Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

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~~NOT FOR PUBLIC DISCLOSURE~~

**Reddick, Darani**

**From:** Svinicki, Kristine  
**Sent:** Thursday, March 17, 2011 8:00 PM  
**To:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** FW: Briefing on NRC Response to Recent Nuclear Events in Japan followed by Agenda Planning, Monday, 3/21 Beginning 9 am  
**Attachments:** 110321 NRC Response to Events in Japan VERSION B Scheduling Note.docx  
**Importance:** High

(b)(5)

**From:** Vietti-Cook, Annette  
**Sent:** Thursday, March 17, 2011 7:33 PM  
**To:** Svinicki, Kristine; Apostolakis, George; Magwood, William; Ostendorff, William  
**Cc:** Sharkey, Jeffry; Lepre, Janet; Sosa, Belkys; Blake, Kathleen; Bubar, Patrice; Crawford, Carrie; Nieh, Ho; Zorn, Jason; Coggins, Angela; Batkin, Joshua; Burns, Stephen; Rothschild, Trip; Bates, Andrew; Bavol, Rochelle; Laufer, Richard; Borchardt, Bill  
**Subject:** Briefing on NRC Response to Recent Nuclear Events in Japan followed by Agenda Planning, Monday, 3/21 Beginning 9 am

Because of the short timeframe and great interest in this event, I am sending this to you directly. Attached for your review and approval is the Scheduling Note for the Commission Briefing on NRC Response to Recent Nuclear Events in Japan. The Commission agreed on Tuesday, March 15, 2011, to hold this meeting on short notice. My plan is to announce the Commission Briefing tomorrow morning on the NRC public website, which provides the title of the meeting, date, time and location. A Federal Register Notice is also sent, but will not be published before the meeting. My understanding is that OPA will be doing a press release. Once you have approved the Scheduling Note it will be posted on the public website along with NRC staff presentation slides that are consistent with the Commission's approved scheduling note. This is our usual practice. Staff is working on background material and slides which we expect tomorrow.

This Commission meeting will be followed by an Agenda Planning Session in the 18<sup>th</sup> floor conference room. The Commission would discuss the scheduling of meetings the Commission would like to have in response to the events in Japan. The Commission will also consider the scheduling of the meetings and papers that are already on its agenda.

Annette

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Draft: 3/17/11

**SCHEDULING NOTE**

**Title:** BRIEFING ON NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN (Public Meeting)

**Purpose:** To provide the Commission a status on the recent events in Japan, NRC's response, and planned actions.

**Scheduled:** March 21, 2011  
9:00 am

**Duration:** Approx. 2 hours

**Location:** Commissioners' Conference Room OWFN

**Participants:**

**Presentation**

**NRC Staff Panel**

**50 mins.\***

**Bill Borchardt, Executive Director for Operations**

**Topics:**

- o Overview of Japanese event and U.S. response
- o Discussion of expectation of no harm to U.S. population
- o Discussion of general radiation health effects
- o Discussion of current regulatory approaches for reactors
- o Path forward; near term and longer term

**Commission Q & A**

**50 mins.**

**Discussion – Wrap-up**

**5 mins.**

**Documents:**

Background materials due to SECY: prior to the briefing.

Slides due to SECY: prior to the briefing.

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 8:36 PM  
**To:** Franovich, Mike; Orders, William  
**Subject:** Re: Outrageous!

You are right on the money. What is amazing to me is that they are saturating us with rapid fire info and we have little chance to engage in discussion.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** Franovich, Mike  
**To:** Castleman, Patrick; Orders, William  
**Sent:** Thu Mar 17 20:32:03 2011  
**Subject:** Outrageous!

That was absurd. You betcha it was worst case. He has no clue on Unit 4 SFP. If the pool is dry and loaded to the max, where is the mythical zirconium fire? Msy be if it l dry then aircooling appears to be adequate.

~~NOT FOR PUBLIC DISCLOSURE~~

FP 136 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~**Castleman, Patrick**

**From:** Sharkey, Jeffry  
**Sent:** Thursday, March 17, 2011 7:00 AM  
**To:** Castleman, Patrick  
**Subject:** Fw: Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines  
**Attachments:** 11-050.pdf; 11-050\_Attchmt.pdf

Let's discuss this morning.

---

**From:** Caputo, Annie (EPW) <Annie\_Caputo@epw.senate.gov>  
**To:** Sharkey, Jeffry  
**Sent:** Wed Mar 16 19:36:55 2011  
**Subject:** FW: Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines

Where are these dose estimates coming from? I haven't seen anything that suggests these numbers. Are you all privy to info that's not being shared?

**From:** Riley (OCA), Timothy [mailto:Timothy.RileyOCA@nrc.gov]  
**Sent:** Wednesday, March 16, 2011 2:22 PM  
**To:** Riley (OCA), Timothy  
**Subject:** Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines

### **NRC PROVIDES PROTECTIVE ACTION RECOMMENDATIONS BASED ON U.S. GUIDELINES**

Under the guidelines for public safety that would be used in the United States under similar circumstances, the NRC believes it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate.

Among other things, in the United States protective actions recommendations are implemented when projected doses could exceed 1 rem to the body or 5 rem to the thyroid. A rem is a measure of radiation dose. The average American is exposed to approximately 620 millirems, or 0.62 rem, of radiation each year from natural and manmade sources. In making protective action recommendations, the NRC takes into account a variety of factors that include weather, wind direction and speed, and the status of the problem at the reactors.

Attached are the results of two sets of computer calculations used to support the NRC recommendations.

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information continues to indicate Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

##

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

Timothy Riley  
 Congressional Affairs Officer  
 U.S. Nuclear Regulatory Commission  
 Office of Congressional Affairs  
 Phone: 301-415-8492  
 E-mail: [tkberry@nrc.gov](mailto:tkberry@nrc.gov) (b)(6)

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# NRC NEWS

U.S. NUCLEAR REGULATORY COMMISSION

Office of Public Affairs Telephone: 301/415-8200

Washington, D.C. 20555-0001

E-mail: [opa\\_resource@nrc.gov](mailto:opa_resource@nrc.gov) Site: [www.nrc.gov](http://www.nrc.gov)

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

No. 11-050

March 16, 2011

## NRC PROVIDES PROTECTIVE ACTION RECOMMENDATIONS BASED ON U.S. GUIDELINES

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###

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



15 March 2010 02:51am (EDT), NRC Operations Center, Protective Measures Team

This data is based on system condition estimates for a hypothetical, single reactor site, 2350 MWT, Boiling Water Reactor. Model results are projections only and may not be representative of an actual release. This projection uses modeled forecast meteorological conditions and is subject to change.

### Maximum Dose Values (rem) - Close-In

Dist from release miles (kilometers)	0.5 (0.8)	1 (1.61)	1.5 (2.41)	2 (3.22)	3 (4.83)	5 (8.05)	7 (11.27)	10 (16.09)
Total EDE	<u>5.4E+03</u>	<u>2.0E+03</u>	<u>1.2E+03</u>	<u>8.2E+02</u>	<u>4.8E+02</u>	<u>2.4E+02</u>	<u>1.6E+02</u>	<u>9.5E+01</u>
Thyroid CDE	<u>2.8E+04</u>	<u>1.1E+04</u>	<u>6.2E+03</u>	<u>4.3E+03</u>	<u>2.5E+03</u>	<u>1.3E+03</u>	<u>8.4E+02</u>	<u>5.1E+02</u>
Inhalation CEDE	3.7E+03	1.4E+03	8.0E+02	5.6E+02	3.3E+02	1.7E+02	1.1E+02	6.7E+01
Cloudshine	1.9E+01	9.3E+00	5.8E+00	4.1E+00	2.5E+00	1.4E+00	9.7E-01	6.2E-01
4-day Groundshine	1.7E+03	6.5E+02	3.8E+02	2.6E+02	1.5E+02	7.3E+01	4.6E+01	2.8E+01
Inter Phase 1st Yr	<u>2.4E+04</u>	<u>9.4E+03</u>	<u>5.4E+03</u>	<u>3.8E+03</u>	<u>2.2E+03</u>	<u>1.1E+03</u>	<u>6.6E+02</u>	<u>3.9E+02</u>
Inter Phase 2nd Yr	<u>1.1E+04</u>	<u>4.4E+03</u>	<u>2.6E+03</u>	<u>1.8E+03</u>	<u>1.0E+03</u>	<u>4.9E+02</u>	<u>3.1E+02</u>	<u>1.8E+02</u>

**Notes:**

- Doses exceeding PAGs are underlined.
- Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
- Intermediate-Phase EPA PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
- \*\*\* indicates values less than 1 mrem
- To view all values - use Detailed Results | Numeric Table
- Total EDE = Inhalation CEDE + Cloudshine + 4-Day Groundshine

### Maximum Dose Values (rem) - To 50 mi

Dist from release miles (kilometers)	15 (24.1)	20 (32.2)	30 (48.3)	40 (64.4)	50 (80.5)
Total EDE	<u>8.6E+01</u>	<u>6.3E+01</u>	<u>3.7E+01</u>	<u>1.8E+01</u>	<u>8.1E+00</u>
Thyroid CDE	<u>3.3E+02</u>	<u>2.7E+02</u>	<u>1.3E+02</u>	<u>5.9E+01</u>	<u>2.3E+01</u>
Inhalation CEDE	3.9E+01	3.1E+01	1.3E+01	4.4E+00	1.3E+00
Cloudshine	4.5E-01	3.8E-01	1.7E-01	7.4E-02	2.7E-02
4-day Groundshine	4.7E+01	3.2E+01	2.4E+01	1.3E+01	6.7E+00
Inter Phase 1st Yr	<u>7.2E+02</u>	<u>4.8E+02</u>	<u>3.8E+02</u>	<u>2.2E+02</u>	<u>1.3E+02</u>
Inter Phase 2nd Yr	<u>3.4E+02</u>	<u>2.3E+02</u>	<u>1.8E+02</u>	<u>1.1E+02</u>	<u>6.9E+01</u>

**Notes:**

- Doses exceeding PAGs are underlined.
- Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
- Intermediate-Phase PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
- \*\*\* indicates values less than 1 mrem
- To view all values - use Detailed Results | Numeric Table
- Total EDE = CEDE Inhalation + Cloudshine + 4-Day Groundshine
- Total Acute Bone = Bone Inhalation + Cloudshine + Period Groundshine

16 March 2010 12:24pm (EDT), NRC Operations Center, Protective Measures Team

This data is based on system condition estimates for a hypothetical, four reactor site. Model results are projections only and may not be representative of an actual release. This projection uses modeled forecast meteorological conditions and is subject to change.

### Maximum Dose Values (rem) - Close-In

Dist from release miles (kilometers)	0.5 (0.8)	1 (1.61)	1.5 (2.41)	2 (3.22)	3 (4.83)	5 (8.05)	7 (11.27)	10 (16.09)
Total EDE	<u>5.4E+03</u>	<u>1.5E+03</u>	<u>6.7E+02</u>	<u>3.9E+02</u>	<u>1.8E+02</u>	<u>7.5E+01</u>	<u>4.0E+01</u>	<u>1.4E+01</u>
Thyroid CDE	<u>2.9E+04</u>	<u>7.9E+03</u>	<u>3.6E+03</u>	<u>2.1E+03</u>	<u>9.6E+02</u>	<u>4.0E+02</u>	<u>2.1E+02</u>	<u>7.5E+01</u>
Inhalation CEDE	<u>3.8E+03</u>	<u>1.0E+03</u>	<u>4.8E+02</u>	<u>2.8E+02</u>	<u>1.3E+02</u>	<u>5.4E+01</u>	<u>2.9E+01</u>	<u>1.0E+01</u>
Cloudshine	2.2E+01	8.0E+00	3.9E+00	2.3E+00	8.0E-01	2.6E-01	2.1E-01	1.1E-01
4-day Groundshine	1.5E+03	4.1E+02	1.9E+02	1.1E+02	5.0E+01	2.1E+01	1.1E+01	4.3E+00
Inter Phase 1st Yr	<u>2.6E+04</u>	<u>7.0E+03</u>	<u>3.2E+03</u>	<u>1.9E+03</u>	<u>8.5E+02</u>	<u>3.6E+02</u>	<u>1.9E+02</u>	<u>7.5E+01</u>
Inter Phase 2nd Yr	<u>1.3E+04</u>	<u>3.5E+03</u>	<u>1.6E+03</u>	<u>9.2E+02</u>	<u>4.2E+02</u>	<u>1.8E+02</u>	<u>9.5E+01</u>	<u>3.8E+01</u>

**Notes:**

- Doses exceeding PAGs are underlined.
- Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
- Intermediate-Phase EPA PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
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- To view all values - use Detailed Results | Numeric Table
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### Maximum Dose Values (rem) - To 50 mi

Dist from release miles (kilometers)	15 (24.1)	20 (32.2)	30 (48.3)	40 (64.4)	50 (80.5)
Total EDE	<u>1.5E+01</u>	<u>1.3E+01</u>	<u>1.1E+01</u>	<u>1.0E+01</u>	<u>9.9E+00</u>
Thyroid CDE	<u>8.6E+01</u>	<u>7.0E+01</u>	<u>5.2E+01</u>	<u>4.9E+01</u>	<u>4.8E+01</u>
Inhalation CEDE	<u>1.1E+01</u>	<u>9.2E+00</u>	<u>7.7E+00</u>	<u>7.6E+00</u>	<u>7.3E+00</u>
Cloudshine	1.2E-01	9.7E-02	7.3E-02	7.0E-02	6.6E-02
4-day Groundshine	4.1E+00	3.4E+00	2.8E+00	2.8E+00	2.5E+00
Inter Phase 1st Yr	<u>7.1E+01</u>	<u>6.0E+01</u>	<u>4.7E+01</u>	<u>4.5E+01</u>	<u>4.3E+01</u>
Inter Phase 2nd Yr	<u>3.6E+01</u>	<u>3.0E+01</u>	<u>2.3E+01</u>	<u>2.2E+01</u>	<u>2.1E+01</u>

**Notes:**

- Doses exceeding PAGs are underlined.
- Early-Phase PAGs: TEDE - 1 rem, Thyroid (iodine) CDE - 5 rem
- Intermediate-Phase PAGs: 1st year - 2 rem, 2nd year - 0.5 rem
- \*\*\* indicates values less than 1 mrem
- To view all values - use Detailed Results | Numeric Table
- Total EDE = CEDE Inhalation + Cloudshine + 4-Day Groundshine
- Total Acute Bone = Bone Inhalation + Cloudshine + Period Groundshine

TEDE - Total Effective Dose Equivalent  
 CDE - Committed Dose Equivalent  
 CEDE - Committed Effective Dose Equivalent  
 PAGs - Protective Action Guidelines  
 EPA - Environmental Protection Agency

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 4:34 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

Thanks!

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 4:15 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

I will see what I can do.

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 4:08 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** Another Request

Alan, et al,

(b)(5)

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 3:50 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Pat,

We have passed this along to the right people in the Ops Center and they are looking into it along with a long list of other action items. We will let you know when we hear something back.

Regards,

Alan L. Frazier  
Executive Technical Assistant  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-1763

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick

**Sent:** Thursday, March 17, 2011 11:54 AM

**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike

**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel; Sharkey, Jeffrey; Reddick, Darani; Thoma, John

**Subject:** RE: RASCAL Runs justifying U.S. PARs

There is a problem with the press release. It says that the second set of values is from a four unit site. Actually, it appears that the second set of values is derived from the SPENT FUEL POOLS of Fukushima Daichi Units 2, 3, and 4. Shouldn't our press release be fixed?

**From:** Wittick, Brian

**Sent:** Thursday, March 17, 2011 11:36 AM

**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike

**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel

**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

Thanks,

Brian Wittick

Executive Technical Assistant for Reactors

Office of the Executive Director for Operations

U.S. Nuclear Regulatory Commission

301-415-2496 (w) (b)(6) (c)

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 11:38 AM  
**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Thanks very much!

**From:** Wittick, Brian  
**Sent:** Thursday, March 17, 2011 11:36 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

Thanks,  
Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 7:15 AM  
**To:** Sharkey, Jeffry  
**Subject:** RE: Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines

(b)(5)

**From:** Sharkey, Jeffry  
**Sent:** Thursday, March 17, 2011 7:00 AM  
**To:** Castleman, Patrick  
**Subject:** Fw: Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines

Let's discuss this morning.

**From:** Caputo, Annie (EPW) <[Annie\\_Caputo@epw.senate.gov](mailto:Annie_Caputo@epw.senate.gov)>  
**To:** Sharkey, Jeffry  
**Sent:** Wed Mar 16 19:36:55 2011  
**Subject:** FW: Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines

Where are these dose estimates coming from? I haven't seen anything that suggests these numbers. Are you all privy to info that's not being shared?

**From:** Riley (OCA), Timothy [<mailto:Timothy.RileyOCA@nrc.gov>]  
**Sent:** Wednesday, March 16, 2011 2:22 PM  
**To:** Riley (OCA), Timothy  
**Subject:** Resend Press Release: NRC Provides Protective Action Recommendations Based on US Guidelines

**NRC PROVIDES PROTECTIVE ACTION RECOMMENDATIONS BASED ON U.S. GUIDELINES**

Under the guidelines for public safety that would be used in the United States under similar circumstances, the NRC believes it is appropriate for U.S. residents within 50 miles of the Fukushima reactors to evacuate. Among other things, in the United States protective actions recommendations are implemented when projected doses would exceed 1 rem to the body or 5 rem to the thyroid. A rem is a measure of radiation dose. The average American exposed to approximately 620 millirems, or 0.62 rem, of radiation each year from natural and manmade sources.

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In making protective action recommendations, the NRC takes into account a variety of factors that include weather, wind direction and speed, and the status of the problem at the reactors.

Attached are the results of two sets of computer calculations used to support the NRC recommendations.

In response to nuclear emergencies, the NRC works with other U.S. agencies to monitor radioactive releases and predict their path. All the available information continues to indicate Hawaii, Alaska, the U.S. Territories and the U.S. West Coast are not expected to experience any harmful levels of radioactivity.

###

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

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

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 7:21 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0700 EDT (March 17, 2011) USNRC Earthquake/Tsunami SitRep  
**Attachments:** NRC Status Update 3-17.11-07.00am.pdf

Here's an update to the 0600 sitrep. An observation: it seems to me that the NRC's casualty control is chaotic. By now, things like reporting and information flow should be routine except for MAJOR developments.

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Thu Mar 17 07:16:01 2011  
**Subject:** 0700 EDT (March 17, 2011) USNRC Earthquake/Tsunami SitRep

Attached, please find a 0700 EDT situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 17, 2011. **This Update corrects information about the US State Department's actions for employees in Japan.**

Please note that this information is "Official Use Only" and is only being shared within the federal family. Please call the Headquarters Operations Officer at 301-816-5100 with questions.

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~



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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 9:49 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry  
**Subject:** Re: 2000 Conference Call

You're welcome.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** Svinicki, Kristine  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffry  
**Sent:** Thu Mar 17 21:47:23 2011  
**Subject:** Re: 2000 Conference Call

Thanks Pat. Very helpful.

---

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Sent:** Thu Mar 17 21:37:33 2011  
**Subject:** 2000 Conference Call

Commissioner,

The 2000 conference call was led by Jack Grobe. There were 30 participants.

(b)(5)

(b)(5)

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)

The next call will occur tomorrow morning at 0730. Pat

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 10:39 AM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

Hi, Alan. Have you had any luck with this? I'd like to have it to add to the background information I'm giving my Commissioner for Monday's Commission meeting. Thanks!

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 4:15 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

I will see what I can do.

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 4:08 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** Another Request

Alan, et al.

(b)(5)

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 3:50 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Pat,

We have passed this along to the right people in the Ops Center and they are looking into it along with a long list of other action items. We will let you know when we hear something back.

Regards,

Alan L. Frazier  
 Executive Technical Assistant  
 Office of the Executive Director for Operations  
 U.S. Nuclear Regulatory Commission  
 01-415-1763

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 11:54 AM  
**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel; Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

There is a problem with the press release. It says that the second set of values is from a four unit site. Actually, it appears that the second set of values is derived from the SPENT FUEL POOLS of Fukushima Daichi Units 2, 3, and 4. Shouldn't our press release be fixed?

**From:** Wittick, Brian  
**Sent:** Thursday, March 17, 2011 11:36 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

Thanks,  
Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

~~NOT FOR PUBLIC DISCLOSURE~~ FP 150 of 2107

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 3:43 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

Alan, et al,

What is the prognosis on this request? Multiple offices really want this information because of its relevance to the Commission meeting that starts at 0900 on Monday.

Thanks. Pat

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 4:15 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

I will see what I can do.

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 4:08 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** Another Request

Alan, et al,

(b)(5)

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 3:50 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Pat,

We have passed this along to the right people in the Ops Center and they are looking into it along with a long list of other action items. We will let you know when we hear something back.

Regards,

Jan L. Frazier  
Executive Technical Assistant

~~NOT FOR PUBLIC DISCLOSURE~~

Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-1763

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 11:54 AM  
**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel; Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

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**From:** Wittick, Brian  
**Sent:** Thursday, March 17, 2011 11:36 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

Thanks,  
Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 6:38 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: USNRC Earthquake-Tsunami Update - 1800 EDT (March 18, 2011)  
**Attachments:** USNRC Earthquake-Tsunami Update.031811.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Fri Mar 18 18:36:50 2011  
**Subject:** USNRC Earthquake-Tsunami Update - 1800 EDT (March 18, 2011)

Attached, please find an 1800 EDT March 18, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 7:47 PM  
**To:** Tadesse, Rebecca; William Orders; Snodderly, Michael; Franovich, Mike  
**Subject:** FW: Another Request

So here's the answer. How hard is it to get an administrative assistant to attach a file to an email and hit the "send" button??

**From:** Andersen, James  
**Sent:** Friday, March 18, 2011 4:48 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory; Frazier, Alan  
**Subject:** RE: Another Request

Pat, we provided the request to the Operations Center yesterday. They have not been able to address it due to other higher priorities.

Jim A.

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 3:43 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

Alan, et al,

What is the prognosis on this request? Multiple offices really want this information because of its relevance to the Commission meeting that starts at 0900 on Monday.

Thanks. Pat

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 4:15 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

will see what I can do.

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 4:08 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** Another Request

Alan, et al,

(b)(5)



~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Frazier, Alan  
**Sent:** Thursday, March 17, 2011 3:50 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

Pat,

We have passed this along to the right people in the Ops Center and they are looking into it along with a long list of other action items. We will let you know when we hear something back.

Regards,

Alan L. Frazier  
Executive Technical Assistant  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-1763

**From:** Castleman, Patrick  
**Sent:** Thursday, March 17, 2011 11:54 AM  
**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel; Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** RE: RASCAL Runs justifying U.S. PARs

There is a problem with the press release. It says that the second set of values is from a four unit site. Actually, it appears that the second set of values is derived from the SPENT FUEL POOLS of Fukushima Daiichi Units 2, 3, and 4. Shouldn't our press release be fixed?

**From:** Wittick, Brian  
**Sent:** Thursday, March 17, 2011 11:36 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Frazier, Alan; PMTERDS Hoc; Brock, Kathryn; Merzke, Daniel  
**Subject:** RASCAL Runs justifying U.S. PARs

Attached are the requested RASCAL runs for your information.

Please let us know if you desire additional information.

Thanks,  
Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~**Castleman, Patrick:**

**From:** Sharkey, Jeffrey  
**Sent:** Friday, March 18, 2011 7:11 AM  
**To:** Castleman, Patrick  
**Subject:** Re: Seismic Q&As March 18th 5am update

Pls do.

**From:** Castleman, Patrick  
**To:** Sharkey, Jeffrey  
**Sent:** Fri Mar 18 06:52:55 2011  
**Subject:** Fw: Seismic Q&As March 18th 5am update

Not sure we need to fwd to KLS

Sent from an NRC Blackberry  
 Patrick Castleman  
 (b)(6)

**From:** Kammerer, Annie  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Gitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Eurnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kanial; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean  
**Sent:** Fri Mar 18 06:50:33 2011  
**Subject:** RE: Seismic Q&As March 18th 5am update

ll,

Please see the updated version of the Seismic Q&amp;As.

Among today's highlights:  
 We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful, but it will have to wait a little)  
 The "additional information" section has been split into tables, plots, and fact sheets  
 A high-level draft fact sheet on NRC's seismic regulations has been added  
 We added a section to track outstanding questions that have come in from congress. This will support those who get the letters in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

Be sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

ers,  
 je

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Kammerer, Annie

**Sent:** Thursday, March 17, 2011 2:36 AM

**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giltter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giltter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderty, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgillo, Martin; Holahan, Vincent; Bergman, Thomas

**Subject:** Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

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

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet... a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,  
Annie

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

(b)(6) mobile

~~NOT FOR PUBLIC DISCLOSURE~~

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(b)(6) BB

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Kammerer, Annie  
**Sent:** Tuesday, March 15, 2011 3:41 AM  
**To:** Hiland, Patrick; Skeen, David  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Glitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael  
**Subject:** latest version of Q&As

All,

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

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

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

Annie

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

(b)(6) mobile  
BB

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffrey

From: Vietti-Cook, Annette  
 Sent: Friday, March 18, 2011 1:04 PM  
 To: Svinicki, Kristine; Apostolakis, George; Magwood, William; Ostendorff, William; Jaczko, Gregory  
 Cc: Sharkey, Jeffrey; Lepre, Janet; Sosa, Belkys; Blake, Kathleen; Bubar, Patrice; Crawford, Carrie; Nieh, Ho; Zorn, Jason; Coggins, Angela; Batkin, Joshua; Burns, Stephen; Rothschild, Trip; Bates, Andrew; Bavor, Rochelle; Laufer, Richard; Borchardt, Bill; Pace, Patti; 3WFN Core Team List Resource  
 Subject: Monday's Commission Briefing on NRC Response to Recent Nuclear Events in Japan  
 Attachments: 110321 NRC Response to Events in Japan VERSION 2 Scheduling Note.docx

(b)(5)

(b)(5) Attached is the final scheduling note that is being posted to the web. We are delivering background books today, and maybe slides. If slides are not available today, they will be sent around by email this weekend.

ECY has coordinated with the rest of the agency on logistics but just want you to be aware the meeting will be broadcast to TWFN auditorium to handle overflow in Commission Hearing Room, lots of security will be on hand, and BS Broadcast Network pool camera will be in the room and will feed others, but lots of reporters and photographers are expected (OPA is working this), space is being reserved in the hearing room for NRC staff that may need to answer questions, and press.

need to leave a little early this afternoon (b)(6) Andy Bates is Acting for me this afternoon (415-1963). Richard Laufer is working details of Monday's Commission meeting (415-1661).

I am available by cell phone, from the time I leave and over the weekend. I will of course be here bright and early Monday.

Annette (b)(6) cell  
 (b)(6) blackberry  
 (b)(6) home

If you have any trouble reaching me, please contact the following people in this order for assistance:

Andrew Bates (b)(6) home  
 (b)(6) cell

Rochelle Bavor (b)(6) cell  
 (b)(6) home

Richard Laufer (b)(6) home  
 (b)(6) cell

John Hart, although a SECY MVP, is not listed because he is working shift work at the ops center.

~~NOT FOR PUBLIC DISCLOSURE~~

Final: 3/18/11

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**SCHEDULING NOTE**

**Title:** BRIEFING ON NRC RESPONSE TO RECENT NUCLEAR EVENTS IN JAPAN (Public Meeting)

**Purpose:** To provide the Commission a status on the recent events in Japan, NRC's response, and planned actions.

**Scheduled:** **March 21, 2011**  
9:00 am

**Duration:** Approx. 2 hours

**Location:** Commissioners' Conference Room OWFN

**Participants:**

**Presentation**

**NRC Staff Panel**

**50 mins.\***

**Bill Borchardt, Executive Director for Operations**

**Topics:**

- Overview of Japanese event and U.S. response
- Discussion of general radiation health effects
- Discussion of current regulatory approaches for reactors
- Path forward; near term and longer term

**Commission Q & A**

**50 mins.**

**Discussion – Wrap-up**

**5 mins.**

**Documents:**

Background materials due to SECY: prior to the briefing.

Slides due to SECY: prior to the briefing.

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 7:50 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Darani Reddick  
**Subject:** FW: Another Request

Commissioner,

This is the staff's response to (b)(5). I will continue to pursue.

Pat

---

**From:** Andersen, James  
**Sent:** Friday, March 18, 2011 4:48 PM  
**To:** Castleman, Patrick  
**Cc:** Wittick, Brian; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory; Frazier, Alan  
**Subject:** RE: Another Request

Pat, we provided the request to the Operations Center yesterday. They have not been able to address it due to other higher priorities.

Jim A.

**From:** Castleman, Patrick  
**Sent:** Friday, March 18, 2011 3:43 PM  
**To:** Frazier, Alan  
**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
**Subject:** RE: Another Request

Alan, et al.

What is the prognosis on this request? Multiple offices really want this information because of its relevance to the Commission meeting that starts at 0900 on Monday.

Thanks. Pat

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**Sent:** Thursday, March 17, 2011 4:15 PM  
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**Cc:** Wittick, Brian; Andersen, James; Brock, Kathryn; Merzke, Daniel; Bowman, Gregory  
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**Subject:** Another Request

Alan, et al.

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U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

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~~NOT FOR PUBLIC DISCLOSURE~~



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Castleman, Patrick

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**From:** Sharkey, Jeffry  
**Sent:** Friday, March 18, 2011 2:03 PM  
**To:** Castleman, Patrick  
**Subject:** FW: Japan OIP SharePoint Site Updated

---

**From:** Breskovic, Clarence  
**Sent:** Friday, March 18, 2011 2:02:21 PM  
**To:** Breskovic, Clarence  
**Subject:** Japan OIP SharePoint Site Updated  
**Auto forwarded by a Rule**

<http://portal.nrc.gov/OCM/ip/countries/japan/default.aspx>

Clarence Breskovic  
International Policy Analyst  
U.S. Nuclear Regulatory Commission  
Office of International Programs  
11555 Rockville Pike  
Rockville, MD 20852, USA  
Tel: 1-301-415-2364  
Fax: 1-301-415-2395  
Alternate Email:

~~NOT FOR PUBLIC DISCLOSURE~~ FP 163 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffry

**From:** Jaczko, Gregory  
**Sent:** Friday, March 18, 2011 1:10 PM  
**To:** Vietti-Cook, Annette; Svinicki, Kristine; Apostolakis, George; Magwood, William; Ostendorff, William  
**Cc:** Sharkey, Jeffry; Lepre, Janet; Sosa, Belkys; Blake, Kathleen; Bubar, Patrice; Crawford, Carrie; Nieh, Ho; Zorn, Jason; Coggins, Angela; Batkin, Joshua; Burns, Stephen; Rothschild, Trip; Bates, Andrew; Bovol, Rochelle; Laufer, Richard; Borchardt, Bill; Pace, Patti; 3WFN Core Team List Resource  
**Subject:** RE: Monday's Commission Briefing on NRC Response to Recent Nuclear Events in Japan

(b)(5)

**From:** Vietti-Cook, Annette  
**Sent:** Friday, March 18, 2011 1:04 PM  
**To:** Svinicki, Kristine; Apostolakis, George; Magwood, William; Ostendorff, William; Jaczko, Gregory  
**Cc:** Sharkey, Jeffry; Lepre, Janet; Sosa, Belkys; Blake, Kathleen; Bubar, Patrice; Crawford, Carrie; Nieh, Ho; Zorn, Jason; Coggins, Angela; Batkin, Joshua; Burns, Stephen; Rothschild, Trip; Bates, Andrew; Bovol, Rochelle; Laufer, Richard; Borchardt, Bill; Pace, Patti; 3WFN Core Team List Resource  
**Subject:** Monday's Commission Briefing on NRC Response to Recent Nuclear Events in Japan

(b)(5)

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I'm not available by cell phone, from the time I leave and over the weekend. I will of course be here bright and early Monday.

Annette (b)(6) cell  
 blackberry  
 home

If you have any trouble reaching me, please contact the following people in this order for assistance:

Andrew Bates (b)(6) home  
 cell

Rochelle Bovol (b)(6) cell  
 home

Richard Laufer (b)(6) home  
 cell

Bill Hart, although a SECY MVP, is not listed because he is working shift work at the ops center.

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Reddick, Darani  
**Sent:** Friday, March 18, 2011 12:22 PM  
**To:** Svinicki, Kristine; Sharkey, Jeffrey; Castleman, Patrick  
**Subject:** Re: Ideas

Commissioner,

We are sending these types of emails to OPA for action, as appropriate. I asked Jan to send this one to you because I thought you might want to know that folks are going to your Facebook page in response to the Japan event.

Thanks,  
Darani

---

**From:** Svinicki, Kristine  
**To:** Sharkey, Jeffrey; Castleman, Patrick; Reddick, Darani  
**Sent:** Fri Mar 18 12:09:18 2011  
**Subject:** FW: Ideas

I don't know this individual, but this might be the first of many ideas that get submitted to me and other members of the Commission. We will need to think about systematic ways of handling. Thanks.

**From:** CMRSVINICKI Resource  
**Sent:** Friday, March 18, 2011 10:48 AM  
**To:** Lepre, Janet; Harves, Carolyn  
**Subject:** FW: Ideas

**From:** JIM SHOMO [mailto:(b)(6)]  
**Sent:** Thursday, March 17, 2011 7:33 PM  
**To:** CMRSVINICKI Resource  
**Subject:** Ideas

hey Kristine,

oy, it took some work to find your email address. Too bad the NRC's website just doesn't have a 'contact us' mail address. Thanks for providing a path to your facebook page which then had your email listed.

nyways, I'm just a regular guy working at the Army's research center at APG, MD. But I had an idea that I ough would be good to pass along. It's concerning all the problems going on in Japan at their Nuclear Power ants. Why don't these facilities just have an emergency power connector so that the military could fly in a rtable generator, plug in and go? If it isn't required at our US power plants, it should be. The Army could ve a large generator flown in within hours of most locations, providing a third level of backup protection in out disasters.

it an idea,

1

I, You have a nice photo on facebook. The look great in front of our flag!!

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 19, 2011 6:25 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 19, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.031911.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman  
(b)(6)

**From:** LIA07 Hoc  
**Sent:** Sat Mar 19 17:51:00 2011  
**Subject:** 1800 EDT (March 19, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, March 19, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Sharkey, Jeffrey  
**Sent:** Saturday, March 19, 2011 5:23 PM  
**To:** Castleman, Patrick  
**Subject:** Fw: Japan Follow-up

**From:** Svinicki, Kristine  
**To:** Sharkey, Jeffrey; Reddick, Darani  
**Sent:** Sat Mar 19 12:57:02 2011  
**Subject:** Fw: Japan Follow-up

(b)(5)

**From:** Jaczko, Gregory  
**To:** Apostolakis, George; Magwood, William; Ostendorff, William; Svinicki, Kristine  
**Sent:** Sat Mar 19 12:37:56 2011  
**Subject:** Fw: Japan Follow-up

Thoughts? If we could come to some consensus I think that would be great

**From:** Borchardt, Bill  
**To:** Jaczko, Gregory  
**Cc:** Weber, Michael; Virgilio, Martin; Ash, Darren; Batkin, Joshua  
**Sent:** Sat Mar 19 10:13:27 2011  
**Subject:** Japan Follow-up

Chairman,  
The following is my initial thinking of NRC lessons learned follow-up from the Japan event. Both of the activities would use a combination of current NRC staff (and SES managers) as well as rehired annuitants. I would also like to explore the possibility of using some existing senior managers for the task force and then backfilling behind them as a succession planning tool.

- 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
  - Develop recommendations for generic communications, orders, etc
  - This would possibly include a 30 day quick look report
  - Limited stakeholder involvement
  - 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

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~~NOT FOR PUBLIC DISCLOSURE~~

These are only initial thoughts and will benefit from the input of others.

Bill

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

**From:** Weber, Michael  
**Sent:** Saturday, March 19, 2011 8:29 AM  
**To:** Castleman, Patrick; Orders, William; Franovich, Mike; Sosa, Belkys  
**Cc:** Andersen, James; OST02 HOC  
**Subject:** FYI - Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki (OUO Attachments)  
**Attachments:** Doc1.docx; bechtel detailed diagram.pdf; Japan Aid.xlsx; Chairmans March 18 Doc.docx

Good morning. Is this the information that the Commission Offices have been seeking regarding the "equipment" requests that we have shared with USAID? First time that I have seen it on an email.

**From:** LIA07 Hoc  
**Sent:** Sat Mar 19 06:24:53 2011  
**Subject:** Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki

Dear Colleagues,

Attached is the report summarizing Chairman Jaczko's meeting with Japanese Ambassador to the U.S. Ichiro Fujisaki, held on March 18, 2011, at 1600 hours EST. We have also included other key documents which provide additional information pertinent to the recent events. Please note this information is "~~official-use-only~~" and is only being shared within the federal family. Please call the Headquarters Operations Office at 301-816-5100 with questions.

International Liaison Team  
U.S. Nuclear Regulatory Commission

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There has been no specific information handed over to TEPCO regarding the specific tasks, equipment or people to implement immediate actions. The following general topics have been discussed:

**Tasks**

Urgently place water on spent fuel pools in the damaged Fukushima Daiichi Units 1, 2, 3, 4 with all available equipment

Establish temporary cooling system for spraying water on Units 1, 2, 3, and 4

Continue to closely monitor and add water to spent fuel pools in Fukushima Daiichi Units 5 & 6

Establish more permanent means of temporary cooling to the reactor cores on Units 1, 2, 3

**Equipment**

All equipment available to the Government of Japan should be used to implement immediate actions to cool the spent fuel pools on Units 1, 2, 3, 4

Equipment list and drawing for "Bechtel" four train system should be supplied.

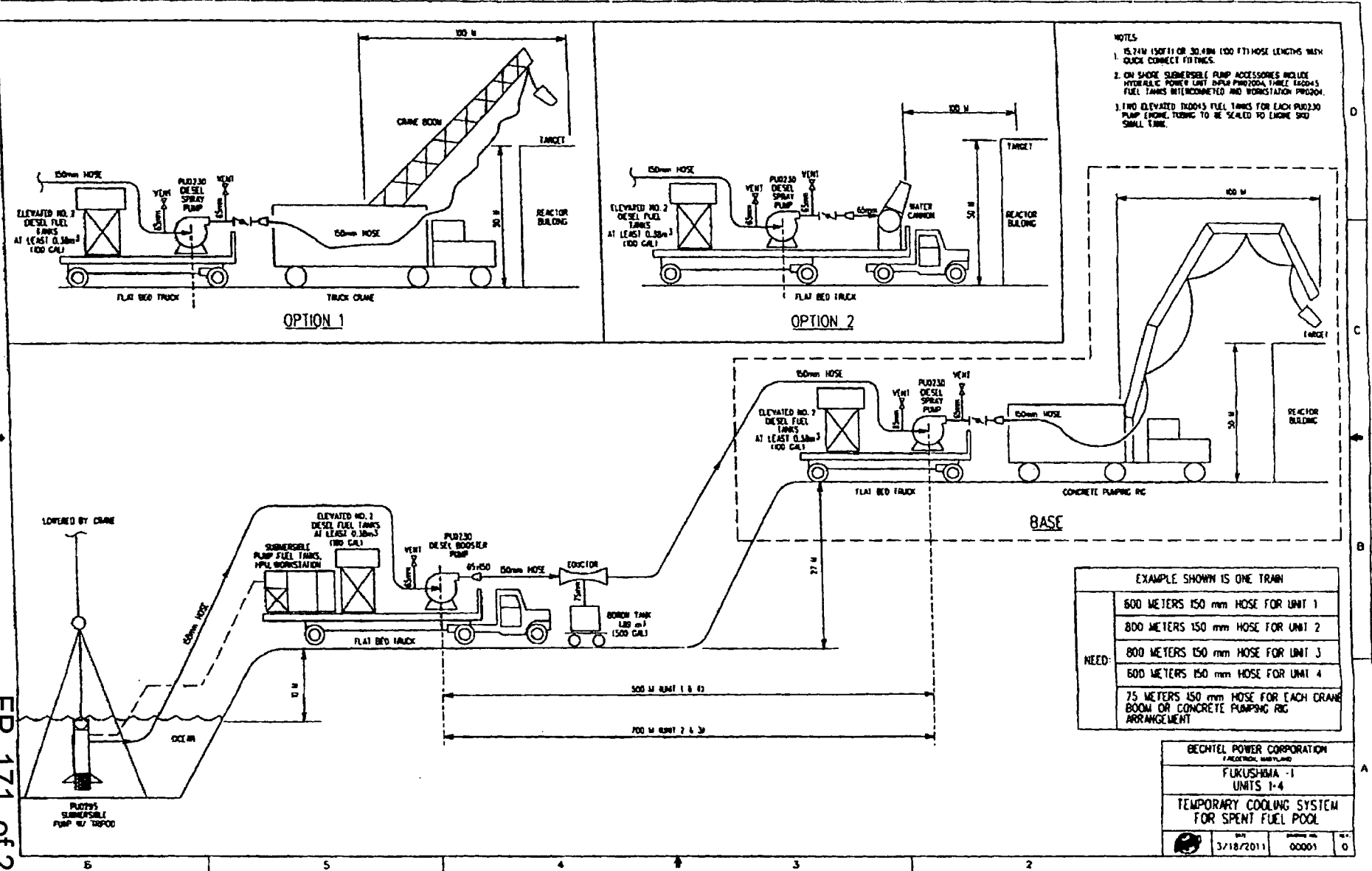
**People**

Establish teams to implement multiple cooling water actions at the same time.

- Several hundred people would likely be required to implement spent fuel pool cooling tasks and manage the activities.
- Health Physics support

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- NOTES**
- 15.24M (50FT) OR 30.48M (100 FT) HOSE LENGTHS WITH QUICK CONNECT FITTINGS.
  - ON SHORE SUBMERSIBLE PUMP ACCESSORIES INCLUDE HYDRAULIC POWER UNIT, DUPLEX PNEUMATIC, THREE 15004'S FUEL TANKS INTERCONNECTED AND WORKSTATION PROGRAM.
  - TWO ELEVATED 15004'S FUEL TANKS FOR EACH PU0230 PUMP (ENGINE TUBING TO BE SCALED TO ENGINE SPEC SMALL TANK).

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part (include for track)	Each	16																				
available for mounting	Each	6																				
available for mounting RSC/20	Each	2																				
available for mounting RSC/120	Each	8																				
is tank for barrel	Each	4		4																		
for - 40 ft by 8 ft, with pin connection, front fe, rubber strip, front die, tongue with pin for training (Pilotlock R)	Each	5		5																		
for - 40 ft by 8 ft, with pin connection, front die, rubber strip, front die, tongue with pin for training, for delivery station	Each	1		1																		
for - 40 ft by 8 ft, with pin connection, front die, rubber strip, front die, tongue with pin for training, for delivery station ready for	Each	1		3																		
ft by 6 feet with axle with axle, rubber strip, + pin connection for	Each	16		16																		

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ITEM NO	QUANTITY	BLAUER PUMPS				RECONQUIE EQUIPMENT LIMITED (Change Selection 99 if required)			ORION FIRE & SAFETY				ALFAGOMMA				ORION MANUFACTURING & WA POLY TUBES			HOWARD	
		UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	AVAIL QTY	TOTAL PRICE	AVAILABILITY	UNIT PRICE	TOTAL PRICE	AVAILABILITY	UNIT PRICE	TOTAL PRICE
1 pump 1100000	4					AUD 16,500.00	TBC	2 units available ex-perth													
rig pump PU/20	4					(included in 1)															
rig pump PU/20	4					(included in 1)															
rig pump PU/20	4					(included in 1)															
1 inch neck adapter with 2 round to female pump	4	TBC	4		Ex-Perth, Australian Flanging	(included in 1)															
1 inch neck to adapter pump to connect to the system	4	TBC	4		Ex-Perth, Australian Flanging	(included in 1)															
1 inch neck to adapter pump to connect to the system	4	1,453	TBC	3,353	Ex-Sydney 12X100 meter (No Couplings) 10000m (No Couplings)-RED 61X00m (No Couplings)-Yellow Ex-Melbourne 21X00m (with camlock couplings)-RED 67X00 (No Couplings)-RED Note: Aluminium camlock couplings for the flange can be arranged based on the condition of what type these are required	(included in 1)															
2 inch neck to adapter pump to connect to the system	4	1,351	3,336	3,336	Ex-Sydney ex-perth, 12X00m ex-sydney, 21X00m ex-melbourne	(included in 1)		300	300 meter available	600	600 meter available	Ex-Melbourne, Brisbane & Sydney	100 PSI rating								
1 inch neck to adapter pump to connect to the system	4	150	250	250	Ex-Perth	(included in 1)															
1 inch neck to adapter pump to connect to the system	4	75	75	75	Ex-Perth/Generation	(included in 1)															
1 inch neck to adapter pump to connect to the system	4	Not Quoted				(included in 1)															
1 inch neck to adapter pump to connect to the system	4	46	46	46	Ex-Stock Perth	(included in 1)															
1 inch neck to adapter pump to connect to the system	4	3	3	3	AUD 80.00	Ex-Stock Perth	(included in 1)														
1 inch neck to adapter pump to connect to the system	4	75	TBC	20	Ex-Perth, Australian Flanging	(included in 1)															

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BENTON			REGIONAL TRAILERS			ESTIMATED SIZE	COMMENTS
LIMIT PRICE	TOTAL PRICE	AVAILABILITY	UNIT PRICE	TOTAL PRICE	AVAILABILITY		
						REL has obtained estimated weight of two complete units is 100 Mlbs: Furness	RESOURCES EQUIPMENT LIMITED (REL): has offered an alternate solution which exceeds engineering requirements. Two (2) units available in-stock (see attachment for details). Engineering to
							BEAVER MOVING Attached are the possible options of Cameron available in-stock. Malheur, Engineering to review and advise if acceptable. RESOURCES EQUIPMENT LIMITED: 2 units available in-stock (see attachment for details). Contact: Chris Wake, Mobile: 543 414 545
							Only 24.35 meters available against total requirement of 3,253 meters
							Need more technical info

FP 174 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

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Sharkey, Jeffry

**From:** Kammerer, Annie  
**Sent:** Saturday, March 19, 2011 9:00 AM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean;  
**Subject:** Seismic Q&As March 19th 8am update  
**Attachments:** Seismic Questions for Incident Response 3-19-11 8am.pdf

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 However, the big news of the day is that we just sent off a 6 page, 22 question, much better edited version for a public Q&A set. It's all in OPA's capable hands now. I think it's pretty good...but then I'm biased.

Yours,  
Annie

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**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean  
**Subject:** RE: Seismic Q&As March 18th 5am update

Please see the updated version of the Seismic Q&As.  
 Today's highlights:  
 - added a Terms and Definitions section at the end of the document. (We know that an acronym list would be helpful too, it will have to wait a little)  
 - the "additional information" section has been split into tables, plots, and fact sheets  
 - high-level draft fact sheet on NRC's seismic regulations has been added  
 - added a section to track outstanding questions that have come in from congress. This will support those who get the tickets  
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I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,  
Annie

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**Sent:** Thursday, March 17, 2011 2:36 AM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Glitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Jselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hemando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Antz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Tolahan, Vincent; Bergman, Thomas  
**Subject:** Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

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

His latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also have these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have been added to the "additional information" section. These include the RO half of a tsunami fact sheet... a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting it in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and QA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,  
Annie

~~NOT FOR PUBLIC DISCLOSURE~~

FP 176 of 2107

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

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(6) mobile  
BB

**From:** Kammerer, Annie  
**Sent:** Tuesday, March 15, 2011 3:41 AM  
**To:** Hiland, Patrick; Skeen, David  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Tricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael  
**Subject:** latest version of Q&As

Hi,

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

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Annie

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

(b)(6) mobile  
BB

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245

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**Castleman, Patrick**

**From:** Svinicki, Kristine  
**Sent:** Saturday, March 19, 2011 9:15 PM  
**To:** Sharkey, Jeffrey; Castleman, Patrick  
**Subject:** RE: FAQ questions posted

I think your Blackberry stripped off the attachment, or something. I don't have it here.

**From:** Sharkey, Jeffrey  
**Sent:** Saturday, March 19, 2011 6:07 PM  
**To:** Svinicki, Kristine; Castleman, Patrick  
**Subject:** Fw: FAQ questions posted

**From:** Kammerer, Annie  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; 'FOIAResource.hoc@nrc.gov' <FOIAResource.hoc@nrc.gov>  
**Sent:** Sat Mar 19 17:24:46 2011  
**Subject:** FAQ questions posted

All,  
  
For your reading enjoyment, and in anticipation of the end of cycle meetings in the regions next week, the NRC has issued a press release announcing a publically available set of FAQs on the earthquake and tsunami.

hope people find it helpful!

cheers,  
Annie

Special thanks to Jennifer Uhle who stayed after her overnight shift in the Ops Center to review and provide outstanding comments that really improved the document.

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Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean;  
FOIAResource.hoc@nrc.gov

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~~NOT FOR PUBLIC DISCLOSURE~~

Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Elliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas

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Senior Seismologist and Earthquake Engineer  
US Nuclear Regulatory Commission  
Office of Nuclear Regulatory Research  
Washington DC 20555

(b)(6) mobile  
BB

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

To: Hiland, Patrick; Skeen, David

Howe, Allen; Nelson, Robert; Stutzke, Martin; Giltter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick;

Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, Mary Jane; Brown,

~~NOT FOR PUBLIC DISCLOSURE~~

Frederick; Glitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael  
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Dr. Annie Kammerer, PE  
Senior Seismologist and Earthquake Engineer  
US Nuclear Regulatory Commission  
Office of Nuclear Regulatory Research  
Washington DC 20555

(b)(6) mobile  
BB

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Saturday, March 19, 2011 7:42 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Darani Reddick  
**Subject:** RE: Japan Follow-up

Commissioner,

(b)(5)

Pat

---

**From:** Sharkey, Jeffrey  
**Sent:** Saturday, March 19, 2011 5:23 PM  
**To:** Castleman, Patrick  
**Subject:** Fw: Japan Follow-up

---

**From:** Svinicki, Kristine  
**To:** Sharkey, Jeffrey; Reddick, Darani  
**Sent:** Sat Mar 19 12:57:02 2011  
**Subject:** Fw: Japan Follow-up

(b)(5)

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**From:** Jaczko, Gregory  
**To:** Apostolakis, George; Magwood, William; Ostendorff, William; Svinicki, Kristine  
**Sent:** Sat Mar 19 12:37:56 2011  
**Subject:** Fw: Japan Follow-up

Thoughts? If we could come to some consensus I think that would be great.

---

**From:** Borchardt, Bill  
**To:** Jaczko, Gregory  
**Cc:** Weber, Michael; Virgilio, Martin; Ash, Darren; Batkin, Joshua  
**Sent:** Sat Mar 19 10:13:27 2011  
**Subject:** Japan Follow-up

Chairman,

The following is my initial thinking of NRC lessons learned follow-up from the Japan event. Both of the activities would use a combination of current NRC staff (and SES managers) as well as rehired annuitants. I would also like to explore the possibility of using some existing senior managers for the task force and then backfilling behind them as a succession planning tool.

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.
- Develop recommendations for generic communications orders, etc

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- This would possibly include a 30 day quick look report
- Limited stakeholder involvement
- Public report

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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

These are only initial thoughts and will benefit from the input of others.  
Bill

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**Castleman, Patrick**

**From:** Reddick, Darani  
**Sent:** Saturday, March 19, 2011 3:17 PM  
**To:** Castleman, Patrick  
**Subject:** Fw: Japan Follow-up

Pat - FYI, from the boss.

**From:** Svinicki, Kristine  
**To:** Sharkey, Jeffrey; Reddick, Darani  
**Sent:** Sat Mar 19 12:57:02 2011  
**Subject:** Fw: Japan Follow-up

(b)(5)

**From:** Jaczko, Gregory  
**To:** Apostolakis, George; Magwood, William; Ostendorff, William; Svinicki, Kristine  
**Sent:** Sat Mar 19 12:37:56 2011  
**Subject:** Fw: Japan Follow-up

Thoughts? If we could come to some consensus I think that would be great

**From:** Borchardt, Bill  
**To:** Jaczko, Gregory  
**Cc:** Weber, Michael; Virgilio, Martin; Ash, Darren; Batkin, Joshua  
**Sent:** Sat Mar 19 10:13:27 2011  
**Subject:** Japan Follow-up

Chairman,

The following is my initial thinking of NRC lessons learned follow-up from the Japan event. Both of the activities would use a combination of current NRC staff (and SES managers) as well as rehired annuitants. I would also like to explore the possibility of using some existing senior managers for the task force and then jackfilling behind them as a succession planning tool.

Near Term Review:

- 90 day effort
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- Develop recommendations for generic communications, orders, etc
- This would possibly include a 30 day quick look report
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Longer Term Review:

- Would start after we have sufficient technical information from Japan
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- Evaluate interagency issues (EP)
- Applicability to non-operating reactor facilities
- Substantive stakeholder involvement

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- Public report

~~NOT FOR PUBLIC DISCLOSURE~~

These are only initial thoughts and will benefit from the input of others.  
Bill

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Saturday, March 19, 2011 10:03 AM  
**To:** Weber, Michael; Orders, William; Franovich, Mike; Sosa, Belkys  
**Cc:** Andersen, James; OST02 HOC  
**Subject:** RE: FYI - Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki (OOO-Attachments)

Thanks, Mike. The information appears to be an equipment list for the Bechtel pumping system.

The information we had requested is something different. It was reported during the 1530 Monday conference call that the NRC staff is working with USAID to identify additional equipment that could be brought in to help with mitigation. We had provided USAID with a list that was largely developed from our B5b experience (portable pumps, generators, and so forth). That list was provided to Chuck Casto. We're not sure of what ultimately became of it. Our interest in getting the list is to provide useful background for our principals for this Monday's Commission meeting. Mike Franovich told me that, when he was in the ops center, he saw the list over with the RST.

Thanks. Pat

**From:** Weber, Michael  
**Sent:** Saturday, March 19, 2011 8:29 AM  
**To:** Castleman, Patrick; Orders, William; Franovich, Mike; Sosa, Belkys  
**Cc:** Andersen, James; OST02 HOC  
**Subject:** FYI - Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki (OOO-Attachments)

Good morning. Is this the information that the Commission Offices have been seeking regarding the "equipment" requests that we have shared with USAID? First time that I have seen it on an email.

**From:** LIA07 Hoc  
**Sent:** Sat Mar 19 06:24:53 2011  
**Subject:** Report on Meeting between Chairman Jaczko and Japanese Ambassador to the U.S. Ichiro Fujisaki

Dear Colleagues,

Attached is the report summarizing Chairman Jaczko's meeting with Japanese Ambassador to the U.S. Ichiro Fujisaki, held on March 18, 2011, at 1600 hours EST. We have also included other key documents which provide additional information pertinent to the recent events. Please note this information is "official use only" and is only being shared within the federal family. Please call the Headquarters Operations Office at 301-816-5100 with questions.

International Liaison Team  
U.S. Nuclear Regulatory Commission

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 20, 2011 6:07 PM  
**To:** Svinicki, Kristine; Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT  
**Attachments:** USNRC Earthquake-Tsunami Update.032011.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Sun Mar 20 17:56:57 2011  
**Subject:** USNRC Earthquake-Tsunami Update 03.20.11--1800 EDT

Attached, please find the **1800 EDT March 20, 2011** status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

- Caroline

Caroline Nguyen  
Office of Nuclear Reactor Regulation  
US Nuclear Regulatory Commission  
[Caroline.Nguyen@nrc.gov](mailto:Caroline.Nguyen@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, March 20, 2011 7:26 AM  
**To:** Svinicki, Kristine; Sharkey, Jeffry  
**Cc:** Darani Reddick  
**Subject:** RE: FAQ questions posted

Commissioner,

Here is the link: <http://www.nrc.gov/reading-rm/doc-collections/news/2011/11-053.pdf>

---

**From:** Svinicki, Kristine  
**Sent:** Saturday, March 19, 2011 9:15 PM  
**To:** Sharkey, Jeffry; Castleman, Patrick  
**Subject:** RE: FAQ questions posted

I think your Blackberry stripped off the attachment, or something. I don't have it here.

**From:** Sharkey, Jeffry  
**Sent:** Saturday, March 19, 2011 6:07 PM  
**To:** Svinicki, Kristine; Castleman, Patrick  
**Subject:** Fw: FAQ questions posted

---

**From:** Kammerer, Annie  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgillo, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; 'FOIAResource.hoc@nrc.gov' <FOIAResource.hoc@nrc.gov>  
**Sent:** Sat Mar 19 17:24:46 2011  
**Subject:** FAQ questions posted

All,

For your reading enjoyment, and in anticipation of the end of cycle meetings in the regions next week, the NRC has issued a press release announcing a publically available set of FAQs on the earthquake and tsunami.

hope people find it helpful!

heers,  
hnie

5 special thanks to Jennifer Uhle who stayed after her overnight shift in the Ops Center to review and provide outstanding comments that really improved the document.

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**From:** Kammerer, Annie

**Sent:** Saturday, March 19, 2011 9:00 AM

**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynn; Meighan, Sean; FOIAResource.hoc@nrc.gov

**Subject:** Seismic Q&As March 19th 8am update

All,

Here is today's updated version. Lot of new fact sheets have been prepared for various briefings and for Monday's public meeting!

However, the big news of the day is that we just sent off a 6 page, 22 question, much better edited version for a public Q&A set. It's all in OPA's capable hands now. I think it's pretty good...but then I'm biased.

Cheers,

Annie

**From:** Kammerer, Annie

**Sent:** Friday, March 18, 2011 6:51 AM

**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynn; Meighan, Sean

**Subject:** RE: Seismic Q&As March 18th 5am update

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:

\*We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little)

\*The "additional information" section has been split into tables, plots, and fact sheets

\*A high-level draft fact sheet on NRC's seismic regulations has been added

\*We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,  
Annie

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**From:** Kammerer, Annie  
**Sent:** Thursday, March 17, 2011 2:36 AM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davls, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas  
**Subject:** Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

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

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet... a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,  
Annie

Annie Kammerer, PE  
Senior Seismologist and Earthquake Engineer  
U.S. Nuclear Regulatory Commission

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Office of Nuclear Regulatory Research  
Washington DC 20555

(b)(6)

mobile  
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**From:** Kammerer, Annie

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

**To:** Hiland, Patrick; Skeen, David

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

**Subject:** latest version of Q&As

All,

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

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

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

Annie

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

(b)(6)

mobile  
BB

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~~NOT FOR PUBLICATION~~

**Castleman, Patrick**

**From:** Svinicki, Kristine  
**Sent:** Sunday, March 20, 2011 10:38 PM  
**To:** Sharkey, Jeffry; Reddick, Darani; Castleman, Patrick  
**Subject:** FW: draft COM and Items for Agenda Planning  
**Attachments:** Tasking Following Japan Earthquake.docx; Proposed New Meeting Schedule.doc; spreadsheet recommended paper changes.doc

(b)(5)

**From:** Jaczko, Gregory  
**Sent:** Sunday, March 20, 2011 7:44 PM  
**To:** Apostolakis, George; Magwood, William; Svinicki, Kristine; Ostendorff, William  
**Subject:** Fw: draft COM and Items for Agenda Planning

Hi all - please see below.

**From:** Greg Jaczko (b)(6)  
**To:** Jaczko, Gregory  
**Sent:** Sun Mar 20 19:42:07 2011  
**Subject:** draft COM and Items for Agenda Planning

Attached are 3 items I hope will facilitate our discussion at tomorrow's agenda planning meeting and open meeting. First, you'll find a draft COM, that I would like to issue tomorrow, which lays out a plan for us to task the staff to address the events in Japan with both near and long term actions. Next, is a meeting list which lays out by week a proposed new calendar for the next 3 months and identifies where I've recommended some additional meetings or recommended moving around some of our existing meetings. The final item is a spreadsheet of the voting items that were on our priority list through June with some recommendations for modification to the prioritization of some of those items.

I would appreciate any thoughts you have on the draft com tonight. If there are simple tweaks that could facilitate more timely decision, let me know. The COM is basically what I emailed y'all yesterday incorporating some feedback I've received. I then tried to make it a more readable is all.

~~NOT FOR PUBLICATION~~

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DRAFT DRAFT DRAFT

March xx, 2011

COMGBJ-11-000X

MEMORANDUM TO: Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

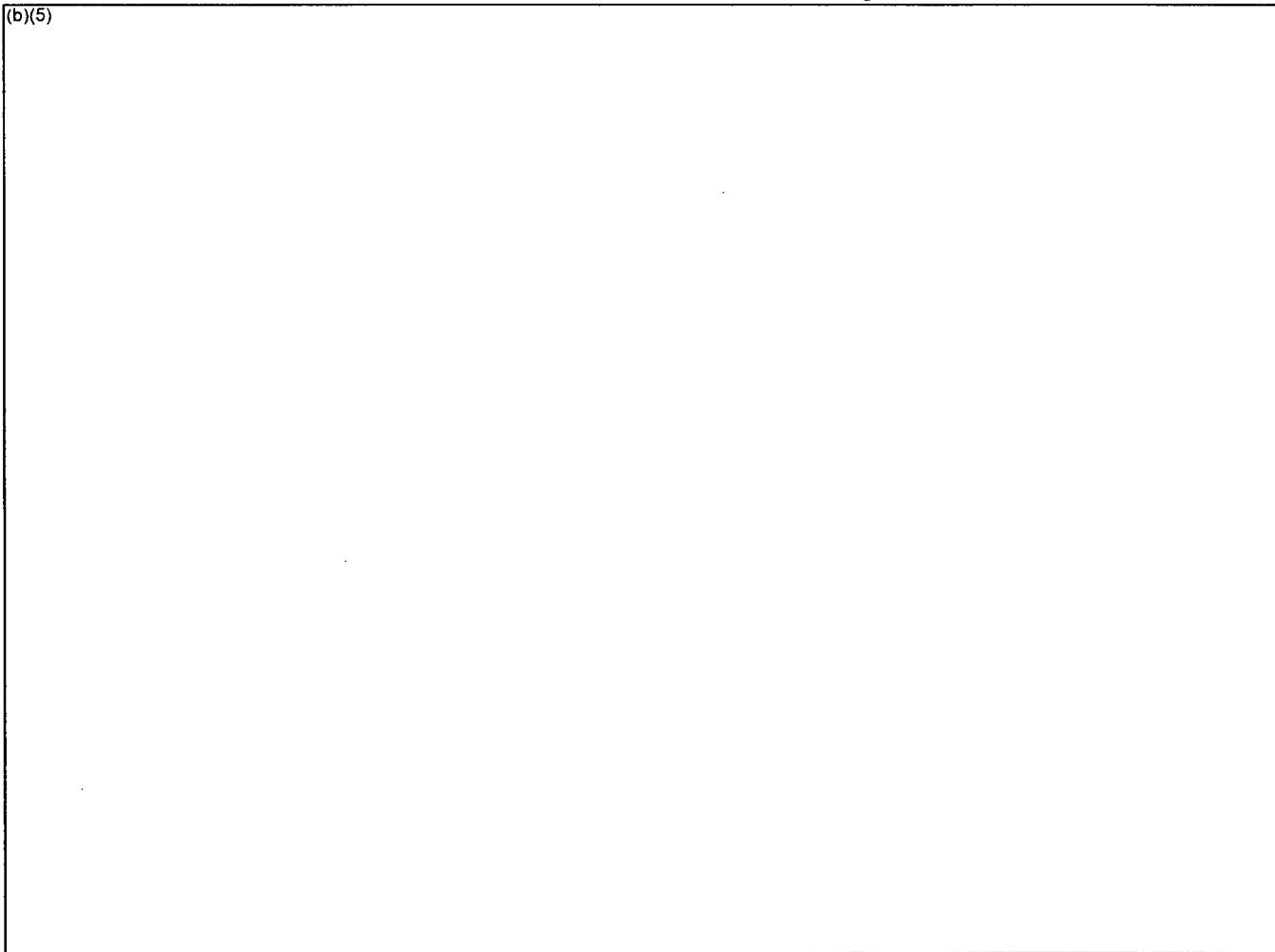
FROM: Chairman Jaczko

SUBJECT: NRC ACTIONS FOLLOWING THE EVENTS IN JAPAN

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(b)(5)



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EX 5  
Q11

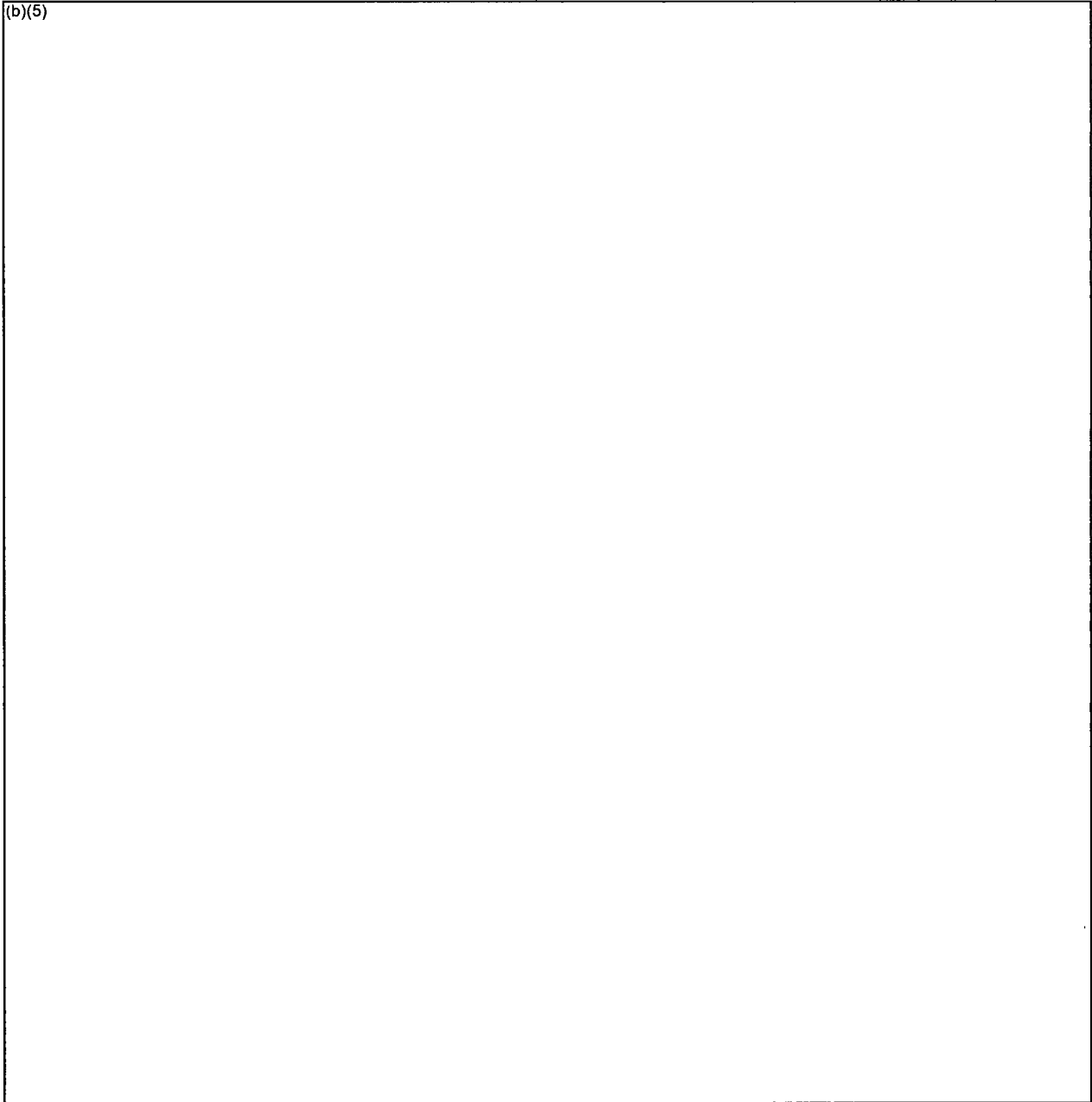


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**Proposed New Meeting Schedule**

Items in **Bold** are Newly Proposed or Moved Meetings  
Items in *Italics* are Currently Planned Meetings

(b)(5)



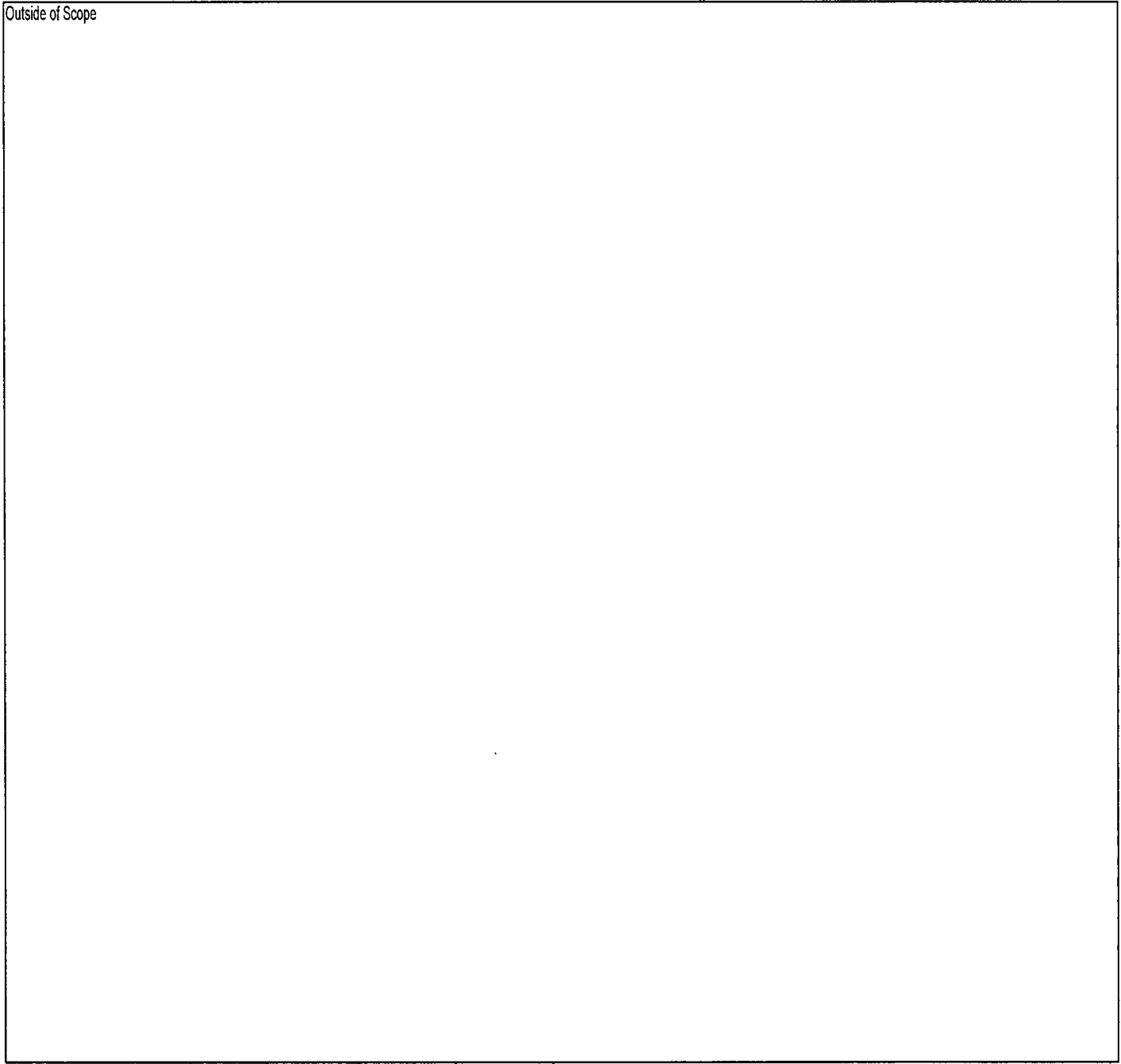
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Outside of Scope

Outside of Scope

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Outside of Scope



Emerging Policy  
Issues Based Upon  
Staff's Review of  
Event

TBD

TBD

Policy Papers may arrive and need to prepare for quick response

Refer to OCM/GBJ

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, March 21, 2011 6:17 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032111.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Sent:** Mon Mar 21 18:16:05 2011  
**Subject:** 1800 EDT (March 21, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 21, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, March 21, 2011 6:14 AM  
**To:** Svinicki, Kristine; Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: USNRC Earthquake-Tsunami Update 03.21.11--0600 EDT  
**Attachments:** NRC Status Update 3.21.11--0600.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Mon Mar 21 06:13:07 2011  
**Subject:** USNRC Earthquake-Tsunami Update 03.21.11--0600 EDT

Attached, please find the **0600 EDT March 21, 2011** status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, March 21, 2011 6:03 AM  
**To:** Svinicki, Kristine; Sharkey, Jeffrey; Reddick, Darani  
**Subject:** RE: draft COM and Items for Agenda Planning

Commissioner,

(b)(5)

Pat

**From:** Svinicki, Kristine  
**Sent:** Sunday, March 20, 2011 10:37 PM  
**To:** Sharkey, Jeffrey; Reddick, Darani; Castleman, Patrick  
**Subject:** FW: draft COM and Items for Agenda Planning

(b)(5)

**From:** Jaczko, Gregory  
**Sent:** Sunday, March 20, 2011 7:44 PM  
**To:** Apostolakis, George; Magwood, William; Svinicki, Kristine; Ostendorff, William  
**Subject:** Fw: draft COM and Items for Agenda Planning

Hi all - please see below.

**From:** Greg Jaczko (b)(6)  
**To:** Jaczko, Gregory  
**Sent:** Sun Mar 20 19:42:07 2011  
**Subject:** draft COM and Items for Agenda Planning

Attached are 3 items I hope will facilitate our discussion at tomorrow's agenda planning meeting and open meeting. First, you'll find a draft COM, that I would like to issue tomorrow, which lays out a plan for us to task the staff to address the events in Japan with both near and long term actions. Next, is a meeting list which lays out by week a proposed new calendar for the next 3 months and identifies where I've recommended some additional meetings or recommended moving around some of our existing meetings. The final item is a spreadsheet of the voting items that were on our priority list through June with some recommendations for modification to the prioritization of some of those items.

~~NOT FOR PUBLIC DISCLOSURE~~

I would appreciate any thoughts you have on the draft com tonight. If there are simple tweaks that could facilitate more timely decision, let me know. The COM is basically what I emailed y'all yesterday incorporating some feedback i've received. I then tried to make it a more readable is all.

~~NOT FOR PUBLIC DISCLOSURE~~



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~~NOT FOR PUBLIC DISCLOSURE~~

Reddick, Darani

**From:** Castleman, Patrick  
**Sent:** Monday, March 21, 2011 5:33 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Seismic Q&As March 20th 8pm update  
**Attachments:** Seismic Questions for Incident Response 3-20-11 8pm.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** kammerer, Annie  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giltter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle  
**Sent:** Sun Mar 20 23:00:08 2011  
**Subject:** Seismic Q&As March 20th 8pm update

All,

Here's today's version. It includes updates on related topics for tomorrow's briefing. Also, some of the sections have been streamlined and some (though not all) of the answers have been updated.

The biggest news from the seismic team's perspective is that starting tomorrow a very bright young risk analyst (Michelle Bensi) who recently joined us from UC Berkeley (my beloved alma mater) will be helping with the compilation of this document. That will allow our team to spend more time cleaning and streamlining it, which inevitably will make it more user friendly... and shorter! Starting with tomorrow's version her name will start to show up on the front.

Best of luck to everyone with the briefing tomorrow!

Annie

**From:** Kammerer, Annie  
**Sent:** Saturday, March 19, 2011 9:00 AM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giltter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~ FP 203 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~  
Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean;  
FOIAResource.hoc@nrc.gov

**Subject:** Seismic Q&As March 19th 8am update

All,

Here is today's updated version. Lot of new fact sheets have been prepared for various briefings and for Monday's public meeting!

However, the big news of the day is that we just sent off a 6 page, 22 question, much better edited version for a public Q&A set. It's all in OPA's capable hands now. I think it's pretty good...but then I'm biased.

Cheers,  
Annie

**From:** Kammerer, Annie

**Sent:** Friday, March 18, 2011 6:51 AM

**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean

**Subject:** RE: Seismic Q&As March 18th 5am update

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:

We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little)

The "additional information" section has been split into tables, plots, and fact sheets

A high-level draft fact sheet on NRC's seismic regulations has been added

We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,  
Annie

**From:** Kammerer, Annie

**Sent:** Thursday, March 17, 2011 2:36 AM

**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter,

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

Joseph; Howe, Allen; Ruland, William; Duces, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas  
**Subject:** Seismic Q&As March 17th 2am update

All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

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

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,  
Annie

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

(b)(6) mobile  
BB

From: Kammerer, Annie  
Sent: Tuesday, March 15, 2011 3:41 AM  
To: Hiland, Patrick; Skeen, David

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

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

All,

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

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

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

Annie

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

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	BB

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, March 21, 2011 8:29 AM  
**To:** LIA08 Hoc; Reddick, Darani; Sharkey, Jeffrey; Snodderly, Michael; Sosa, Belkys; Orders, William; Bubar, Patrice; Franovich, Mike; Nieh, Ho; Andersen, James; Batkin, Joshua; Hipschman, Thomas; Marshall, Michael  
**Subject:** Re: Emailing: List.pdf

Thanks!

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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

**From:** LIA08 Hoc  
**To:** Castleman, Patrick; Reddick, Darani; Sharkey, Jeffrey; Snodderly, Michael; Sosa, Belkys; Orders, William; Bubar, Patrice; Franovich, Mike; Nieh, Ho; Andersen, James; Batkin, Joshua; Hipschman, Thomas; Marshall, Michael  
**Sent:** Mon Mar 21 08:28:34 2011  
**Subject:** FW: Emailing: List.pdf

Attached is the list of equipment discussed this morning on the 0730 conference call with the Executive Team and CA's. Please let me know if you would like additional information.

Jeff Temple  
Liaison Team Coordinator  
301-816-5205

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

**From:** ET07 Hoc  
**Sent:** Monday, March 21, 2011 8:10 AM  
**To:** LIA08 Hoc  
**Subject:** FW: Emailing: List.pdf

Jeff,  
As discussed, please distribute to the Commissioners Assistants. The ET committed to this on the 0730 call.

Craig

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

**From:** H00 Hoc  
**Sent:** Monday, March 21, 2011 8:04 AM  
**To:** ET07 Hoc  
**Subject:** Emailing: List.pdf

The message is ready to be sent with the following file or link attachments:

List.pdf

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~~NOT FOR PUBLIC DISCLOSURE~~

Note: To protect against computer viruses, e-mail programs may prevent sending or receiving certain types of file attachments. Check your e-mail security settings to determine how attachments are handled.

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Sharkey, Jeffrey

~~NOT FOR PUBLIC DISCLOSURE~~

From: Beall, James  
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? Fuses? 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.)

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

From: Castleman, Patrick  
Sent: Monday, March 21, 2011 8:35 AM  
To: Svinicki, Kristine; Sharkey, Jeffrey; Reddick, Darani; Thoma, John; Lepre, Janet  
Subject: Fw: Emailing: List.pdf  
Attachments: List.pdf

Commissioner,

(b)(5)

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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

From: LIA08 Hoc  
To: Castleman, Patrick; Reddick, Darani; Sharkey, Jeffrey; Snodderly, Michael; Sosa, Belkys; Orders, William; Bubar, Patrice; Franovich, Mike; Nieh, Ho; Andersen, James; Batkin, Joshua; Hipschman, Thomas; Marshall, Michael  
Sent: Mon Mar 21 08:28:34 2011  
Subject: FW: Emailing: List.pdf

Attached is the list of equipment discussed this morning on the 0730 conference call with the Executive Team and CA's. Please let me know if you would like additional information.

Jeff Temple  
Liaison Team Coordinator  
301-816-5205

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

From: ET07 Hoc  
Sent: Monday, March 21, 2011 8:10 AM  
To: LIA08 Hoc  
Subject: FW: Emailing: List.pdf

Jeff,  
As discussed, please distribute to the Commissioners Assistants. The ET committed to this on the 0730 call.

Wraig

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

From: H00 Hoc  
Sent: Monday, March 21, 2011 8:04 AM  
To: ET07 Hoc  
Subject: Emailing: List.pdf

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~~NOT FOR PUBLIC DISCLOSURE~~

NRC Reactor Safety Team Equipment List

Fire trucks or Fire boats to supply makeup to suction pool and water to supply reactor (requires qualified personnel)

- portable generators (ensure appropriate voltage/frequency)
- Dewatering pumps (need qualified person to operate) Need specifications on pumps
- Portable hoses and fittings
- Fire fighting gear
- Fuel for all diesel and gas equipment

Onsite Water Supply: Is this needed equipment or how they propose to do it.

- Water in liquid Rad Waste tanks
- Condensate Storage Tanks
- Extend hoses into the ocean and either pump directly or pump to pond

Other Equipment:

- Positive Displacement Pumps from supply store – What supply store
- Any pump capable of supplying 250 gpm at 90 pounds of pressure per reactor unit
- Battery Cells Types of batteries?
- Battery chargers
- Air compressors size, capacity?
- Nitrogen bottles size, type
- Firefighting containers carried by helicopters Need more specifics?
- Portable switchgear for onsite pumps – specifics??

For the last two headings, just more specific information. We can normally purchase things fast and transport if fast.

Injection implementation:

- Feed through feedwater header using hoses thru removable spool piece, or
- Feed trough core spray or Standby Liquid control, or Control Rod Drive
- Injection tie-in through existing RHRSW-RHR injection lines
- Suction source from either pool or ocean

Long term cooling:

- Long term cooling for RHR – portable cooling unit and truck in and if power supply 15 tonnage and tie into cooling system, they are air cooled
- SFP requires cooling or water addition

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, March 21, 2011 12:35 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: Answer on drywell design pressure  
**Attachments:** boardfile.docx

Commissioner,

(b)(5)

Pat

**From:** ET05 HOC  
**Sent:** Monday, March 21, 2011 9:07 AM  
**To:** Castleman, Patrick; Franovich, Mike; Marshall, Michael; Orders, William; Snodderly, Michael  
**Cc:** OST02 HOC; RST01 Hoc; Anderson, James; FOIA Response.hoc Resource  
**Subject:** Answer on drywell design pressure

Good morning,

A question came up in this morning's CA brief regarding the design pressure of the drywells at Fukushima Daiichi Nuclear Power Plant. Attached is the answer provided by our reactor safety team. Please let me know if there is anything else you need.

Regards,  
Melissa Ralph  
[Melissa.Ralph@nrc.gov](mailto:Melissa.Ralph@nrc.gov)  
ET Actions Officer ([et05.hoc@nrc.gov](mailto:et05.hoc@nrc.gov))  
NRC Headquarters Operation Center

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Containment Design Parameters – Fukushima Daiichi Units 1 – 3

Source of Information – RST (Not verified)

Metric:

	Unit 1	Unit 2	Unit 3
CV Design Pressure	384 KPa	384 KPa	384 KPa
CV Max Use Pressure	427 KPa	427 KPa	427 KPa
SP Design Pressure	384 KPa	384 KPa	384 KPa
SP Max Use Pressure	427 KPa	427 KPa	427 KPa

Normal operational pressure of both containment vessel and suppression pool is about 5 KPa.

English:

	Unit 1	Unit 2	Unit 3
CV Design Pressure	55.7 psi	55.7 psi	55.7 psi
CV Max Use Pressure	61.9 psi	61.9 psi	61.9 psi
SP Design Pressure	55.7 psi	55.7 psi	55.7 psi
SP Max Use Pressure	61.9 psi	61.9 psi	61.9 psi

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**Castleman, Patrick**

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**From:** Weber, Michael  
**Sent:** Tuesday, March 22, 2011 12:08 PM  
**To:** ET07 Hoc; ET05 Hoc; Hannah, Roger; Brenner, Eliot; Hayden, Elizabeth; RST01 Hoc; LIA06 Hoc  
**Cc:** Castleman, Patrick; Casto, Chuck; Dorman, Dan; Batkin, Joshua; Coggins, Angela; Borchardt, Bill; Virgilio, Martin  
**Subject:** Response - Bechtel equipment .

Great photos. Thanks, Pat, for sharing.

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 22, 2011 11:04 AM  
**To:** Orders, William; Snodderly, Michael; Franovich, Mike; Hipschman, Thomas; Marshall, Michael; Weber, Michael; Brown, Frederick  
**Subject:** Bechtel equipment

Check out this link. It has pix of the Bechtel equipment being unloaded in Japan.

<http://www.yokota.af.mil/>

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(b)(6)

March 22, 2011

# 2394

Kristine L. Svinicki  
Commissioner, NRC  
Mail Stop 0-16G4  
Washington, DC 20555-0001

Dear Commissioner Svinicki,

The main problem that the Japanese are having with the nuclear reactors is in getting water to keep the fuel temperature under control.

There is a type of backup system that could overcome this problem. Whereas the current backup designs require continuous power to operate a complex of machinery, a simpler and more reliable kind of backup system that relies only on gravity and a single valve might be used.

It would work like this. Instead of building the reactor and the fuel storage containers above ground, both could be constructed below ground level. Then water from a reservoir or an elevated storage tank could be used for cooling. In an emergency, a single valve could be opened and then gravity would flood the containers.

In addition, the material excavated from the construction pit might be left at the site and be used to cover the reactor in an emergency or when the reactor is retired.

This seems a reasonable, reliable, and cheap solution to a dangerous problem. I have attached a drawing to illustrate the essential elements of this design. If there are practical difficulties with this idea, I would like to know what they are and would appreciate a response.

Sincerely,

*Charles Phillips*

Charles Phillips

R TOWER

WATER RESAVOIR  
(GROUND LEVEL)

ABOVE GROUND ENCLOSURE  
(FOR MECHANICALS)

CONTAINMENT  
VESSEL

SPENT FUEL  
STORAGE

REACTOR

BELOW GROUND  
REACTOR AND  
FUEL STORAGE  
AREA

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**Svinicki, Kristine**

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**From:** Jaczko, Gregory  
**Sent:** Tuesday, March 22, 2011 4:41 PM  
**To:** Apostolakis, George; Svinicki, Kristine; Ostendorff, William; Magwood, William  
**Subject:** japan com

Hi all

(b)(5)

Thanks,  
Greg

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 22, 2011 2:02 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John; Lepre, Janet  
**Subject:** FW: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)  
**Attachments:** gbj11-0002.srm.docx

**Importance:** High

Commissioner,

(b)(5)

[Redacted content]

Pat

**From:** Wright, Darlene  
**Sent:** Tuesday, March 22, 2011 1:19 PM  
**To:** Baggett, Steven; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffry; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Thoma, John; Vietti-Cook, Annette; Warren, Roberta; Zorn, Jason; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muesse, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Apostolakis, George; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth  
**Cc:** Lewis, Antoinette  
**Subject:** DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)  
**Importance:** High

The attached file contains a draft SRM which is being circulated for Commission review. Your response is requested as soon as practical today. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, scheduler, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Baval (RCB5), and Pam Shea (PWS).

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~~Not For Public Disclosure~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, March 22, 2011 6:22 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.22.11-0600 EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Tue Mar 22 06:19:47 2011  
**Subject:** 0600 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

Please find attached a 0600 EDT (March 22, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~Not For Public Disclosure~~

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**Castleman, Patrick**

**From:** Thoma, John  
**Sent:** Tuesday, March 22, 2011 1:54 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeff; Reddick, Darani; Castleman, Patrick  
**Subject:** Outside of Scope

**Commissioner Svinicki,**

Outside of Scope

2. Tuesday 3/29 – there is a Senate Energy Member Briefing of the current status of the Japanese effort. Invited participants are NRC (possibly Borchardt), DOE (Pete Lyons), UCS, and GE

Outside of Scope

6. April 12 (? Possible date) – Senate EPW – Senator Boxer – radiation Monitoring in Progress and Status of Japan – NRC (Chairman) and EPA

Outside of Scope

Outside of Scope

1. (b)(5)

2. Starting last Thursday (3/17) and planning to continue through this Friday (3/25), NRC has held a daily phone call involving 200 to 300 people (mainly reporters) to discuss the day's events related to Japan. Basically, NRC gives a 10 minute update and then responds to questions. After this Friday, they may go to once a week phone call.

- o Congressman Markey sent a letter requesting a daily briefing on the current status of the activities in Japan. The response will be a commitment to supply a daily note to Congressman Markey and 18 other Congressional offices involving our oversight committees.

Outside of Scope

(b)(5)

Outside of Scope

John

294

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, March 22, 2011 6:34 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032211.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Tue Mar 22 18:12:07 2011  
**Subject:** 1800 EDT (March 22, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 22, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[IA07.HOC@nrc.gov](mailto:IA07.HOC@nrc.gov) (Operations Center)

~~Not For Public Disclosure~~

298

~~Not For Public Disclosure~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 6:28 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0600 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.23.11--0600 EDT.pdf

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Wed Mar 23 06:16:47 2011  
**Subject:** 0600 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update

Please find attached a 0600 EDT (March 23, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~Not For Public Disclosure~~

**Castleman, Patrick**

---

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 7:03 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0700 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update Corrected Document  
**Attachments:** NRC Status Update 3.23.11--0700 EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Wed Mar 23 07:02:11 2011  
**Subject:** 0700 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update Corrected Document

Please find attached a 0700 EDT (March 23, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

**This update corrects some information sources, the PMT update, and the International Response**

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

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

-Jim

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

309

~~Not For Public Disclosure~~

**Castleman, Patrick**

---

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 6:06 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032311.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Sent:** Wed Mar 23 18:01:51 2011  
**Subject:** 1800 EDT (March 23, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 23, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)



Q: What are the criteria that the NRC would use to relax its previous protective action recommendation.

A: Brief response: Within the United States the decision to relax a protective action decision is based on confidence that any significant additional release is unlikely and on actual environmental measurements obtained and analyzed by the Federal Radiological Monitoring and Assessment Center (FRMAC) and that the plant is in a stable condition. These decisions are generally not made until the radioactivity release has been terminated and the source of the release is under control. The primary criteria for the decision to relocate a population from the affected area or allow re-entry to the affected area would be protective action guidance provided by the Environmental Protection Agency in its "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA 400-R-92-001, May 1992. Generally, re-entry would not be allowed until the projected dose (based on actual measurements) due to ground deposition was less than 2 rem in the first year, or limiting doses as defined for the second through 50 years.

Explanation

For events which occur at U.S. nuclear facilities licensed by the Nuclear Regulatory Commission (NRC), the radiological annex to the National Response Framework, (NRF) defines the relationships between the Federal, state, and local emergency response organizations. In the early phase of the emergency, the operator of the facility (licensee) is expected, amongst other actions, to assess the conditions and recommend evacuation or sheltering protective actions to the affected state and local emergency response organizations. These protective actions recommendations may be based on plant status and prognosis, the results of radiological assessments and projections, or a combination of both. The NRC performs independent assessments of the conditions as a matter of regulatory oversight, and works with the licensee to resolve differences. The state and local

~~Emergency Response Organizations~~

emergency response organizations consider the licensee's recommendation and decide upon the protective actions that will be implemented.

The early phase of the response ends when the radioactivity releases have been terminated, the plant is in a stable condition and the source of the radioactivity release is under control. The intermediate phase commences at this point.

Once the protective action decision (and any subsequent revisions) has been implemented, the decision to relax the protective actions and allow public re-entry to the affected areas is based on reassurance of no further release and on actual measurements and samples obtained in the affected area. The FRMAC, along with the affected states and local organizations, perform this assessment as the basis for decisions regarding relaxation of the protective actions to allow re-entry. The agencies that comprise the Interagency FRMAC, by statute, have the monitoring and assessment assets necessary to accomplish these tasks. Although the NRC will have representatives at the FRMAC, the NRC is not the lead federal agency for environmental monitoring under the radiological annex to the NRF, the lead is EPA.

In the United States, the EPA has established protective action guides for the intermediate phase that requires that the general population be relocated outside of the affected area if the projected effective dose equivalent from external gamma radiation from ground deposition and the committed effective dose equivalent from inhalation from re-suspended materials exceeds 2 rem in the first year. Re-entry would generally not occur as long as the projected dose in the first year exceeds 2 rem. It is important to note that are post plume assessments are based on the results of actual field measurements and sampling results. In the context of the Japanese event, these principals would still be generally applicable, although US field assessment capability should be augmented with available Japanese data.

~~Emergency Response Organizations~~

CRITERIA

1. Radioactivity releases have been terminated and the source of the radioactivity release is under control.
2. Decision to allow public re-entry is based on field measurements and samples obtained from the affected area once the above criteria are satisfied.
3. Re-entry would not generally occur as long as the projected dose in the first years exceeds 2 rem, or exceeds 0.5 rem in the second year, or exceeds 5 rem in 50 years, depending on which case is most limiting.

M:\PMT\Relaxing protective action criteria.doc

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**Castleman, Patrick**

**From:** Reddick, Darani  
**Sent:** Wednesday, March 23, 2011 9:07 PM  
**To:** Castleman, Patrick  
**Subject:** RE: (b)(5)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 9:04 PM  
**To:** Reddick, Darani  
**Subject:** (b)(5)

(b)(5)

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Wed Mar 23 21:00:54 2011  
**Subject:** RE (b)(5)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 8:57 PM  
**To:** Reddick, Darani  
**Subject:** Re (b)(5)

(b)(5)

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Wed Mar 23 20:53:54 2011  
**Subject:** FW (b)(5)

(b)(5)

**From:** Svinicki, Kristine  
**Sent:** Wednesday, March 23, 2011 8:07 PM

To: Sharkey, Jeffrey; Reddick, Darani  
Subject: (b)(5)

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(b)(5)

**From:** Library Resource [mailto:Library.Resource@nrc.gov]  
**Sent:** Wednesday, March 23, 2011 7:31 PM  
**To:** EPUB - Energy Daily  
**Subject:** FW: Your issue of The Energy Daily

**From:** The Energy Daily[SMTP:ED@CHEMBUSINESS-MEDIA.COM]  
**Sent:** Wednesday, March 23, 2011 7:30:40 PM  
**To:** Library Resource  
**Subject:** Your issue of The Energy Daily  
**Auto forwarded by a Rule**

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Energy  
Daily



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Please find attached your issue of today's  
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Sabrina Ousmaal  
Associate Publisher

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## March 24, 2011 Headlines

### Low-Cost Gas Slams Adage's Plans For U.S. Biopower Plants

Saying low natural gas prices and weak state renewable electricity mandates have undermined the marketability of their projects, Adage LLC, formed by French nuclear giant Areva and Duke Energy, this week quietly revealed it has dropped plans to build and operate a series of plants in various U.S. markets using wood waste as fuel to produce electricity. In a statement Wednesday, Adage spokesman Tom DePonty said the joint venture has no immediate plans to dissolve, but "for the time being will not be investing in development. "In general, low gas prices are driving down demand for these kinds of projects," he said. DePonty added that uncertainty surrounding a clean energy standard (CES) proposed by President Obama in January, as well as ineffective renewable electricity mandates in the states in which Adage was to operate also has "hindered" the overall outlook for new biomass power. While proponents of biopower generally back federal renewable energy incentives, the CES plan proposed...

### UK Proposes World's First Carbon Floor Price For Generators

In a move aimed at accelerating investment in United Kingdom clean energy technologies, Britain's coalition government announced in a budget proposal Wednesday that beginning in 2013 it will require electricity generators to pay the government about \$26 for every metric ton of carbon dioxide they emit, with the minimum price rising gradually over time to nearly \$50 per ton by 2020. The fee—the world's first mandated price floor for carbon emissions—will be linked to allowance prices in the European Union greenhouse gas Emissions Trading Scheme (ETS), such that if ETS allowance prices fall below the UK floor price,

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generators operating in the UK would have to pay the difference—in essence a tax—to the government. The carbon floor price is meant to provide an incentive to non-emitting generation technologies such as wind, solar and nuclear, while punishing carbon-heavy coal generation. It also will provide new revenues to the UK that, like many other European nations, is struggling...

### **NRC Task Force To Review Safety; 27 Reactors Are Seismic Priorities**

The Nuclear Regulatory Commission, responding to the Japanese nuclear accident, said Wednesday it will establish a task force of commission staff and former NRC experts to review U.S. nuclear plant safety and make recommendations on any needed short-term and long-term improvements. At the same time, NRC officials Wednesday confirmed the agency had identified 27 U.S. nuclear reactors for priority earthquake safety reviews, but they emphasized the move was being made due to new seismic data known since 2008—not in response to any concerns raised by the accident at Japan's Fukushima Daiichi nuclear plant. An NRC spokesman said the 27 reactors had been identified for priority evaluation last fall as part of the agency's regular periodic review of earthquake risks to nuclear plants. The plants all are located in the eastern and central regions of the United States where new studies by the U.S. Geological Survey (USGS) have found potentially higher seismic risks than previously believed. The...

### **South Korea Enters U.S. Shale In Anadarko Deal**

In South Korea's first foray into U.S. shale, Anadarko Petroleum Corp. Monday announced a joint venture with Korea National Oil Corp. under which the state-owned oil firm will acquire about one third of Anadarko's interest in the company's liquids-rich Eagle Ford Shale assets in South Texas for about \$1.55 billion. Anadarko said in a statement an unnamed affiliate of Korean...

### **Georgia Power To Retire 569 MW Of Coal Capacity**

In a move that likely presages similar actions by other utilities with aging coal plants, Georgia Power Co. announced last week it will soon ask the Georgia Public Service Commission to decertify two coal-fired units totaling 569 megawatts, saying it had determined it would not be economic to install pollution controls at the two units to meet existing and anticipated environmental regulations. The Southern Co. affiliate said its request to decertify units 1 and 2 at Plant Branch in south-central Georgia will be included in Georgia Power's updated integrated...

### **Senate Dems To GOP: CFTC Budget Cuts Will Worsen Oil Speculation**

Senate Democrats this week criticized Republicans for proposing substantial budget cuts for the Commodity Futures Trading Commission, saying it would seriously weaken the agency's ability to monitor speculation in oil futures markets that Democrats charge is contributing significantly to rising U.S. gasoline prices. In a Tuesday letter to Senate Minority Leader Mitch McConnell (R-Ky.) and House Speaker John Boehner (R-Ohio), Senate Majority Leader Harry Reid (D-Nev.) and 45 other Senate Democrats charged that the fiscal year 2011 spending bill recently passed by the GOP-controlled House would slash the agency's budget by one-third, forcing it to lay off staff and reduce its market monitoring. "At a time when gas prices are rising and squeezing American families, we have a responsibility to provide our watchdogs the resources they need to fulfill their important oversight and regulatory responsibilities," the Democrats wrote in the letter, which was also signed by Sens. Joseph Lieberman...

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 9:10 PM  
**To:** Reddick, Darani  
**Subject:** Re: (b)(5)

(b)(5)

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Reddick, Darani  
**To:** Castleman, Patrick  
**Sent:** Wed Mar 23 21:07:28 2011  
**Subject:** RE: (b)(5)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 9:04 PM  
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**Sent:** Wednesday, March 23, 2011 8:57 PM  
**To:** Reddick, Darani  
**Subject:** Re: (b)(5)

(b)(5)

ent from an NRC Blackberry



7:30 a.m. to 6:00 p.m. CST.

Sincerely,  
Sabrina Ousmaal  
Associate Publisher

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 5:44 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Seismic Q&As March 22th 10pm update  
**Attachments:** Diablo Canyon Q&As.pdf; SONGS Q&As.pdf; Seismic Questions for Incident Response 3-22-11 10 pm.pdf

Sent from an NRC ~~Blackberry~~  
 Patrick Castleman

(b)(6)

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

**From:** Kammerer, Annie  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca, Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John, Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle  
**Sent:** Wed Mar 23 03:14:31 2011  
**Subject:** Seismic Q&As March 22th 10pm update

All,

Attached please find an updated set of Q&As. I also included some new Q&As for SONGS and Diablo Canyon, just in case anyone is interested.

This version has an expanded set of definitions and new sections on station blackout, spent fuel, flooding and some other topics. It also has fewer duplicate questions.

Let me also pass on a tidbit of info. According to TEPCO (via an NEI press release), the tsunami at Fukushima was 14 meters and the design tsunami level was 5.7 meters. The reactors and backup power sources were at 10 meters and at 13 meters. Ouch.

Cheers,  
Annie

**From:** Kammerer, Annie  
**Sent:** Sunday, March 20, 2011 11:00 PM  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca, Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John, Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffrey; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle

Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Bunnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle  
Subject: Seismic Q&As March 20th 8pm update

All,

Here's today's version. It includes updates on related topics for tomorrow's briefing. Also, some of the sections have been streamlined and some (though not all) of the answers have been updated.

The biggest news from the seismic team's perspective is that starting tomorrow a very bright young risk analyst (Michelle Bensi) who recently joined us from UC Berkeley (my beloved alma mater) will be helping with the compilation of this document. That will allow our team to spend more time cleaning and streamlining it; which inevitably will make it more user friendly...and shorter! Starting with tomorrow's version her name will start to show up on the front.

Best of luck to everyone with the briefing tomorrow!

Annie

From: Kammerer, Annie  
Sent: Saturday, March 19, 2011 9:00 AM  
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Bunnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIAResource.hoc@nrc.gov  
Subject: Seismic Q&As March 19th 8am update

ll,

ere is today's updated version. Lot of new fact sheets have been prepared for various riefings and for Monday's public meeting!

owever, the big news of the day is that we just sent off a 6 page, 22 question, much better ited version for a public Q&A set. It's all in OPA's capable hands now. I think it's etty good...but then I'm biased.

eeers,  
inie

~~Not For Public Disclosure~~

From: Kammerer, Annie  
Sent: Friday, March 18, 2011 6:51 AM  
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Gitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean  
Subject: RE: Seismic Q&As March 18th 5am update

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:

\*We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little) \*The "additional information" section has been split into tables, plots, and fact sheets \*A high-level draft fact sheet on NRC's seismic regulations has been added \*We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,  
Annie

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From: Kammerer, Annie  
Sent: Thursday, March 17, 2011 2:36 AM  
To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Gitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Gitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas  
Subject: Seismic Q&As March 17th 2am update All,

~~Not For Public Disclosure~~  
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~~Not For Public Disclosure~~

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...  
<http://portal.nrc.gov/edo/nrr/NRR%20TA/FAQ%20Related%20to%20Events%20Occuring%20in%20Japan/Fo rms/AllItems.aspx>

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,  
Annie

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

(b)(6) mobile  
BB

From: Kammerer, Annie  
Sent: Tuesday, March 15, 2011 3:41 AM  
To: Hiland, Patrick; Skeen, David  
Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Gitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Kammerer, Annie; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Gitter, Joseph; Howe, Allen; Case, Michael; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Bunnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Larnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael  
Subject: latest version of Q&As

~~Not For Public Disclosure~~

~~Not For Public Disclosure~~

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

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

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

Annie

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

(b)(6)

mobile  
BB

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~~RESTRICTED INFORMATION~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 9:06 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: Answer on relaxation of protective action recommendations  
**Attachments:** Relaxing protective action criteria EDITS 03-22-2011.doc

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** ET05 Hoc  
**To:** Castleman, Patrick; Franovich, Mike; Marshall, Michael; Orders, William; Snodderly, Michael  
**Cc:** OST02 HOC; FOIA Response.hoc Resource; LIA07 Hoc  
**Sent:** Wed Mar 23 09:04:06 2011  
**Subject:** Answer on relaxation of protective action recommendations

Good morning,

A question came up in this morning's CA brief regarding the relaxation of protective action recommendations implemented following the events at the Fukushima Daiichi Nuclear Power Plant. Attached is the answer provided by our protective measures team. Please let me know if there is anything else you need.

Regards,  
Melissa Ralph  
[Melissa.Ralph@nrc.gov](mailto:Melissa.Ralph@nrc.gov)  
ET Actions Officer ([et05.hoc@nrc.gov](mailto:et05.hoc@nrc.gov))  
NRC Headquarters Operation Center

~~RESTRICTED INFORMATION~~



Q: What are the criteria that the NRC would use to relax its previous protective action recommendation.

A: Brief response: Within the United States the decision to relax a protective action decision is based on confidence that any significant additional release is unlikely and on actual environmental measurements obtained and analyzed by the Federal Radiological Monitoring and Assessment Center (FRMAC) and that the plant is in a stable condition. These decisions are generally not made until the radioactivity release has been terminated and the source of the release is under control. The primary criteria for the decision to relocate a population from the affected area or allow re-entry to the affected area would be protective action guidance provided by the Environmental Protection Agency in its "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA 400-R-92-001, May 1992. Generally, re-entry would not be allowed until the projected dose (based on actual measurements) due to ground deposition was less than 2 rem in the first year, or limiting doses as defined for the second through 50 years.

Explanation

For events which occur at U.S. nuclear facilities licensed by the Nuclear Regulatory Commission (NRC), the radiological annex to the National Response Framework, (NRF) defines the relationships between the Federal, state, and local emergency response organizations. In the early phase of the emergency, the operator of the facility (licensee) is expected, amongst other actions, to assess the conditions and recommend evacuation or sheltering protective actions to the affected state and local emergency response organizations. These protective actions recommendations may be based on plant status and prognosis, the results of radiological assessments and projections, or a combination of both. The NRC performs independent assessments of the conditions as a matter of regulatory oversight, and works with the licensee to resolve differences. The state and local

emergency response organizations consider the licensee's recommendation and decide upon the protective actions that will be implemented.

The early phase of the response ends when the radioactivity releases have been terminated, the plant is in a stable condition and the source of the radioactivity release is under control. The intermediate phase commences at this point.

Once the protective action decision (and any subsequent revisions) has been implemented, the decision to relax the protective actions and allow public re-entry to the affected areas is based on reassurance of no further release and on actual measurements and samples obtained in the affected area. The FRMAC, along with the affected states and local organizations, perform this assessment as the basis for decisions regarding relaxation of the protective actions to allow re-entry. The agencies that comprise the Interagency FRMAC, by statute, have the monitoring and assessment assets necessary to accomplish these tasks. Although the NRC will have representatives at the FRMAC, the NRC is not the lead federal agency for environmental monitoring under the radiological annex to the NRF, the lead is EPA.

In the United States, the EPA has established protective action guides for the intermediate phase that requires that the general population be relocated outside of the affected area if the projected effective dose equivalent from external gamma radiation from ground deposition and the committed effective dose equivalent from inhalation from re-suspended materials exceeds 2 rem in the first year. Re-entry would generally not occur as long as the projected dose in the first year exceeds 2 rem. It is important to note that are post plume assessments are based on the results of actual field measurements and sampling results. In the context of the Japanese event, these principals would still be generally applicable, although US field assessment capability should be augmented with available Japanese data.

---

CRITERIA

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1. Radioactivity releases have been terminated and the source of the radioactivity release is under control.
2. Decision to allow public re-entry is based on field measurements and samples obtained from the affected area once the above criteria are satisfied.
3. Re-entry would not generally occur as long as the projected dose in the first years exceeds 2 rem, or exceeds 0.5 rem in the second year, or exceeds 5 rem in 50 years, depending on which case is most limiting.

M:\PMT\Relaxing protective action criteria.doc

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~~Redacted: Public Information~~

**From:** Milligan, Patricia  
**Sent:** Wednesday, March 23, 2011 1:32 PM  
**To:** Castleman, Patrick  
**Subject:** RE: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 1:31 PM  
**To:** Milligan, Patricia  
**Subject:** RE: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Wednesday, March 23, 2011 1:28 PM  
**To:** Castleman, Patrick  
**Subject:** RE: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 23, 2011 1:26 PM  
**To:** Milligan, Patricia  
**Subject:** RE: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

Hey Trish,

(b)(5)

at

**From:** Milligan, Patricia  
**Sent:** Wednesday, March 23, 2011 1:19 PM  
**To:** Castleman, Patrick  
**Subject:** FW: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)  
**Importance:** High

(b)(5)

**From:** RidsNsirMailCenter Resource  
**Sent:** Wednesday, March 23, 2011 1:15 PM  
**To:** Abraham, Susan; Albert, Ronald; Anderson, Joseph; Barss, Dan; Biddison, John; Brown, Cris; Buckley, Michael; Cwell, Robert; Correlia, Richard; Costello, Ralph; Cubellis, Louis; Diec, David; Dodmead, James; Erlanger, Craig; Evans, hele; Giantelli, Adelaide; Gott, William; Grant, Jeffery; Harris, Tim; Holahan, Patricia; Howell, Art; Huyck, Doug; Jones, thia; Kahler, Robert; Kohen, Marshall; Layton, Michael; Masse, Todd; McDermott, Brian; Miller, Eric; Miller, Eric

~~Not For Public Disclosure~~

Patricia; Morey, Dennis; Morris, Scott; Norris, Michael; Peduzzi, Francis; Rayland, Andrew; Rheaume, Cynthia; Stapleton, Bernard; Stransky, Robert; VandenBerghe, John; Wastler, Sandra; Way, Ralph; Wiggins, Jim; Williams, Evelyn; Williams, Kevin; Wray, Roxanne; Young, Francis

**Subject:** FW: DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

**Importance:** High

**Subject:** DRAFT SRM - COMGBJ-11-0002 (NRC Actions Following the Events in Japan)

**Importance:** High

The attached file contains a draft SRM which is being circulated for Commission review. Your response is requested as soon as practical today. As provided in the Internal Commission Procedures, the staff is afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, scheduler, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Bavo! (RCB5), and Pam Shea (PWS).

~~Not For Public Disclosure~~

~~Not For Public Release~~

**Sharkey, Jeffry**

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 2:46 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: Photos 1  
**Attachments:** Photos\_1.doc

Commissioner,

These are the photos that were sent to (b)(6). First of three emails.

Pat

**From:** Hipschman, Thomas  
**Sent:** Thursday, March 24, 2011 2:09 PM  
**To:** Marshall, Michael; Snodderly, Michael; Franovich, Mike; Castleman, Patrick; Orders, William  
**Subject:** FW: Photos 1

Thomas Hipschman  
Policy Advisor for Reactors  
Office of Chairman Gregory B. Jaczko  
301-415-1832

**From:** ET02 Hoc  
**Sent:** Thursday, March 24, 2011 2:01 PM  
**To:** Hipschman, Thomas  
**Cc:** FOIA Response.hoc Resource  
**Subject:** FW: Photos 1

per your request (2 of 3) ...karen jackson

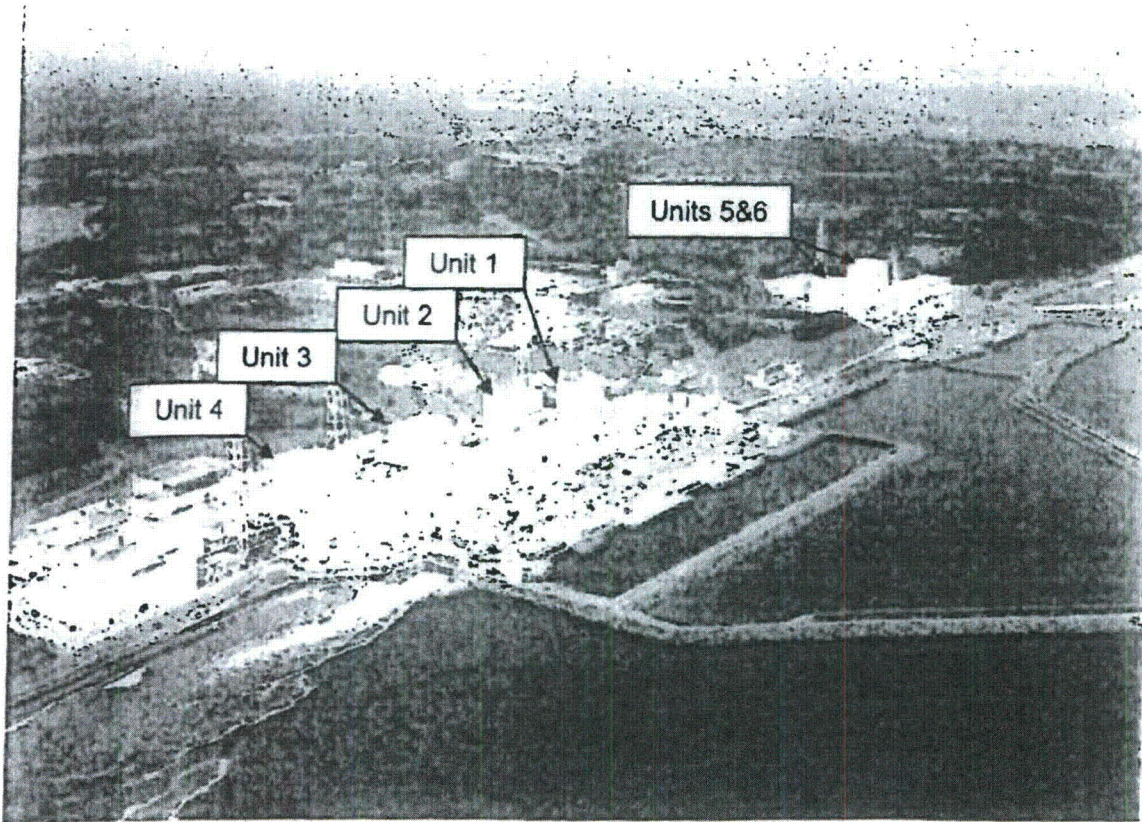
**From:** LIA08 Hoc  
**Sent:** Thursday, March 24, 2011 1:53 PM  
**To:** ET02 Hoc  
**Subject:** FW: Photos 1

**From:** LIA08 Hoc  
**Sent:** Wednesday, March 23, 2011 10:23 PM  
**To:** (b)(6)  
**Subject:** FW: Photos 1

second of three picture sets from TEPCO.

**From:** RST09 Hoc  
**Sent:** Wednesday, March 23, 2011 10:14 PM  
**To:** LIA08 Hoc  
**Subject:** FW: Photos 1

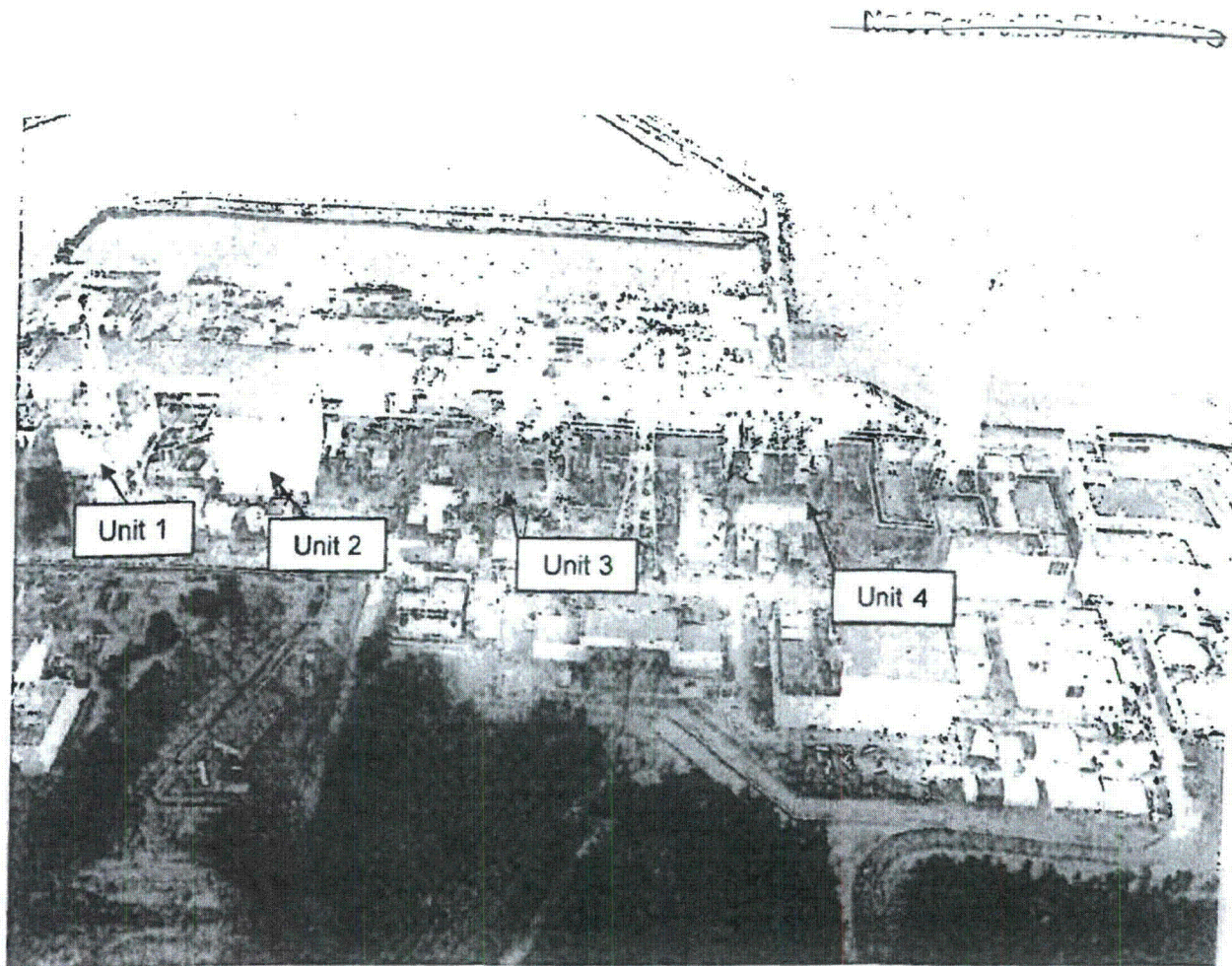
~~NOT FOR PUBLIC DISCLOSURE~~



Fukushima Daiichi Nuclear Power Station Prior to Accident  
(TEPCO)

~~NOT FOR PUBLIC DISCLOSURE~~





Fukushima Daiichi Nuclear Power Station (March 20, 2011:  
TEPCO)

~~NOT FOR PUBLIC DISCLOSURE~~



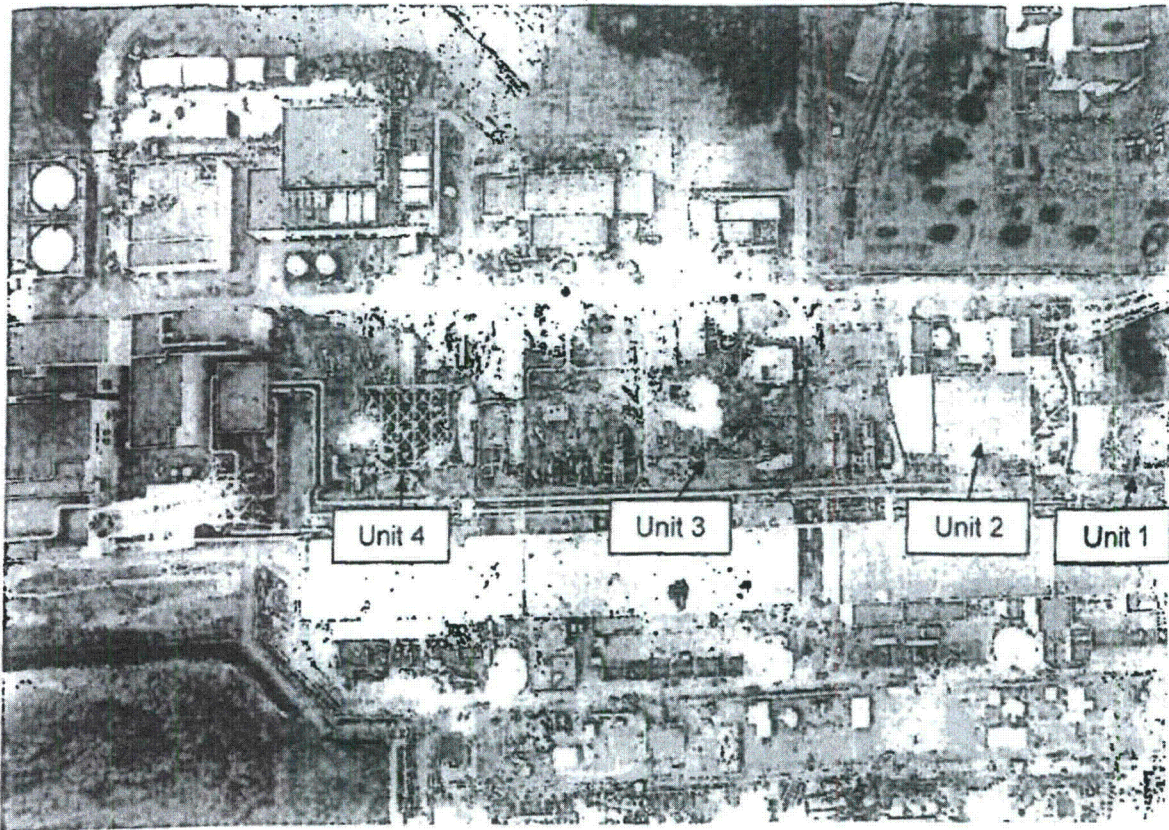
~~Not For Public Release~~



Fukushima Daiichi Nuclear Power Station  
Unit 1 in Foreground, Units 2-4 in Background (March 18, 2011:  
TEPCO)

~~Not For Public Release~~





Fukushima Daiichi Nuclear Power Station (Overhead View, March 20, 2011: TEPCO)

~~Not For Public Disclosure~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 6:28 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0600 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.24.11-0600 EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Sent:** Thu Mar 24 06:23:40 2011  
**Subject:** 0600 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update

Please find attached a 0600 EDT (March 24, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~Not For Public Disclosure~~

319

~~Not For Public Disclosure~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 6:41 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: Corrected 0600 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.24.11-0600 EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Thu Mar 24 06:40:09 2011  
**Subject:** Corrected 0600 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update

Please find attached a 0600 EDT (March 24, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami. **This corrects the previous version that was incorrectly marked draft.**

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

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

-Jim

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

~~Not For Public Disclosure~~

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~~Not For Public Disclosure~~

**Castleman, Patrick**

---

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:06 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

Sure. I am busy but come on by. Bring a diet coke pls. thanks door is closed. Just knock. Am trying to avoid the masses.

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:05 PM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

What does your schedule look like today? We should meet and chat for a half hour. I could stop by your place if that works.

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:04 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:03 PM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:02 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:01 PM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:00 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 11:59 AM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

~~FP 256 of 2107~~

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 11:42 AM  
**To:** Castleman, Patrick  
**Subject:** Hi

FYI

~~FP 256 of 2107~~

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~~Not For Public Release~~

**Castleman, Patrick**

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 1:42 PM  
**To:** Castleman, Patrick  
**Subject:** RE: article

ok

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 1:42 PM  
**To:** Milligan, Patricia  
**Subject:** RE: article

Interested in hearing it...if you're there, I'll head over now with diet coke in hand.

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 1:16 PM  
**To:** Castleman, Patrick  
**Subject:** RE: article

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 1:11 PM  
**To:** Milligan, Patricia  
**Subject:** RE: article

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 1:06 PM  
**To:** Castleman, Patrick  
**Subject:** RE: article

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:55 PM  
**To:** Milligan, Patricia  
**Subject:** article

(b)(5)

~~Not For Public Disclosure~~

whether that distance is enough, given that last week, the Nuclear Regulatory Commission urged US citizens in Japan to stay at least 50 miles away from the earthquake and tsunami stricken Fukushima Dai-ichi nuclear plant. Japanese officials had only required a 12-mile zone. The Journal notes that MIT professor Michael Golay suggested that the NRC's recommendation certainly took into account issues that would not necessarily impact a similar disaster response in this country, such as the limited ability of the US government to aid its citizens in another country. Still, Golay doubted a 50-mile evacuation radius would be very feasible in the US, where almost half of the 104 reactors are within 50 miles of a metropolitan area. "We're certainly not prepared for it," said Golay.

~~Not For Public Disclosure~~



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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 6:12 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032411.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Thu Mar 24 17:59:58 2011  
**Subject:** 1800 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 24, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

From: Castleman, Patrick  
Sent: Thursday, March 24, 2011 8:43 PM  
To: Orders, William; Franovich, Mike  
Subject: Conf call

Seems like this last call was less informative. Just a feeling I am having...

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, March 25, 2011 6:00 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: UPDATED 0430 EDT (March 25, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.25.11-0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Fri Mar 25 05:56:05 2011  
**Subject:** UPDATED 0430 EDT (March 25, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an UPDATED 0430 EDT (March 25, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

The original incorrectly reported that the radiation level at the main gate at Fukushima Daiichi (approximately 3281 feet from the Unit 2 building) was 204.5 mSv/hr vice the correct level of 204.5  $\mu$ Sv/hr.

Please note that the NRC has moved the publication time of this document from 0600 to 0430 to better serve the needs of its team in Japan.

The original 1800 SITREP incorrectly reported that the radiation level at the main gate at Fukushima Dai-ichi (approximately 3281 feet from the Unit 2 building) was 204.5 mSv/hr vice the correct level of 204.5 micro Sv/hr.

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

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

-Jim

Jim Anderson  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[james.anderson@nrc.gov](mailto:james.anderson@nrc.gov)  
[JA07.HOC@nrc.gov](mailto:JA07.HOC@nrc.gov) (Operations Center)

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, March 25, 2011 6:48 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry  
**Subject:** Re: New NRC Daily Notes for March 25, 2011

Commissioner,

Will do.

Pat

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Svinicki, Kristine  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffry  
**Sent:** Fri Mar 25 18:46:32 2011  
**Subject:** FW: New NRC Daily Notes for March 25, 2011

Pat - I would like a copy of this TI (or link to it) when you get a chance on Monday. Thanks.

On March 23 the TI (Temporary Instruction) to independently assess the adequacies of US Nuclear Plants in response to the recent Japanese Fukushima Nuclear Power Plant events was issued. The TI will assess licensee's capabilities to cope with beyond design basis events, station blackouts and flooding events. The equipment staged and preparations for these events will also be assessed under the TI. Completion of this TI at all sites is expected by April 29, and a final report should be available by May 13.

**From:** NRC Daily Notes [<mailto:EDO.GroupAccount@nrc.gov>]  
**Sent:** Friday, March 25, 2011 4:00 PM  
**To:** EDO GroupAccount  
**Cc:** Pena, Alex  
**Subject:** New NRC Daily Notes for March 25, 2011

**Daily Notes for March 25, 2011**

Outside of Scope

Outside of Scope

**NRR**

**(OUO-SII)**

**On March 23 the TI (Temporary Instruction) to independently assess the adequacies of US Nuclear Plants in response to the recent Japanese Fukushima Nuclear Power Plant events was issued. The TI will assess licensee's capabilities to cope with beyond design basis events, station blackouts and flooding events. The equipment staged and preparations for these events will also be assessed under the TI. Completion of this TI at all sites is expected by April 29, and a final report should be available by May 13.**

Outside of Scope

~~INTERNAL USE ONLY~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, March 25, 2011 6:53 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 25, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 032511 1800EDT.pdf

Sent from an NRC Blackberry

Patrick Castleman  
(b)(6)

**From:** LIA07 Hoc  
**Sent:** Fri Mar 25 18:50:32 2011  
**Subject:** 1800 EDT (March 25, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 25, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~INTERNAL USE ONLY~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Friday, March 25, 2011 7:09 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Resent: 1800 EDT (March 25, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 032511 1800EDT(rev).pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Sent:** Fri Mar 25 19:08:31 2011  
**Subject:** Resent: 1800 EDT (March 25, 2011) USNRC Earthquake/Tsunami Status Update

Resent to remove the "Draft" watermark.

Attached, please find an 1800 EDT (March 25, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

**Castleman, Patrick**

---

**From:** Castleman, Patrick  
**Sent:** Saturday, March 26, 2011 7:06 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.26.11-0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sat Mar 26 04:43:10 2011  
**Subject:** 0430 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

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

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

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

-Jim

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



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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 26, 2011 4:18 PM  
**To:** Sharkey, Jeffry  
**Subject:** RE: 0830 Conference Call

You're welcome, Jeff. Continuity is important as things keep changing. Darani and John have both offered to cover for me if I need a break. Going to eat Indian food with my folks tonight.

A couple of things occurred to me while I was at the gym this afternoon. On the 50 mile evacuation, it was Brenner who asked if it was still in effect. He didn't say if he wanted to know just in case someone asks, or if he is getting inquiries about this. I'll ask him next time I see him. The other thing regards the severe accident mitigation strategies. They will be fed through GBJ's office to us. This strikes me as a departure from standard practice, wherein the information would be shared to all five offices at the same time. I chose not to scuffle over it during the call. My concern is that this could be an attempt to establish a new MO of keeping the Commission fully and currently informed. It fits into the larger picture of how and why things are being done the way they are. Maybe we should chat about this on Monday. Another big item will be the "reentry criteria."

Have a good evening and Sunday. Pat

---

**From:** Sharkey, Jeffry  
**Sent:** Saturday, March 26, 2011 11:06 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 0830 Conference Call

Thanks, Pat. You must be getting weary of this routine. Appreciate your dedication

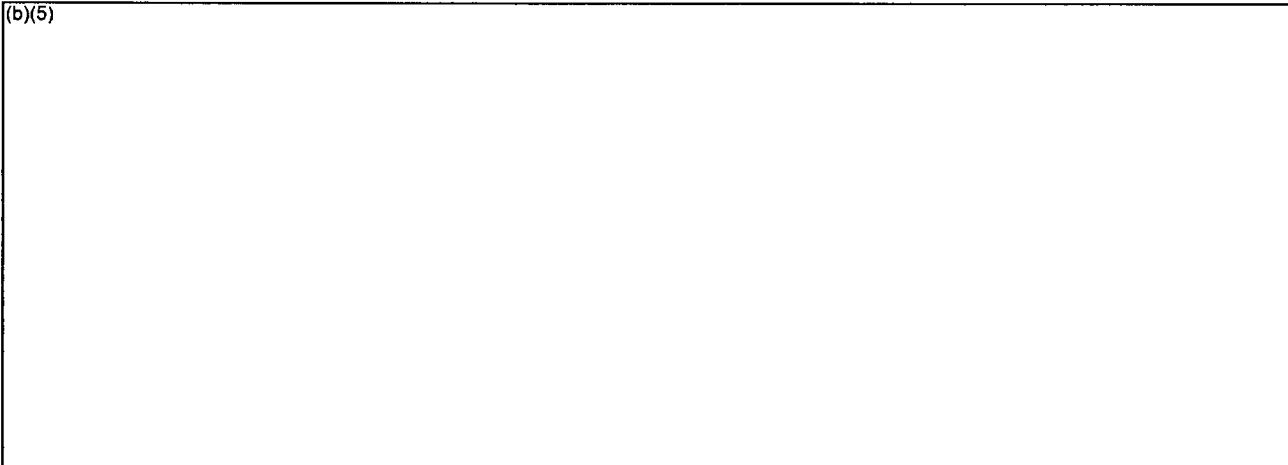
---

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Sent:** Sat Mar 26 09:36:35 2011  
**Subject:** 0830 Conference Call

Commissioner,

The 0830 conference call was led by Jim Dyer. There were 22 participants. Highlights:

(b)(5)



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(b)(5)

b The next conference call will occur at 2000. John has graciously offered to cover the call.

Pat

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 26, 2011 6:22 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032611.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Sat Mar 26 18:01:45 2011  
**Subject:** 1800 EDT (March 26, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 26, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 27, 2011 7:16 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (March 27, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.27.11-0430 EDT.pdf

Sent from an NRC BlackBerry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Sun Mar 27 05:09:15 2011  
**Subject:** 0430 EDT (March 27, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT (March 27, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 27, 2011 7:35 AM  
**To:** Sharkey, Jeffry; Thoma, John; Svinicki, Kristine  
**Cc:** Reddick, Darani  
**Subject:** Re: 03/26/2011 2000 Conference Call

Will do. It sounds like the SAM recommendations that the Chmn office was supposed to have fed to the Commission.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

----- Original Message -----  
**From:** Sharkey, Jeffry  
**To:** Thoma, John; Svinicki, Kristine  
**Cc:** Reddick, Darani; Castleman, Patrick  
**Sent:** Sun Mar 27 07:33:04 2011  
**Subject:** Re: 03/26/2011 2000 Conference Call

Pat/John,

(b)(5)

Thank,

Jeff

----- Original Message -----  
**From:** Thoma, John  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Castleman, Patrick  
**Sent:** Sat Mar 26 21:40:12 2011  
**Subject:** 03/26/2011 2000 Conference Call

Commissioner Svinicki,

The 2000 conference call was lead by Brian Sharon. There were 23 participants. Highlights:

(b)(5)

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(b)(5)

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)

John

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Sharkey, Jeffrey  
**Sent:** Sunday, March 27, 2011 8:40 AM  
**To:** Svinicki, Kristine  
**Cc:** Castleman, Patrick; Reddick, Darani; Thoma, John  
**Subject:** EUCO 10/11 12  
**Attachments:** EU Council Recommendations.pdf

(b)(5)

**Conclusions – 24/25 March 2011**

1. In this connection, the European Council stresses the need to fully draw the lessons from these events, and to provide all necessary information to the public. Recalling that the energy mix is the competence of Member States, it calls for work to be taken forward as a matter of priority on the following aspects:

The safety of all EU nuclear plants should be reviewed, on the basis of a comprehensive and transparent risk and safety assessment ("stress tests"); the European Nuclear Safety Regulatory Group (ENSREG) and the Commission are invited to develop as soon as possible the scope and modalities of these tests in a coordinated framework in the light of lessons learned from the accident in Japan and with the full involvement of Member States, making full use of available expertise (notably from the Western European Nuclear Regulators Association); the assessments will be conducted by independent national authorities and through peer review; their outcome and any necessary subsequent measures that will be taken should be shared with the Commission and within the ENSREG and should be made public; the European Council will assess initial findings by the end of 2011, on the basis of a report from the Commission;

The priority of ensuring the safety of nuclear plants obviously cannot stop at our borders; the EU will request that similar "stress tests" be carried out in the neighbouring countries and worldwide, regarding both existing and planned plants; in this regard full use should be made of relevant international organisations;

The highest standards for nuclear safety should be implemented and continuously improved in the EU and promoted internationally;

The Commission will review the existing legal and regulatory framework for the safety of nuclear installations and will propose by the end of 2011 any improvements that may be necessary. Member States should ensure full implementation of the Directive on the safety of nuclear installations. The proposed Directive on the management of spent fuel and radioactive waste should be adopted as soon as possible. The Commission is invited to reflect on how to promote nuclear safety in neighbouring countries.

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consequences for the world and for the EU need to be closely monitored, paying particular attention to the volatility of energy and commodity prices, in particular in the context of the G20.

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 27, 2011 6:02 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 27, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.27.11-1800.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Sun Mar 27 17:59:45 2011  
**Subject:** 1800 EDT (March 27, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find an 1800 EDT (March 27, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Nichole

Nichole Glenn  
Communications and Outreach  
Emergency Operations Center  
US Nuclear Regulatory Commission  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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**Svinicki, Kristine**

**From:** Sharkey, Jeffry  
**Sent:** Sunday, March 27, 2011 9:58 PM  
**To:** Svinicki, Kristine  
**Subject:** FW: 2000 Conference Call (read and delete)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Sunday, March 27, 2011 9:08 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** 2000 Conference Call

Commissioner,

The 2000 conference call was led by Brian Sheron. There were 32 participants. Highlights:

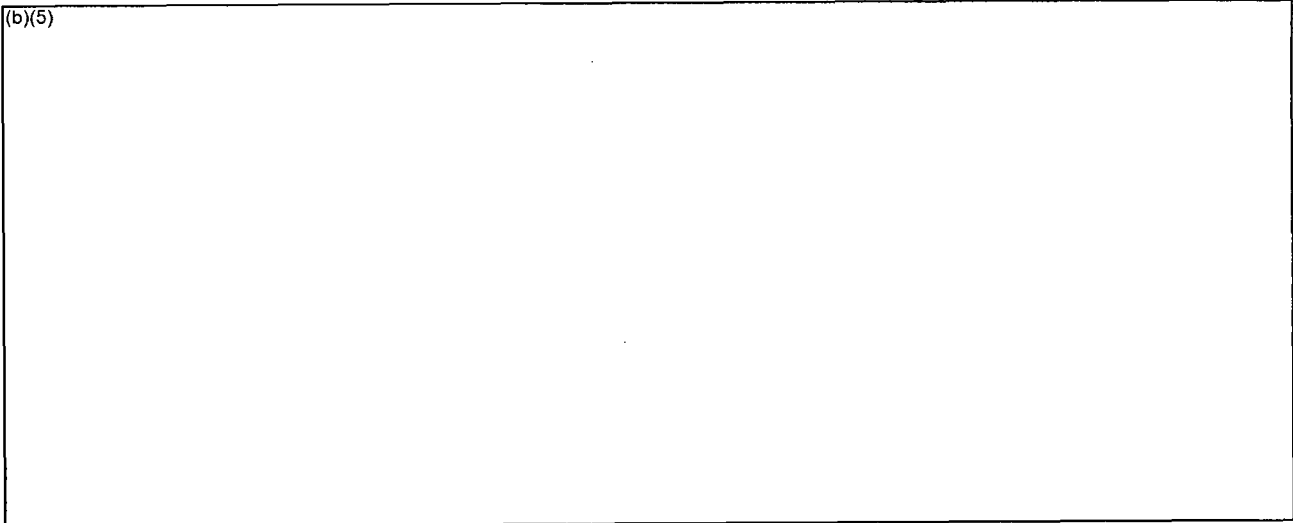
(b)(5)

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~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)



- The next conference call will occur at 0730.

Pat

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

From: Castleman, Patrick  
Sent: Sunday, March 27, 2011 7:26 AM  
To: Sharkey, Jeffry  
Cc: Reddick, Darani  
Subject: Re: Chairman travel

Delegate emergency powers to the EDO when there are four Commissioners available? Hmm...

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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

From: Sharkey, Jeffry  
To: Svinicki, Kristine  
Cc: Reddick, Darani; Thoma, John; Castleman, Patrick  
Sent: Sun Mar 27 07:19:44 2011  
Subject: Fw: Chairman travel

FYI

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

From: Batkin, Joshua  
To: Sharkey, Jeffry; Nieh, Ho; Bubar, Patrice; Sosa, Belkys  
Cc: Vietti-Cook, Annette; Bradford, Anna; Brenner, Eliot; Schmidt, Rebecca; Borchardt, Bill; Burns, Stephen; Doane, Margaret; Dyer, Jim; Coggins, Angela  
Sent: Sat Mar 26 21:14:30 2011  
Subject: Chairman travel

Fyi, the Chairman is leaving tonight for a quick trip to Japan to show our continuing support for our friends and allies, to touch base with our team, and to meet with USG and GOJ officials to discuss the ongoing mitigation efforts. Annette helped organize a quick Commission call to discuss this and the SMR meeting but Belkys' and Jeff's bosses weren't able to join on short notice.

The Chairman will be back Tuesday afternoon. He's delegated Emergency Powers to the EDO for continuity purposes and he's asked Commissioner Magwood to preside over the SMR meeting Tuesday morning so that it can take place in his absence.

Please let me know if your principals have any questions.

Thank you,  
Josh

Joshua C. Batkin  
Chief of Staff  
Chairman Gregory B. Jaczko  
301) 415-1820

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Sunday, March 27, 2011 10:09 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: RST Assessment of reactor and SFP conditions with recommendations  
**Attachments:** 03-26-2100 Final RST assessment of Daiichi Units document.docx

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA08 Hoc  
**To:** Franovich, Mike; Orders, William; Snodderly, Michael; Castleman, Patrick; Marshall, Michael; Batkin, Joshua; Hipschman, Thomas  
**Cc:** LIA06 Hoc; RST01 Hoc  
**Sent:** Sun Mar 27 22:07:45 2011  
**Subject:** RST Assessment of reactor and SFP conditions with recommendations

Gentlemen

Attached for your information is the RST's assessment of plant conditions in Japan with recommendations. We talked to the NRC Japan Team, who plans to pass this document on to their Japanese counterparts in a meeting that begins in a few minutes.

Please let us know if you would like more information.

Jeff Temple  
Response Program Manager  
Liaison Team  
301-816-5185

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, March 27, 2011 10:16 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: NRC Spent Fuel Storage Safety White Paper  
**Attachments:** Your Question; 03-27-0900 spent fuel storage safety\_RST\_0327\_0900FINALVERSION.docx

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA06 Hoc  
**To:** Snodderly, Michael; Orders, William; Castleman, Patrick; Marshall, Michael; Hipschman, Thomas; Franovich, Mike  
**Cc:** Batkin, Joshua; LIA08 Hoc  
**Sent:** Sun Mar 27 22:15:04 2011  
**Subject:** FW: NRC Spent Fuel Storage Safety White Paper

Attached is the NRC white paper on spent fuel storage safety (b)(6)

Note: The paper states "... spent fuel must be stored wet in storage pools for at least three years until it is sufficiently cool to permit dry storage." As the attached e-mail from Brian Sheron explains, the paper states that because that is the shortest time a discharged fuel assembly has ever been approved for loading in a dry cask. The regulations (10 CFR Part 72) actually specify a minimum cool time of 1 year, and the general practice has been a minimum of 5 years.

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

**From:** LIA01 Hoc  
**Sent:** Sunday, March 27, 2011 8:41 PM  
**To:** LIA06 Hoc  
**Subject:** FW: NRC Spent Fuel Storage Safety White Paper

**From:** LIA01 Hoc  
**Sent:** Sunday, March 27, 2011 2:44 PM  
**To:** (b)(6)  
**Subject:** NRC Spent Fuel Storage Safety White Paper

Attached please find the NRC white paper on spent fuel storage safety. If you could confirm receipt to this email that would be appreciated.

Federal Liaison Team  
01-816-5186

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, March 28, 2011 12:37 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: 50 Mile EPZ justification response  
  
**Importance:** High

Commissioner,

(b)(5)

~~Pat~~

**From:** LIA08 Hoc  
**Sent:** Monday, March 28, 2011 11:56 AM  
**To:** Franovich, Mike; Orders, William; Snodderly, Michael; Castleman, Patrick; Marshall, Michael; Batkin, Joshua; tipschman, Thomas  
**Cc:** LIA06 Hoc  
**Subject:** FW: 50 Mile EPZ justification response

Attached for your info is an email sent by the Ops Center Liaison Team to Mr. Takashi regarding questions he raised about the 50 mile evacuation recommendation we made for US Citizens in Japan. Please let me know if you have any questions or would like additional information about this.

of Temple  
Response Program Manager  
Liaison Team/Interagency Response Team/Corporate Support Response Team  
-816-5185

**From:** LIA03 Hoc  
**Sent:** Monday, March 28, 2011 11:07 AM  
**To:** takashi.inutsuka@mofa.go.jp  
**Cc:** Joane, Margaret; Mamish, Nader; LIA02 Hoc; LIA08 Hoc; Borchardt, Bill; LIA03 Hoc  
**Subject:** 50 Mile EPZ justification response

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On behalf of Bill Borchardt, we are responding to your questions:

1. In the NRC NEWS, March 16, 2011, there are attachments of the results of two sets of computer calculations. One, 15 March 2010 02:51am (EDT), has a hypothetical, single-reactor site, 2350 MWT, Boiling Water Reactor. On the other hand, 16 March 2010 12:24pm (EDT), has a hypothetical, four-reactor site. But in these attachments there is no detailed assumption for calculations about  
(1) the power and type of reactor for the four-reactor site,  
(2) weather, wind direction and speed, and the status of the problem at the reactors (for example: Source Term).

Q1: Are these sentences correct?

A1: These sentences are correct. Although the press release identified one of the computer calculations being based on a hypothetical four-reactor site, the source term used in the calculation was the approximate activity available for release from one reactor and two spent fuel pools.

Q2: Have you ever explained these detailed assumptions to the public?

A2: The assumptions have been generally described in press releases, interviews, and congressional testimony.

Q3: Could you explain the relation between the number of Total EDE and 1rem (PAGs)? For example 8.1rem (15 March calculation) and 9.9rem (16 March calculation), 50 mi, and 1rem? Could you also explain the relation between the number of Thyroid CDE and 5rem (PAGs)? For example 23rem (15 March calculation) and 48rem (16 March calculation), 50 mi, and 5rem? Is there no need to calculate this for distances greater than 50 mi?

A3: As stated in the press release, these two computer calculations are hypothetical, rough estimates that would not necessarily characterize an actual release. Although the calculation references have TEDE and CDE doses exceeding PAGs beyond 50 miles, these were only two of several cases run. Given that other cases projected PAG doses less than 50 miles and there would be time to extend our recommendations beyond 50 miles, if necessary, the 50 mile recommendation was considered appropriate to protect US citizens.

2. At the White House Regular Briefing, March 17, 2011, Chairman Jaczko said, "We have a team of 11, some of our best technical experts in Tokyo, and they are working with counterparts from the utility in Tokyo as well as other individuals with the government. So that is one of the sources. We are collecting data from as many places as we can to make the best judgments we can with the information available. But I would stress that this is a very difficult situation. There is often conflicting information. And so we made what we thought was a prudent decision."

Q4: Does this statement accurately reflect the NRC's decisionmaking process that led to the recommendation (50 miles)?

A4: Yes.

Q5: Did NRC have evidence to suggest that radiation levels around Fukushima were higher than what Japanese officials had said?

A5: No. The NRC had very limited radiation level information at this time. The computer calculations and subsequent protective action decisions were based on conservative assumptions based on limited information and the deteriorating state of several reactors and spent fuel pools.

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3. At the meeting of NRC, March 21, 2011, you said, "the situation that led to the 50 mile guidance in Japan was based upon what we understood and still believe had existed that there were degraded conditions in two spent-fuel pools at the site and, in all likelihood, some core damage in three of the reactor units. Based on the situation as we understood it at that time, we thought it was prudent to provide the recommendation to the ambassador to evacuate out to 50 miles in Japan."

Q6: Does this statement accurately reflect the NRC's decisionmaking process that led to the recommendation (50 miles)?

A6: Yes.

Q7: There are some differences on the basis for making recommendation between 1. and 3. Could you explain the basis for making the recommendation (50 miles) again?

A7: The comments made by NRC Chairman Jaczko and Mr. Borchardt were consistent in that seriously degrading conditions at several Daiichi units supported a need to take pre-emptive protective action. The computer calculations helped to provide perspective on possible impacts.

Q8: I understand the recommendation is prudent. How do you define "prudent" in the assumptions for your calculations? in the decision about the distance?

A8: Since communications were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the radiological hazard. Computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable estimates of fuel damage, containment, and other release conditions. Subsequent modeling can be correlated with the ground deposition as observed in flyover and other monitoring data. Therefore, prudent (reasonable conservative protective actions made with a predictive approach to limit radiation exposure to US citizens) can be substantiated based on the conditions present and the information known at the time.

If you have additional questions please contact Mr. Borchardt at the email address above.

415

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, March 28, 2011 10:37 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: Seismic Q&As March 28th 10pm update  
**Attachments:** Seismic Questions for Incident Response 3-28-11 9pm.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Kammerer, Annie  
**To:** Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc  
**Cc:** Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensj, Michelle; 'rmtpactsu\_elnrc@ofda.gov' <rmtpactsu\_elnrc@ofda.gov>  
**Sent:** Mon Mar 28 22:32:22 2011  
**Subject:** Seismic Q&As March 28th 10pm update

All,

It seems that some people actually missed getting the Q&As since I'm starting to get emails asking if I can do an update. Sorry it's been a while, for some reason my workload seems to have exploded...LOL. (*Actually I really have no excuse as Shelby has been a compiling machine!*). We've added several new sections including **ACRONYMS**, located near the back. (*Thanks to Stephanie Devlin for pulling the acronyms together*)

Now that the agency is moving out of the heart of the emergency response phase, and looking towards short, medium and long term actions and goals, our little seismic group has been discussing what to do with this document; and specifically how to make it useful beyond this event. We've discussed the fact that ever since the Kashiwazaki earthquake, we have recognized the need to develop a "generic" seismic Q&A document so that the agency can hit the ground running in cases such as this. It is obvious to us that we now have the guts of the document we've envisaged for years in one 140 page compilation; and it's time to make it happen!

So the next time you see this document (which won't be for a while), it will be radically transformed. We'll be putting all the "static" information in the front, and will be pulling the japan earthquake-specific information into a separate section. It will be more user friendly and will be easier to find any new information. It's unclear to us how long these updates will be useful, but we suspect, not much longer. So, now's the time to start wrapping it up and putting a bow on it...

We hope the new document will be worth the wait...

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<<Seismic Questions for Incident Response 3-28-11 9pm.pdf>>

Dr. Annie Kammerer, P.E.

US NRC/RES/DE

(301) 251-7695 Office

(b)(6) Mobile

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

From: Kammerer, Annie

Sent: Wednesday, March 23, 2011 3:15 AM

To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle

Subject: Seismic Q&As March 22th 10pm update

All,

Attached please find an updated set of Q&As. I also included some new Q&As for SONGS and Diablo Canyon, just in case anyone is interested.

This version has an expanded set of definitions and new sections on station blackout, spent fuel, flooding and some other topics. It also has fewer duplicate questions.

Let me also pass on a tidbit of info. According to TEPCO (via an NEI press release), the tsunami at Fukushima was 14 meters and the design tsunami level was 5.7 meters. The reactors and backup power sources were at 10 meters and at 13 meters. Ouch.

Cheers,

Annie

~~NOT FOR PUBLIC DISCLOSURE~~

From: Kammerer, Annie

FP 286 of 2107

Sent: Sunday, March 20, 2011 11:00 PM

~~NOT FOR PUBLIC DISCLOSURE~~

To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIA Response.hoc Resource; Bensi, Michelle

Subject: Seismic Q&As March 20th 8pm update

All,

Here's today's version. It includes updates on related topics for tomorrow's briefing. Also, some of the sections have been streamlined and some (though not all) of the answers have been updated.

The biggest news from the seismic team's perspective is that starting tomorrow a very bright young risk analyst (Michelle Bensi) who recently joined us from UC Berkeley (my beloved alma mater) will be helping with the compilation of this document. That will allow our team to spend more time cleaning and streamlining it; which inevitably will make it more user friendly...and shorter! Starting with tomorrow's version her name will start to show up on the front.

Best of luck to everyone with the briefing tomorrow!

Annie

From: Kammerer, Annie

Sent: Saturday, March 19, 2011 9:00 AM

To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Elliot; Harrington, Holly; Seber, Dogan; Ledford, Joey;

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FP 287 of 2107

Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean; FOIAResource.hoc@nrc.gov

Subject: Seismic Q&As March 19th 8am update

All,

Here is today's updated version. Lot of new fact sheets have been prepared for various briefings and for Monday's public meeting!

However, the big news of the day is that we just sent off a 6 page, 22 question, much better edited version for a public Q&A set. It's all in OPA's capable hands now. I think it's pretty good...but then I'm biased.

Cheers,

Annie

From: Kammerer, Annie

Sent: Friday, March 18, 2011 6:51 AM

To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Glitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Niles; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas; Webb, Michael; Manoly, Kamal; Khanna, Meena; Screnci, Diane; Thomas, Eric; Nguyen, Quynh; Meighan, Sean

Subject: RE: Seismic Q&As March 18th 5am update

All,

Please see the updated version of the Seismic Q&As.

Among today's highlights:

\*We added a Terms and Definitions section at the end of the document. (We know that an acronyms list would be helpful too, but it will have to wait a little) \*The "additional information" section has been split into tables, plots, and fact sheets \*A high-level draft fact sheet on NRC's seismic regulations has been added \*We added a section to track outstanding questions that have come in from congress. This will support those who get the tickets in the short terms (most likely NRR). The questions will be moved to the appropriate sections long term (as long as they are not duplicates.)

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I'm sure we all agree this has been a crazy week!. We're hoping that the weekend workload is lighter (if only because we won't get as many email from in house) and we can clean up this document and fill in some of the missing answers in preparation for the news story changing. We're trying hard to get out in front of the next wave.

Cheers,

Annie

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From: Kammerer, Annie

Sent: Thursday, March 17, 2011 2:36 AM

To: Kammerer, Annie; Hiland, Patrick; Skeen, David; Case, Michael; RST01 Hoc

Cc: Howe, Allen; Nelson, Robert; Stutzke, Martin; Giitter, Joseph; Rihm, Roger; McDermott, Brian; Hasselberg, Rick; Chokshi, Nilesh; Munson, Clifford; Cook, Christopher; Flanders, Scott; Ross-Lee, MaryJane; Brown, Frederick; Giitter, Joseph; Howe, Allen; Ruland, William; Dudes, Laura; Karas, Rebecca; Ake, Jon; Munson, Clifford; Hogan, Rosemary; Uhle, Jennifer; Marshall, Michael; Uselding, Lara; Randall, John; Allen, Don; Burnell, Scott; Hayden, Elizabeth; Pires, Jose; Graves, Herman; Candra, Hernando; Murphy, Andrew; Murphy, Andrew; Pires, Jose; Hogan, Rosemary; Sheron, Brian; Dricks, Victor; Warnick, Greg; Reynoso, John; Lantz, Ryan; Markley, Michael; Orders, William; Santiago, Patricia; Snodderly, Michael; Baggett, Steven; Sosa, Belkys; Davis, Roger; Franovich, Mike; Castleman, Patrick; Sharkey, Jeffry; Boska, John; Ma, John; Tegeler, Bret; Patel, Pravin; Shams, Mohamed; Morris, Scott; Brenner, Eliot; Harrington, Holly; Seber, Dogan; Ledford, Joey; Johnson, Michael; Virgilio, Martin; Holahan, Vincent; Bergman, Thomas

Subject: Seismic Q&As March 17th 2am update All,

As promised, a sharepoint site has been set up where our friends in NRR will be posting the latest version of the Seismic Q&A document on an ongoing basis. If someone would prefer to use the sharepoint site, instead of being on this distribution list, please let me know...

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

This latest update has a number of new questions (not many with answers today, but we are working hard). A high priority question we are working on is "how many plants are near a mapped active fault". We're focusing on anything within 50 miles. We're also pulling relevant questions from the congressional inquiries we just received; and will also give these high priority to support any needs by NRR.

Many new figures and some draft fact sheets have added to the "additional information" section. These include the NRO half of a tsunami fact sheet...a description of the tsunami research is still to come from RES.

Some good news: Yesterday's version seems to have been widely forwarded around the agency. So, we are also starting to get some excellent questions from staff looking forward. This is allowing us to feel that we are finally getting out in front of things to a small degree. Also, our team has grown and we now have someone acting as source of seismic expertise for the 11pm to 7 am shift. This means that we now have seismic experts

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available to the RST and OPA at the Op Center 24 hours, with 2 people during the day. That extra support is allowing us to get this out at least an hour earlier today ☺

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

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

Happy St. Paddy's Day. May the world (especially our friends in Japan) have the luck of the Irish today.

Cheers,

Annie

Dr. Annie Kammerer, PE

Senior Seismologist and Earthquake Engineer US Nuclear Regulatory Commission Office of Nuclear Regulatory Research Washington DC 20555

(b)(6) mobile  
BB

From: Kammerer, Annie

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

To: Hiland, Patrick; Skeen, David

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

Subject: latest version of Q&As

All,

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

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

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

Annie

Dr. Annie Kammerer, PE

Senior Seismologist and Earthquake Engineer US Nuclear Regulatory Commission Office of Nuclear Regulatory  
Research Washington DC 20555

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mobile

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407

~~Castleman, Patrick~~

**From:** Castleman, Patrick  
**Sent:** Monday, March 28, 2011 4:51 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: Reactor Recirculation Seal Information Request  
**Attachments:** BWR Recirculation Pump Assorted Ref.pdf

Commissioner,

(b)(5)

Pat

**From:** Miller, Ed  
**Sent:** Monday, March 28, 2011 4:40 PM  
**To:** Orders, William  
**Cc:** Wittick, Brian; Hipschman, Thomas; Castleman, Patrick; Snodderly, Michael; Franovich, Mike  
**Subject:** Reactor Recirculation Seal Information Request

Bill,

Per your request, here is a short information package with information on recirculation pumps pulled from the E-Library. These are for Dresden 2, which should be similar the Fukushima Unit No. 1, but differences may exist. I have some other info requests out for more drawings. I'll follow up as soon as I have more. Please let me know if you have any questions. Thanks.

Ed Miller  
415-2481

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, March 28, 2011 5:57 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (March 28, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032811.0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Mon Mar 28 03:51:47 2011  
**Subject:** 0430 EDT (March 28, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT (March 28, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Caroline

Caroline Nguyen  
Office of Nuclear Reactor Regulation  
US Nuclear Regulatory Commission  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)  
[Caroline.Nguyen@nrc.gov](mailto:Caroline.Nguyen@nrc.gov)

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410A

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, March 28, 2011 6:40 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 28, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032811.1800EDT.pdf

\*Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Sent:** Mon Mar 28 18:38:52 2011  
**Subject:** 1800 EDT (March 28, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, March 28, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Monday, March 28, 2011 9:18 PM  
**To:** LIA08 Hoc; Franovich, Mike; Snodderly, Michael; Marshall, Michael; Orders, William  
**Cc:** LIA06 Hoc; ET05 Hoc  
**Subject:** RE: 3 28 11 Re-Entry Guidance FINAL.docx

Thanks!

**From:** LIA08 Hoc  
**Sent:** Monday, March 28, 2011 9:07 PM  
**To:** Franovich, Mike; Snodderly, Michael; Marshall, Michael; Castleman, Patrick; Orders, William  
**Cc:** LIA06 Hoc; ET05 Hoc  
**Subject:** FW: 3 28 11 Re-Entry Guidance FINAL.docx

As requested...

(b)(5)

Rani Franovich  
Liaison Team Coordinator

**From:** LIA01 Hoc  
**Sent:** Monday, March 28, 2011 9:06 PM  
**To:** LIA08 Hoc  
**Subject:** 3 28 11 Re-Entry Guidance FINAL.docx

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**Castleman, Patrick**

**From:** Miller, Ed  
**Sent:** Tuesday, March 29, 2011 3:58 PM  
**To:** Orders, William  
**Cc:** Wittick, Brian; Hipschman, Thomas; Castleman, Patrick; Snodderly, Michael; Franovich, Mike; Biernik, James; Chernoff, Harold  
**Subject:** Follow-up: Reactor Recirculation Seal Information Request  
**Attachments:** Recirculation Pump.pptx

Bill,  
Here is a follow-up with some additional information on the recirculation pump seals. The attached spreadsheet contains three more images. The third one has some narrative in the comments. In reference to the question of what materials are used in the seals, some references indicated that the seal material consisted of an elastomer and a graphite ring with a thin layer of water between. This information may be a bit dated and could certainly vary seal package to seal package. Thanks to Jim Biernik for the additional information. If you need anything else, please let me know. Thanks.

Ed Miller  
415-2481

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4.16

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, March 29, 2011 5:17 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (March 29, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.29.11-0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Tue Mar 29 04:39:00 2011  
**Subject:** 0430 EDT (March 29, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT (March 29, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

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~~NOT FOR PUBLIC DISCLOSURE~~

424

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, March 29, 2011 6:37 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 29, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.032911.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Tue Mar 29 18:35:52 2011  
**Subject:** 1800 EDT (March 29, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, March 29, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Communications and Outreach  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 30, 2011 5:15 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (March 30, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.30.11-0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Wed Mar 30 04:42:33 2011  
**Subject:** 0430 EDT (March 30, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT (March 30, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~

428

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Sharkey, Jeffrey  
**Sent:** Wednesday, March 30, 2011 5:38 AM  
**To:** Castleman, Patrick  
**Subject:** Re: 0430 EDT (March 30, 2011) USNRC Earthquake/Tsunami Status Update

Up early, are we??

---

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Sent:** Wed Mar 30 05:14:34 2011  
**Subject:** Fw: 0430 EDT (March 30, 2011) USNRC Earthquake/Tsunami Status Update

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Wed Mar 30 04:42:33 2011  
**Subject:** 0430 EDT (March 30, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT (March 30, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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-Jim

Jim Anderson  
Office of Nuclear Security and Incident Response  
JS Nuclear Regulatory Commission  
[JA07.HOC@nrc.gov](mailto:JA07.HOC@nrc.gov) (Operations Center)  
[ames.anderson@nrc.gov](mailto:ames.anderson@nrc.gov)

~~NOT FOR PUBLIC DISCLOSURE~~



~~NOT FOR PUBLIC DISCLOSURE~~

433

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 30, 2011 11:57 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John; Lepre, Janet  
**Subject:** FW: DRAFT SRM - M110321 (Recent Events in Japan)  
**Attachments:** m110321.srm.docx; 2011 03 21 Japan CM SRM redline.docx

Commissioner,

(b)(5)

Pat

**From:** wright, Darlene  
**Sent:** Thursday, March 24, 2011 1:56 PM  
**To:** Baggett, Steven; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Thoma, John; Vietti-Cook, Annette; Warren, Roberta; Zorn, Jason; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Apostolakis, George; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth; Golder, Jennifer  
**Cc:** Lewis, Antoinette  
**Subject:** DRAFT SRM - M110321 (Recent Events in Japan)

The attached file contains a draft SRM which is being circulated for the normal 3-day period for Commission review. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, scheduler, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Baval (RCB5), and Pam Shea (PWS).

~~NOT FOR PUBLIC DISCLOSURE~~

FP 307 of 2107

447

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

From: Castleman, Patrick  
Sent: Wednesday, March 30, 2011 7:58 PM  
To: Svinicki, Kristine  
Cc: Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
Subject: Internatinal Recommendations on Japan  
Attachments: Results Compilation Emergency Response Governmental Decision and Recommendation Rev 9 29 March (2).doc

Commissioner.

(b)(5)

Pat

~~NOT FOR PUBLIC DISCLOSURE~~

429

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 30, 2011 8:19 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: FYI: Slides for consortium  
**Attachments:** US Government - Industry Consortium Structure Rev 1.pptx

Commissioner,

This was requested at this morning's conference call.

Pat

Sent from an NRC Blackberry.

Patrick Castleman

(b)(6)

**From:** LIA06 Hoc  
**To:** Snodderly, Michael; Franovich, Mike; Marshall, Michael; Orders, William; Castleman, Patrick  
**Cc:** Blount, Tom; Wittick, Brian; Boger, Bruce; Virgilio, Martin  
**Sent:** Wed Mar 30 08:04:48 2011  
**Subject:** FYI: Slides for consortium

Attached are the slides that outline the consortium structure that I described during the 0730 brief today.

Thanks

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

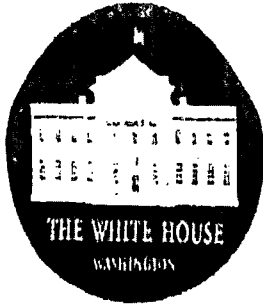
~~NOT FOR PUBLIC DISCLOSURE~~

# US Government Coordination

~~NOT FOR PUBLIC DISCLOSURE~~



~~NOT FOR PUBLIC DISCLOSURE~~



# The White House

POC: Julie Bentz

(b)(6)

NOT FOR PUBLIC DISCLOSURE



## National Security Staff

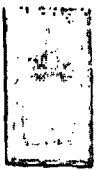
- Assist in assessing ability of US private sector companies to loan equipment to Japan, understanding contaminated items may not be returned (3/23 0800)
- Reconvene interagency group to develop "tripwires" for decision-making based on DOE "bounded model" (3/23 0800)
- Coordinate interagency efforts regarding need for and availability of dosimetry for US military and civilian response personnel
- Form working group to study potential radiological impacts to mail, imports, and airport processes (3/18 0800)
- Make a recommendation regarding release of analysis to GoJ and public (3/21 0930)
  - DOE, DOS support

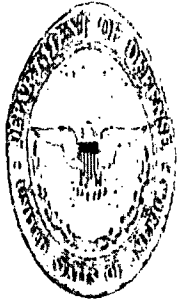


## Office of Science and Technology Policy

- Provide Deputies with a comprehensive analysis of all agencies' radiation data, modeling and analysis (3/23 0800)
- Offer US Embassy Tokyo and PACOM recommendations on additional guidance to AMCIT in light of higher radioactivity levels found in Tokyo's tap water (3/23 0800)
- Provide Deputies with all germane US Public Action Guidelines (PAGs) that currently exist (3/23 0800)
- Coordinate to provide relevant US health and nuclear expertise to DOD and DOS for contingency planning (3/21 0930)

NOT FOR PUBLIC DISCLOSURE

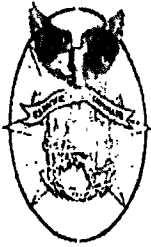




# Defense

POC: Crisis Management Team (703) 614-3323

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## United States Pacific Command

- USG contact for nuclear industry consortium
- Provide transport for all requested equipment and DOE AMS (3/14 0800)
- Deploy CBRNE Consequence Management Response Force (3/15 0800)



## Naval Reactors

- Provide radiological monitoring data to DOE and OSTP and provide breakdown of I-131 particulate (3/21 0930)

~~NOT FOR PUBLIC DISCLOSURE~~





# US Agency for International Development

POC: NRC Watch Desk (202) 712-4384

~~NOT FOR PUBLIC DISCLOSURE~~

- Designated principal federal agency for overall response effort
- Complete assessment of humanitarian efforts and needs on the ground (3/14 0800)
- Provide travel arrangements for US civilian nuclear specialists

~~NOT FOR PUBLIC DISCLOSURE~~





# Environmental Protection Agency

~~NOT FOR PUBLIC DISCLOSURE~~

- Offer US Embassy Tokyo and PACOM recommendations on additional guidance to AMCIT in light of higher radioactivity levels found in Tokyo's tap water (3/23 0800)
- Mobilize fixed and mobile monitoring capabilities that may be used for radiation detection and monitoring within US (3/14 0800)
  - DOE Support

~~NOT FOR PUBLIC DISCLOSURE~~







# Health and Human Services

~~NOT FOR PUBLIC DISCLOSURE~~



## Centers for Disease Control and Prevention

- Work with NSS, FEMA to develop proposal on how much pediatric and tablet KI the US could provide Japan, if asked, as well as replenishment plan (3/23 0800)



## Food and Drug Administration

- Offer US Embassy Tokyo and PACOM recommendations on additional guidance to AMCIT in light of higher radioactivity levels found in Tokyo's tap water (3/23 0800)

~~NOT FOR PUBLIC DISCLOSURE~~





# Homeland Security

~~NOT FOR PUBLIC DISCLOSURE~~



## **Federal Emergency Management Agency**

- Work with HHS, CDC to develop proposal on how much pediatric and tablet KI the US could provide Japan, if asked, as well as replenishment plan (3/23 0800)



## **United States Coast Guard**

- Issued a Notice to Mariners on 18 March recommending vessels avoid transiting within 50 miles (80 km) of the Fukushima Daiichi Nuclear Power Plant

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# State

POC: Task Force 1 (202) 647-6611

~~NOT FOR PUBLIC DISCLOSURE~~



## US Embassy Japan

- USG focal point to convey available US resources to Japanese
- USG focal point to obtain information from GoJ

~~NOT FOR PUBLIC DISCLOSURE~~





# Nuclear Regulatory Commission

Operations Center (301) 816-5100

- Develop USG position regarding health & welfare of US citizens in light of nuclear accident AND how would US nuclear plants handle similar natural disasters (3/12 1100)
- Provide assessment of implications of core meltdown (3/14 0800)
- Develop plume model scenarios and share within federal family (3/14 0800)

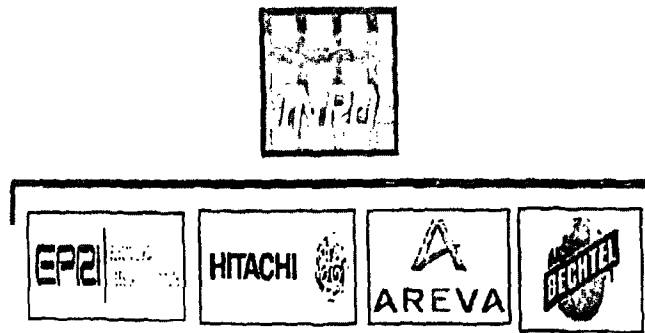
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~~NOT FOR PUBLIC DISCLOSURE~~



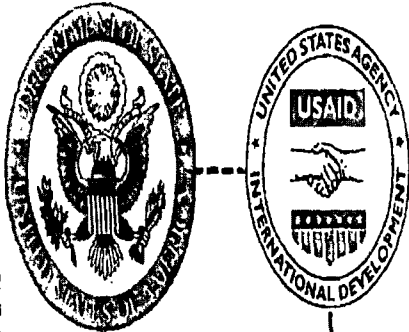
# US Nuclear Industry Consortium

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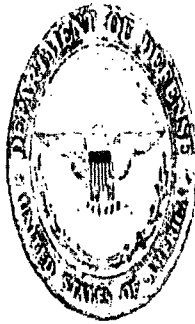
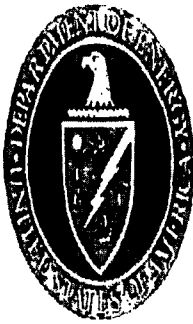
~~NOT FOR PUBLIC DISCLOSURE~~

**UNITED STATES  
FEDERAL GOVERNMENT SUPPORT**



U.S. Ambassador  
to Japan

**Disaster Assistance Response Team**

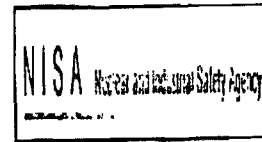
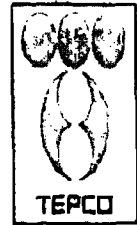
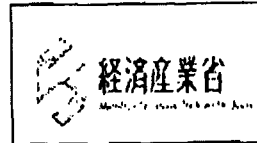


NRC Site Team  
Japan

NRC HQ  
Operations Center

- Executive Team
- Reactor Safety Team
  - Protective Measures Team
  - Liaison Team

**GOVERNMENT OF JAPAN  
RESPONSE**



**UNITED STATES  
Industry Consortium**



**Define Roles & Responsibilities**

- Government
- Industry
- Points of Contact

**Equipment Needs**

**Engineering Support**

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UNITED STATES

FEDERAL GOVERNMENT SUPPORT

INDUSTRY SUPPORT




Role & Responsibility



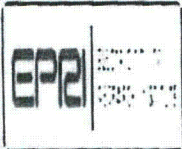
Role & Responsibility

- Overall Industry Coordination
- Engineering Support
- Equipment




Role & Responsibility

- Overall Federal Government Coordination



Role & Responsibility

- Engineering Support



Roles & Responsibility

- Technical/Engineering Advisor (REST, PIVOT)
- NRC Site Team Support
- Logistics Support




Roles & Responsibility

- Engineering Support
- Equipment



Role & Responsibility

- Logistics Support
- Equipment
- Dose Assessment




Role & Responsibility

- Engineering Support
- Equipment



Role & Responsibility

- Logistics Support
- Equipment



Role & Responsibility

- Engineering Support
- Equipment



**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Thursday, March 31, 2011 11:08 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** RE: DRAFT SRM - M110321 (Recent Events in Japan)

Commissioner,

(b)(5)

Pat

**From:** Svinicki, Kristine  
**Sent:** Thursday, March 31, 2011 10:19 AM  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** RE: DRAFT SRM - M110321 (Recent Events in Japan)

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, March 30, 2011 11:57 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John; Lepre, Janet  
**Subject:** FW: DRAFT SRM - M110321 (Recent Events in Japan)

Commissioner,

(b)(5)

Pat

**From:** Wright, Darlene  
**Sent:** Thursday, March 24, 2011 1:56 PM  
**To:** Baggett, Steven; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Thoma, John; Vietti-Cook, Annette; Warren, Roberta; Zorn, Jason; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Ho; Ostendorff, William; Warnick, Greg; Apostolakis, George; Pearson, Laura; Lui, Christiana; Lisann, Elizabeth; Golder, Jennifer



~~NOT FOR PUBLIC DISCLOSURE~~

**Cc:** Lewis, Antoinette

**Subject:** DRAFT SRM - M110321 (Recent Events in Japan)

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~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

448

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 31, 2011 5:26 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (March 31, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.31.11--0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Thu Mar 31 04:31:31 2011  
**Subject:** 0430 EDT (March 31, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, March 31, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

This update contains new clarifying information regarding the Unit 4 spent fuel pool that is less optimistic than information shared earlier today.

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

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

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

454

**From:** Castleman, Patrick  
**Sent:** Thursday, March 31, 2011 12:11 PM  
**To:** Franovich, Mike; Orders, William  
**Subject:** RE: (b)(5)

(b)(5)

**From:** Franovich, Mike  
**Sent:** Thursday, March 31, 2011 12:08 PM  
**To:** Orders, William; Castleman, Patrick  
**Subject:** (b)(5)

## Kan & Sarkozy to cooperate in handling nuke crisis

The leaders of Japan and France have confirmed that they will work together to solve the ongoing crisis at the quake-damaged Fukushima nuclear power plant.

French President Nicolas Sarkozy visited Prime Minister Naoto Kan's office in Tokyo on Thursday.

Kan thanked France for expressing sympathy for the victims of the March 11th earthquake and tsunami and for showing its support and solidarity for Japan since.

He also thanked Sarkozy for visiting Japan as the head of France, which currently holds the rotating presidency of the Group of Eight summit talks.

Kan said Japanese people are determined to stand together to overcome the crisis, and asked France for continued support.

Sarkozy said he pays respect to the Japanese people who are facing their greatest crisis since World War Two with dignity and courage.

He added that he was shocked to see footage disaster-stricken areas, but deeply impressed by the heroic operations now under way at the nuclear plant.

After the meeting, Kan and Sarkozy held a news conference and announced that France will lead the international community to help Japan resolve the problems at the crippled plant and come up with decontamination measures. France has the second largest of nuclear power stations in the world.

Thursday, March 31, 2011 19:10 +0900 (JST)

~~NOT FOR PUBLIC DISCLOSURE~~ of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

458

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 31, 2011 5:57 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (March 31, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.033111.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

---

**From:** LIA07 Hoc  
**Sent:** Thu Mar 31 17:56:06 2011  
**Subject:** 1800 EDT (March 31, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, March 31, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

This update contains new clarifying information regarding the Unit 4 spent fuel pool that is less optimistic than information shared earlier today.

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

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

-Sara

Sara K. Mroz  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

FP 326 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

450

**Castleman, Patrick**

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 10:21 AM  
**To:** Franovich, Mike; Orders, William; Hipschman, Thomas; Snodderly, Michael; Castleman, Patrick  
**Cc:** ET05 Hoc; ET07 Hoc; OST02 HOC; Andersen, James  
**Subject:** FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1  
**Attachments:** 03-31-11 1200 RST Assessment Document REV 1 .docx; RST ASSESSMENT CONCURRENCE OFFICIALS 3-31-2011.docx

As requested in the CA call this morning, here is the severe accident mitigating strategies document.

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 8:55 AM  
**To:** PMT01 Hoc; Hoc, PMT12; LIA06 Hoc; LIA08 Hoc; ET07 Hoc; ET05 Hoc; OST02 HOC  
**Cc:** FOIA Response.hoc Resource; Leeds, Eric; Johnson, Michael; Sheron, Brian; Haney, Catherine; Boger, Bruce; Carpenter, Cynthia; RST01 Hoc  
**Subject:** HEADS UP - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

To ensure a coordinated response, if you are referring to the severe accident mitigation strategies document that was developed and coordinated by the RST, please use the attached versions as the official version of Revision 1 of the document.

Thanks

**From:** RST01 Hoc  
**Sent:** Friday, April 01, 2011 8:33 AM  
**To:** Blount, Tom; ET07 Hoc; Weber, Michael  
**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

See attached RST assessment and list of approving officials.

Thank you

Brett Rini  
RST Coordinator

**From:** RST01 Hoc  
**Sent:** Thursday, March 31, 2011 7:10 PM  
**To:**

(b)(6)

**From:** RST01 Hoc; RST02 Hoc; RST07 Hoc; RST09 Hoc; Hoc, RST16; ET07 Hoc; ET02 Hoc; ET05 Hoc  
**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

|| addressees:

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

Attached please find REV 1 to the RST Assessment Document, along with a separate table indicating the senior officials who represented the key agencies/organizations with whom we have consulted to produce the assessment report.

John Thorp  
Reactor Safety Team Communicator

~~NOT FOR PUBLIC DISCLOSURE~~

473

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Friday, April 01, 2011 3:47 PM  
**To:** Sharkey, Jeffry  
**Subject:** Re: the package you gave me

Jeff,

(b)(5)

Pat

~~NOT FOR PUBLIC DISCLOSURE~~

466

**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Friday, April 01, 2011 12:32 PM  
**To:** Franovich, Mike; Orders, William; Snodderly, Michael  
**Subject:** RE: FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

How good of them to share this with the Commission. Especially after it had been requested in previous conference calls, and had been promised, and they STILL had to be asked again to provide it. (b)(5)

(b)(5)

The Commission is clearly being treated as an afterthought by the staff. I could understand some things falling through the cracks in the heat of battle, but we're three weeks into the event, things have reached a quasi-static level, and there should be no reason the staff can't keep the Commission fully and currently informed. I will ensure my principal is apprised of this.

(b)(5)

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 10:21 AM  
**To:** Franovich, Mike; Orders, William; Hipschman, Thomas; Snodderly, Michael; Castleman, Patrick  
**Cc:** ET05 Hoc; ET07 Hoc; OST02 HOC; Andersen, James  
**Subject:** FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

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**To:** PMT01 Hoc; Hoc; PMT12; LIA06 Hoc; LIA08 Hoc; ET07 Hoc; ET05 Hoc; OST02 HOC  
**Cc:** FOIA Response.hoc Resource; Leeds, Eric; Johnson, Michael; Sheron, Brian; Haney, Catherine; Boger, Bruce; Carpenter, Cynthia; RST01 Hoc  
**Subject:** HEADS UP - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

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Thanks

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**To:** Blount, Tom; ET07 Hoc; Weber, Michael  
**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

See attached RST assessment and list of approving officials.

Thank you

Stett Rini

~~NOT FOR PUBLIC DISCLOSURE~~



RST Coordinator

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** RST01 Hoc

**Sent:** Thursday, March 31, 2011 7:10 PM

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

(b)(6)

**Cc:** RST01 Hoc; RST02 Hoc; RST07 Hoc; RST09 Hoc; Hoc, RST16; ET07 Hoc; ET02 Hoc; ET05 Hoc

**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

All addressees:

Attached please find REV 1 to the RST Assessment Document, along with a separate table indicating the senior officials who represented the key agencies/organizations with whom we have consulted to produce the assessment report.

John Thorp

Reactor Safety Team Communicator

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Friday, April 01, 2011 6:01 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (April 1, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.040111.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Fri Apr 01 18:00:19 2011  
**Subject:** 1800 EDT (April 1, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, April 1, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Friday, April 01, 2011 12:47 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1  
**Attachments:** 03-31-11 1200 RST Assessment Document REV 1 .docx; RST ASSESSMENT CONCURRENCE OFFICIALS 3-31-2011.docx

Commissioner,

Here is the latest version of the Severe Accident Mitigation recommendations.

(b)(5)

(b)(5)

For your awareness, during conference calls on Tuesday, Wednesday, and Thursday, the staff had briefed that this revision was in preparation. The staff had been requested to provide the document to the Commission offices as soon as it was completed (which was yesterday evening at 7:10 pm). This was not done, and it had to be requested again during this morning's conference call.

Pat

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 10:21 AM  
**To:** Franovich, Mike; Orders, William; Hipschman, Thomas; Snodderly, Michael; Castleman, Patrick  
**Cc:** ET05 Hoc; ET07 Hoc; OST02 HOC; Andersen, James  
**Subject:** FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

As requested in the CA call this morning, here is the severe accident mitigating strategies document.

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 8:55 AM  
**To:** PMT01 Hoc; Hoc, PMT12; LIA06 Hoc; LIA08 Hoc; ET07 Hoc; ET05 Hoc; OST02 HOC  
**Cc:** FOIA Response.hoc Resource; Leeds, Eric; Johnson, Michael; Sheron, Brian; Haney, Catherine; Boger, Bruce; Carpenter, Cynthia; RST01 Hoc  
**Subject:** HEADS UP - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

To ensure a coordinated response, if you are referring to the severe accident mitigation strategies document that was developed and coordinated by the RST, please use the attached versions as the official version of Revision 1 of the document.

Thanks

**From:** RST01 Hoc  
**Sent:** Friday, April 01, 2011 8:33 AM  
**To:** Blount, Tom; ET07 Hoc; Weber, Michael  
**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

See attached RST assessment and list of approving officials.

Thank you

~~NOT FOR PUBLIC DISCLOSURE~~

Pat Rini

RST Coordinator

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** RST01 Hoc

**Sent:** Thursday, March 31, 2011 7:10 PM

(b)(6)

**Cc:** RST01 Hoc; RST02 Hoc; RST07 Hoc; RST09 Hoc; Hoc, RST16; ET07 Hoc; ET02 Hoc; ET05 Hoc

**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

All addressees:

Attached please find REV 1 to the RST Assessment Document, along with a separate table indicating the senior officials who represented the key agencies/organizations with whom we have consulted to produce the assessment report.

John Thorp

Reactor Safety Team Communicator

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Saturday, April 02, 2011 7:19 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 2, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 4.2.11--0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sat Apr 02 05:23:54 2011  
**Subject:** 0430 EDT (April 2, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, April 2, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

482

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Saturday, April 02, 2011 6:44 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (April 2, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.040211.1800EDT.pdf

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sat Apr 02 18:18:49 2011  
**Subject:** 1800 EDT (April 2, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, April 2, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

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

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Sunday, April 03, 2011 7:57 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 3, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update.040311 0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sun Apr 03 04:51:05 2011  
**Subject:** 0430 EDT (April 3, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, April 3, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Yen

Yen Chen  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[IA07.HOC@nrc.gov](mailto:IA07.HOC@nrc.gov) (Operations Center)

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Sunday, April 03, 2011 5:52 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (April 3, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 04.03.11--1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Sun Apr 03 17:50:28 2011  
**Subject:** 1800 EDT (April 3, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 1800 EDT, April 3, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Nichole Glenn  
Executive Briefing Team Coordinator  
US Nuclear Regulatory Commission  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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~~NOT FOR PUBLIC DISSEMINATION~~

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Reddick, Darani

From: Sharkey, Jeffry  
Sent: Monday, April 04, 2011 9:41 AM  
To: Svinicki, Kristine  
Cc: Reddick, Darani  
Subject: Fw: Emergency

??

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

From: Caputo, Annie (EPW) <[Annie\\_Caputo@epw.senate.gov](mailto:Annie_Caputo@epw.senate.gov)>  
To: Sharkey, Jeffry  
Sent: Mon Apr 04 09:38:06 2011  
Subject: Fw: Emergency

Scratch that. Here it is.

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

From: Schmidt, Rebecca [<mailto:Rebecca.Schmidt@nrc.gov>]  
Sent: Monday, April 04, 2011 08:45 AM  
To: Caputo, Annie (EPW)  
Subject: RE: Emergency

Section 3 of the Reorganization Plan No.1 of 1980 provides the Chairman with substantial additional authority during an emergency. This does not require an "official designation of an emergency." The Commission and staff understand how this authority is executed. The Operations Center went into monitoring mode on March 11th at approximately 0946 in response to the possible impact on the West Coast plants due to potentially high waves. The Chairman has been exercising his emergency authority since that time. The agency will return to a non-emergency status when the situation warrants.

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

From: Caputo, Annie (EPW) [[mailto:Annie\\_Caputo@epw.senate.gov](mailto:Annie_Caputo@epw.senate.gov)]  
Sent: Friday, April 01, 2011 9:29 PM  
To: Schmidt, Rebecca  
Subject: Re: Emergency

Thanks. Have a good weekend.

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

From: Schmidt, Rebecca [<mailto:Rebecca.Schmidt@nrc.gov>]  
Sent: Friday, April 01, 2011 08:15 PM  
To: Caputo, Annie (EPW)  
Subject: Re: Emergency

Annie.

I had an appointment and left work at 300 after I talked to you. I will get you something monday morning  
becky

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

From: Caputo, Annie (EPW) <[Annie\\_Caputo@epw.senate.gov](mailto:Annie_Caputo@epw.senate.gov)>  
To: Schmidt, Rebecca  
Sent: Fri Apr 01 16:25:07 2011  
Subject: Emergency

~~NOT FOR PUBLIC DISSEMINATION~~ FPC339 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

Ms. Schmidt,

Per our phone conversation what's the reason for the delay in getting this basic information regarding the emergency declaration?

Annie

~~NOT FOR PUBLIC DISCLOSURE~~

487

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, April 04, 2011 5:17 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 4, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 4.04.11--0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Mon Apr 04 05:15:41 2011  
**Subject:** 0430 EDT (April 4, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, April 4, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

498

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, April 04, 2011 6:34 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (April 4, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 040411 1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Mon Apr 04 17:45:09 2011  
**Subject:** 1800 EDT (April 4, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find the 1800 EDT, April 4, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Yen

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

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

**From:** Wittick, Brian  
**Sent:** Monday, April 04, 2011 7:50 AM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Trapp, James  
**Subject:** FW: Inerting and Drywell Pressure

The below information is provided as requested at a recent CA briefing.

Please let us know if you have additional questions

Brian Wittick  
 Executive Technical Assistant for Reactors  
 Office of the Executive Director for Operations  
 U.S. Nuclear Regulatory Commission  
 301-415-2496 (w); (b)(6) (c)

**From:** ET05 Hoc  
**Sent:** Saturday, April 02, 2011 11:10 AM  
**To:** Wittick, Brian  
**Subject:** Inerting and Drywell Pressure

This was raised at a previous briefing, can you provide it up to the CA's?

Priority	Originator Date/Time Requested	Description/Response	Assigned To Date/Time	Time Due/ Completed	Requestor	Status	Edit
2 edium	Record #: 3611 EST Actions Officer Wendy Reed	Desc: Regarding inerting of containment: process will increased dry wall containment pressure. At what pressure value do you need to stop inerting? Provide by next CA meeting.	RST (All) RST Coordinator	04/02/2011 08:30:00	Commissioners Assistants	7: Complete	Edit
	04/01/2011 10:25:02	Response: SAMGs recommend Inerting WHILE Venting if Drywell/Torus H2 & O2 Is Unknown (or > 6%). All actions that can increase pressure inside Primary Containment are stopped before	04/01/2011 10:25:02	04/02/2011 10:57:39			

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exceeding Primary  
Containment Pressure  
Limit [(in SAMGs) or  
Design Pressure] at the  
Torus Bottom. The  
number is 53 to 61 psig  
(dependent on the level  
of water in Primary  
Containment)

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~~NOT FOR PUBLIC DISCLOSURE~~

500

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, April 05, 2011 5:28 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 5, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 4-05-11-0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Tue Apr 05 05:07:43 2011  
**Subject:** 0430 EDT (April 5, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, April 5, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~

500

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, April 05, 2011 6:05 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (April 5, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.040511.1800EDT.pdf

Sent from an NRC BlackBerry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Tue Apr 05 18:01:10 2011  
**Subject:** 1800 EDT (April 5, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1800 EDT, April 5, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~



504

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, April 05, 2011 2:51 PM  
**To:** Wittick, Brian; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Subject:** RE: PMT Comments on Department of State Trigger Levels

Thanks, Brian. Do we know who this memo is to be sent to? For example, is it from the ambassador to someone at DOS HQ? Or maybe from the deputy chief of mission to the ambassador? Pat

**From:** Wittick, Brian  
**Sent:** Tuesday, April 05, 2011 2:29 PM  
**To:** Castleman, Patrick; Warnick, Greg; Marshall, Michael; Hipschman, Thomas; Snodderly, Michael; Orders, William; Franovich, Mike  
**Subject:** FW: PMT Comments on Department of State Trigger Levels

Attached please find subject document with PMT comments FYI.

Thanks,  
Brian Wittick  
Executive Technical Assistant for Reactors  
Office of the Executive Director for Operations  
U.S. Nuclear Regulatory Commission  
301-415-2496 (w) (b)(6) (c)

**From:** Hoc, PMT12  
**Sent:** Tuesday, April 05, 2011 10:54 AM  
**To:** Wittick, Brian  
**Cc:** ET05 Hoc; FOIA Response.hoc Resource; Andersen, James; McGinty, Tim  
**Subject:** PMT Comments on Department of State Trigger Levels

Brian.

Please forward this attachment to the Commission TAs for their information.

NRC PMT

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)

CORR: 11-0040

COMMISSION CORRESPONDENCE

Correspondence Response Sheet

Date: April 6, 2011

To: Chairman Jaczko  
Commissioner Svinicki ✓  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

From: Annette Vietti-Cook, Secretary

Subject: *Letter to SEN Nita Lowey, responds to letter concerning Indian Point Nuclear Generating Station Units 2 & 3 in light of recent events in Japan and their implications for ensuring continued safety of nuclear power plants in the United States*

**ACTION:** *Please comment/concur and respond to the Office of the Secretary by:*

Time: 4:00 P.M.

Day: Wednesday

Date: April 13, 2011

**Comment:** *Correspondence has been updated.*

Contact: Roger Rihm, OEDO  
(301) 415-1717

Entered in STARS Tracking System  Yes  No

~~NOT FOR PUBLIC DISCLOSURE~~  
FP 348 of 2107

CORR: 11-0040

~~NOT FOR PUBLIC DISCLOSURE~~  
— REVISED —

CORR: 11-0040

**COMMISSION CORRESPONDENCE**

**Correspondence Response Sheet**

**Date:** *April 6, 2011*

**To:** *OGC  
OCA*

**From:** *Annette Vietti-Cook, Secretary*

**Subject:** *Letter to SEN Nita Lowey, responds to letter concerning Indian Point Nuclear Generating Station Units 2 & 3 in light of recent events in Japan and their implications for ensuring continued safety of nuclear power plants in the United States*

**ACTION:** *Please comment/concur and respond to the Office of the Secretary by:*

**Time:** *4:00 P.M.*  
**Day:** *Friday*  
**Date:** *April 8, 2011*

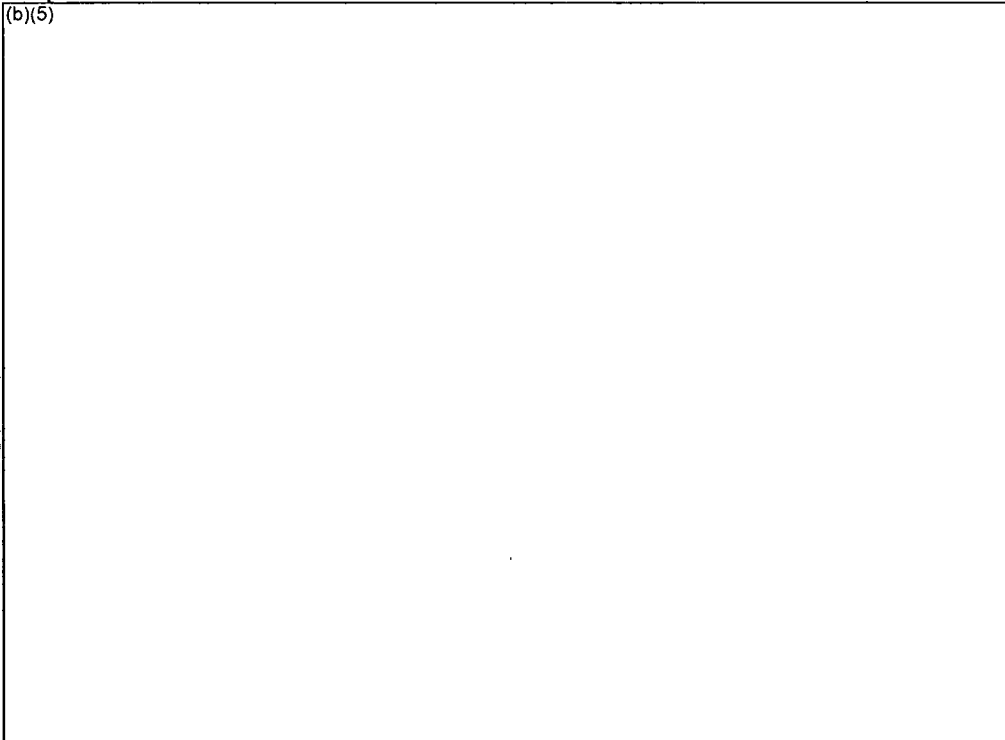
**Comment:** *Correspondence has been updated.*

**Contact:** *Roger Rihm, OEDO  
(301) 415-1717*

~~NOT FOR PUBLIC DISCLOSURE~~

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(b)(5)

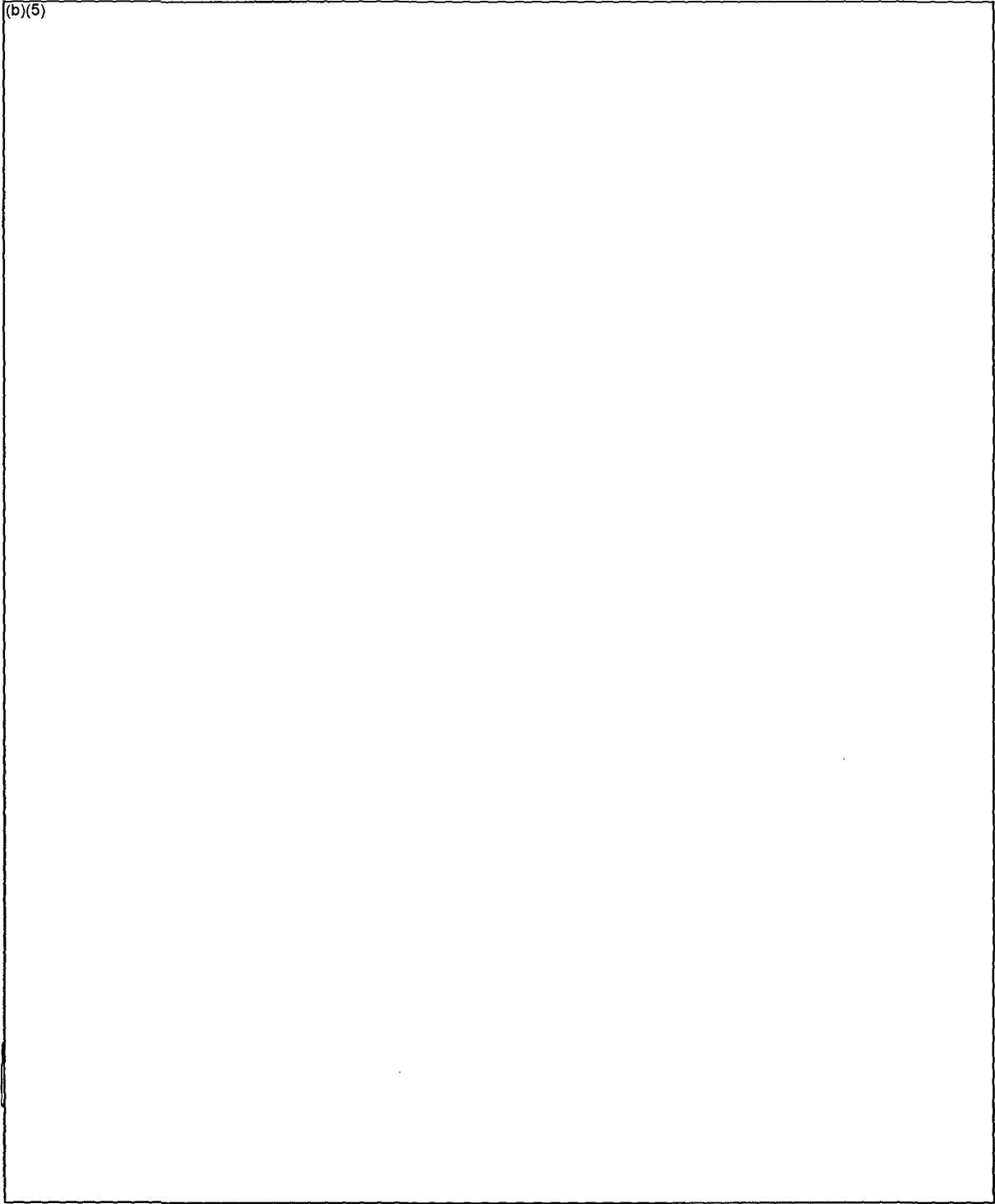


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~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)

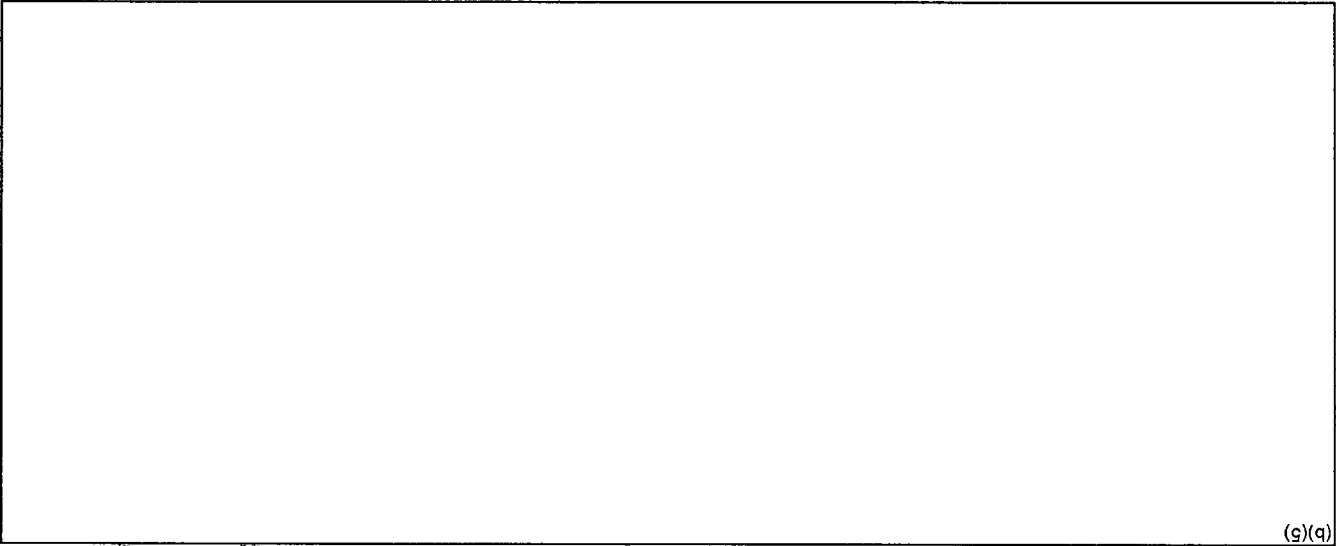


Pkg. No: ML11089A002 Ltr: ML11089A009 Incoming: ML110760172

OFFICE	OEDO	OCA	OGC	EDO	OCM
NAME	R.Rihm	T.Riley	S.Turk	<i>MW</i>	
DATE	3/31/11	3/31/11	3/29/11	4/4/11	4/ /11

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(b)(5)

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Wednesday, April 06, 2011 6:17 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: OOU -- 1800 EDT (April 6, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.040611.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Wed Apr 06 18:09:33 2011  
**Subject:** OOU -- 1800 EDT (April 6, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1800 EDT, April 6, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Sara

Sara K. Mroz  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[Sara.Mroz@nrc.gov](mailto:Sara.Mroz@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~NOT FOR PUBLIC DISCLOSURE~~

518

Sharkey, Jeffrey

**From:** Harves, Carolyn  
**Sent:** Wednesday, April 06, 2011 1:27 PM  
**To:** Svinicki, Kristine  
**Cc:** Castleman, Patrick; Reddick, Darani; Sharkey, Jeffrey  
**Subject:** FW: Nuclear Safety Statement on Fukushima  
**Attachments:** Statement April 4, 2011.pdf; ATT00002.txt

YI. Forwarding a message from Roger Mattson who is a former NRC employee.

Thank you,  
Carolyn

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

**From:** Roger Mattson [mailto:(b)(6)]  
**Sent:** Wednesday, April 06, 2011 12:43 PM  
**To:** CMRAPOSTOLAKIS Resource; CMRSVINICKI Resource; CMRMAGWOOD Resource; CMROSTENDORFF Resource  
**Cc:** Borchardt, Bill; OPA1 RESOURCE; Doane, Margaret; Leeds, Eric  
**Subject:** Nuclear Safety Statement on Fukushima

Dear NRC Commissioners and Staff:

I write to you on behalf of an ad hoc group of nuclear safety experts from various countries that for many years have been engaged in research and development, design, construction, operation, management and safety regulation of nuclear power plants. We have prepared a Statement, "NEVER AGAIN: An Essential Goal for Nuclear Safety" to express our deep concern about the future of nuclear power in view of the consequences of the earthquake and tsunami at the Fukushima-Daiichi NPP in Japan. A copy of the Statement is attached. We delivered the Statement to Mr. Yukiya Amano, Director General of IAEA on April 6 in Vienna. We offer the Statement with good intentions in the hope that it will help national nuclear safety organizations such as yours, and your international counterparts, in developing considered responses to the events at Fukushima.

Although comprehensive analysis of this tragic event is not feasible at the moment due to lack of complete data on the events that occurred, we wish to voice our opinion about severe accidents at civilian nuclear power plants and suggest additional measures to avoid them in light of the experience so far gained at Fukushima. In our Statement, we review many advances in nuclear safety that were realized after the accidents at Three Mile Island and Chernobyl. We hoped these advances would relegate severe nuclear accidents to history. Nevertheless, another one has happened. Why?

Detailed analysis based on more data is needed to give a full answer to this question, but some preliminary observations deserve to be made now. Accordingly, our Statement describes measures that should be considered, for both operating and new nuclear power plants, by the organizations that own and operate these plants and those that oversee their safety.

We hope that our recommendations will be accepted for consideration by national authorities, the nuclear industry, the referees at the Chernobyl-25 Conference in Kiev this month, and the conferees at the IAEA Ministerial Conference in Geneva in June.

We are always ready to share our experience and expertise to assist in developing and implementing these and other recommendations to reach our common goal - to "Never Again" experience severe accidents and, as defense in depth, to effectively respond to them should they nevertheless occur.

Sincerely, on behalf of the ad hoc group,

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## STATEMENT

### NEVER AGAIN: An Essential Goal for Nuclear Safety

The people listed below are nuclear safety experts from various countries that for many years have been engaged in research and development, design, construction, operation, management and safety regulation of nuclear power plants (NPPs). We express here our deep concern about the future of nuclear power in view of the consequences of the earthquake and tsunami at the Fukushima-Daiichi NPP in Japan. We are confident that only nuclear power that avoids being a threat to the health and safety of the population and to the environment is acceptable to society. Although comprehensive analysis of this tragic event is not feasible at the moment due to lack of complete data on the events that occurred, we wish to voice our opinion about severe accidents at civilian nuclear power plants and suggest additional measures to avoid them in light of the experience so far gained at Fukushima. First, we review the improvements made in safety due to earlier severe accidents.

The accident at Three Mile Island (TMI) Unit 2 (USA, 1979) did not cause injuries of the plant personnel or the population. There was no significant radioactive contamination outside the plant. Even so, the accident caused a reduction of investments in new NPPs due to a decreased interest from private investors. Studies of the accident confirmed the robustness of safety principles employed in the design of that type of NPP. At the same time, the accident revealed significant weaknesses in the implementation of those principles, including design of instrumentation and controls, operating procedures and the realism of the analyses supporting them, personnel training, and feedback of operating experience. Lessons learned from the accident allowed improvements with regard to human factors (how people and NPPs relate), design-specific probabilistic safety assessments, emergency preparedness, and safety systems. This accident also led the nuclear industry to design new NPPs that include passive safety features not dependent on the availability of electrical or mechanical equipment.

The accident at Chernobyl Unit 4 (USSR, 1986) was the largest in history. The spread of the accident to the other reactors at the plant was prevented but cost the lives of thirty-one members of plant personnel and firemen. There was widespread radioactive contamination over large parts of Europe. Many thousand people had to be relocated from their homes near the plant. Regionally, the accident produced excess thyroid cancers and other negative effects on human health and had a large psychological impact on the public. The accident also had significant political resonance. The design of the reactor at Chernobyl was very different from the light-water reactors at TMI and Fukushima. Studies of the Chernobyl accident highlighted significant design deficiencies (core instability, inadequate design of control rods, unsatisfactory characteristics of confinement) as well as deficiencies in safety culture in the former Soviet Union. In harmony with international guidance and in compliance with upgraded national safety standards, significant modernization was achieved in NPPs in the former Soviet Union. Moreover, the IAEA International Nuclear Safety Advisory Group (INSAG) issued reports on the accident and developed Guidance on General Safety Principles and Safety Culture for improving NPP safety worldwide. The nuclear industry created the World Association of Nuclear Operators (WANO) for a continuous review and feedback of nuclear power plant operating experience.

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On learning the lessons from these accidents, the approaches to safety regulation and NPP design were upgraded, and an international nuclear safety regime based on the Nuclear Safety Convention and other international accords was established. The fundamental principle of safety culture has become a daily routine.

International cooperation was strengthened to improve the fundamental requirements and criteria to ensure safety of nuclear power and to incorporate them into the design basis of NPPs of the next generations. The Nuclear Safety Convention also called for reviewing the safety of existing NPPs to identify and implement reasonably practical improvements.

The importance of nuclear education and training was acknowledged, which led to the establishment of the World Nuclear University (WNU) and the creation of regional nuclear education networks in different parts of the world.

Severe nuclear accidents seemed to have gone to history. Nevertheless, another one has happened. Why?

A detailed analysis based on more data is needed to give a full answer, but some preliminary observations deserve to be made now. On one hand, the Tohoku-Taiheiyou-Oki Earthquake on March 11, 2011 shows that nuclear power plants are capable of withstanding some catastrophic natural events better than many other manmade objects. On the other hand, it appears that, in the siting and design of the Fukushima-Daiichi nuclear plants, an unlikely combination of low-probability events (historic earthquake plus historic tsunami leading to loss of all electrical power) was not taken sufficiently into account.

In fact, complex combinations of initiating events unforeseen in plant designs resulted in all the severe accidents described above. In addition, these accidents took emergency responders outside the range of circumstances for which they were trained and equipped. Moreover, hindsight shows that relatively inexpensive improvements, detectable by more extensive analysis beforehand, may have avoided these accidents altogether.

These observations lead us to conclude that more can be done to prevent severe accidents and to limit their consequences should they nevertheless occur. We know that due to a natural tendency of human beings for complacency, the nuclear safety regime can erode; i.e., if we do not continuously pursue safety, we can lose safety. There are occasional signs that national and international safety assessments and peer review missions are becoming more focused on demonstrating that safety is satisfactory and in compliance with national and international standards than on finding and correcting deficiencies, be they in design, operation, or the standards themselves. Therefore, we need to reinforce our dedication, not only in words but also in actions towards a questioning attitude, thereby assuring continuous improvement in the safety of NPPs.

Thus, there is a need to continue to audit and improve the safety culture at all levels of nuclear power management and regulation, achieve due attention to detail, implement effective programs to identify, analyze and correct safety deficiencies, and effectively manage nuclear knowledge.

Special attention should be paid to the quality of personnel training for nuclear power. To achieve this goal, NPP vendor countries should establish centers to train specialists for nuclear technology in recipient countries. Top professionals involved in nuclear power generation should not only "know what" and "know how" but also "know why" in order to deliver difficult and critical decisions in time to deal with unforeseen circumstances. In

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addition, regulatory organizations should improve the effectiveness of expert missions and inspections, and guarantee openness and honesty in reporting the findings of such inspections to the public. Routine inspections are important; however, even more important is the capability to recognize early indications of low probability incidents or circumstances.

In addition to further measures to prevent severe accidents, more must be done to limit the consequences of such accidents if they occur. It is important to finalize the in-depth safety assessments of severe accident vulnerabilities for each NPP plant design and to develop severe accident management provisions for all operating nuclear reactors. Measures for accident management should be supported with robust technical capabilities, backup equipment, and procedures for restoration of core heat removal before the onset of fuel melting. Plant staff should be well trained in flexible severe accident management.

Renewed attention should be given to general safety requirements for plants built to earlier safety standards in view of the considerable remaining operating time envisaged for many such plants. A more internationally harmonized approach in this area should be sought. In light of the common mode failure of redundant safety systems (electric power) caused by the tsunami at Fukushima, authorities should ask to what extent this failure and other common mode failure vulnerabilities in operating plants might be revealed by current technology.

The safety requirements for future NPPs should be refined to assure that their backup cooling systems are able to operate for a long enough time following a complete loss of on-site and off-site power. These future NPPs should be able to promptly restore or compensate for lost power. Passive systems and advanced technologies for system engineering, materials, information management and communications should be applied to new NPPs. New plants should be sited away from areas of extreme natural and manmade hazards. Risk assessments and risk governance should be used for optimization of plant design and operation but not substitute for deterministic safety justifications. The next-generation NPPs should ensure safety even if operating personnel are not able to provide immediate response in an emergency.

The responsibility and qualifications of government and corporate officials involved in nuclear safety-related decision-making should be reviewed and enhanced by national authorities where needed. National nuclear institutions in all countries, including nuclear safety regulators, should be accountable for their actions and transparent in nuclear safety communications so that they receive and deserve the trust of the public. It is necessary to ensure that national nuclear safety regulators in all countries are fully independent in their decision-making on nuclear safety and to assure their competence, resources and enforcement authorities. Insurance premiums for all NPP owners should be tied to plant safety performance.

The safety of nuclear power goes beyond national boundaries. Appropriate measures to further strengthen the international nuclear safety regime should be identified and implemented after proper discussions, whether it will be within the framework of the Nuclear Safety Convention, the IAEA, regional bodies like the EU or industry organizations like WANO. A critical question should be what measures would be most effective in further promoting a high level of nuclear safety worldwide. Would it be to create new international frameworks, for example in the shape of an international regulatory agency entrusted with

issuing binding international safety standards and performing compulsory inspections, or would it be to further develop and strengthen existing frameworks, emphasizing national responsibilities in combination with rigorous international peer reviews? It is to be expected that the international conference to be convened at the IAEA in Vienna in June of this year will provide a starting point for discussions of such measures.

Requirements for new countries wishing to start using nuclear power should be developed and incorporated into the international nuclear safety regime. Such countries must demonstrate their ability to uphold high international standards with regard to safety, security and non-proliferation over the lifetime of their nuclear power programs.

We hope that our recommendations will be accepted for consideration by national authorities and international organizations and that concerted measures will be developed. We are always ready to share our experience and expertise to assist in developing and implementing these and other recommendations to reach our common goal - to "Never Again" experience severe accidents in the future and, as defense in depth, to effectively respond to them should they nevertheless occur.

The following people assisted in the formulation of this Statement and concur in its issuance.

Adolf Birkhofer	Germany	Professor Emeritus, Technical University of Munich; former member and chair, INSAG; former chair, German Reactor Safety Commission; former chair, Committee on Safety of Nuclear Installations of OECD
Agustin Alonso	Spain	Former member, INSAG; former member, director and commissioner of Spanish Regulatory Institution; vice chair, Committee on Safety of Nuclear Installations of OECD
KunMo Chung	Republic of Korea	Former member, INSAG; former minister, Science & Technology, Republic of Korea; former president, Korean Academy of Science & Technology; former president, General Conference, IAEA; former vice chair, World Energy Council
Harold Denton	USA	Former director, office of nuclear reactor regulation, US Nuclear Regulatory Commission and President Carter's representative at TMI during the accident
Lars Högberg	Sweden	Former member, INSAG; former director general, Swedish Nuclear Power Inspectorate; former chair, steering committee, OECD Nuclear Energy Agency
Anil Kakodkar	India	Former member, INSAG, former chairman, Atomic Energy Commission of India
Georgy Kopchinsky	Ukraine	Former head, nuclear power and industry department, USSR Council of Ministers; former vice chair, Ukrainian nuclear regulatory authority
Jukka Laaksonen	Finland	Vice-chair, INSAG; director general, Finnish Radiation & Nuclear Safety Authority; chair, Western European Nuclear Regulatory Association (WENRA); former chair, NEA Committee on Nuclear Regulatory Activities (CNRA)
Salomon Levy	USA	Former member, INSAG; former design and manufacturing manager, General Electric Atomic Power Equipment Division; honorary member, ASME

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Roger Mattson	USA	Former director of reactor systems safety division and leader, TMI Lessons Learned Task Force, US Nuclear Regulatory Commission; working group co-chair, INSAG-3
Victor Murogov	Russia	Professor, National Nuclear Research University (MEPHI); director, Russian Association Nuclear Science and Education; former director, Institute of Physics and Power Engineering (IPPE); former deputy director general for nuclear power, IAEA
Nikolai Ponomarev-Stepnoy	Russia	Member, Russian Academy of Science; former deputy director, Kurchatov Institute
Victor Sidorenko	Russia	Correspondent member of Russian Academy of Science; former member, INSAG; former deputy director, Kurchatov Institute; former deputy Chairman of the USSR nuclear regulatory authority; former deputy minister of nuclear power of the USSR and Russia
Nikolai Steinberg	Ukraine	Former member, IAEA Standing Advisory Group on Nuclear Energy; former chief engineer, Chernobyl NPP; former deputy chairman of USSR nuclear regulatory authority; former chairman of Ukrainian nuclear regulatory authority; former deputy minister of fuel & power of Ukraine
Pierre Tanguy	France	Former member, INSAG; former inspector general of nuclear safety, Electricité de France
Jurgis Vilemas	Lithuania	Member of Lithuanian Academy of Science; former director, Lithuanian Energy Institute

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Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Wednesday, April 06, 2011 9:02 AM  
**To:** Baggett, Steven; Tadesse, Rebecca  
**Subject:** FW: ACTION: Commissioners Assistants Briefing Notification  
**Attachments:** NRC Status Update 4.06.11--0430EDT.pdf

fyi

**From:** [ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov) [mailto:ANS.HOC@nrc.gov]  
**Sent:** Wednesday, April 06, 2011 9:01 AM  
**Subject:** ACTION: Commissioners Assistants Briefing Notification

There will be a Commissioners Assistants Briefing given by NRC HQ at 1000 EDT this morning, Wednesday April 6, concerning the Reactor Events in Japan. Call <sup>(b)(6)</sup> [redacted] approximately 5 minutes before the scheduled start time. When prompted, enter security code <sup>(b)(6)</sup> [redacted]. You may call 301-816-5164 at this time and follow the voice prompts if you do not wish to receive this notification from our Automatic Notification System.

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, April 07, 2011 9:44 AM  
**To:** Franovich, Mike; LIA06 Hoc  
**Cc:** Orders, William; Snodderly, Michael; Hipschman, Thomas; Marshall, Michael  
**Subject:** RE: IAEA daily report on the Status of the Fukushima Daiichi Nuclear Power Plant and related environmental conditions.

Thanks! BTW, what is the URL for this report?

**From:** Franovich, Mike  
**Sent:** Thursday, April 07, 2011 8:05 AM  
**To:** LIA06 Hoc  
**Cc:** Orders, William; Castleman, Patrick; Snodderly, Michael; Hipschman, Thomas; Marshall, Michael  
**Subject:** RE: IAEA daily report on the Status of the Fukushima Daiichi Nuclear Power Plant and related environmental conditions.

Thanks Mark.

**From:** LIA06 Hoc  
**Sent:** Wednesday, April 06, 2011 7:00 PM  
**To:** Orders, William; Castleman, Patrick; Franovich, Mike; Snodderly, Michael; Hipschman, Thomas; Marshall, Michael  
**Cc:** LIA06 Hoc  
**Subject:** RE: IAEA daily report on the Status of the Fukushima Daiichi Nuclear Power Plant and related environmental conditions.

I did not see where the login and password information were sent to you all. Here it is:

UN   
PW

Please do not forward it further.

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

**From:** LIA06 Hoc  
**Sent:** Tuesday, April 05, 2011 9:58 AM  
**To:** Orders, William; Castleman, Patrick; Franovich, Mike; Snodderly, Michael; Hipschman, Thomas; Marshall, Michael  
**Subject:** IAEA daily report on the Status of the Fukushima Daiichi Nuclear Power Plant and related environmental conditions.

Does your office have access to the IAEA ENAC site? There is a comprehensive daily status of the Fukushima Daiichi Nuclear Power Plant and related environmental conditions available. Let me know if you would like access.

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

~~NOT FOR PUBLIC DISCLOSURE~~

301-816-5188

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~



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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Thursday, April 07, 2011 4:56 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 7, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 4.07.11-0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Thu Apr 07 04:54:07 2011  
**Subject:** RE: 0430 EDT (April 7, 2011) USNRC Earthquake/Tsunami Status Update

Attached, please find a 0430 EDT, April 7, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

-Jim

Jim Anderson  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[IA07.HOC@nrc.gov](mailto:IA07.HOC@nrc.gov) (Operations Center)  
[ames.anderson@nrc.gov](mailto:ames.anderson@nrc.gov)

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528

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Thursday, April 07, 2011 6:55 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 7, 2011  
**Attachments:** USNRC Earthquake-Tsunami Update 040711 1800EDT update.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Thu Apr 07 17:50:18 2011  
**Subject:** USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 7, 2011

Attached, please find a 1800 EDT, April 7, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

Yen

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

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Friday, April 08, 2011 5:22 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 8, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 4.8.11-0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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

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

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-Jim

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

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~~RESTRICTED INFORMATION~~

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, April 08, 2011 6:40 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: OOU -- 1800 EDT (April 8, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.040811.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**Sent:** Fri Apr 08 17:57:29 2011  
**Subject:** OOU -- 1800 EDT (April 8, 2011) USNRC Earthquake-Tsunami Update

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-Sara

Sara K. Mroz  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

~~RESTRICTED INFORMATION~~

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, April 08, 2011 11:54 AM  
**To:** Jones, Cynthia  
**Subject:** RE: Fwd: [SocialMedia] NRC 50 mile evacuation zone questioned

Yes, I am. Thanks so much for sharing!

**From:** Jones, Cynthia  
**Sent:** Friday, April 08, 2011 11:51 AM  
**To:** Castleman, Patrick  
**Subject:** Fw: Fwd: [SocialMedia] NRC 50 mile evacuation zone questioned

That you'd be interested in this-

Cynthia G. Jones, Ph.D.  
Sr. Technical Advisor for Nuclear Security,  
NRC/NSIR  
Sent from blackberry

**From:** morgan cox <morgancx@swcp.com>  
**To:** (b)(6); Mark Maiello <MAIELLM@wyeth.com>; Hansen, Richard <HansenRG@nv.doe.gov>; Murray E. Moore (b)(6); Hayes, Robert (b)(6); Jones, Cynthia  
**Sent:** Fri Apr 08 10:33:15 2011  
**Subject:** Fwd: [SocialMedia] NRC 50 mile evacuation zone questioned

The 50 mile evacuation zone recommended by the chair of the NRC is one reason why the Japanese resent some American inputs. That recommendation caused some panic among the Japanese population.

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

**Subject:**[SocialMedia] NRC 50 mile evacuation zone questioned  
**Date:**Fri, 8 Apr 2011 09:06:03 -0400  
**From:**Dan Yurman <djysrv@usa.net>  
**Reply-To:**dan.yurman@usa.net, Social Media <socialmedia@list.ans.org>  
**To:**'Social Media' <socialmedia@list.ans.org>

Readers may be interested in this nugget buried in the LA Times article noted on this list. It raises the question of the scientific basis, for the recommendation by NRC Chairman Gregory Jaczko for a 10 mile evacuation zone at Fukushima for American citizens.

<http://www.latimes.com/news/nationworld/world/la-fg-japan-nuclear-20110408,0,2828502.story>

start LA Times snip>

Separately, the staff of the NRC came under heavy questioning Thursday by the Advisory Committee on Reactor Safeguards, a panel of outside experts, academics and nuclear industry officials that provides guidance to the agency.

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At a committee meeting, NRC officials were asked about the scientific basis for their agency's advice that Americans evacuate a 50-mile zone around the plant. NRC officials said they couldn't provide an explanation and would have to get back to the committee.

NRC officials were unavailable for comment afterward."

<end LA Times snip>

Dan Yurman

Email: [dan.yurman@usa.net](mailto:dan.yurman@usa.net)

Mobile: (b)(6)

Blog: <http://dysrv.blogspot.com>

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, April 08, 2011 1:25 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Interesting tweet

Commissioner,

For your awareness, this was forwarded to me this morning. It appears to be a tweet from the ANS social media feed. Evidently, people outside the NRC-sphere are talking about the 50 mile decision and its ramifications.

Pat

**Subject:** Fwd: [SocialMedia] NRC 50 mile evacuation zone questioned

The 50 mile evacuation zone recommended by the chair of the NRC is one reason why the Japanese resent some American inputs. That recommendation caused some panic among the Japanese population.

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

**Subject:**[SocialMedia] NRC 50 mile evacuation zone questioned

**Date:**Fri, 8 Apr 2011 09:06:03 -0400

**From:**Dan Yurman <djysrv@usa.net>

**Reply-To:**dan.yurman@usa.net, Social Media <socialmedia@list.ans.org>

**To:**'Social Media' <socialmedia@list.ans.org>

Readers may be interested in this nugget buried in the LA Times article noted on this list. It raises the question of the scientific basis, for the recommendation by NRC Chairman Gregory Jaczko for a 50 mile evacuation zone at Fukushima for American citizens.

<http://www.latimes.com/news/nationworld/world/la-fg-japan-nuclear-20110408,0,2828502.story>

<start LA Times snip>

“Separately, the staff of the NRC came under heavy questioning Thursday by the Advisory Committee on Reactor Safeguards, a panel of outside experts, academics and nuclear industry officials that provides guidance to the agency.

At a committee meeting, NRC officials were asked about the scientific basis for their agency's advice that Americans evacuate a 50-mile zone around the plant. NRC officials said they couldn't provide an explanation and would have to get back to the committee.

NRC officials were unavailable for comment afterward.”

end LA Times snip>

Dan Yurman  
mail: [dan.yurman@usa.net](mailto:dan.yurman@usa.net)

Mobile: (b)(6)  
Blog: <http://djysrv.blogspot.com>

~~NOT FOR PUBLIC RELEASE~~

~~NOT FOR PUBLIC RELEASE~~



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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Saturday, April 09, 2011 7:05 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 9, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 4.09.11--0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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

Attached, please find a 0430 EDT, April 9, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

-Jim

Jim Anderson  
Executive Briefing Team Coordinator  
Office of Nuclear Security and Incident Response  
US Nuclear Regulatory Commission  
[IA07.HOC@nrc.gov](mailto:IA07.HOC@nrc.gov) (Operations Center)  
[ames.anderson@nrc.gov](mailto:ames.anderson@nrc.gov)

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~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Saturday, April 09, 2011 6:42 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: USNRC Earthquake/Tsunami Status Update: 1800 EDT, April 9, 2011  
**Attachments:** USNRC Earthquake-Tsunami Update.040911.1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sat Apr 09 18:18:53 2011  
**Subject:** USNRC Earthquake/Tsunami Status Update: 1800 EDT, April 9, 2011

Attached, please find a 1800 EDT, April 9, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

Yen

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

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Sunday, April 10, 2011 7:16 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 0430 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 04.10.11--0430.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sun Apr 10 04:39:18 2011  
**Subject:** 0430 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update

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

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

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

-Jim

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

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, April 10, 2011 6:33 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: 1800 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 041011 1800EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Sun Apr 10 18:00:27 2011  
**Subject:** 1800 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update

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

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

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

Thanks,  
Jeremy

Jeremy Susco  
Executive Briefing Team Coordinator  
US Nuclear Regulatory Commission  
[LIA07\\_HOC@nrc.gov](mailto:LIA07_HOC@nrc.gov) (Operations Center)  
[jeremy.susco@nrc.gov](mailto:jeremy.susco@nrc.gov)

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Sunday, April 10, 2011 6:34 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: IAEA Summary of reactor unit status at 10-April  
**Attachments:** Letter - Summary of reactor unit status at 10-April 0000 UTC[1].pdf

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

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**From:** LIA02 Hoc  
**To:** LIA02 Hoc  
**Cc:** Whitney, James; Castleman, Patrick; Hipschman, Thomas; Orders, William; Franovich, Mike; Snodderly, Michael; Wittick, Brian; Schwartzman, Jennifer  
**Sent:** Sun Apr 10 15:35:38 2011  
**Subject:** IAEA Summary of reactor unit status at 10-April

FYI

~~NOT FOR PUBLIC DISCLOSURE~~

553

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Monday, April 11, 2011 4:57 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011  
**Attachments:** USNRC Earthquake-Tsunami Update 041111 0430EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**To:** LIA07 Hoc  
**Sent:** Mon Apr 11 04:28:54 2011  
**Subject:** USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011

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

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

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

Yen

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

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, April 11, 2011 4:31 PM  
**To:** Thoma, John; Tadesse, Rebecca; Baggett, Steven; Kock, Andrea  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Orders, William; Snodderly, Michael; Franovich, Mike  
**Subject:** FW: OUC -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.041111.1200EDT.pdf

Dear Materials Colleagues,

I don't know if you are all copied on the sitreps, so here's the latest just in case you haven't seen it. Please see the bottom of page 5, where the following appears:

The PMT has the lead for a "composite" document that takes conditions such as plant stability, radiological conditions, and local infrastructure into consideration in order to re-evaluate the current 50-mile evacuation recommendations.

(b)(5)

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

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

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

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

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

Thank you,  
Sara

Sara Mroz  
US Nuclear Regulatory Commission  
[IA07.HOC@nrc.gov](mailto:IA07.HOC@nrc.gov) (Operations Center)

571

**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Wednesday, April 13, 2011 7:33 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: IAEA ENAC rept for April 13 , 2011  
**Attachments:** Letter - Summary of reactor unit status at 13-April 0000 UTC[1].pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA02 Hoc  
**To:** Castleman, Patrick; Hipschman, Thomas; Orders, William; Franovich, Mike; Snodderly, Michael; Wittick, Brian; Jones, Cynthia  
**Cc:** Doane, Margaret; Mamish, Nader; Abrams, Charlotte; Schwartzman, Jennifer; Kreuter, Jane; Larson, Emily; LIA06 Hoc; LIA08 Hoc; Whitney, James  
**Sent:** Wed Apr 13 07:15:11 2011  
**Subject:** RE: IAEA ENAC rept for April 13 , 2011

Attached is the IAEA ENAC report for April 13, 2011.

This information is being provided in response to several Commission Offices request.

Please note the sensitivity of the information.

~~NOT FOR PUBLIC DISCLOSURE~~



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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Thursday, April 14, 2011 9:12 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** FW: FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1  
**Attachments:** 03-31-11 1200 RST Assessment Document REV 1 .docx; RST ASSESSMENT CONCURRENCE OFFICIALS 3-31-2011.docx

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 10:21 AM  
**To:** Franovich, Mike; Orders, William; Hipschman, Thomas; Snodderly, Michael; Castleman, Patrick  
**Cc:** ET05 Hoc; ET07 Hoc; OST02 HOC; Andersen, James  
**Subject:** FYI - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

As requested in the CA call this morning, here is the severe accident mitigating strategies document.

**From:** Weber, Michael  
**Sent:** Friday, April 01, 2011 8:55 AM  
**To:** PMT01 Hoc; Hoc, PMT12; LIA06 Hoc; LIA08 Hoc; ET07 Hoc; ET05 Hoc; OST02 HOC  
**Cc:** FOIA Response.hoc Resource; Leeds, Eric; Johnson, Michael; Sheron, Brian; Haney, Catherine; Boger, Bruce; Carpenter, Cynthia; RST01 Hoc  
**Subject:** HEADS UP - USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

To ensure a coordinated response, if you are referring to the severe accident mitigation strategies document that was developed and coordinated by the RST, please use the attached versions as the official version of Revision 1 of the document.

Thanks

**From:** RST01 Hoc  
**Sent:** Friday, April 01, 2011 8:33 AM  
**To:** Blount, Tom; ET07 Hoc; Weber, Michael  
**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

See attached RST assessment and list of approving officials.

Thank you

Brett Rini  
RST Coordinator

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** RST01 Hoc  
**Sent:** Thursday, March 31, 2011 7:10 PM

(b)(6)

(b)(6)

**Cc:** RST01 Hoc; RST02 Hoc; RST07 Hoc; RST09 Hoc; Hoc, RST16; ET07 Hoc; ET02 Hoc; ET05 Hoc  
**Subject:** FW: USNRC REACTOR SAFETY TEAM ASSESSMENT REV 1

All addressees:

Attached please find REV 1 to the RST Assessment Document, along with a separate table indicating the senior officials who represented the key agencies/organizations with whom we have consulted to produce the assessment report.

John Thorp  
Reactor Safety Team Communicator

**Sharkey, Jeffry**

**From:** Reddick, Darani  
**Sent:** Thursday, April 14, 2011 12:36 PM  
**To:** Sharkey, Jeffry  
**Cc:** Castleman, Patrick  
**Subject:** RE: Japan - Bridgeline Information

That is interesting, thanks

(b)(5)

**From:** Sharkey, Jeffry  
**Sent:** Thursday, April 14, 2011 12:30 PM  
**To:** Reddick, Darani  
**Cc:** Castleman, Patrick  
**Subject:** FYI: Japan - Bridgeline Information

Interesting Seminar for NRR Staff...

Seminar on the Price-Anderson Act and how the Act would respond to a nuclear incident in the U.S. The seminar will be presented by the insurance/indemnity staff in NRR/DPR and will include a representative from OGC, OCA and OPA who will discuss their interactions with members of the public and with Congress resulting from the Japanese reactor accident.

**From:** Deeds, Erin  
**Sent:** Thursday, April 14, 2011 11:55 AM  
**To:** Deeds, Erin; Dinitz, Ira  
**Cc:** NRR Distribution; NRO\_ARP\_Distribution; Simpson, JoAnn; Galloway, Melanie; Wrona, David; Oesterle, Eric; Wentzel, Michael; Nguyen, John; Cunanan, Arthur; Wolfgang, Robert; Ashley, MaryAnn; Blount, Tom; Purtscher, Patrick; Jenkins, Barbara; Ron, Fred; Frahm, Ronald; Wertz, Geoffrey; Westreich, Barry; Khanna, Meena; Thorp, John; Mazumdar, Subinoy; Miller, Ilyne; Aiyda, Bhalchandra; Valentine, Nicholee; Markley, Michael; Laur, Steven; Gavrilas, Mirela; Conatser, Richard; Adams, John; Mtiglio, Clayton; Istar, Ata; Purnell, Blake; Reed, Elizabeth; Fredrichs, Thomas; Dusaniwskyj, Michael; Garmon, David; King, Mark; Revelle, Carole; Grobe, Jack; Richter, Brian; Ruland, William; Thompson, Jon; Malave, Yanelly; Heida, Bruce; Li, Rui; Ambaugh, Margaret; Garry, Steven; Hiland, Patrick; Manahan, Michelle; Russell, Andrea; Mitman, Jeffrey; Matharu, Gurcharan; Venak, Michael; Isom, James; Salgado, Nancy; Tam, Peter; Mayfield, Michael; Voth, Marcus; Bucholtz, Kristy; Johnson, Deborah; Ron, Warren; Alvarado, Rossnyev; Lubinski, John; Lois, Kosmas; Markley, Anthony; Rowley, Jonathan; Hardesty, Duane; Helton, Diana; Nguyen, Quynh; Dias, Antonio; Alley, David; Wengert, Thomas; Elliott, Robert; Brown, Leta; Haskell, Russell; Beltz, Terry; Imberoni, David; Iqbal, Naeem; Bahadur, Sher; Roquecruz, Carla; Shea, James; Dudley, Richard; McConnell, Matthew; Licoeur, John; Kevern, Thomas; Hopkins, Jon; Langlie, Liz; Cooper, Paula; Wiebe, Joel; Billerbeck, John; Coffin, Stephanie; Ba, Farideh; Poole, Justin; Poehler, Jeffrey; Martin, Robert; Heller, Kevin; BeBault, April; Fields, Leslie; Hsli, Yi-Hsiung; Hon, drew; Singh, Gursharan; Costa, Arlon; Szabo, Aaron; Wong, Albert; Philpott, Stephen; Astwood, Heather; Norkin, Donald; Ylor, Chutima; DiFrancesco, Nicholas; Johnson, Andrew; Hawes, Cathy; Regan, Christopher; Adams, Alexander; Font, Ossy; Awla, Mahesh; Cranston, Gregory; Muller, David; Franovich, Rani; Harrison, Donnie; Bagchi, Manash; Magruder, Stewart; Schneider, Stewart; Evans, Michele; Le, Hong; Sircar, Madhumita; Klos, John; Grenier, Bernard; Banic, Merrilee; Lovell, Louise; Honey, Michael; Thomas, Brian; Goel, Vijay; Shan, Roya; Williams, Tamera; Beaulieu, David; Attard, Anthony; Davidson, Evan; Shih-Liang; Donohue, Jack; Belssel, Dennis; DORLCAL Resource; Giitter, Joseph; Craver, Patti; Parillo, John; Sloan, Scott; Ero, Alicia; McGovern, James; Gibson, Lauren; Lapinsky, George; Brady, Bennett; Newell, Karenina; Henderson, Christopher; Iver, Ravinder; Gettys, Evelyn; Starefos, Joelle; Telson, Ross; Armstrong, Garry; Casto, Greg; Nguyen, Nikki; .Dinitz@nrc.gov.; Andruszkiewicz, Edward; Lund, Louise; Benton, Laray; Wong, See-Meng; Dout, Clifford; Purciarello, Gerard; .Dinitz@nrc.gov.  
**Subject:** Japan - Bridgeline Information

NRR/DPR/PRIB  
301-415-2887  
erin.deeds@nrc.gov  
O-12H18

~~CONFIDENTIAL~~

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

**From:** Deeds, Erin

**Sent:** Thursday, April 07, 2011 11:56 AM

**To:** Deeds, Erin; Dinitz, Ira

**Cc:** NRR Distribution; NRO\_ARP\_Distribution; Simpson, JoAnn; Galloway, Melanie; Wrona, David; Oesterle, Eric; Wentzel, Michael; Nguyen, John; Cunanan, Arthur; Wolfgang, Robert; Ashley, MaryAnn; Blount, Tom; Purtscher, Patrick; Jenkins, Barbara; Lyon, Fred; Frahm, Ronald; Wertz, Geoffrey; Westreich, Barry; Khanna, Meena; Thorp, John; Mazumdar, Subinoy; Miller, Ilyne; Aiyda, Bhalchandra; Valentine, Nicholee; Markley, Michael; Laur, Steven; Gavrillas, Mirela; Conatser, Richard; Adams, John; Attigillo, Clayton; Istar, Ata; Purnell, Blake; Reed, Elizabeth; Fredrichs, Thomas; Dusaniwskyj, Michael; Garmon, David; King, Mark; Revelle, Carole; Grobe, Jack; Richter, Brian; Ruland, William; Thompson, Jon; Malave, Yanely; Heida, Bruce; Li, Rui; Tambaugh, Margaret; Garry, Steven; Hiland, Patrick; Manahan, Michelle; Russell, Andrea; Mitman, Jeffrey; Matharu, Gurcharan; Jrenak, Michael; Isom, James; Salgado, Nancy; Tam, Peter; Mayfield, Michael; Voth, Marcus; Bucholtz, Kristy; Johnson, Deborah; Lyon, Warren; Alvarado, Rossnyev; Lubinski, John; Lois, Kosmas; Markley, Anthony; Rowley, Jonathan; Hardesty, Duane; Helton, Shana; Nguyen, Quynh; Dias, Antonio; Alley, David; Wengert, Thomas; Elliott, Robert; Brown, Leta; Haskell, Russell; Beltz, Terry; Jamberoni, David; Iqbal, Naeem; Bahadur, Sher; Roquecruz, Carla; Shea, James; Dudley, Richard; McConnell, Matthew; Policoeur, John; Kevern, Thomas; Hopkins, Jon; Langlie, Liz; Cooper, Paula; Wiebe, Joel; Billerbeck, John; Coffin, Stephanie; Aghaba, Farideh; Poole, Justin; Poehler, Jeffrey; Martin, Robert; Heller, Kevin; BeBault, April; Fields, Leslie; Hsui, Yi-Hsiung; Hon, Andrew; Singh, Gursharan; Costa, Arlon; Szabo, Aaron; Wong, Albert; Philpott, Stephen; Astwood, Heather; Norkin, Donald; Aylor, Chutima; DiFrancesco, Nicholas; Johnson, Andrew; Hawes, Cathy; Regan, Christopher; Adams, Alexander; Font, Ossy; Alhawi, Mahesh; Cranston, Gregory; Muller, David; Franovich, Rani; Harrison, Donnie; Bagchi, Manash; Magruder, Stewart; Schneider, Stewart; Evans, Michele; Le, Hong; Sircar, Madhumita; Klos, John; Grenier, Bernard; Banic, Merrilee; Lovell, Louise; Mahoney, Michael; Thomas, Brian; Goel, Vijay; Shan, Roya; Williams, Tamera; Beaulieu, David; Attard, Anthony; Davidson, Evan; Liu, Shih-Liang; Donohue, Jack; Beissel, Dennis; DORLICAL Resource; Giitter, Joseph; Craver, Patti; Parillo, John; Sloan, Scott; Alvero, Alicia; McGovern, James; Gibson, Lauren; Lapinsky, George; Brady, Bennett; Newell, Karenina; Henderson, Christopher; Rover, Ravinder; Gettys, Evelyn; Starefos, Joelle; Telson, Ross; Armstrong, Garry; Casto, Greg; Nguyen, Nikki; 'a.Dinitz@nrc.gov.'; Andruszkiewicz, Edward; Lund, Louise; Benton, Laray; Wong, See-Meng; Doult, Clifford; Purciarello, Gerard; 'a.Dinitz@nrc.gov.'

**Subject:** Japan

**When:** Tuesday, April 26, 2011 1:00 PM-3:00 PM (GMT-05:00) Eastern Time (US & Canada).

**Where:** HQ-TWFFN-10A01-40p

Seminar on the Price-Anderson Act and how the Act would respond to a nuclear incident in the U.S. The seminar will be presented by the insurance/indemnity staff in NRR/DPR and will include a representative from OGC, OCA and OPA who will discuss their interactions with members of the public and with Congress resulting from the Japanese reactor accident.

For questions regarding this event, please contact Ira Dinitz at 301-415-1289 or [Ira.Dinitz@nrc.gov](mailto:Ira.Dinitz@nrc.gov).

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~~NOT FOR PUBLIC USE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, April 14, 2011 4:21 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: Draft Chuck Casto Slides  
**Attachments:** JapanGlobalAssessment.pptx

Commissioner,

(b)(5)

Pat

**From:** OST01 HOC  
**Sent:** Thursday, April 14, 2011 2:59 PM  
**To:** Franovich, Mike; Hipschman, Thomas; Snodderly, Michael; Orders, William; Castleman, Patrick; Weber, Michael; Virgilio, Martin; Boger, Bruce; Zimmerman, Roy; Bowman, Gregory  
**Subject:** Draft Chuck Casto Slides

Please see attached **DRAFT** slides from Chuck Casto, as requested. Staff comments have not been incorporated yet. After receipt of planned final, we can resend that version tomorrow, hopefully.

Executive Support Team  
(for the ET Director, Roy Z.)

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# NRC GLOBAL ASSESSMENT of FUKUSHIMA EVENT

6/14/2012

~~Official Use Only - Sensitive Internal Information~~

FP 384 of 2107

# Background

- Consortium of U.S. nuclear organizations completed assessment
  - NRC; Department of Energy; Naval Reactors; Institute of Nuclear Power Operations; Electric Power Research Institute; General Electric
- Collaborated to complete technical assessments for safety issues for reactors and spent fuel pools
- All major assessments completed
- Provided results to TEPCO and NISA

## Assessment Conclusions

- PARs remain conservative through all scenarios
  - Tokyo is not seriously threatened
- Unknown Ocean impacts
- Active releases ongoing
- Static but fragile accident conditions
- Mitigating features temporary and highly unconventional



# Assessment Conclusions

- Timeline for action short upon loss of injection – less than 10 hours for Unit 1
- Fuel Damage estimates: U-1 67%; U-2 44%; U-3 30% (est.)
- Reliance on steam cooling for reactors
- Current situation results in a 1-10 to 1-100 probability of release
- Current situation could be improved to 1-1000 or greater by flooding
- Flooding reduces consequences by one-to-two orders of magnitude
- Containment flooding remains primary suggestion
- Feed and bleed assessment recommends more actions to mitigate additional events

# Assessment Conclusions

- Stability requires more actions
  - Diversity and redundancy in feeding system
  - Automation of Giraffes and feeding systems
  - Additional feeding system injection points
  - Additional venting system
  - Completing actions to Phase 1 and Phase 2 stability
  - Procedures and training

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, April 15, 2011 8:17 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: IAEA distributed documents  
**Attachments:** Summary\_of\_reactor\_unit\_status\_at\_15-April\_0000UTC.pdf; Monitoring\_data\_15Apr\_0843.pdf; Plant\_parameter\_15Apr\_0600.pdf; 94\_NISA\_News\_Release\_Japanese.pdf

Commissioner,

(b)(5)

Pat

**From:** OST01 HOC  
**Sent:** Friday, April 15, 2011 3:12 AM  
**To:** Johnson, Michael; RST01 Hoc; Hoc, PMT12; LIA08 Hoc  
**Cc:** Weber, Michael; Castleman, Patrick; Orders, William; Franovich, Mike; Hipschman, Thomas; Snodderly, Michael  
**Subject:** IAEA distributed documents

\*\*\*Attachments are OUC\*\*\*

**From:** HOO Hoc [<mailto:HOO.Hoc@nrc.gov>]  
**Sent:** Friday, April 15, 2011 3:07 AM  
**To:** LIA07 Hoc; OST01 HOC  
**Subject:** FW: IAEA distributed documents

**From:** Kenagy, W David[SMTP:KENAGYWD@STATE.GOV]  
**Sent:** Friday, April 15, 2011 2:54:32 AM  
**Subject:** RE: IAEA distributed documents  
Auto forwarded by a Rule

\*\*\*Attachments are OUC\*\*\*

~~NOT FOR PUBLIC DISCLOSURE~~

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~~CONFIDENTIAL - SECURITY INFORMATION~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, April 15, 2011 8:51 AM  
**To:** Reddick, Darani  
**Subject:** RE: IAEA distributed documents

Darani,

Absolutely. I will ask Jan to have OIS give you more space.

Pat

**From:** Reddick, Darani  
**Sent:** Friday, April 15, 2011 8:37 AM  
**To:** Castleman, Patrick  
**Subject:** Re: IAEA distributed documents

Pat,

Could you do me a huge favor? My inbox is overloaded with Japan docs and adjudicatory filings. I can't delete the old Japan stuff because of the FOIAs, and I need the adjudicatory docs for the cases I'm working on. Do you think perhaps you could omit me from future emails that forward large Japan attachments (unless, of course, you think I need them electronically). I already get the regular sit reps directly from the Ops Center. Appr

Have a good weekend,  
Darani

**From:** Castleman, Patrick  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Sent:** Fri Apr 15 08:17:18 2011  
**Subject:** FW: IAEA distributed documents

Commissioner,

(b)(5)

Pat

**From:** OST01 HOC  
**Sent:** Friday, April 15, 2011 3:12 AM  
**To:** Johnson, Michael; RST01 Hoc; Hoc, PMT12; LIA08 Hoc  
**Cc:** Weber, Michael; Castleman, Patrick; Orders, William; Franovich, Mike; Hipschman, Thomas; Snodderly, Michael  
**Subject:** IAEA distributed documents

\*\*Attachments are (U)C\*\*\*

~~CONFIDENTIAL - SECURITY INFORMATION~~

11/15/2011 3:07 AM

**From:** HOO Hoc [mailto:HOO.Hoc@nrc.gov]  
**Sent:** Friday, April 15, 2011 3:07 AM  
**To:** LIA07 Hoc; OST01 HOC  
**Subject:** FW: IAEA distributed documents

---

**From:** Kenagy, W David[SMTP:KENAGYWD@STATE.GOV]  
**Sent:** Friday, April 15, 2011 2:54:32 AM  
**Subject:** RE: IAEA distributed documents  
**Auto forwarded by a Rule**

\*\*\*Attachments are OUI\*\*\*

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11/15/2011 3:07 AM

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, April 16, 2011 10:14 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** Fw: NRC Interim comprehensive assessment of Fukushima event slides  
**Attachments:** INTERIM COMPRHENSIVE Assessment 4-15-2011.ppt

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

**From:** OST01 HOC  
**To:** Weber, Michael; Virgilio, Martin; Castleman, Patrick; Orders, William; Franovich, Mike; Hipschman, Thomas; Snodderly, Michael  
**Cc:** Tracy, Glenn; Zimmerman, Roy; LIA08 Hoc; RST01 Hoc; Hoc, PMT12; Moore, Scott; Reynolds, Steven  
**Sent:** Sat Apr 16 22:12:27 2011  
**Subject:** FW: NRC Interim comprehensive assessment of Fukushima event slides

Attached are the slides on the Interim Comprehensive Assessment of Fukushima Event that were used by the Japan team to brief NISA and the Japanese Government's representative for the event.

~~NOT FOR PUBLIC DISCLOSURE~~

~~CONFIDENTIAL - SECURITY INFORMATION~~

~~CONFIDENTIAL - SECURITY INFORMATION~~

# Background

- Consortium of U.S. nuclear organizations completed assessment
  - NRC; Department of Energy; Naval Reactors; Institute of Nuclear Power Operations; Electric Power Research Institute; General Electric
- Collaborated to complete technical assessments for safety issues for reactors and spent fuel pools
- All major assessments completed
- Provided results to TEPCO and NISA



---

## Assessment Conclusions

- U.S. Protective Action decisions remain conservative through all scenarios
  - Tokyo is not seriously threatened
- Unknown Ocean impacts
- Active radiation releases ongoing
- Accident conditions static but fragile
- Mitigating features temporary and highly unconventional

# Assessment Conclusions

- Fuel Damage estimates: U-1 67%, U-2 44%, U-3 30% (est.)
- Reliance on steam cooling for reactors
- Timeline to react on a loss of injection is short – less than 10 hours for Unit 1
- Current situation results in a 1-10 to 1-100 probability of release
- Probability driven by seismic events without diversity or redundancy of injection system
- Can get 1-100,000 probability with training & preplanning of fire equipment and diverse & redundant injection system
- Containment flooding remains primary suggestion – especially for Units 1 & 3
- Flooding reduces consequences by one-to-two orders of magnitude

# Next Steps

- Feed and bleed assessment recommends more actions to mitigate additional events
  - Diversity and redundancy in feeding system
  - Automation of Giraffes and feeding systems
  - Additional feeding system injection points
  - Additional venting system
- Stability requires more actions
  - Completing actions to Phase 1 and Phase 2 stability
    - For example – decay heat removal

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, April 16, 2011 4:18 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** Fw: April 16 - 1500EDT One-Pager - Fukushima Daiichi  
**Attachments:** Japan One Pager 1500 EDT 4-16-11.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** OST01 HOC  
**To:** Jaczko, Gregory; Virgilio, Martin; Weber, Michael; Boger, Bruce; Johnson, Michael; Zimmerman, Roy; Uhle, Jennifer; Tracy, Glenn; Wiggins, Jim; Carpenter, Cynthia; Moore, Scott  
**Cc:** Pace, Patti; Batkin, Joshua; Gibbs, Catina; Speiser, Herald; Hipschman, Thomas; Marshall, Michael; Castleman, Patrick; Snodderly, Michael; Franovich, Mike; RST01 Hoc; Hoc, PMT12; LIA08 Hoc  
**Sent:** Sat Apr 16 16:06:30 2011  
**Subject:** April 16 - 1500EDT One-Pager - Fukushima Daiichi

Attached, please find the April 16 - 1500 EDT One-Pager - Fukushima Daiichi

Please note that this information is "Official Use Only."

~~NOT FOR OFFICIAL USE~~

~~CONFIDENTIAL~~ 601  
**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, April 16, 2011 3:01 PM  
**To:** Sharkey, Jeffry  
**Subject:** RE: Commissioners call

Hmmm...

(b)(5)

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

**From:** Sharkey, Jeffry  
**Sent:** Saturday, April 16, 2011 1:03 PM  
**To:** Castleman, Patrick; Reddick, Darani  
**Cc:** Svinicki, Kristine  
**Subject:** Fw: Commissioners call

Not clear to me why this can't be shared with Rd TAs rather than principals. It is sensitive but not classified.

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

**From:** Vietti-Cook, Annette  
**To:** Sharkey, Jeffry  
**Sent:** Sat Apr 16 12:55:18 2011  
**Subject:** Fw: Commissioners call

Subject of nsad below

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

**From:** Batkin, Joshua  
**To:** Vietti-Cook, Annette  
**Cc:** Coggins, Angela; Sharkey, Jeffry; Nieh, Ho; Sosa, Belkys; Bubar, Patrice  
**Sent:** Sat Apr 16 08:12:46 2011  
**Subject:** Commissioners call

(b)(5)

Joshua C. Batkin  
Chief of Staff  
Chairman Gregory B. Jaczko  
301) 415-1820

612

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Svinicki, Kristine  
**Sent:** Sunday, April 17, 2011 7:12 PM  
**To:** Castleman, Patrick; Sharkey, Jeffry  
**Subject:** RE: April 16 - 0700 EDT One-Pager - Fukushima Daiichi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Saturday, April 16, 2011 2:50 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** FW: April 16 - 0700 EDT One-Pager - Fukushima Daiichi

**From:** OST01 HOC  
**Sent:** Saturday, April 16, 2011 7:02 AM  
**To:** Jaczko, Gregory; Virgilio, Martin; Weber, Michael; Boger, Bruce; Johnson, Michael; Zimmerman, Roy; Uhle, Jennifer; Tracy, Glenn; Wiggins, Jim; Carpenter, Cynthia; Moore, Scott  
**Cc:** Pace, Patti; Batkin, Joshua; Gibbs, Catina; Speiser, Herald; Hipschman, Thomas; Marshall, Michael; Castleman, Patrick; Snodderly, Michael; Franovich, Mike; RST01 Hoc; Hoc, PMT12; LIA08 Hoc  
**Subject:** April 16 - 0700 EDT One-Pager - Fukushima Daiichi

Attached, please find the April 16 - 0700 EDT One-Pager - Fukushima Daiichi

Please note that this information is "Official Use Only."

611

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, April 17, 2011 3:17 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** Fw: One Pager April 17 1500EDT  
**Attachments:** One Pager - April 17 1500EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** OST01 HOC  
**To:** Jaczko, Gregory; Virgilio, Martin; Weber, Michael; Boger, Bruce; Johnson, Michael; Zimmerman, Roy; Uhle, Jennifer; Tracy, Glenn; Wiggins, Jim; Carpenter, Cynthia; Moore, Scott  
**Cc:** Orders, William; Snodderly, Michael; Franovich, Mike; Castleman, Patrick; Hipschman, Thomas  
**Sent:** Sun Apr 17 15:01:44 2011  
**Subject:** FW: One Pager April 17 1500EDT

\*\*\* Please note that this information is "Official Use Only" \*\*\*

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

613

**Castleman, Patrick**

**From:** Svinicki, Kristine  
**Sent:** Sunday, April 17, 2011 7:23 PM  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffrey  
**Subject:** RE: TEPCO "Roadmap towards Restoration"

Pat,

(b)(5)

KLS

**From:** Castleman, Patrick  
**Sent:** Sunday, April 17, 2011 9:20 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey  
**Subject:** FW: TEPCO "Roadmap towards Restoration"

Commissioner,

(b)(5)

Pat

**From:** OST01 HOC  
**Sent:** Sunday, April 17, 2011 5:37 AM  
**To:** Castleman, Patrick; Orders, William; Franovich, Mike; Hipschman, Thomas; Snodderly, Michael  
**Cc:** Hoc, PMT12; RST01 Hoc; LIA08 Hoc; Tracy, Glenn; Zimmerman, Roy  
**Subject:** TEPCO "Roadmap towards Restoration"

On April 17, TEPCO presented the attached Roadmap to Restoration, and METI provided a subsequent statement. DOS has requested NRC's thoughts on the plan through brief, high-level bullets to be used by the SoS upon her return to the US. The HOC Team and Japan Team are drafting points at this time. Requested by noon, Sunday 4/17 to DOS Embassy.

**From:** PROTOCOLOFFICE-EM [<mailto:protocoloffice-em@mofa.go.jp>]  
**Sent:** Sunday, April 17, 2011 4:43 PM  
**To:** PROTOCOLOFFICE-EM  
**Subject:** Urgent: Roadmap towards Restoration



~~URGENT (15:50) Sunday 17 April 2011~~

**URGENT (15:50) Sunday 17 April 2011**

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

Please find attached the "Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station", that was made public at the press conference by Mr. Tsunehisa Katsumata, Chairman of the Tokyo Electric Power Company (TEPCO) at TEPCO headquarters at 3 pm today.

Please also find attached the statement by Mr. Banri Kaieda, Minister of Economy, Trade and Industry at the press conference at METI following the announcement of the Roadmap by TEPCO.

The Missions are kindly requested to forward this message to their headquarters as soon as possible.

Contact: International Nuclear Energy Cooperation Division, Tel 03-5501-8227

~~CONFIDENTIAL~~

6009

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, April 17, 2011 11:14 AM  
**To:** OST01 HOC  
**Subject:** RE: TEPCO "Roadmap towards Restoration"

(b)(5)

**From:** OST01 HOC  
**Sent:** Sunday, April 17, 2011 5:37 AM  
**To:** Castleman, Patrick; Orders, William; Franovich, Mike; Hipschman, Thomas; Snodderly, Michael  
**Cc:** Hoc, PMT12; RST01 Hoc; LIA08 Hoc; Tracy, Glenn; Zimmerman, Roy  
**Subject:** TEPCO "Roadmap towards Restoration"

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**Sent:** Sunday, April 17, 2011 4:43 PM  
**To:** PROTOCOLOFFICE-EM  
**Subject:** Urgent: Roadmap towards Restoration

**URGENT (15:50) Sunday 17 April 2011**

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Contact: International Nuclear Energy Cooperation Division, Tel 03-5501-8227

~~CONFIDENTIAL~~

608

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Sunday, April 17, 2011 9:20 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey  
**Subject:** FW: TEPCO "Roadmap towards Restoration"  
**Attachments:** TEPCO.zip; kaieda.zip; Kaieda(correction).pdf

Commissioner,

(b)(5)

Pat

**From:** OST01 HOC  
**Sent:** Sunday, April 17, 2011 5:37 AM  
**To:** Castleman, Patrick; Orders, William; Franovich, Mike; Hipschman, Thomas; Snodderly, Michael  
**Cc:** Hoc, PMT12; RST01 Hoc; LIA08 Hoc; Tracy, Glenn; Zimmerman, Roy  
**Subject:** TEPCO "Roadmap towards Restoration"

On April 17, TEPCO presented the attached Roadmap to Restoration, and METI provided a subsequent statement. DOS has requested NRC's thoughts on the plan through brief, high-level bullets to be used by the SoS upon her return to the US. The HOC Team and Japan Team are drafting points at this time. Requested by noon, Sunday 4/17 to DOS Embassy.

**From:** PROTOCOLOFFICE-EM [<mailto:protocoloffice-em@mofa.go.jp>]  
**Sent:** Sunday, April 17, 2011 4:43 PM  
**To:** PROTOCOLOFFICE-EM  
**Subject:** Urgent: Roadmap towards Restoration

**URGENT (15:50) Sunday 17 April 2011**

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

Please find attached the "Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station", that was made public at the press conference by Mr. Tsunehisa Katsumata, Chairman of the Tokyo Electric Power Company (TEPCO) at TEPCO headquarters at 3 pm today.

Please also find attached the statement by Mr. Banri Kaieda, Minister of Economy, Trade and Industry at the press conference at METI following the announcement of the Roadmap by TEPCO.

~~CONFIDENTIAL~~

The Missions are kindly requested to forward this message to their headquarters as soon as possible.

Contact: International Nuclear Energy Cooperation Division, Tel 03-5501-8227

~~NOT FOR PUBLIC RELEASE~~

Roadmap towards Restoration from the Accident  
at Fukushima Daiichi Nuclear Power Station

April 17th, 2011  
Tokyo Electric Power Company

With regard to the accident at Fukushima Daiichi Nuclear Power Station due to the Tohoku-Chihou-Taiheiyo-Okai Earthquake occurred on Friday, March 11th, 2011, we are currently making our utmost effort to bring the situation under control. This announcement is to notify the roadmap that we have put together towards restoration from the accident.

1. Basic Policy

By bringing the reactors and spent fuel pools to a stable cooling condition and mitigating the release of radioactive materials, we will make every effort to enable evacuees to return to their homes and for all citizens to be able to secure a sound life.

2. Targets

Based on the basic policy, the following two steps are set as targets: "Radiation dose is in steady decline" as "Step 1" and "Release of radioactive materials is under control and radiation dose is being significantly held down" as "Step 2." Target achievement dates are tentatively set as follows: "Step 1" is set at around 3 months and "Step 2" is set at around 3 to 6 months after achieving Step 1.

3. Immediate Actions

Immediate actions were divided into three groups, namely, "I. Cooling," "II. Mitigation," "III. Monitoring and Decontamination." For the following five issues—"Cooling the Reactors," "Cooling the Spent Fuel Pools," "Containment, Storage, Processing, and Reuse of Water Contaminated by Radioactive Materials (Accumulated Water)," "Mitigation of Release of Radioactive Materials to Atmosphere and from Soil," and "Measurement, Reduction and Announcement of Radiation Dose in Evacuation Order/Planned Evacuation/ Emergency Evacuation Preparation Areas"—targets are set for each of the five issues and various countermeasures will be implemented simultaneously.

Please see the attachment for detailed actions.

We would like to deeply apologize again for the grave inconvenience and anxiety that the broad public has been suffering due to the accident at the Fukushima Daiichi Nuclear Power Station. We will continue to make every endeavor to bring the situation under control.

# Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station

## 1. Basic Policy

The Fukushima Daiichi Nuclear Power Station (NPS) accident has created a global concern about the safety of the release of radioactive materials. We will make every effort to restore the Fukushima Daiichi NPS to a state that can be safely operated and maintained.

## 2. Targets

- Based on the basic policy, the following two categories of targets are set:
  - (1) Radiation dose and safety issues
  - (2) Release of radioactive materials, source control and radioactive debris being significantly laid down
- Target achievement dates are tentatively set as follows, although there will still be various uncertainties on these.
  - Step 1: around 2 months
  - Step 2: around 3 to 6 months (after achievement Step 1)
- As a consequence, we will make a detailed planning of Step 1 and Step 2 activities in a comprehensive manner, and implement them as a series of measures to the target of achievement of the basic policy.

## 3. Immediate Actions

- In order to achieve the above targets, immediate actions were divided into 3 groups with targets set for each of the 3 areas. Various countermeasures will be implemented simultaneously (see the table on page 3).
- In order to achieve Step 1, we are taking the following two issues that are currently being addressed and being done:
  - Prevention of hydrogen explosion inside the primary containment vessel (hereafter PCV) for Units 1-3.
  - Cooling the reactor by providing fresh water into the reactor to prevent the chance of steam condensation leading to a consistent, if partially, temperature decrease.
- Prevention of release of contaminated water with high radiation level outside of the site boundary (Unit 2):
  - While cooling the reactor by injecting fresh water, accumulation of contaminated water with high radiation level in the future, leading to release of radioactive materials outside of the site boundary.
  - Water will be taken up into an accumulated water tank (1) to store several days' accumulated water to prevent the contaminated water and reduce the radiation level in the pool tank.

Category	Target	Countermeasure	Target Achievement Date
I. Cooling	(1) Cooling the Reactors	1) Maintain stable cooling	Achieve cold shutdown condition (sufficient cooling achieved depending on status of each unit)
		2) (Unit 2) Cool the reactor while controlling the increase of accumulated water until the PCV is sealed	Maintain stable cooling function by keeping up the level of water.
	(2) Cooling the Spent fuel Pools	1) Maintain stable cooling	Keep stable cooling function by keeping up the level of water.
II. Mitigation	(3) Containment, Storage, Processing, and Reuse of Water Contaminated by Radioactive Materials (Accumulated Water)	1) Secure sufficient storage place to prevent water with high radiation level from being released out of the site boundary	Decrease the total amount of contaminated water
		2) Store and process water with low radiation level	Reduce the radiation level of water
	(4) Mitigation of Release of Radioactive Materials to Atmosphere and from Soil	1) Prevent scattering of radioactive materials on buildings and ground	Cover the entire building (temporary measure).
III. Monitoring/Decontamination	(5) Measurement, Reduction and Announcement of Radiation Dose in Evacuation Order/Planned Evacuation Area/Emergency Evacuation Preparation Areas	1) Expand/enhance monitoring and inform of results fast and accurately	Sufficiently reduce radiation dose in evacuation order/planned evacuation/emergency evacuation preparation areas
		2) Expand/enhance monitoring and inform of results fast and accurately	Sufficiently reduce radiation dose in evacuation order/planned evacuation/emergency evacuation preparation areas

# Roadmap towards Restoration from the Accident at Fukushima Daiichi Nuclear Power Station

Basic Policy: By bringing the reactors and spent fuel pools to a stable cooling condition and mitigating the release of radioactive materials, we will make every effort to enable evacuees return to their homes and for all citizens to be able to secure a sound life.

Areas	Issues	Current Status (as of April 16 <sup>th</sup> )	Targets, Countermeasures and Risks		
			<Step 1 (around 3 months)> Radiation dose is in steady decline	<Step 2 (around 3 to 6 months)*> Release of residual fission materials is under control and radiation dose is being significantly held down * After achieving Step 1	Mid-term Issues
I. Cooling (1) Cooling the Reactors		<p><b>Current Status [1] (Units 1 to 3) Cooling achieved by water injection while there is partial damage to fuel pellets.</b></p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>	<p><b>Target [1] (Unit 1 to 3) Maintain stable cooling.</b></p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>	<p><b>Target [3] Achieve cold shutdown condition (sufficient cooling is achieved depending on the status of each unit.)</b></p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>	<p><b>Issue [1] Prevention of breakage, clogging, and water leakage of structural materials (reactor and pipes, etc.) due to corrosion caused by so</b></p>
		<p><b>Current Status [2] (Units 1 to 3) High likelihood of small leakage of steam containing radioactive materials through the gap of PCV caused by high temperature.</b></p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>	<p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>		
		<p><b>Current Status [3] (Unit 2) Large amount of water leakage, indicating high likelihood of PCV damage.</b></p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>	<p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>		
		<p><b>Current Status [4] Secured multiple off-site power (1 system each from TEPCO and Tohoku EPCO) and deployed backup power (generator cars / emergency generators)</b></p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>	<p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p> <p>• The level of radioactivity that will be discharged from the spent fuel pools is low.</p>		

Areas	Issues	Current Status (as of April 16*)	Targets, Countermeasures and Risks		Mid-Term Issues
			<Step 1 (around 3 months)> Radiation dose is in steady decline	<Step 2 (around 3 to 6 months)> Release of radioactive materials is under control and radiation dose is being significantly held down. * After achieving Step 1	
I. Cooling	Cooling the Spent Fuel Pools (2)	<p><b>Current Status [5]: Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Target [4]: Maintain stable cooling.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Target [5]: Maintain more stable cooling function by keeping a certain level of water.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Issue [2]: Remove of fuels (including Unit 5 &amp; 6.)</b></p>
		<p><b>Current Status [6]: Confirmation of release of radioactive materials from the pool</b></p> <p>Countermeasures: (1) Sampling and analysis of residual water.</p> <p>Risks: (1) Sampling and analysis of residual water.</p>	<p><b>Target [4]: Maintain stable cooling.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Target [5]: Maintain more stable cooling function by keeping a certain level of water.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Issue [2]: Remove of fuels (including Unit 5 &amp; 6.)</b></p>
		<p><b>Current Status [7]: Walls of the building supporting the pool have been damaged.</b></p> <p>Countermeasures: (1) Evacuation of the building.</p> <p>Risks: (1) Evacuation of the building.</p>	<p><b>Target [4]: Maintain stable cooling.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Target [5]: Maintain more stable cooling function by keeping a certain level of water.</b></p> <p>Countermeasures: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p> <p>Risks: (1) Fresh water is injected from outside for Units 1, 3, 4 and through normal cooling line for Unit 2.</p>	<p><b>Issue [2]: Remove of fuels (including Unit 5 &amp; 6.)</b></p>
II. Mitigation	Containment, Storage, Processing and Reuse of Water Contaminated by Radioactive Materials (Accumulated Water) (3)	<p><b>Current Status [8]: Leakage of high radiation-level contaminated water assumed to have originated from Unit 2 reactor occurred, but was subsequently stopped.</b></p> <p>Countermeasures: (1) Containment of the water.</p> <p>Risks: (1) Containment of the water.</p>	<p><b>Target [6]: Secure sufficient storage place to prevent water with high radiation level from being released out of the site boundary.</b></p> <p>Countermeasures: (1) Storage of the water.</p> <p>Risks: (1) Storage of the water.</p>	<p><b>Target [8]: Decrease the total amount of contaminated water.</b></p> <p>Countermeasures: (1) Reuse of the water.</p> <p>Risks: (1) Reuse of the water.</p>	<p><b>Issue [3]: Installation of full-fledged water treatment facilities.</b></p>
		<p><b>Current Status [9]: Leakage and accumulation of high radiation level contaminated water at Unit 2's turbine building, vertical shafts and trenches.</b></p> <p>Countermeasures: (1) Containment of the water.</p> <p>Risks: (1) Containment of the water.</p>	<p><b>Target [6]: Secure sufficient storage place to prevent water with high radiation level from being released out of the site boundary.</b></p> <p>Countermeasures: (1) Storage of the water.</p> <p>Risks: (1) Storage of the water.</p>	<p><b>Target [8]: Decrease the total amount of contaminated water.</b></p> <p>Countermeasures: (1) Reuse of the water.</p> <p>Risks: (1) Reuse of the water.</p>	<p><b>Issue [3]: Installation of full-fledged water treatment facilities.</b></p>
		<p><b>Current Status [10]: Increase of storage volume of water with low radiation level.</b></p> <p>Countermeasures: (1) Storage of the water.</p> <p>Risks: (1) Storage of the water.</p>	<p><b>Target [7]: Store and process water with low radiation level.</b></p> <p>Countermeasures: (1) Storage of the water.</p> <p>Risks: (1) Storage of the water.</p>	<p><b>Target [8]: Decrease the total amount of contaminated water.</b></p> <p>Countermeasures: (1) Reuse of the water.</p> <p>Risks: (1) Reuse of the water.</p>	<p><b>Issue [3]: Installation of full-fledged water treatment facilities.</b></p>
		<p><b>Current Status [11]: High likelihood of underground water around the building (sub-drainage water) to be contaminated.</b></p> <p>Countermeasures: (1) Containment of the water.</p> <p>Risks: (1) Containment of the water.</p>	<p><b>Target [7]: Store and process water with low radiation level.</b></p> <p>Countermeasures: (1) Storage of the water.</p> <p>Risks: (1) Storage of the water.</p>	<p><b>Target [8]: Decrease the total amount of contaminated water.</b></p> <p>Countermeasures: (1) Reuse of the water.</p> <p>Risks: (1) Reuse of the water.</p>	<p><b>Issue [3]: Installation of full-fledged water treatment facilities.</b></p>



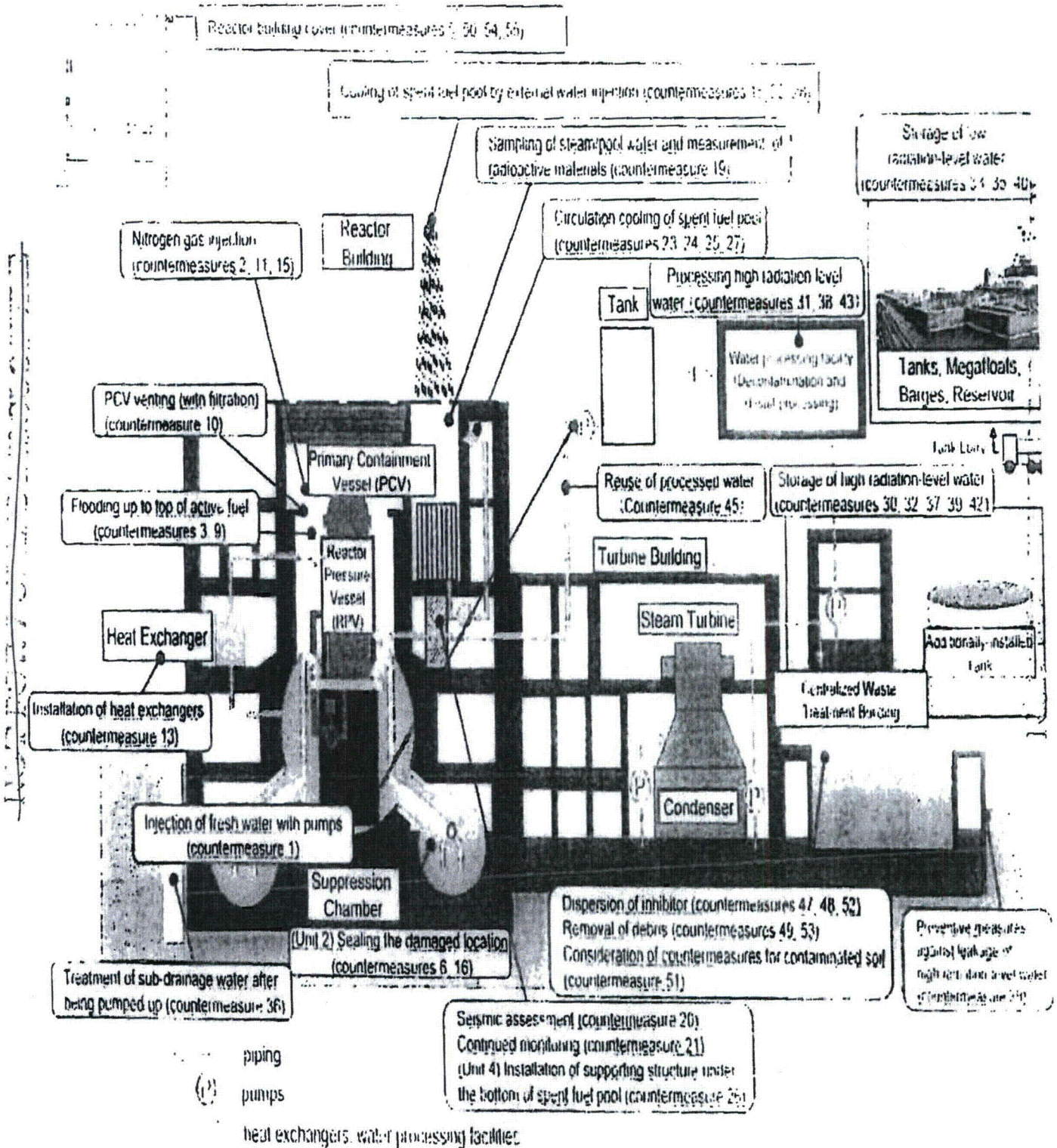
Areas	Issues	Current Status (as of April 16 <sup>th</sup> )	Targets, Countermeasures and Risks		Mid-term Issues
			-Step 1 (around 3 months)- radiation dose is in steady decline	-Step 2 (around 3 to 6 months*)- Release of radioactive materials is further control and radiation dose is being significantly held down * After achieving Step 1	
II. Mitigation	(4) Mitigation of Release of Radioactive Materials to Atmosphere and from Soil	<p><b>Current Status [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</b></p> <p>1. Countermeasure [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</p> <p>2. Countermeasure [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</p> <p>3. Countermeasure [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</p> <p>4. Countermeasure [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</p> <p>5. Countermeasure [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</p> <p>6. Countermeasure [12]: Debris are scattered outside the buildings and radioactive materials are being scattered.</p>	<p><b>Target [9]: Prevent scattering of radioactive materials on buildings and ground.</b></p> <p>1. Countermeasure [9]: Prevent scattering of radioactive materials on buildings and ground.</p> <p>2. Countermeasure [9]: Prevent scattering of radioactive materials on buildings and ground.</p> <p>3. Countermeasure [9]: Prevent scattering of radioactive materials on buildings and ground.</p> <p>4. Countermeasure [9]: Prevent scattering of radioactive materials on buildings and ground.</p> <p>5. Countermeasure [9]: Prevent scattering of radioactive materials on buildings and ground.</p> <p>6. Countermeasure [9]: Prevent scattering of radioactive materials on buildings and ground.</p>	<p><b>Target [10]: Cover the entire buildings (as temporary measure).</b></p> <p>1. Countermeasure [10]: Cover the entire buildings (as temporary measure).</p> <p>2. Countermeasure [10]: Cover the entire buildings (as temporary measure).</p> <p>3. Countermeasure [10]: Cover the entire buildings (as temporary measure).</p> <p>4. Countermeasure [10]: Cover the entire buildings (as temporary measure).</p> <p>5. Countermeasure [10]: Cover the entire buildings (as temporary measure).</p> <p>6. Countermeasure [10]: Cover the entire buildings (as temporary measure).</p>	<p><b>Issue [4]: Cover the entire building (as full-fledged measure)</b></p> <p>1. Issue [4]: Cover the entire building (as full-fledged measure)</p> <p>2. Issue [4]: Cover the entire building (as full-fledged measure)</p> <p>3. Issue [4]: Cover the entire building (as full-fledged measure)</p> <p>4. Issue [4]: Cover the entire building (as full-fledged measure)</p> <p>5. Issue [4]: Cover the entire building (as full-fledged measure)</p> <p>6. Issue [4]: Cover the entire building (as full-fledged measure)</p>
		III. Monitoring/ Decontamination	(5) Measurement, Reduction and Announcement of Radiation Dose in Evacuation Order/Planned Evacuation/Emergency Evacuation Preparation Areas	<p><b>Current status [13]: Monitoring of radiation dose in and out of the power station is carried out.</b></p> <p>1. Countermeasure [13]: Monitoring of radiation dose in and out of the power station is carried out.</p> <p>2. Countermeasure [13]: Monitoring of radiation dose in and out of the power station is carried out.</p> <p>3. Countermeasure [13]: Monitoring of radiation dose in and out of the power station is carried out.</p> <p>4. Countermeasure [13]: Monitoring of radiation dose in and out of the power station is carried out.</p> <p>5. Countermeasure [13]: Monitoring of radiation dose in and out of the power station is carried out.</p> <p>6. Countermeasure [13]: Monitoring of radiation dose in and out of the power station is carried out.</p>	<p><b>Target [11]: Expand/enhance monitoring and inform of results last and accurately.</b></p> <p>1. Countermeasure [11]: Expand/enhance monitoring and inform of results last and accurately.</p> <p>2. Countermeasure [11]: Expand/enhance monitoring and inform of results last and accurately.</p> <p>3. Countermeasure [11]: Expand/enhance monitoring and inform of results last and accurately.</p> <p>4. Countermeasure [11]: Expand/enhance monitoring and inform of results last and accurately.</p> <p>5. Countermeasure [11]: Expand/enhance monitoring and inform of results last and accurately.</p> <p>6. Countermeasure [11]: Expand/enhance monitoring and inform of results last and accurately.</p>

Continuation for Immediate Actions (Issues / Targets / Major Countermeasures) Reference: 1

	Current Status	STEP1	STEP2	Mid-term issues
I. Cooling	(1) Reactors	Injecting fresh water Nitrogen gas injection (Unit 3) Flooding up to top of active fuel Examination and implementation of heat exchange function (Unit 2) Sealing the damaged location	Specific cooling Flooding up to top of active fuel	Prevention of leakage of structural materials, etc
	(2) Spent Fuel Pools	Injecting fresh water Enhance reliability of water injection Restore coolant circulation system (Unit 4) Install supporting structure	Stable cooling Revitalize control of water injection Examination and implementation of heat exchange function	Removal of fuels
II. Mitigation	(3) Accumulated Water	Transferring water with high radiation level Installation of storage / processing facilities Storing water with low radiation level Installation of storage facilities / decontamination processing	Storage / processing Expansion of storage / processing facilities Decontamination / waste processing house, etc	Installation of full-fledged water treatment facilities
	(4) Atmosphere / Soil	Dispersion of inhibitor Removal of debris	Installing reactor building cover	Installation of reactor building cover (equipped with concrete) Solidification of contaminated soil, etc
III. Monitoring / Decontamination	(5) Monitoring / Decontamination	Monitoring of radiation dose in and out of the power station Expand/enhance monitoring and inform of results fast and accurately	Sufficiently reduce radiation dose in evacuation order / planned evacuation / emergency evacuation preparation areas	Continue monitoring and informing environmental safety

# Overview of Major Countermeasures in the Power Station

Reference 1



~~CONFIDENTIAL~~

**Statement of Mr. Banri Kaleda, Minister of Economy, Trade and Industry at the press conference following the announcement of Roadmap by Tokyo Electric Power Company (TEPCO)**

1. Presentation at the earliest possible date of a roadmap towards settling the situation at Fukushima Daiichi Nuclear Power Station has been requested by people home and abroad, especially the residents around Fukushima Daiichi Nuclear Power Station.

TEPCO has just released this roadmap, which is an important step forward.

Taking this opportunity, we would like to move from the "emergency response phase" up until now that includes water spray by fire engines over the facilities and the prevention of high-level radioactive water to the sea, to the "stabilizing phase" in which the settlement of the situation will be aimed in a planned manner under the solid roadmap.

2. In response to the release of the roadmap,

(1) The Government will request TEPCO to ensure the implementation of this roadmap steadily and as early as possible. To this end, the Nuclear and Industrial Safety Agency and others will make regular follow-up, monitoring of the progress of the works and necessary safety checks;

(2) The Government will request TEPCO to ensure the mobilization and deployment of workers, the procurement and preparation of equipment and materials, and the arrangement of accommodation and other facilities, which are necessary to ensure implementation of the roadmap;

(3) At the end of Step 2, the release of radioactive materials will be under control. At this stage, the Government will review the "Deliberate Evacuation Area" and the "Evacuation Prepared Area". Up until that time, we will consider the details of review criteria, and will decontaminate the widest possible area.

By implementing this, we would like to announce, within 6 to 9 months as our target, to the residents of some of the areas whether they will be able to come home.

~~CONFIDENTIAL - SECURITY INFORMATION~~

Statement of Mr. Banri Kaieda, Minister of Economy, Trade and Industry at the press conference following the announcement of Roadmap by Tokyo Electric Power Company (TEPCO)

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(3) At the end of Step 2, the release of radioactive materials will be under control. At this stage, the Government will, following advices of the Nuclear Safety Commission of Japan, review the "Deliberate Evacuation Area" and the "Evacuation Prepared Area". Up until that time, we will consider the details of review criteria, and will decontaminate the widest possible area.

By implementing this, we would like to announce, within 6 to 9 months as our target, to the residents of some of the areas whether they will be able to come home.

(Division in Charge)

Nuclear and Industrial Safety Agency

Nuclear Safety Public Relations and Training Division

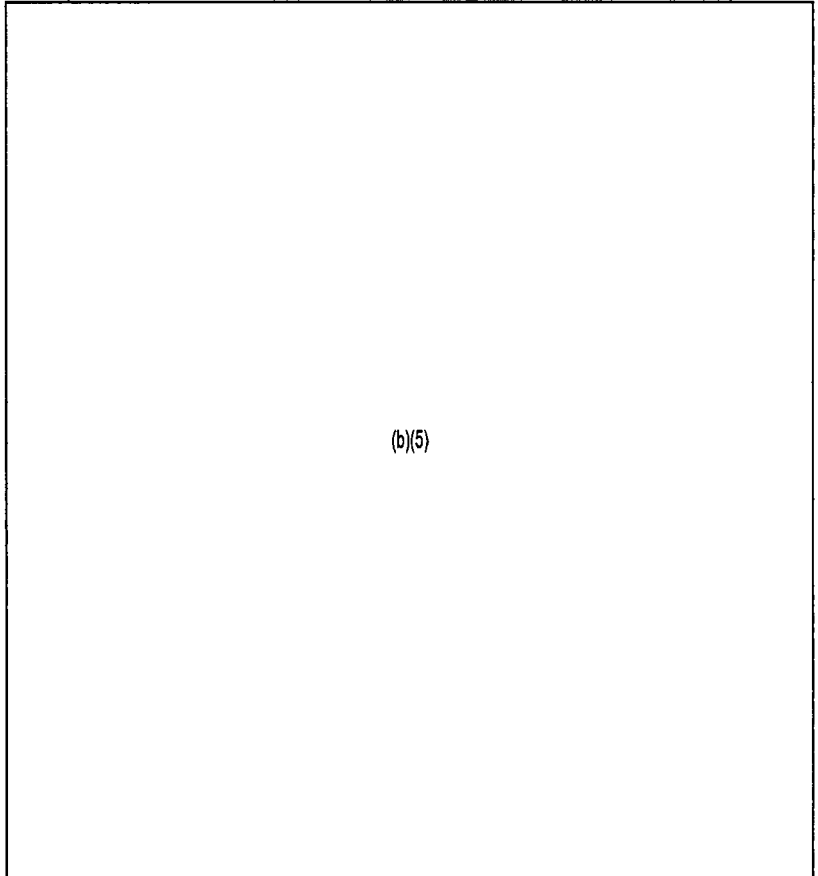
~~NOT FOR PUBLIC RELEASE~~

NRC FORM 78A  
(3-2010)

**COMMISSIONER SVINICKI**  
ROUTING AND TRANSMITTAL SLIP

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

TO: (Name, office)	Initials	Date
1. <i>Commissioner</i>		
2.		
3.		
4.		



(b)(5)

~~NOT FOR PUBLIC RELEASE~~

When is it due?	
To whom is it due?	
Who else should be copied?	
From: (Name, office) <i>[Signature]</i>	Phone Number: <i>4/18/11</i>

719

NRC FORM 78A (3-2010)

PRINTED ON RECYCLED PAPER



CORRESPONDENCE

CORRESPONDENCE

COMMISSION CORRESPONDENCE

Correspondence Response Sheet

(b)(5)

Date: April 19, 2011

To: Chairman Jackson  
Commissioner Brynildsen  
Commissioner Appleblome  
Commissioner Magwood  
Commissioner O'Connell

From: Annette Virts-Cook, Secretary

Subject: Letter to SEN Richard Blumenthal, responds to letter regarding the recent events in Japan and their implications for the continuing safety of nuclear power plants in the United States

ACTION: Please comment/concur and respond to the Office of the Secretary by:

Time: 4:00 P.M.  
Day: Tuesday  
Date: April 19, 2011

Comment:

Contact: Roger Rihm, OEDO  
(301) 415-1717

Entered in STARS Tracking System  Yes  No



(b)(5)





COMMISSIONER SVINICKI

ROUTING AND TRANSMITTAL SLIP

United States Nuclear Regulatory Commission  
Protecting People and the Environment

TO: (Name, office)	Initials	Date
1. <i>Commissioner</i>		
2.		
3.		
4.		
5.		
6.		

(b)(5)

TO WHOM IS IT DUE?

Who else should be copied?

From: (Name, office)

*[Signature]*

*4/18/11*

Phone Number

615

623

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Monday, April 18, 2011 10:15 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** Fw: Japan One Pager 2300 EDT 4-18-11  
**Attachments:** Japan One Pager 2300 EDT 4-18-11.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** OST01 HOC  
**To:** Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy  
**Cc:** Boger, Bruce  
**Sent:** Mon Apr 18 22:13:21 2011  
**Subject:** Japan One Pager 2300 EDT 4-18-11

Greetings...

Attached, please find the April 18, 2011 - 2300 EDT One-Pager - Fukushima Daiichi.

Please note that this information is "Official Use Only."

Regards...  
Mary Glenn Crutchley  
Executive Support Team  
US Nuclear Regulatory Commission  
email: [ost01hoc@nrc.gov](mailto:ost01hoc@nrc.gov)  
Desk Ph: 301-816-5100, ext. 5801

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**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Tuesday, April 19, 2011 5:08 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** Fw: Japan One Pager 0700 EDT 4-19-11  
**Attachments:** Japan One Pager 0700 EDT 4-19-11.doc

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** OST01 HOC  
**To:** Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy  
**Sent:** Tue Apr 19 01:09:24 2011  
**Subject:** Japan One Pager 0700 EDT 4-19-11

**Greetings & Salutations:**

Attached, please find the April 19, 2011 – 0700 EDT One-Pager – Fukushima Daiichi for your perusal and edits. It would be a delight to have your input by 1700 EDT. Thanking you in advance for your cooperation in this matter.

Please note that this information is "Official Use Only."

Regards...  
T.R. Rowe  
Executive Support Team  
US Nuclear Regulatory Commission  
email: [ost01hoc@nrc.gov](mailto:ost01hoc@nrc.gov)  
Desk Ph: 301-816-5100, ext. 5801

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Svinicki, Kristine  
**Sent:** Wednesday, April 20, 2011 3:32 PM  
**To:** Reddick, Darani  
**Cc:** Castleman, Patrick; Sharkey, Jeffrey; Thoma, John  
**Subject:** Re: WDM briefing tomorrow

Last I knew from Jeff, I think I have meetings out of the office tomorrow at that time. Perhaps JOT should attend, of Pat is out.

Thanks.

**From:** Reddick, Darani  
**To:** Svinicki, Kristine  
**Cc:** Castleman, Patrick; Sharkey, Jeffrey; Thoma, John  
**Sent:** Wed Apr 20 14:26:16 2011  
**Subject:** WDM briefing tomorrow

Commissioner,

(b)(5)

He has invited you and/or your TA to attend. If you are unable to attend, perhaps John can go (Pat is out tomorrow afternoon). Please advise.

Thanks,  
Darani

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Svinicki, Kristine

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**From:** Sharkey, Jeffrey  
**Sent:** Wednesday, April 20, 2011 7:06 PM  
**To:** Svinicki, Kristine  
**Subject:** Re: Reuters request - conversation on top nuclear issues ?

And I will independently research her writing/reporting before discussing this with you.

---

**From:** Sharkey, Jeffrey  
**To:** Svinicki, Kristine  
**Sent:** Wed Apr 20 19:03:44 2011  
**Subject:** Fw: Reuters request - conversation on top nuclear issues ?

intriguing. A return call is worth discussing, IMHO.

---

**From:** roberta.rampton@thomsonreuters.com <roberta.rampton@thomsonreuters.com>  
**To:** CMRSVINICKI Resource  
**Cc:** Sharkey, Jeffrey  
**Sent:** Wed Apr 20 13:39:26 2011  
**Subject:** Reuters request - conversation on top nuclear issues ?

Dear Commissioner Svinicki:

My name is Roberta Rampton and I am a reporter with Reuters. I recently began covering nuclear regulation and the NRC as part of Reuters' efforts to focus more closely on reporting on nuclear regulatory issues than we have in the past several years.

I am new to the field, but not new to the regulatory process. For the past year, I covered financial regulation, specifically regulatory issues for derivatives in the wake of the financial crisis. I covered the Commodity Futures Trading Commission and had excellent working relationships with the Commissioners on that agency. I gained insight and expertise into the rulemaking process and the way agencies work. I would like to build that same level of expertise into reporting on regulation of nuclear power.

I attended the hearing earlier this week on the proposed byproducts rule and I found your comments about the challenges of rule-making and implementing rules to be very interesting. (I didn't write a story from that hearing, although it is an issue I would like to follow once the Commission reaches the stage later this year of looking at a final draft.) I am wondering whether you would be willing to meet with me to have an off-the-record chat about some of the key issues ahead of you and the Commission going forward from the Fukushima incident? It would be great to have the opportunity to get your insight into the top issues.

I hope it is OK that I am contacting you and your chief of staff directly rather than going through Public Affairs – the CFTC's public affairs office handled requests only for staff and the Chairman, so I am assuming the situation at the NRC is similar. If I have breached protocol, I apologize, and I would be happy to redirect my request through Public Affairs.

I have attached a few stories I have written recently about nuclear issues and a couple of others from my time talking with Commissioners at the CFTC, purely fyi.

Please let me know whether you would be open to the idea of talking with me about some of your key issues. Thanks for considering my request.

~~NOT FOR PUBLIC DISCLOSURE~~ FP 423 of 2107

Best regards,

~~NOT FOR PUBLIC DISCLOSURE~~

Roberta Rampton

---

Roberta Rampton  
Correspondent

Reuters

Phone: 202 898 8376

Mobile: (b)(6)

Roberta.rampton@thomsonreuters.com

RSS feed: <http://blogs.reuters.com/roberta-rampton/feed/>

19:31 31Mar11 -UPDATE 3-US lawmakers probe plan to shelve Yucca nuclear dump

- \* Fuel at Japan plant reignites US debate on waste
- \* Lawmakers hope to revive shelved Nevada dump site
- \* Energy committee asks Chu, Jaczko detailed questions
- \* Top House watchdog gets copy of NRC report on Yucca
- \* Republican complains NRC "politicized" in its Yucca role

By Roberta Rampton and Ayesha Rascoe

WASHINGTON, March 31 (Reuters) - Republican lawmakers on Thursday pressed the Obama administration on its decision to stop work on a permanent nuclear waste storage site inside Yucca Mountain, Nevada, launching a formal probe and grilling the nuclear regulator on Capitol Hill.

The House Energy and Commerce committee sent detailed lists of questions to Energy Secretary Steven Chu and Nuclear Regulatory Commission Chairman Gregory Jaczko probing decisions to stop work on the controversial dump site.

Japan's nuclear disaster, caused in part by problems with storage pools for spent fuel, has renewed debate over the site, fiercely opposed by Nevada residents and Senate Majority leader Harry Reid.

Separately, House lawmakers with oversight of the NRC's

budget grilled its chairman Gregory Jaczko about his move to  
end a technical review of the site.

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"I firmly believe that contrary to what your counsel says,  
you're acting outside the law," Republican Representative Mike  
Simpson of Idaho told Jaczko during a hearing, complaining  
about the "politicization" of the independent regulator.

A House watchdog committee led by Darrell Issa was also  
studying a previously unreleased complete version of the NRC's  
pending technical review of Yucca that it obtained this week,  
over objections from Jaczko, who called the release a  
"dangerous precedent."

Representative Shelley Berkley, a Democrat from Nevada,  
called the Energy and Commerce investigation into the Yucca  
Mountain decision a "political witch hunt," labeling the probe  
as "one more effort to turn Nevada into a nuclear waste dump."

"While Republicans in Congress say they want to spend less,  
they are demanding \$100 billion be dumped into Yucca Mountain,  
while ignoring the safety risks that would come from decades of  
nuclear waste shipments," Berkley said in a statement.

#### "APOLITICAL" DECISION-JACZKO

In a heated back-and-forth that lasted more than 30  
minutes, the NRC's Jaczko defended his actions as "apolitical"  
and said it was not the commission's job to require the  
government to move ahead with the project.

"No more than you would expect the fire marshal to go in  
and tell a developer to continue developing a building so that  
they can conduct their fire inspections, should we expected to  
be in a position of demanding or requiring the Department of  
Energy to move forward with the program," Jaczko said.

Before his appointment to the NRC in 2005, Jaczko had been  
a top advisor to Harry Reid, majority leader in the Senate.

Reid led political opposition to Yucca, and also worked to get

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his former aide appointed to the five-member commission.

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Commission staff were well into a review of the Yucca project needed for its safety license when the Obama administration asked to pull its license request because of local opposition to the plan.

A separate NRC licensing board ruled that the Energy Department lacked the authority to shelve the application. That ruling was appealed to the full commission, but the case has languished for months.

Simpson accused Jaczko of stalling the commission's decision and acting to stop the review before a final vote had been made. He said other commissioners have said as much.

Jaczko said the NRC's head counsel advised him that stopping the review was proper based on the NRC's budget plans.

Ed Pastor, a Democratic lawmaker from Arizona, told Jaczko that the appropriations committee members "were not in an accord with what was happening to Yucca Mountain" and reminded him that Congress has not yet passed a budget for fiscal 2011.

It was the second consecutive day for Jaczko to be pressed by lawmakers on storing nuclear waste. On Wednesday, he testified before a Senate committee on the issue.

Jaczko and Peter Lyons, an Energy Department official, said it's safe to store waste in pools or "dry casks" for decades.

"We're going to continue to kick this one down the road, aren't we?" said John Olver, a Massachusetts Democrat.

Simpson told reporters that his committee would eye how to use its budgetary powers to force the NRC to act.

"Nobody likes to spend \$12 billion and see it washed down the toilet," he said, referring to the amount of money Congress has spent so far on the Yucca project.

(Reporting by Roberta Rampton and Ayesha Rascoe; Editing by

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David Gregorio and Lisa Shurraker)

~~NOT FOR PUBLIC DISCLOSURE~~

18:20 07Apr11 -Engineers scrutinize US NRC's Japan evacuation call

- \* NRC recommended 50-mile zone vs Japan's 12-mile zone
- \* Advisory group demand the calculations behind the call
- \* Did NRC discuss the results with Japan government first?
- \* NRC staff: "limited and uncertain data" in model
- \* "You go with the best available information you have"

By Roberta Rampton

ROCKVILLE, Md., April 7 (Reuters) - Nuclear engineers on Thursday aggressively questioned the data and decisions behind the call from the U.S. nuclear regulator for a 50-mile evacuation zone around a failed Japanese nuclear plant.

The recommendation for U.S. citizens to leave that zone -- far larger than the 12-mile evacuation area that Japanese authorities had in place -- sparked international concern about the extent of the crisis at the tsunami-stricken Fukushima plant earlier this month.

A committee of top engineers that advises the U.S. Nuclear Regulatory Commission and reviews all its studies and license applications said it wants access to all the modeling data for the evacuation call.

"This was a very, very important decision. I would have expected there would have been high-level conversations between our regulatory bodies and our government (with their Japanese counterparts)", said Sam Armijo, former head of GE's nuclear fuel business, who invented the fuel cladding used on boiling water reactors.

"I want to make sure we get the analysis and the numbers that were actually used," Armijo said.

#### TOUGH QUESTIONS, FEW ANSWERS

Regulatory staff had few answers for the advisory committee, which will review the NRC's response to the Japan tragedy, but they promised to deliver the calculations.

NRC staff said that after the third explosion at the Fukushima complex, they spoke with a Japanese regulatory official.

"There was limited and uncertain data," said Randy Sullivan, a senior emergency preparedness specialist.

The NRC was worried about the condition of pools holding spent fuel, and assumed they would contain as much radioactive waste as similar pools at U.S. plants -- something that turned out not to be the case, Sullivan said.

Using a computer model and assuming 100 percent damage to the No. 2 reactor, the NRC staff produced an estimate of risks and recommended the larger evacuation area.

The recommendation was not based on actual data from the site, which was unavailable, Sullivan said.

"Maybe the Japanese had some of that, but we didn't, alright?" he told the committee during a heated, lengthy question period.

#### "WHAT-IF" CALCULATIONS PANNED

Some of the NRC's assumptions were based on press reports, said William Ruland, the NRC's acting deputy director of engineering and corporate support.

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"In an emergency event, you go with the best available information you have at the time," Ruland said, noting Japanese counterparts were focused on containing the situation rather than providing U.S. officials with information.

Michael Corradini, head of the nuclear engineering department at the University of Wisconsin, said the NRC's evacuation recommendation left him "confused."

He questioned why the NRC did not correlate its modeling with data from radiation monitors in the country before publicizing its recommendation.

"Thirty-two years ago, if Japan would have done a what-if calculation on Three Mile Island and said all the Japanese within 50 miles of Harrisburg should get out, what would be our response, from a policy standpoint?" Corradini said, referring to the worst-ever U.S. nuclear disaster that happened at the Three Mile Island plant in Pennsylvania in 1979. (Reporting by Roberta Rampton; Editing by David Gregorio)

11:30 13Aug10 -INTERVIEW-CFTC's Sommers: position limit deadline poses risk

- \* Sommers-CFTC needs to see swaps data to set good limits
- \* Deadline to set limits comes before data system in place
- \* Wall St law could limit CFTC flexibility for exemptions
- \* Aggregating positions by ownership may not work

By Roberta Rampton

WASHINGTON, Aug 13 (Reuters) - U.S. regulators run the risk of setting commodity market position limits too low or too high because the deadline for the curbs comes before they will be able to assess the true size of the vast, opaque swaps market, according to an official who has opposed limits in the past.

The sweeping Wall Street reform law last month mandated that the Commodity Futures Trading Commission set position limits for energy and metals markets in 180 days, and agricultural futures and swaps in 270 days -- but a deadline for collecting data on the over-the-counter swaps markets comes later, in 360 days.

That timeline puts the CFTC in the tricky position of attempting to set limits without knowing the scale of the market that it's regulating, warned CFTC Commissioner Jill Sommers, a Republican who worked for the Chicago Mercantile Exchange and the International Swaps and Derivatives Association trade group before her appointment in 2007.

"From my perspective, I am not supportive of moving forward with limits until we're able to see the whole market," Sommers told Reuters.

"I think that you run the risk of not having the appropriate formula or position size," she said

#### SOMMERS OPPOSED FIRST PLAN

Sommers, one of five commissioners at the helm of the futures regulator, opposed the release of a proposal the CFTC issued in January to set limits for energy markets because of the "piecemeal" approach she said it took to markets. [ID:nN14182526]

The proposal responded to complaints from consumers and energy users in the wake of record-high prices seen in 2008 -- but sparked a furious reaction from companies that trade the markets for profit. [ID:nN26184443]

Banks like Morgan Stanley <MS.N> and Deutsche Bank <DBKGn.DE> said the plan would limit the utility of U.S. futures markets, and energy companies like Royal Dutch Shell <RDSA.L> and Vitol [VITOLV.UL] said the plan was structurally flawed and would raise costs.

At the time, the CFTC did not have oversight of over-the-counter markets -- something the new law, which applies to all commodities, has changed.

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The new oversight can help the CFTC find the right formula for position limits, Sommers said.

The law will require all swaps to be reported to the regulator, a power that will give it deep insight into what had been an opaque market worth a total of \$615 trillion, although only \$3 trillion of that is in commodities.

First, the CFTC must write rules establishing how that reporting will take place, one of many rule-making topics it will grapple with over the next year. [ID:nN21183568]

But in the meantime, it will have to set limits for speculators across both futures markets -- which are tracked and regulated -- and the OTC markets.

"Because of these deadlines that were sort of arbitrarily put into the (law), it makes it very difficult for us to do this appropriately," Sommers said.

"You're not seeing the whole market, which was the problem back in January," she said.

### HOPES FOR INTERIM SOLUTION

Sommers said she is keen to see whether CFTC staff will be able to propose some "middle ground" as a solution to the timing problem of the new rules, but said she did not know the details of what they were considering.

The commissioners have ultimate approval over new regulations. In January, two other commissioners were concerned about the proposed limits.

Sommers' fellow Republican on the panel, Scott O'Malia, has also recently said the CFTC will need a better handle on data to track traders' positions. [ID:nN14167527]

Michael Dunn, a Democrat, had expressed reservations but said last week the new law has made some of his concerns "a moot point." [ID:nN05178947]

Chairman Gary Gensler and fellow Democratic Commissioner Bart Chilton have been strong proponents of limits.

The CFTC will formally withdraw the January rule in coming days as it prepares to repropose a broadened set of regulations, Gensler said this week, emphasizing the CFTC will meet its statutory deadlines. [ID:nN11232451]

### CAN CFTC SALVAGE PARTS OF JAN RULE?

CFTC staff will need to determine a new formula before the agency proposes its new rule, and must also wrestle with controversial features of its first framework, Sommers said.

A plan to combine all speculative positions by ownership -- even when trades are done under accounts with independent control -- drew fire from energy traders, who said it would be impossible to manage administratively. [ID:nN11140284]

"I don't know if that part survives. We may have to modify our approach to aggregating based on the comments we received," Sommers said.

Sommers said she thinks the new law won't change the tenor of the debate over position limits. "Fundamentally, people said, 'If you're going to impose limits, just make sure they're fair and that they're not so constraining that you push the market somewhere else.'"

Establishing position limits in the United States will continue to create the risk of pushing trade overseas to markets beyond the CFTC's authority, Sommers said.

"There's lots of other oil contracts traded around the world," she said.

(Editing by Jim Marshall)

13:10 04Jun10 -UPDATE1-INTERVIEW-From fax machines to quants: CFTC seeks reboot

\* Leading new panel to out-fox would-be manipulators

\* Flash crash sapped public confidence in markets

~~NOT FOR PUBLIC DISCLOSURE~~

- Technology panel to scrutinize high-frequency strategies
- "Not afraid to step on toes"-O'Malia
- CFTC eyes "tsunami of data" from OTC derivatives market

By Roberta Rampton and Christopher Doering

WASHINGTON, June 4 (Reuters) - Scott O'Malia's early exposure to cutting-edge technology was a primitive Apple computer and a prototype laptop "as big as a sewing machine".

Now he's grappling with the complexities of sub-millisecond trades and terahertz processors, seeking strategies to out-fox programmers and computer-aided algorithmic traders.

O'Malia and the four other federal commissioners who oversee the \$33 trillion U.S. futures industry are under pressure to move quickly to bring the U.S. Commodity Futures Trading Commission into the modern era.

A self-described "basic computer user," O'Malia is at the forefront of efforts to close the gap between the CFTC's arcane technology and the state-of-the-art hardware and software used by the traders it polices.

"Rather than enforcing the last crime we caught ... we need to use computers to figure and run algorithms to catch new trading strategies that might manipulate markets," O'Malia told Reuters, in his first major interview since taking the helm of a technology committee that was mothballed in 2005 and resurrected last month.

The agency still relies on fax machines to receive some trade information, an anachronism it can no longer afford as it grapples with a five-fold surge in U.S. futures trading volume over the past decade and braces for vastly expanded oversight of even larger over-the-counter (OTC) markets.

"We have to be 100 percent electronic and be able to see up and down all trades," O'Malia said.

The CFTC faces daunting challenges: hire a battalion of the same sought-after quantitative analysts that Wall Street banks crave to make money from computer-driven trading strategies; upgrade systems to handle a "tsunami of data" from the \$615 trillion over-the-counter derivatives market; and review rules designed for a time when trading was done by humans in pits.

Improved technology will be essential for helping the CFTC monitor traders' speculative positions across both futures and swaps markets. O'Malia has said this is necessary to ensure a controversial energy position-limit plan does not drive traders to unregulated markets.

The 42-year-old Republican's panel, which meets for the first time on July 14, will study how the CFTC should invest in technology and regulate the rapidly evolving market.

The mammoth task became more high-profile last month, when a "flash crash" hit the stock market, driving the Dow Jones index <DJIA> down some 700 points within minutes, shaking investor confidence worldwide.

Regulators have said computer-driven high-frequency trading may have exacerbated the sell-off when some firms stopped making markets in stocks and futures contracts.

"The confidence that people have in these markets is absolutely critical," said O'Malia, the latest commissioner at the CFTC. He stressed the primary purpose of futures markets is for price discovery and commercial hedging.

"People say, 'Are these still the markets for me?'"

"We need to have a thorough and complete understanding of technology on the markets. That's a genie we're not going to put back in the bottle. Technology is here to stay and we need to understand it better," he said.

There is risk inherent in the CFTC's renewed scrutiny of technology, said former trader Richard Friesen, now a consultant working with hedge funds and proprietary traders.

Regulators' "tendency is to look at a problem that happened and need to create a law or regulation that gives people some emotional satisfaction," he said, noting quick-fix rules can have unintended impacts on costs and trading liquidity.

"I'm really hoping that we have some people (on the CFTC) who don't just cater to the headlines and are able to work with the industry to figure out what actually needs to be done," said Friesen, who was part of the original CFTC technology panel in 2001, and said the experience was positive.

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U-HAUL TO WASHINGTON

O'Malia said he has always been interested in technology, but his passion is politics and policy.

After graduating from the University of Michigan in 1990, O'Malia and a friend packed up a U-Haul and drove to Washington. His friend had a job; O'Malia did not.

O'Malia went on to spend 16 years on Capitol Hill, including stints working for Senator Mitch McConnell, now the top Republican in the Senate, and later as a high-ranking staffer for former Senator Pete Domenici on a committee that funds the Energy Department and related agencies.

He had a brief respite from the Hill working for power company Mirant Corp <MIR.N>, just as the California energy crisis and Enron scandals blew up, an experience he has said showed him the "consequences of poorly designed markets and inadequate oversight."

As an appropriations staffer, O'Malia delved into the advanced computing work done at the Energy Department's National Laboratories and Technology Centers, learning more about the role of technology in national security and climate change using large data sets and complex calculations.

The CFTC is now looking for advice from the National Labs, as well as other federal agencies recognized for technological prowess, such as the Kansas City Federal Reserve Bank.

NOT AFRAID TO STEP ON TOES

Next month, O'Malia's panel, to include as-yet unnamed academics, exchanges, clearing houses, trade repositories and other groups, will pore through studies and information about where markets are heading, and how the agency can catch up.

At the top of his list of concerns are strategies used by high-frequency traders that could undermine confidence.

"I don't feel we have a very good sense about what these trading strategies are," he said, noting the CFTC will ask "tough questions."  
[ID:n03249720]

"I'm not worried about stepping on toes. We've got to make these markets function properly, effectively," he said.

The CFTC is in the throes of a hiring frenzy, boosting its ranks by nearly 40 percent in three years, and investing in data storage.

But it's not enough, O'Malia said, noting the CFTC also needs more quantitative analysts on staff experienced with developing ever-changing algorithmic strategies, which he said have an average shelf life of only three months.

The economic downturn is a boon for CFTC recruitment, said O'Malia, who is currently reading Scott Patterson's "The Quants: How a New Breed of Math Whizzes Conquered Wall Street and Nearly Destroyed It."

"We're getting very good candidates, and a lot of them," he said.

(Reporting by Roberta Rampton and Christopher Doerin, Editing by Sofina Mirza-Reid)

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636

Sharkey, Jeffry

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**From:** Castleman, Patrick  
**Sent:** Thursday, April 21, 2011 9:07 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** FW: IAEA distributed documents  
**Attachments:** Summary\_of\_reactor\_unit\_status\_at\_21-April\_0200UTC.pdf

Nothing really new here. Of interest are the charts on pages 12 and 15, which clearly show rad levels continuing to significantly diminish.

**From:** OST01 HOC  
**Sent:** Thursday, April 21, 2011 1:19 AM  
**To:** Holonich, Joseph; Brown, Michael; Castleman, Patrick; Franovich, Mike; Hipschman, Thomas; Hoc, PMT12; LIA08 Hoc; Orders, William; RST01 Hoc; Snodderly, Michael; Weber, Michael  
**Subject:** IAEA distributed documents

\*Attachments are OOU\*\*\*

**From:** HOO Hoc [mailto:HOO.Hoc@nrc.gov]  
**Sent:** Thursday, April 21, 2011 1:04 AM  
**To:** LIA07 Hoc; OST01 HOC  
**Subject:** FW: IAEA distributed documents

**From:** Kenagy, W David [SMTP:KENAGYWD@STATE.GOV]  
**Sent:** Thursday, April 21, 2011 1:00:16 AM  
**To:** Kenagy, W David; vince.mcclelland@nnsa.doe.gov; Rodriguez, Veronica; inn.heinrich@nnsa.doe.gov; HOO Hoc; HOO2 Hoc; Huffman, William; lecair.sara@epamail.epa.gov; timothy.greten@dhs.gov; maria.marinissen@hhs.gov; (b)(6) doehqec@oem.doe.gov; hs.soc@hhs.gov; james.kish@dhs.gov; HOO Hoc; Smith, Brooke; Lubarev, Jill E; Shaffer, Mark R; nitops@nnsa.doe.gov; Skypek, Thomas M; (b)(6); clark.ray@epamail.epa.gov; Stern, Warren; deLaBarre, Robin; Burkart, Alex R; Metz, Patricia J; Fladeboe, Jan P; Withers, Anne M; Lowe, Thomas J; Lewis, Brian M; SES-O\_OS; AP-J-Office-DL; O'Brien, Thomas P; Lane, Charles D; Conlon, John N; Cougherty, Michael A; Mahaffey, (b)(6); h, Rongsong; (b)(6); Cutler, Kirsten B  
**Subject:** RE: IAEA distributed documents  
auto forwarded by a Rule

\*Attachments are OOU\*\*\*

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638

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, April 21, 2011 1:54 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** Fw: USNRC Earthquake-Tsunami Update - 1200 EDT (April 21, 2011)  
**Attachments:** USNRC Earthquake-Tsunami Update 042111, 1200 EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA08 Hoc  
**To:** LIA08 Hoc  
**Sent:** Thu Apr 21 13:53:24 2011  
**Subject:** USNRC Earthquake-Tsunami Update - 1200 EDT (April 21, 2011)

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICAL USE ONLY\*\*\*\*\*

Liaison Team Coordinator  
US Nuclear Regulatory Commission  
email: [lia08.hoc@nrc.gov](mailto:lia08.hoc@nrc.gov)  
Desk Ph: 301-816-5185

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633

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, April 21, 2011 8:48 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** FW: One Pager - April 21 - 0700 EDT - Fukushima Daiichi  
**Attachments:** Japan One Pager 0700 EDT 4-21-11.doc

(b)(5)

**From:** OST01 HOC  
**Sent:** Thursday, April 21, 2011 12:52 AM  
**To:** Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Orders, William; Pace, Patti; RST01 Hoc; Snodderly, Michael; Spelser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy; Holonich, Joseph  
**Subject:** One Pager - April 21 - 0700 EDT - Fukushima Daiichi

Good Morning:

Please find attached the April 21, 2011 0700 EDT One-Pager for Fukushima Daiichi for your perusal and updates. Feel free to make updates by 5:00am in order that I may have updates replete by 6:00am. Thanks.

\*\*\*\*\*All documents attached are Official Use Only\*\*\*\*\*

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, April 21, 2011 2:38 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** Fw: Japan One Pager 1500 EDT 4-21-11  
**Attachments:** Japan One Pager 1500 EDT 4-21-11.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** OST01 HOC  
**To:** Batkin, Joshua; Boger, Bruce; Carpenter, Cynthia; Castleman, Patrick; Franovich, Mike; Gibbs, Catina; Hipschman, Thomas; Hoc, PMT12; Jaczko, Gregory; Johnson, Michael; LIA08 Hoc; Marshall, Michael; Moore, Scott; Orders, William; Pace, Patti; RST01 Hoc; Snodderly, Michael; Speiser, Herald; Tracy, Glenn; Uhle, Jennifer; Virgilio, Martin; Weber, Michael; Wiggins, Jim; Zimmerman, Roy  
**Sent:** Thu Apr 21 14:37:18 2011  
**Subject:** Japan One Pager 1500 EDT 4-21-11

Good Afternoon,

Attached, please find April 21, 2011 – 1500 EDT One-Pager – Fukushima Daiichi with updates from the 0700 - 1500 shift.

Please note that this information is "Official Use Only."

Thanks,  
Christine

Christine A. Steger  
Executive Support Team  
US Nuclear Regulatory Commission  
email: [ost01hoc@nrc.gov](mailto:ost01hoc@nrc.gov)  
Ph: 301-816-5100

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**Castleman, Patrick**

**From:** Sharkey, Jeffry  
**Sent:** Friday, April 22, 2011 3:11 PM  
**To:** Muesle, Mary  
**Cc:** Virgilio, Martin; Nieh, Ho; Bubar, Patrice; Batkin, Joshua; Sosa, Belkys  
**Subject:** FW: CA Note - 4/22/11 - Actions Following the Events in Japan: Near-Term Task Force Activities (To: Commissioners' Assistants; From: Mary Muesle)

Mary,

(b)(5)

I am happy to answer any questions regarding this response.

Thanks,

Jeff

**From:** Hasan, Nasreen  
**Sent:** Friday, April 22, 2011 2:27 PM  
**To:** Andersen, James; Ash, Darren; Blake, Kathleen; Borchardt, Bill; Bozin, Sunny; Bubar, Patrice; Chairman Temp; Cianci, Sandra; Crawford, Carrie; Garland, Stephanie; Gibbs, Catina; Harves, Carolyn; Hasan, Nasreen; Herr, Linda; Jimenez, Patricia; Lepre, Janet; Lisann, Elizabeth; Mamlsh, Nader; Muesle, Mary; Nieh, Ho; Pace, Patti; RidsEdoMailCenter Resource; RidsOcaMailCenter Resource; RidsOcoMailCenter Resource; RidsOgcMailCenter Resource; RidsOipMailCenter Resource; RidsOIS Resource; RidsOpaMail Resource; RidsSecyMailCenter Resource; Sanfilippo, Nathan; Savoy, Carmel; Sharkey, Jeffry; Shea, Pamela; Sosa, Belkys; Speiser, Herald; Sprogeris, Patricia; Svinicki, Kristine; Taylor, Renee; Temp, GEA; Temp, WDM; Virgilio, Martin; Warnick, Greg; Wyatt, Melissa; Cianci, Sandra; Virgilio, Martin; Boyer, Rachel; Sanfilippo, Nathan; Miller, Charles; Doane, Margaret; Taylor, Renee  
**Subject:** CA Note - 4/22/11 - Actions Following the Events in Japan: Near-Term Task Force Activities (To: Commissioners' Assistants; From: Mary Muesle)

Date: April 22, 2011

From: Mary C. Muesle

**You can access the document in ADAMS by clicking the following link:**  
[CA Note - 4/22/11 - Actions Following the Events in Japan: Near-Term Task Force Activities](#)

ADAMS Package ML1112A075

Hard copies are being mailed to each Commission office.

cc's electronic Distribution only

EDO - Note placed in EDO Daily Information Folder for 4/22/2011

Nasreen Hasan  
Chief Administrative Assistant to Mary C. Muesle  
Office of the Executive Director for Operations  
1-415-1703

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*"The best preparation for good work tomorrow is to do good work today."*

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646

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Monday, April 25, 2011 12:15 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** Fw. USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits  
**Attachments:** USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits .pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** LIA08 Hoc

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

(b)(6)

(b)(6)

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(b)(6)

**Sent:** Mon Apr 25 12:02:14 2011

**Subject:** USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits

~~NOT FOR PUBLIC DISCLOSURE~~

FP 440 of 2107

647

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Castleman, Patrick  
**Sent:** Monday, April 25, 2011 12:19 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** Fw: Japan Status for 4/25/2011  
**Attachments:** USNRC Earthquake-Tsunami Update 042511 1200 EDT --- pmt edits .pdf

Sent from an NRC Blackberry

Patrick Castleman

(b)(6)

**From:** [ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov) <[ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov)>  
**Sent:** Mon Apr 25 12:16:06 2011  
**Subject:** Japan Status for 4/25/2011

This is the Headquarter Operations Officer. Attached is the Japan Status for 4/25/2011. For clarification, please contact the Headquarters Operations Officer at 301-816-5100.

~~NOT FOR PUBLIC DISCLOSURE~~

650

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Sharkey, Jeffry  
**Sent:** Monday, April 25, 2011 1:19 PM  
**To:** Castleman, Patrick  
**Subject:** RE: USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits

Ok. Thx.

**From:** Castleman, Patrick  
**Sent:** Monday, April 25, 2011 1:16 PM  
**To:** Sharkey, Jeffry  
**Subject:** Re: USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits

Jeff,

My understanding is that they are still monitoring, based mainly on the fact that we still have a team in Japan. Also, everyone who was on the watchbill was considered to be on call this weekend. They should now be back on 24/7 expanded coverage in the ops center. I will get clarification during tomorrow's conference call.

Pat

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Sharkey, Jeffry  
**To:** Castleman, Patrick  
**Sent:** Mon Apr 25 13:05:06 2011  
**Subject:** FW: USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits

Pat,

See my highlight from this morning's SITREP. Ho shared with me that Mike reported out to him this morning that NRC stood down the Ops Ctr this weekend. Based on the SITREP, the OpsCtr is still being staffed 24/7. Do you have any insights on whether the OpsCtr is still in the monitoring mode?

Thanks,

eff

Status

At 0946 EST, March 11, 2011, the NRC entered Monitoring Mode, and the agency continues to monitor the unfolding events in Japan. In that the situation is not yet stable, NRC continues its 24 hour support in headquarters and a fully-engaged site team in Japan. During the week of April 11<sup>th</sup>, NRC increased the size and adjusted the skill set of its site team to better support the work activities in Japan. A core team of managers and experts continue to staff the Headquarters Operations Center on a 24 hour basis.

**From:** LIA08 Hoc  
**Sent:** Monday, April 25, 2011 12:02 PM

~~NOT FOR PUBLIC DISCLOSURE~~

FP 442 of 2107



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

[Redacted content]

Subject: USNRC Earthquake-Tsunami Update 042511 1200 EDT ---- pmt edits

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667

**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Tuesday, May 03, 2011 9:39 AM  
**To:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Time Change: 1330 EDT Commissioners Assistants Briefing Notification  
**Attachments:** USNRC Earthquake-Tsunami Update 050211 Revision 1200 EDT.pdf

FYI. I will be covering the 1330 call. If you get a notification of a 10 am call, just ignore it.

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** [ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov) <[ANS.HOC@nrc.gov](mailto:ANS.HOC@nrc.gov)>  
**Sent:** Tue May 03 09:36:32 2011  
**Subject:** Time Change: 1330 EDT Commissioners Assistants Briefing Notification

There will be a Commissioners Assistants Briefing given by the NRC HQ at 1330 EDT concerning the Reactor Events in Japan. Call (b)(6) approximately 5 minutes before the scheduled start time. When prompted, enter security code (b)(6). You may call 301-816-5164 at this time and follow the voice prompts if you do not wish to receive this notification from our Automatic Notification System.

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FP 444 of 2107

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Friday, May 06, 2011 8:32 AM  
**To:** Svinicki, Kristine; Sharkey, Jeffry  
**Subject:** RE: USNRC Emergency Operations Center Status Update 05032011 1200 EDT

Commissioner,

Based on the meager information presented at the Tuesday/Thursday conference calls, and reinforced by "hall talk," they are not doing much of anything in the ops center, either. The Japan team will be reduced to 8 members from 9 in a week and a half, and it is not apparent what all these people are doing on behalf of the NRC.

(b)(5)

The staff may discuss their path forward in next week's Japan update Commission meeting. However, there is nothing in the slide package to indicate that this will be a discussion point.

Pat

**From:** Svinicki, Kristine  
**Sent:** Thursday, May 05, 2011 8:32 PM  
**To:** Sharkey, Jeffry; Castleman, Patrick  
**Subject:** FW: USNRC Emergency Operations Center Status Update 05032011 1200 EDT

Slow progress on dialing back the Ops Center staffing . . .

A core team of managers and experts will continue to staff the Headquarters Operations Center on a 24 hour basis Monday through Friday, with around the clock on-call staffing on weekends.

**From:** LIA08 Hoc  
**Sent:** Thursday, May 05, 2011 12:47 PM

(b)(6)

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(b)(6)

Cc: LIA08 Hoc

Subject: USNRC Emergency Operations Center Status Update 05032011 1200 EDT

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY\*\*\*\*\*

Good Afternoon,

Attached is the Status Update for May 5, 2011. The next USNRC Status Update will be distributed at 1200 EDT on May 6, 2011.

Thank You

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY\*\*\*\*\*

Liaison Team Coordinator  
US Nuclear Regulatory Commission  
Email: lia08.hoc@nrc.gov  
Desk Ph: 301-816-5185

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077

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Tuesday, May 10, 2011 8:26 AM  
**To:** Sharkey, Jeffry  
**Cc:** Svinicki, Kristine; Reddick, Darani  
**Subject:** FW: Draft SRM on Briefing on Response to Events in Japan  
**Attachments:** M110428.b.docx

(b)(5)

**From:** Hart, Ken  
**Sent:** Tuesday, May 10, 2011 7:35 AM  
**To:** Baggett, Steven; Bovol, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Draft SRM on Briefing on Response to Events in Japan

Please review the changes to the draft SRM on the Briefing on Response to Events in Japan in the attached file M110428.b.docx). This is **Version B**. Please respond by May 11, 2011.

Thanks, Ken

~~NOT FOR PUBLIC DISCLOSURE~~

680

**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Wednesday, May 11, 2011 3:37 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: Japan Response Team Proposal

Commissioner,

(b)(5)

Pat

**From:** Merzke, Daniel  
**Sent:** Wednesday, May 11, 2011 10:17 AM  
**To:** Castleman, Patrick; Franovich, Mike  
**Subject:** Japan Response Team Proposal

Pat/Mike, I already touched base with your counterparts in the other offices. The Japan response team is looking at moving out of the Ops Center as early as next week, and into a conference room, probably in OWFN. They have proposed reducing the CA status calls to once weekly, suggested on Tuesdays, vice the current twice weekly calls. The Sharepoint site would continue to be updated for your information purposes. Additional briefings could be provided if there were significant changes. Please let me know if you have any objections to this proposal. Thanks.

Dan

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, May 12, 2011 3:36 PM  
**To:** Merzke, Daniel  
**Cc:** Orders, William; Gilles, Nanette; Franovich, Mike; Hipschman, Thomas; Marshall, Michael; Webber, Robert; Wiggins, Jim; McDermott, Brian; Andersen, James  
**Subject:** RE: CA Call Proposal

Dan,

Thank you very much for the comprehensive response. Please pass along my thanks to Marty as well. The entire staff has done a great deal of admirable heavy lifting over the past two months, and it is good to see that we are taking steps toward a sense of normalcy in our day to day operations.

Pat

**From:** Merzke, Daniel  
**Sent:** Thursday, May 12, 2011 3:04 PM  
**To:** Castleman, Patrick  
**Cc:** Orders, William; Gilles, Nanette; Franovich, Mike; Hipschman, Thomas; Marshall, Michael; Webber, Robert; Wiggins, Jim; McDermott, Brian; Andersen, James  
**Subject:** RE: CA Call Proposal

Pat, I talked to Marty this afternoon about your questions and concerns. He said most of your questions are addressed one way or another on the Sharepoint site. According to the most recent status report, we entered Monitoring mode on March 11<sup>th</sup>, and we have not exited. I believe the rationale is that we still have a substantial site team to support, and the conditions for all affected units have not stabilized. The status report also states the 50 mile evacuation recommendation is still in effect. We provided the Ambassador a draft document with conditions staff felt needed to be met in order to relax the recommendation. It was couched as a travel advisory recommendation, and I think it's up to the State Department to decide if conditions in Japan are stable enough to allow U.S. residents to relax to the Japanese evacuation zone, taking into consideration the criteria we provided. I didn't see that document on the Sharepoint site because I'm pretty sure it was still draft when it was sent to the site team and Ambassador for comments, and they have not been populating the Sharepoint site with draft documents. I understand the desire on the part of the Commissioners to be kept fully informed of all policy matters and important recommendations and major actions.

As the Sharepoint site will continue to be updated with the most current information, and the other four offices concurred on the proposal, Marty is directing that we proceed with the proposal to provide once weekly CA status briefs on Tuesdays. Again, if conditions change, there will be additional briefings provided to ensure all offices are kept informed of current conditions. If you have specific questions, we can get them answered as expeditiously as possible at any time. If you have any questions, feel free to let me know.

Dan

**From:** Castleman, Patrick  
**Sent:** Thursday, May 12, 2011 9:02 AM  
**To:** Merzke, Daniel  
**Cc:** Orders, William; Gilles, Nanette; Franovich, Mike; Hipschman, Thomas; Marshall, Michael  
**Subject:** RE: CA Call Proposal

need to consult with my principal before I give you a firm answer. Some sort of feedback on the concerns I presented would help me in my discussions with the Commissioner.

~~NOT FOR PUBLIC DISCLOSURE~~

Again, I do not object to cancelling today's call (which conflicts with the Commission meeting) if that is the consensus of my counterparts.

**From:** Merzke, Daniel  
**Sent:** Thursday, May 12, 2011 8:34 AM  
**To:** Castleman, Patrick  
**Subject:** RE: CA Call Proposal

Pat, my only question was do you have any objections to going to a once per week status call? None of the other CAs objected. If you do object, then I'll pass that back to the team to keep the twice weekly call going.

Dan

**From:** Castleman, Patrick  
**Sent:** Thursday, May 12, 2011 8:31 AM  
**To:** Merzke, Daniel; Franovich, Mike  
**Cc:** Orders, William; Gilles, Nanette; Marshall, Michael; Hipschman, Thomas  
**Subject:** RE: CA Call Proposal

(b)(5)

Thanks, Pat

**From:** Merzke, Daniel  
**Sent:** Thursday, May 12, 2011 7:34 AM  
**To:** Castleman, Patrick; Franovich, Mike  
**Subject:** CA Call Proposal

I hadn't heard back from you guys regarding the proposal I sent you yesterday to reduce the CA calls for the Japan event status to once a week; I believe Tuesday is being proposed. Please let me know if you're on board with that proposal. Thanks.

Dan

~~NOT FOR PUBLIC DISCLOSURE~~



Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

683

**From:** Castleman, Patrick  
**Sent:** Thursday, May 12, 2011 3:43 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** FW: CA Call Proposal

Commissioner,

Here is an update to the proposal to cut back to one Japan conference call per week. Since four offices have agreed, Marty has directed that we do weekly calls on Tuesdays. As you can see from the interchange below, I raised a number of questions that were not initially addressed in the staff's initial proposal. The real objective of the questions was to make sure the staff is aware that the Commission offices are sensitive to the need to be kept fully and currently informed.

Pat

**From:** Merzke, Daniel  
**Sent:** Thursday, May 12, 2011 3:04 PM  
**To:** Castleman, Patrick  
**Cc:** Orders, William; Gilles, Nanette; Franovich, Mike; Hipschman, Thomas; Marshall, Michael; Webber, Robert; Wiggins, Jim; McDermott, Brian; Andersen, James  
**Subject:** RE: CA Call Proposal

Pat, I talked to Marty this afternoon about your questions and concerns. He said most of your questions are addressed one way or another on the Sharepoint site. According to the most recent status report, we entered Monitoring mode on March 11<sup>th</sup>, and we have not exited. I believe the rationale is that we still have a substantial site team to support, and the conditions for all affected units have not stabilized. The status report also states the 50 mile evacuation recommendation is still in effect. We provided the Ambassador a draft document with conditions staff felt needed to be met in order to relax the recommendation. It was couched as a travel advisory recommendation, and I think it's up to the State Department to decide if conditions in Japan are stable enough to allow U.S. residents to relax to the Japanese evacuation zone, taking into consideration the criteria we provided. I didn't see that document on the Sharepoint site because I'm pretty sure it was still draft when it was sent to the site team and Ambassador for comments, and they have not been populating the Sharepoint site with draft documents. I understand the desire on the part of the Commissioners to be kept fully informed of all policy matters and important recommendations and major actions.

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**Sent:** Thursday, May 12, 2011 9:02 AM  
**To:** Merzke, Daniel  
**Cc:** Orders, William; Gilles, Nanette; Franovich, Mike; Hipschman, Thomas; Marshall, Michael  
**Subject:** RE: CA Call Proposal

need to consult with my principal before I give you a firm answer. Some sort of feedback on the concerns I presented would help me in my discussions with the Commissioner.

~~NOT FOR PUBLIC DISCLOSURE~~

FP 451 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

Again, I do not object to cancelling today's call (which conflicts with the Commission meeting) if that is the consensus of my counterparts.

**From:** Merzke, Daniel  
**Sent:** Thursday, May 12, 2011 8:34 AM  
**To:** Castleman, Patrick  
**Subject:** RE: CA Call Proposal

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**Sent:** Thursday, May 12, 2011 8:31 AM  
**To:** Merzke, Daniel; Franovich, Mike  
**Cc:** Orders, William; Gilles, Nanette; Marshall, Michael; Hipschman, Thomas  
**Subject:** RE: CA Call Proposal

(b)(5)



Thanks, Pat

**From:** Merzke, Daniel  
**Sent:** Thursday, May 12, 2011 7:34 AM  
**To:** Castleman, Patrick; Franovich, Mike  
**Subject:** CA Call Proposal

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Dan

~~NOT FOR PUBLIC DISCLOSURE~~

FP 452 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

684

Castleman, Patrick

**From:** Svinicki, Kristine  
**Sent:** Thursday, May 12, 2011 7:36 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Draft SRM on Briefing on Response to Events in Japan

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Tuesday, May 10, 2011 8:26 AM  
**To:** Sharkey, Jeffry  
**Cc:** Svinicki, Kristine; Reddick, Darani  
**Subject:** FW: Draft SRM on Briefing on Response to Events in Japan

(b)(5)

Jeff

Pat

**From:** Hart, Ken  
**Sent:** Tuesday, May 10, 2011 7:35 AM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitts, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Draft SRM on Briefing on Response to Events in Japan

Please review the changes to the draft SRM on the Briefing on Response to Events in Japan in the attached file (M110428.b.docx). This is **Version B**. Please respond by May 11, 2011.

Thanks, Ken

~~NOT FOR PUBLIC DISCLOSURE~~

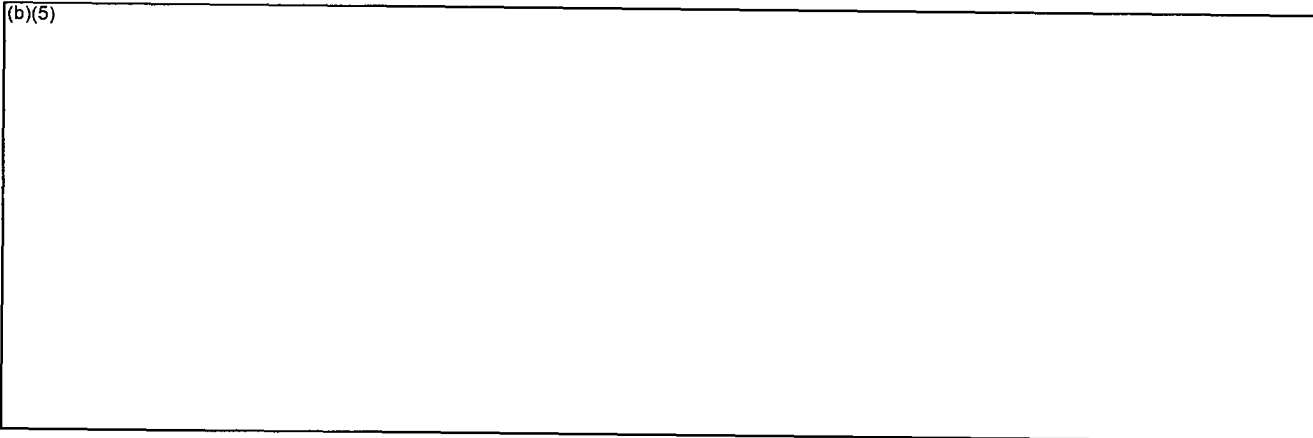
**Commission Briefing on the Status of NRC Response to Events in Japan and Briefing on Station Blackout**

*You go first with questions.*

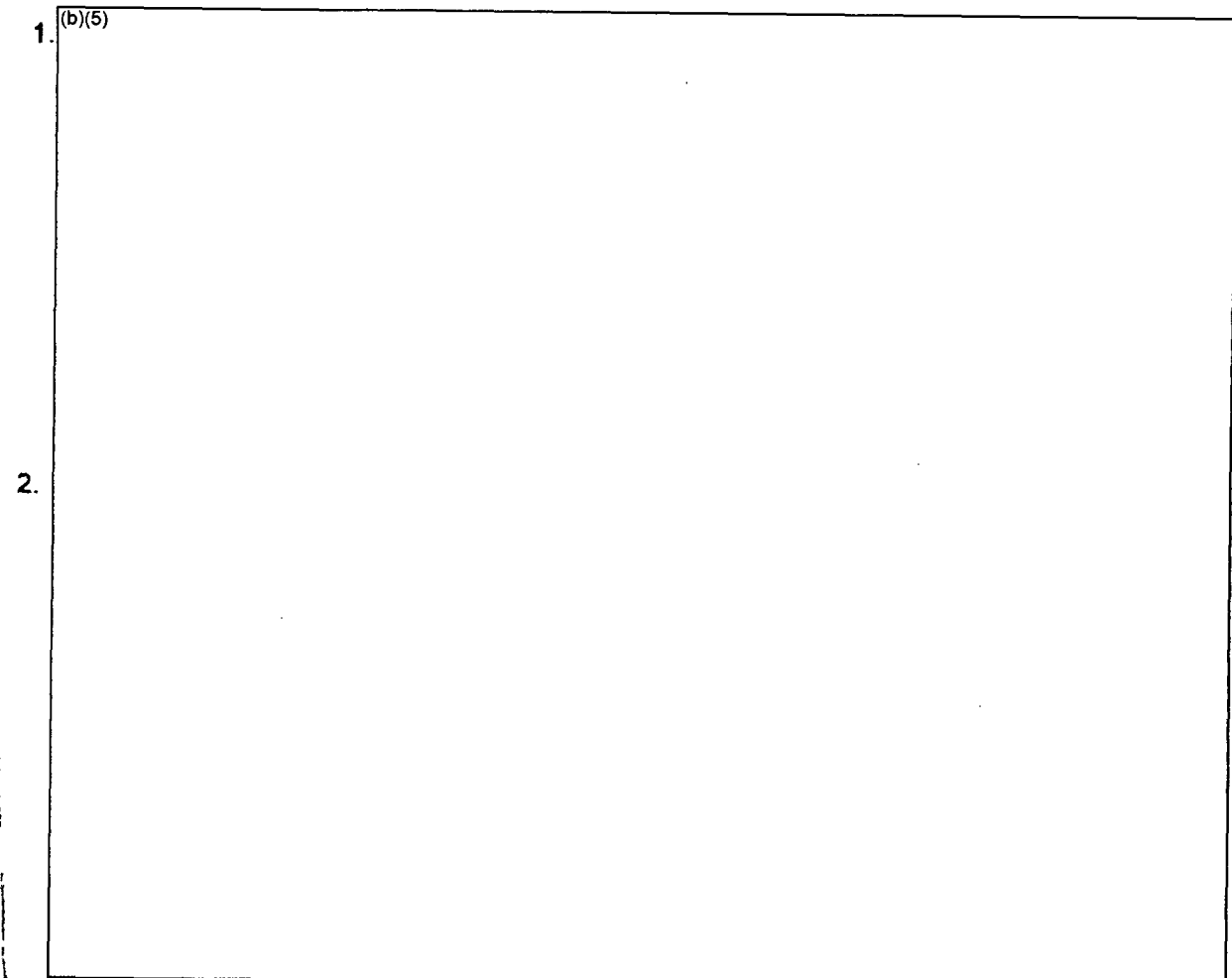
Thursday, May 12, 2011  
9:30 – 11:30 am

Panel: NRC staff (Borchardt, Virgilio, Miller)

(b)(5)



**Proposed Questions:**

1. (b)(5)
  - 2.
- 

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3.

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1.

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**Actions to Date**

- **Status of event in Japan and NRC response**
- **Information Notice 2011-05, "Tohoku-Taiheiyou-Oki Earthquake Effects on Japanese Nuclear Power Plants"**

3

(b)(5)

### **Prompt Actions**

- **Task force requested an inspection of SAMG implementation**
- **Task force encouraged public release of guidance for developing EDMGs**

(b)(5)

## **Scope of Review**

- **U.S. power reactors and their spent fuel pools**
- **Near-term and longer-term recommendations**

12

(b)(5)



**Cross-Cutting Considerations  
for Mitigation**

- **Emergency operating procedures, SAMGs, and EDMGs**
  - **Integration**
  - **Training and exercises**
- **Personnel availability and safety**
- **Instrumentation**
- **Decision-making and command and control**

.6

(b)(5)

(b)(5)

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

685

**From:** Castleman, Patrick  
**Sent:** Friday, May 13, 2011 2:38 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: VERSION C - Draft SRM on Briefing on Response to Events in Japan  
**Attachments:** M110428.c.docx

Commissioner,

(b)(5)

Pat

**From:** Láufer, Richard  
**Sent:** Friday, May 13, 2011 2:26 PM  
**To:** Hart, Ken; Baggett, Steven; Bovol, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hipschman, Thomas; Batkin, Joshua; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffrey; Shea, Pamela; Thoma, John; Vietti-Cook, Annette; Laufer, Richard  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** VERSION C - Draft SRM on Briefing on Response to Events in Japan

Please review the changes to the draft SRM on the Briefing on Response to Events in Japan in the attached file (M110428.c.docx). This is **Version C**. Please respond by May 17, 2011.

Thanks,  
Rich

~~NOT FOR PUBLIC DISCLOSURE~~

691

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffry

**From:** Hart, Ken  
**Sent:** Tuesday, May 17, 2011 11:18 AM  
**To:** Baggett, Steven; Bavo!, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Subject:** FW: Japan Tsunami Response Contact List  
**Attachments:** Japan Response Contact List Week Beginning 5-16.docx

Contact list is attached.

Ken

**From:** Brown, Eva  
**Sent:** Tuesday, May 17, 2011 11:01 AM  
**To:** Hart, Ken; Laufer, Richard  
**Cc:** Taylor, Robert; RST01\_F Resource  
**Subject:** Japan Tsunami Response Contact List

Ken/Rich,

Per your TA briefing on Japan with Rob, please find the attached contact list. Please distribute as appropriate.

Thanks.

Eva A. Brown  
 Senior Project Manager  
 Headquarters Japan Site Team Support  
 Nuclear Regulatory Commission  
 301) 415-3152

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~  
**Japan Response Contact Information**

**HQ Japan Support Team**

E-mail: RST01\_F Resource

Name	Role	Primary Phone	Secondary Phone	Email	End Date
Dave Skeen	SES Manager	301-415-3890	(b)(6)	<a href="mailto:David.Skeen@nrc.gov">David.Skeen@nrc.gov</a>	TBD
Rob Taylor	Team Leader	301-415-3823		<a href="mailto:Robert.Taylor@nrc.gov">Robert.Taylor@nrc.gov</a>	TBD
Eva Brown	Sr. Project Manager	301-415-3152		<a href="mailto:Eva.Brown@nrc.gov">Eva.Brown@nrc.gov</a>	TBD
James Shea	RST Lead	301-415-3890		<a href="mailto:James.Shea@nrc.gov">James.Shea@nrc.gov</a>	05/27/11
Tim Kolb	RST Member	301-415-0499		<a href="mailto:Timothy.Kolb@nrc.gov">Timothy.Kolb@nrc.gov</a>	05/20/11
Kathryn Brock	PMT Member	301-415-2929		<a href="mailto:Kathryn.Brock@nrc.gov">Kathryn.Brock@nrc.gov</a>	TBD
Beth Reed	LT Member	301-415-2130		<a href="mailto:Elizabeth.Reed@nrc.gov">Elizabeth.Reed@nrc.gov</a>	TBD

**Japan Site Team**

Name	Blackberry	Email	Return Date
Matthew Mitchell	(b)(6)	<a href="mailto:Matthew.Mitchell@nrc.gov">Matthew.Mitchell@nrc.gov</a>	05/19/11
Richard Plasse		<a href="mailto:Richard.Plasse@nrc.gov">Richard.Plasse@nrc.gov</a>	05/19/11
Robert Temps		<a href="mailto:Robert.Temps@nrc.gov">Robert.Temps@nrc.gov</a>	05/19/11
Skip Young		<a href="mailto:Francis.Young@nrc.gov">Francis.Young@nrc.gov</a>	05/19/11
Scott Freeman		<a href="mailto:Scott.Freeman@nrc.gov">Scott.Freeman@nrc.gov</a>	05/20/11
Jim Lynch		<a href="mailto:James.Lynch@nrc.gov">James.Lynch@nrc.gov</a>	05/20/11
Mark Miller		<a href="mailto:Mark.Miller@nrc.gov">Mark.Miller@nrc.gov</a>	05/20/11
Hironori Peterson		<a href="mailto:Hironori.Peterson@nrc.gov">Hironori.Peterson@nrc.gov</a>	05/20/11
Michael L. Brown		<a href="mailto:Michael.Brown@nrc.gov">Michael.Brown@nrc.gov</a>	06/02/11
Lou Brandon		<a href="mailto:Lou.Brandon@nrc.gov">Lou.Brandon@nrc.gov</a>	06/05/11
Kristy Bucholtz		<a href="mailto:Kristy.Bucholtz@nrc.gov">Kristy.Bucholtz@nrc.gov</a>	06/05/11
Chris Cahill		<a href="mailto:Christopher.Cahill@nrc.gov">Christopher.Cahill@nrc.gov</a>	06/05/11
Chuck Norton		<a href="mailto:Charles.Norton@nrc.gov">Charles.Norton@nrc.gov</a>	06/05/11

**Site Team Hotel**

(b)(6)

**Site Team Conference Room**

9-011-81-3-3224-5066

**Site Team Fax**

011-81-3-3224-5229

**Bridge Lines**

RST/PMT Bridge: (877) 951-5843 passcode (b)(6) #

Executive Team Bridge: (877) 972-7614 passcode (b)(6) #

~~NOT FOR PUBLIC DISCLOSURE~~

989

May 18, 2011

Note to: Commissioner Svinicki  
From: John Thoma *John*  
Subject: Commissioner Briefing on NRC Communication to States During the Japanese

On May 18, 2011 Commissioners Magwood and Ostendorff were briefed on communications with States during an emergency response (see attached slides). The briefing was lead by Mark Thaggard (Deputy Director for Emergency Preparedness, NSIR). With him at the table was Rich Turtill (FSME) and Jane March (NSIR – Incident Response).

(b)(5)

cc: Jeff Sharkey  
Darani Reddick  
Pat Castleman

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# **Communications with States During an Emergency Response**

Mark Thaggard

Deputy Director for Emergency  
Preparedness, NSIR

May 18, 2011

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~~NOT FOR PUBLIC DISCLOSURE~~



United States Nuclear Regulatory Commission

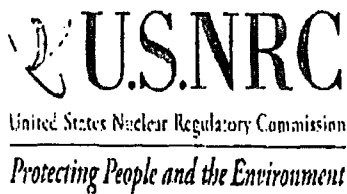
*Protecting People and the Environment*

## Briefing Outline

- Anticipated interactions during a domestic response
- Interactions during the Japanese response
- Preliminary feedback
- Potential follow-up actions

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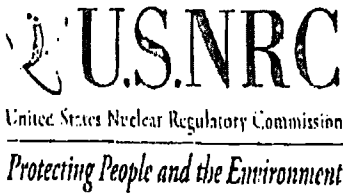
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## What is anticipated during a domestic response

- The NRC would have jurisdiction
- HQ Operation Center staffs its Liaison Team (*Activation Mode*)
  - LT will typically have two State Liaison persons
- Region Operation Center staffs its Base Team (*Monitoring Mode*)
- Communicate Directly with Affected States
  - Want to know what the protective action decision is
  - Need to know if any assistance is needed
  - NRC primary communication with States is through the Region

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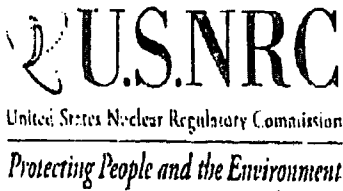


## **What is anticipated during a domestic response (cont.)**

- Communications with other States will likely occur through OPA and/or Regional State Liaison Officers
- All information released during an event must be approved by the Executive Team
  - Important to avoid communicating misinformation

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# Communications with States during the Japanese Response

- DOS Overall lead responsibility for the U.S. response
  - (b)(5)
- HQ Op Ctr partially staffed
  - Agency in a Monitoring Mode
  - Initially no State Liaison staff in LT (not a domestic event)
- Communication challenges
  - International event (b)(5)
  - Early on very limited information (heavy reliance on media reports)
  - (b)(5)
  - Rapidly evolving event
  - (b)(5)

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## Communications with States during the Japanese Response (cont.)

- 2nd day State Liaison staff added to LT
  - SL staff worked closely with RSLOs to develop Q/As
- Calls involving States
  - HHS
    - Initially included only CA, OR, and WA; later included all States
    - Other Federal agencies included: CDC, CBP, DOE, NOAA, FDA, EPA, and NRC
  - WH telecon with western states
    - OR, WA, CA, HI, AK, Guam, Samoa, Northern Marianas
    - Other Federal agencies included: DOE, DOS, EPA, DHS, USDA, NOAA, and USAID
  - Federal Radiological Preparedness Coordinating Committee
- DOE/EPA designated as lead agency for communicating with States on radiation monitoring
- OPA/RSLOs involved throughout



United States Nuclear Regulatory Commission

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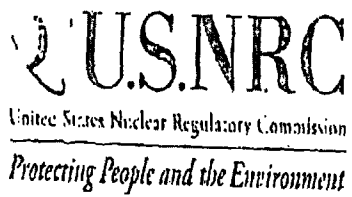
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# Feedback for After-action Assessment for Foreign Response

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A large, empty rectangular box with a black border, intended for feedback. It contains three small black dots on the left side, suggesting a list or bullet points.

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~~NOT FOR PUBLIC DISCLOSURE~~

## Follow-on actions

- Complete after-action assessment
- Engagement with States

~~NOT FOR PUBLIC DISCLOSURE~~

696

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffrey

**From:** Hart, Ken  
**Sent:** Wednesday, May 18, 2011 4:07 PM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffrey; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** FW VERSION C - Draft SRM on Briefing on Response to Events in Japan

Please note below the GBJ extension request in which to respond to the subject draft SRM. Assuming there are no objections, the extension will be granted. Any office having an objection should notify SECY.

Thanks, Ken

**From:** Hipschman, Thomas  
**Sent:** Wednesday, May 18, 2011 4:05 PM  
**To:** Hart, Ken  
**Cc:** Laufer, Richard  
**Subject:** RE VERSION C - Draft SRM on Briefing on Response to Events in Japan

(b)(6)

Thomas Hipschman  
 Policy Advisor for Reactors  
 Office of Chairman Gregory B. Jaczko  
 31-415-1832

**From:** Laufer, Richard  
**Sent:** Friday, May 13, 2011 2:26 PM  
**To:** Hart, Ken; Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hipschman, Thomas; Batkin, Joshua; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffrey; Shea, Pamela; Thoma, John; Vietti-Cook, Annette; Laufer, Richard  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** VERSION C - Draft SRM on Briefing on Response to Events in Japan

Please review the changes to the draft SRM on the Briefing on Response to Events in Japan in the attached file 110428.c.docx). This is Version C. Please respond by May 17, 2011.

Thanks,  
Richard

~~NOT FOR PUBLIC DISCLOSURE~~

701

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Laufer, Richard  
**Sent:** Monday, May 23, 2011 11:27 AM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Cc:** HOO Hoc; Marshall, Jane; Skeen, David; Taylor, Robert; Hart, Ken; Brown, Eva  
**Subject:** Bridge number for 5/24 at 10:00 a.m. Technical Assistants' Brief - Fukushima Site Team

Below is the telephone bridge information for the TA Brief on Japan tomorrow at 10:00 a.m.

Rich

**From:** Brown, Eva  
**Sent:** Monday, May 23, 2011 11:23 AM  
**To:** Hart, Ken; Laufer, Richard  
**Cc:** HOO Hoc; Marshall, Jane; Skeen, David; Taylor, Robert  
**Subject:** Technical Assistants' Brief - Fukushima Site Team

Ken, Richard,

Dave and Rob just wanted me to confirm the intent for a brief of the TAs on Tuesday's at 10:00am. The conference bridge is (877) 972-7614 passcode (b)(6) #

Should you have any questions, please feel free to contact me.

Eva A. Brown  
Senior Project Manager  
Fukushima Support Team  
Nuclear Regulatory Commission  
(301) 415-3152

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~~NOT FOR PUBLIC DISCLOSURE~~

698

**From:** Jones, Cynthia  
**To:** Sharkey, Jeffrey  
**Subject:** RE: Draft Speech - comments  
**Date:** Monday, May 23, 2011 8:47:15 AM  
**Attachments:** Webb enclosure Redline (05-19-11) Rev2 (C).doc

---

Jeff-

(b)(5)

Thanks for sharing  
Cyndi

(b)(5)

**From:** Sharkey, Jeffrey  
**Sent:** Saturday, May 21, 2011 8:54 AM  
**To:** Jones, Cynthia  
**Subject:** FW: Draft Speech

Hey Cindi,

I am curious about your reaction to the attached draft speech. Any thoughts you're willing to share (without attribution)?

Thanks,

Jeff

**From:** David Montes [mailto:(b)(6)]  
**Sent:** Friday, May 20, 2011 7:37 PM  
**To:** Sharkey, Jeffrey  
**Subject:** Fwd: Draft Speech

Hey Jeff,

~~NOT FOR PUBLIC DISCLOSURE~~  
~~NOT FOR PUBLIC DISCLOSURE~~

I mistyped your email. Here's the Chairman's draft speech.

Have a good weekend,  
David

----- Forwarded message -----

From: David Montes <(b)(6)>

Date: Fri, May 20, 2011 at 7:34 PM

Subject: Draft Speech

To: [patrice.bubar@nrc.gov](mailto:patrice.bubar@nrc.gov), [ho.nieh@nrc.gov](mailto:ho.nieh@nrc.gov), [jeffrey.sharkey@nrc.gov](mailto:jeffrey.sharkey@nrc.gov), [belkys.sosa@nrc.gov](mailto:belkys.sosa@nrc.gov)

Cc: "Batkin, Joshua" <[joshua.Batkin@nrc.gov](mailto:joshua.Batkin@nrc.gov)>, "Coggins, Angela" <[angela.coggins@nrc.gov](mailto:angela.coggins@nrc.gov)>, "Loyd, Susan" <[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)>

Attached is the Chairman's draft speech for Wednesday. It's still in draft, and we may yet revise.

Have a good weekend,  
David

~~NOT FOR PUBLIC DISCLOSURE~~

**Responses to Information Requests from Senator Jim Webb  
Letter of April 15, 2011**

- (1) The assumed magnitudes of the total releases (in Curies) to the atmosphere of the radioisotopes dominating the inhalation, cloudshine, and 4-day groundshine effective whole body doses and the thyroid inhalation doses.**

(b)(5)

- (2) The assumed duration of the releases.**

(b)(5)

~~ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED~~  
- NOT FOR PUBLIC DISCLOSURE

(3) The assumed wind speed and deposition velocities.

(b)(5)

699

**Svinicki, Kristine**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Sharkey, Jeffry  
**Sent:** Monday, May 23, 2011 8:49 AM  
**To:** Jones, Cynthia  
**Subject:** RE: Draft Speech - comments

Cyndi – thanks for sharing your views. Very helpful!

Best,

Jeff

**From:** Jones, Cynthia  
**Sent:** Monday, May 23, 2011 8:47 AM  
**To:** Sharkey, Jeffry  
**Subject:** RE: Draft Speech - comments

Jeff-

(b)(5)

Thanks for sharing (b)(5)  
Cyndi

**From:** Sharkey, Jeffry  
**Sent:** Saturday, May 21, 2011 8:54 AM  
**To:** Jones, Cynthia  
**Subject:** FW: Draft Speech

Hey Cindi,

I am curious about your reaction to the attached draft speech. Any thoughts you're willing to share (without attribution)?

Thanks.

Jeff

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** David Montes [mailto:(b)(6)]  
**Sent:** Friday, May 20, 2011 7:37 PM  
**To:** Sharkey, Jeffry  
**Subject:** Fwd: Draft Speech

Hey Jeff,

I mistyped your email. Here's the Chairman's draft speech.

Have a good weekend,  
David

----- Forwarded message -----

**From:** David Montes [mailto:(b)(6)]  
**Date:** Fri, May 20, 2011 at 7:34 PM  
**Subject:** Draft Speech  
**To:** [patrice.bubar@nrc.gov](mailto:patrice.bubar@nrc.gov), [ho.nieh@nrc.gov](mailto:ho.nieh@nrc.gov), [jeffrey.sharkey@nrc.gov](mailto:jeffrey.sharkey@nrc.gov), [belkys.sosa@nrc.gov](mailto:belkys.sosa@nrc.gov)  
**Cc:** "Batkin, Joshua" <[Joshua.Batkin@nrc.gov](mailto:Joshua.Batkin@nrc.gov)>, "Coggins, Angela" <[angela.coggins@nrc.gov](mailto:angela.coggins@nrc.gov)>, "Loyd, Susan" <[Susan.Loyd@nrc.gov](mailto:Susan.Loyd@nrc.gov)>

Attached is the Chairman's draft speech for Wednesday. It's still in draft, and we may yet revise.

Have a good weekend,  
David

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

705

**From:** Castleman, Patrick  
**Sent:** Thursday, May 26, 2011 4:19 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Lepre, Janet  
**Subject:** FW: Draft SRM on Events in Japan and Station Blackout  
**Attachments:** M110428.d.docx

Commissioner (b)(5)

(b)(5)

Pat

**From:** Hart, Ken  
**Sent:** Thursday, May 26, 2011 4:02 PM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Draft SRM on Events in Japan and Station Blackout

Please review the changes to the draft SRM on Events in Japan and Station Blackout in the attached file (M110428.d.docx). This is **Version D**. Please respond by May 31, 2011.

Thanks. Ken

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

Version D 5/26/11 4:00 p.m.

IN RESPONSE, PLEASE  
REFER TO: M110428

MEMORANDUM TO: R. W. Borchardt  
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS – BRIEFING ON THE STATUS OF  
NRC RESPONSE TO EVENTS IN JAPAN AND BRIEFING ON  
STATION BLACKOUT, 9:30 A.M., THURSDAY, APRIL 28, 2011,  
COMMISSIONERS' CONFERENCE ROOM, ONE WHITE FLINT  
NORTH, ROCKVILLE, MARYLAND (OPEN TO PUBLIC  
ATTENDANCE) and COMMISSIONERS' EXECUTIVE  
CONFERENCE ROOM, ONE WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND (CLOSED TO PUBLIC ATTENDANCE)

(b)(5)

~~NOT FOR PUBLIC DISCLOSURE~~



~~NOT FOR PUBLIC DISCLOSURE~~

cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
CFO  
OCA  
OIG  
OPA  
Office Directors, Regions, ACRS, ASLBP (via E-Mail)  
PDR

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Svinicki, Kristine  
**Sent:** Friday, May 27, 2011 4:20 PM  
**To:** Castleman, Patrick  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** RE: Draft SRM on Events in Japan and Station Blackout

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, May 26, 2011 4:19 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Lepre, Janet  
**Subject:** FW: Draft SRM on Events in Japan and Station Blackout

Commissioner, (b)(5)

(b)(5)

Pat

**From:** Hart, Ken  
**Sent:** Thursday, May 26, 2011 4:02 PM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffrey; Shea, Pamela; Thoma, John; Vletti-Cook, Annette  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Reddick, Darani; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Draft SRM on Events in Japan and Station Blackout

Please review the changes to the draft SRM on Events in Japan and Station Blackout in the attached file (M110428.d.docx). This is **Version D**. Please respond by May 31, 2011.

Thanks, Ken

~~NOT FOR PUBLIC DISCLOSURE~~

714

**Castleman, Patrick**

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Friday, June 03, 2011 11:19 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: Draft SRM on the Briefing on Events in Japan and Station Blackout - Version E  
**Attachments:** M110428.e.docx

Commissioner,

(b)(5)

Pat

**From:** Hart, Ken  
**Sent:** Friday, June 03, 2011 10:28 AM  
**To:** Reddick, Darani; Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffrey; Shea, Pamela; Thoma, John; Vietti-Cook, Annette  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lewis, Antoinette; Loyd, Susan; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Draft SRM on the Briefing on Events in Japan and Station Blackout - Version E

Please review the changes to the draft SRM on the Briefing on Events in Japan and Station Blackout in the attached file (M110429.e.docx). This is **Version E**. Please respond by June 7, 2011.

Thanks, Ken

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

Version E 6/3/11 10:30 a.m.

IN RESPONSE, PLEASE  
REFER TO: M110428

MEMORANDUM TO: R. W. Borchardt  
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS – BRIEFING ON THE STATUS OF  
NRC RESPONSE TO EVENTS IN JAPAN AND BRIEFING ON  
STATION BLACKOUT, 9:30 A.M., THURSDAY, APRIL 28, 2011,  
COMMISSIONERS' CONFERENCE ROOM, ONE WHITE FLINT  
NORTH, ROCKVILLE, MARYLAND (OPEN TO PUBLIC  
ATTENDANCE) and COMMISSIONERS' EXECUTIVE  
CONFERENCE ROOM, ONE WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND (CLOSED TO PUBLIC ATTENDANCE)

(b)(5)

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
CFO  
OCA  
OIG  
OPA  
Office Directors, Regions, ACRS, ASLBP (via E-Mail)  
PDR

~~NOT FOR PUBLIC DISCLOSURE~~

719

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Breskovic, Clarence  
**Sent:** Tuesday, June 07, 2011 1:53 PM  
**To:** Breskovic, Clarence  
**Subject:** Report of Japanese Government to the IAEA Ministerial Conference on Nuclear Safety, June 2011  
**Attachments:** Japan Meti to IAEA June 2011.pdf

See attached PDF file from the METI website:  
[http://www.kantei.go.jp/foreign/kan/topics/201106/iaea\\_houkokusho\\_e.html](http://www.kantei.go.jp/foreign/kan/topics/201106/iaea_houkokusho_e.html)

Clarence Breskovic  
International Policy Analyst  
J.S. Nuclear Regulatory Commission  
Office of International Programs  
11555 Rockville Pike  
Rockville, MD 20852, USA  
Tel: 1-301-415-2364  
Fax: 1-301-415-2395  
Alternate Email: (b)(6)

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

976

6/15/11

## **Agenda**

- **Actions to Date**  
**Martin Virgilio**
- **Task Force Activities**  
**Dr. Charles Miller**

(b)(5)

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~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)



~~NOT FOR PUBLIC DISCLOSURE~~



6/15/11

**Task Force Actions Since Last Meeting**

- **Continued task force discussions with NRC staff on technical topics**
- **Site visits**
- **Developing background and evaluation of focus areas**
- **Reviewing results of TIs**
- **Reviewing input from various stakeholders**

(b)(5)

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~~NOT FOR PUBLIC DISCLOSURE~~

6/15/11

### **NRC Programs**

- **Principles of Good Regulation promote a consistent, coherent, and reliable regulatory framework**
- **Past agency decisions for beyond design basis events have led to variability in licensee and NRC programs**

20

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(b)(5)



~~NOT FOR PUBLIC DISCLOSURE~~

731

~~NOT FOR PUBLIC DISCLOSURE~~  
~~NOT FOR PUBLIC DISCLOSURE~~

**Sharkey, Jeffry**

---

**From:** Reddick, Darani  
**Sent:** Wednesday, June 15, 2011 1:40 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry  
**Subject:** letter to Issa on ACRS  
**Attachments:** Issa response to ACRS question.docx; Issa incoming re ACRS.pdf

Commissioner,

(b)(5)

Thanks,  
Darani

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

The Honorable Darrell E. Issa  
Chairman, Committee on Oversight and  
Government Reform  
U.S. House of Representatives  
Washington, D.C. 20515

Dear Chairman Issa:

(b)(5)

Sincerely,

Kristine L. Svinicki

Enclosure: As stated

cc: The Honorable Elijah E. Cummings, Ranking Member

~~NOT FOR PUBLIC DISCLOSURE~~

**Sharkey, Jeffrey**

**From:** Castleman, Patrick  
**Sent:** Monday, June 20, 2011 3:26 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Lepre, Janet  
**Subject:** FW: DRAFT SRM - M110615 (Briefing Following Events in Japan)  
**Attachments:** M110615.srm.docx

Commissioner,

(b)(5)

Pat

**From:** Wright, Darlene  
**Sent:** Thursday, June 16, 2011 12:09 PM  
**To:** Baggett, Steven; Bates, Andrew; Batkin, Joshua; Bavol, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patricia; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Harves, Carolyn; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Sosa, Belkys; Speiser, Gerald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Thoma, John; Vietti-Cook, Annette; Warren, Roberta; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Adler, James; Jimenez, Patricia; Muessle, Mary; Nieh, Jo; Ostendorff, William; Apostolakis, George; Lui, Christiana; Lisann, Elizabeth; Golder, Jennifer; Gilles, Nanette  
**Subject:** DRAFT SRM - M110615 (Briefing Following Events in Japan)

The attached file contains a draft SRM which is being circulated for the normal 3-day period for Commission review. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, scheduler, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Bavol (CB5), and Pam Shea (PWS).

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

June 16, 2011

MEMORANDUM TO: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

FROM: Annette L. Vietti-Cook, Secretary */s/*

SUBJECT: DRAFT STAFF REQUIREMENTS MEMORANDUM – BRIEFING  
ON THE PROGRESS OF THE TASK FORCE REVIEW OF NRC  
PROCESSES AND REGULATIONS FOLLOWING THE EVENTS  
IN JAPAN, 9:30 A.M., WEDNESDAY, JUNE 15, 2011,  
COMMISSIONERS' CONFERENCE ROOM, ONE WHITE FLINT  
NORTH, ROCKVILLE, MARYLAND (OPEN TO PUBLIC  
ATTENDANCE)

(b)(5)

Attachment:  
As stated

cc: EDO  
OGC

~~NOT FOR PUBLIC DISCLOSURE~~



~~NOT FOR PUBLIC DISCLOSURE~~

IN RESPONSE, PLEASE  
REFER TO: M110615

MEMORANDUM TO: R. W. Borchardt  
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS – BRIEFING ON THE PROGRESS OF  
THE TASK FORCE REVIEW OF NRC PROCESSES AND  
REGULATIONS FOLLOWING THE EVENTS IN JAPAN, 9:30  
A.M., WEDNESDAY, JUNE 15, 2011, COMMISSIONERS'  
CONFERENCE ROOM, ONE WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND (OPEN TO PUBLIC ATTENDANCE)

(b)(5)

cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
CFO  
OCA  
OIG  
OPA  
Office Directors, Regions, ACRS, ASLBP (via E-Mail)  
PDR

~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

748

**Reddick, Darani**

---

**From:** Sharkey, Jeffrey  
**Sent:** Wednesday, June 29, 2011 9:35 PM  
**To:** Svinicki, Kristine  
**Cc:** Reddick, Darani  
**Subject:** Fw: NRC Incident Response Program Lessons Learned Review Post-Fukushima

---

**From:** Morris, Scott  
**To:** Batkin, Joshua; Bubar, Patrice; Nieh, Ho; Sosa, Belkys; Sharkey, Jeffrey  
**Cc:** Merzke, Daniel  
**Sent:** Wed Jun 29 14:48:22 2011  
**Subject:** NRC Incident Response Program Lessons Learned Review Post-Fukushima

Josh, Patty, Ho, Belkys and Jeff ...

As you likely already know, the NRC incident response program staff is soliciting feedback from stakeholders regarding the agency's response to the events at Fukushima. Input concerning the NRC response program, including interagency coordination, and state communications will be included in our After Action Report.

We are interested in any feedback you or your principal may have regarding our response to the Fukushima events. If your office would like to provide input, please let me know by emailing your responses back to me. If you would prefer to meet in person to provide this feedback, please contact Jason Kozal and we will set something up ASAP.

Thanks!

**Scott A. Morris**

Director (Acting)  
Division of Preparedness and Response  
Office of Nuclear Security and Incident Response

U.S. Nuclear Regulatory Commission  
Mail Stop T4-A43  
11555 Rockville Pike  
Rockville, MD 20852

[scott.morris@nrc.gov](mailto:scott.morris@nrc.gov)  
301-415-7482 (Office)  
(b)(6) (BlackBerry/Cell)  
301-415-5278 (Fax)



~~NOT FOR PUBLIC DISCLOSURE~~

FP 500 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

759

**Castleman, Patrick**

---

**From:** Castleman, Patrick  
**Sent:** Tuesday, July 05, 2011 2:46 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry  
**Subject:** Japan Update -- July 5, 2011  
**Attachments:** USNRC Earthquake-Tsunami Update 070511 1200 EDT.pdf; Attachment - NRC Daily Assessment of Daiichi 070511.pdf

Commissioner,

(b)(5)



jat

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY\*\*\*\*\*

~~NOT FOR PUBLIC DISCLOSURE~~

FP 501 of 2107

763

Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Sharkey, Jeffry  
**Sent:** Friday, July 08, 2011 1:16 PM  
**To:** Svinicki, Kristine  
**Cc:** Reddick, Darani; Castleman, Patrick  
**Subject:** FW: Request for Early Public Release of the Japan Task Force Report

KLS,

(b)(5)

Please advise.

Jeff

**From:** Laufer, Richard  
**Sent:** Friday, July 08, 2011 12:55 PM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Thoma, John; Vietti-Cook, Annette; Ammon, Bernice; Bupp, Margaret; Burns, Stephen; Clark, Lisa; Coggins, Angela; Davis, Roger; Nieh, Jo; Reddick, Darani; Sexton, Kimberly  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Chairman Temp; Crawford, Carrie; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Harves, Carolyn; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Lyd, Susan; Mitchell-Funderburk, Natalie; Monninger, John; Montes, David; Moore, Scott; Olive, Karen; Pace, Patti; Pearson, Laura; Poole, Brooke; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Request for Early Public Release of the Japan Task Force Report

Staff is requesting that the Japan Task Force Report be publicly released on July 13, in support of the July 19 Commission meeting on the report.

Note that the staff is briefing the Commission TA's on the report on July 11 and the report will be provided to the Commission offices on July 12.

(b)(5)

(b)(5)

Please let SECY know if your office supports releasing the report on July 13.

Thanks,  
ch

~~NOT FOR PUBLIC DISCLOSURE~~

**Svinicki, Kristine**

**From:** Reddick, Darani  
**Sent:** Monday, July 11, 2011 10:48 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry  
**Subject:** RE: CA Note: 6/30/2011 - Staff Approach to Evaluate Petitions for Rulemaking 50-93/95 Issues (To: Commissioners' Assistants From: Nader L. Mamish)

(b)(5)

**From:** Svinicki, Kristine  
**Sent:** Monday, July 11, 2011 10:44 AM  
**To:** Reddick, Darani  
**Cc:** Sharkey, Jeffry  
**Subject:** RE: CA Note: 6/30/2011 - Staff Approach to Evaluate Petitions for Rulemaking 50-93/95 Issues (To: Commissioners' Assistants From: Nader L. Mamish)

(b)(5)

**From:** Reddick, Darani  
**Sent:** Thursday, July 07, 2011 7:11 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry  
**Subject:** RE: CA Note: 6/30/2011 - Staff Approach to Evaluate Petitions for Rulemaking 50-93/95 Issues (To: Commissioners' Assistants From: Nader L. Mamish)

Commissioner,

(b)(5)

(b)(5)

(b)(5)

Thanks,  
Darani

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Svinicki, Kristine  
**Sent:** Thursday, July 07, 2011 5:17 PM  
**To:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** FW: CA Note: 6/30/2011 - Staff Approach to Evaluate Petitions for Rulemaking 50-93/95 Issues (To: Commissioners' Assistants From: Nader L. Mamish)

(b)(5)

Thanks.

**From:** Riddick, Nicole  
**Sent:** Friday, July 01, 2011 2:14 PM  
**To:** Clark, Lisa; Hipschman, Thomas; Marshall, Michael; Reddick, Darani; Castleman, Patrick; Orders, William; Bupp, Margaret; Davis, Roger; Snodderly, Michael  
**Cc:** Batkin, Joshua; Monninger, John; Virgilio, Martin; Weber, Michael; Ash, Darren; Mamish, Nader; Brock, Kathryn; Bowman, Gregory; Leeds, Eric; RidsSecyMailCenter Resource; RidsOgcMailCenter Resource; RidsOcaMailCenter Resource; RidsOpaMail Resource; RidsOlpMailCenter Resource; RidsOIS Resource; RidsOcoMailCenter Resource; RidsEdoMailCenter Resource; Speiser, Herald; Pace, Patti; Gibbs, Catina; Chalmers Temp; Svinicki, Kristine; Lepre, Janet; Harves, Carolyn; Blake, Kathleen; Savoy, Carmel; Temp, GEA; Crawford, Carrie; Jimenez, Patricia; Temp, WDM; Herr, Linda; Bozin, Sunny; Nieh, Ho; Warnick, Greg; Boyer, Rachel; Cianci, Sandra; Garland, Stephanie; Taylor, Renee; Wyatt, Melissa  
**Subject:** CA Note: 6/30/2011 - Staff Approach to Evaluate Petitions for Rulemaking 50-93/95 Issues (To: Commissioners' Assistants From: Nader L. Mamish)

DATE: June 30, 2011

FROM: Nader L. Mamish

You can access the document in ADAMS by clicking the following link:

[6/30/2011 - Staff Approach to Evaluate Petitions for Rulemaking 50-93/95 Issues \(To: Commissioners' Assistants From: Nader L. Mamish\)](#)

ADAMS Accession Number: ML11182B025

Hard copies are being mailed to each Commission office.

cc's electronic distribution only

OEDO – Note placed in EDO Daily Information Folder for 6/30/2011

Thank you.

**Nicole D. Riddick**

(Acting) Administrative Assistant to Darren B. Ash  
U.S. Nuclear Regulatory Commission  
Office of the Executive Director for Operations  
Location: O-17H15  
E-mail: [Nicole.Riddick@nrc.gov](mailto:Nicole.Riddick@nrc.gov) | Office: (301) 415-7443 |

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

**Sharkey, Jeffrey**

**From:** Nieh, Ho  
**Sent:** Tuesday, July 12, 2011 9:13 AM  
**To:** Miller, Charles; Sharkey, Jeffrey  
**Cc:** Bubar, Patrice; Sosa, Belkys; Batkin, Joshua; Virgilio, Martin  
**Subject:** RE: Question

Thanks Charlie.

to Nieh  
Chief of Staff  
Office of Commissioner William C. Ostendorff U.S. Nuclear Regulatory Commission  
301 415-1811 (office)  
(b)(6) mobile)  
301 415-1757 (fax)  
[o.nieh@nrc.gov](mailto:o.nieh@nrc.gov)

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

**From:** Miller, Charles  
**Sent:** Tuesday, July 12, 2011 8:43 AM  
**To:** Sharkey, Jeffrey  
**Cc:** Bubar, Patrice; Sosa, Belkys; Nieh, Ho; Batkin, Joshua; Virgilio, Martin  
**Subject:** RE: Question

eff,

As requested, here is the list.

Charlie

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

**From:** Sharkey, Jeffrey  
**Sent:** Tuesday, July 12, 2011 7:43 AM  
**To:** Miller, Charles  
**Subject:** Question

Charlie,

question I meant to ask at yesterday's briefing: who from NRC is attending today's White House briefing, and who are the other participants?

Thanks,

ff

~~NOT FOR PUBLIC DISCLOSURE~~

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~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffrey

**From:** Doane, Margaret  
**Sent:** Tuesday, July 12, 2011 6:47 PM  
**To:** Sosa, Belkys  
**Cc:** Virgilio, Martin; Bloom, Steven; Moore, Scott; Sharkey, Jeffrey; Bubar, Patrice; Nieh, Ho; Batkin, Joshua; Holahan, Gary  
**Subject:** Staff Notes regarding EU Stress Tests in response to Fukushima Daiichi  
**Attachments:** Talking Points - EU Stress Tests (2).docx

Belkys,

At my periodic this week with Commissioner Apostolakis we discussed the "stress tests" that the European regulators are conducting in response to the events at Fukushima Daiichi. He asked if there was something discussing staff's views about these tests. Attached is a quick one-page document listing the staff's immediate impressions. Gary Holahan provided the input and Marty discussed these issues at the IAEA in meetings with international counterparts. Also, below Steve Bloom provides two links: one is the President of ENSREGs statement about the stress tests and the other is the actual stress tests.

Regards,  
Mergie

**From:** Bloom, Steven  
**Sent:** Tuesday, July 12, 2011 4:08 PM  
**To:** Doane, Margaret; Abrams, Charlotte  
**Cc:** Larson, Emily  
**Subject:** Talking Points for Apostolakis

Mergie and Charlotte,

Attached in the file containing the talking points.

The background information is found at

[http://www.ensreg.eu/sites/default/files/EU%20Stress%20tests%20specifications\\_0.pdf](http://www.ensreg.eu/sites/default/files/EU%20Stress%20tests%20specifications_0.pdf)

<http://www.ensreg.eu/sites/default/files/25-05-11%20Statement%20of%20ENSREG%20Chairman%20about%20EU%20Stress%20Tests.pdf>

Steve

Steven Bloom, International Relations Officer  
 International Cooperation and Assistance Branch (ICA)  
 1-415-2431 (W)  
 (b)(6) (BB)  
 4F4  
 S O-4E21

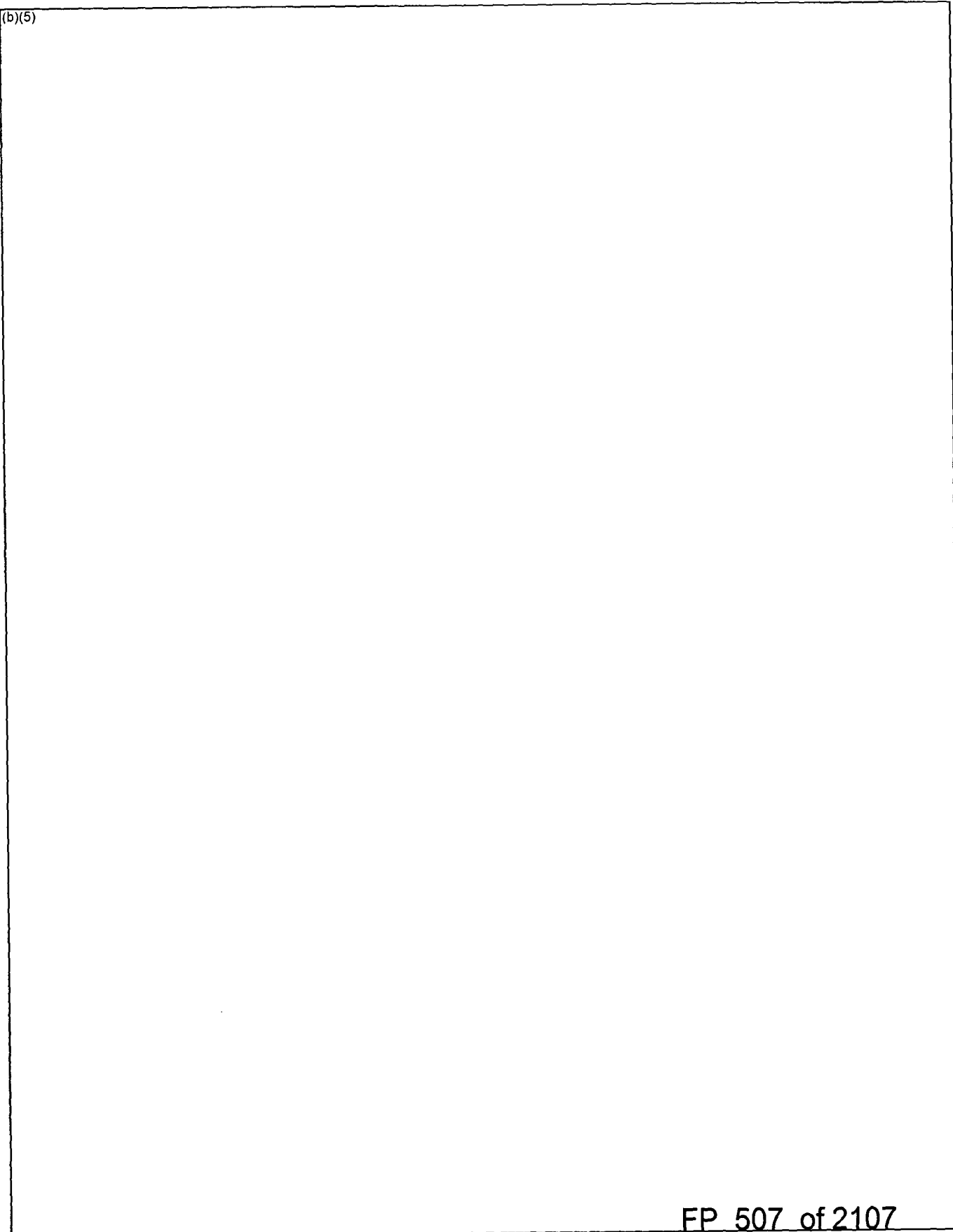
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**Talking Points Regarding EU Stress Tests**

(b)(5)



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~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffry

**From:** Sharkey, Jeffry  
**Sent:** Tuesday, July 12, 2011 8:33 PM  
**To:** Svinicki, Kristine  
**Cc:** Reddick, Darani  
**Subject:** Fw: report leaks/press release  
**Attachments:** 11-XXX-JapanTaskForce DRAFT 3.docx

(b)(5)

**From:** Brenner, Elliot  
**To:** Batkin, Joshua; Sharkey, Jeffry; Sosa, Belkys; Bubar, Patrice; Nieh, Ho  
**Cc:** Schmidt, Rebecca  
**Sent:** Tue Jul 12 20:03:50 2011  
**Subject:** report leaks/press release

(b)(5)

<http://online.wsj.com/article/SB10001424052702304584404576442551499164400.html>

In the interest in this issue, here is the release we will send out in the morning about 9 a.m.

ot

800

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Sharkey, Jeffry

From: Sharkey, Jeffry  
Sent: Wednesday, July 13, 2011 8:49 AM  
To: Virgilio, Martin; Borchartd, Bill  
Subject: Re: Question

I tried the number ... But got a woman.

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

From: Virgilio, Martin  
To: Sharkey, Jeffry; Borchartd, Bill  
Sent: Wed Jul 13 08:37:31 2011  
Subject: Re: Question

Jeff

Please call me. (b)(6)

----- Original message -----

From: Sharkey, Jeffry  
To: Borchartd, Bill  
Cc: Virgilio, Martin  
Sent: Wed Jul 13 08:01:06 2011  
Subject: Re: Question

Bill,

Thank you for the clarification -- very helpful.

Two followup questions for you which can help in determining next steps for the Commission. First, do you continue to stand behind the paper as originally drafted? Second, was the paper withdrawn at the Chairman's direction, or unilaterally by the staff at their own discretion?

Thanks,

Jeff

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

From: Borchartd, Bill  
To: Sharkey, Jeffry  
Cc: Virgilio, Martin  
Sent: Wed Jul 13 07:01:06 2011  
Subject: Re: Question

Became aware of the events as you described by an email (followed by a phone call I placed to Marty- he was on his way to, or at the airport) very early my Weds AM (your Tues afternoon). I understood that Marty signed the 1 page SECY before he left for travel (but I could be wrong about that). I also understand that the Chairman's office wrote the new SECY" paragraph. I had participated in the drafting of the original version that suggested stakeholder outreach.

Bill Borchartd  
via blackberry

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

From: Sharkey, Jeffry

~~NOT FOR PUBLIC DISCLOSURE~~

To: Borchardt, Bill  
Cc: Virgilio, Martin  
Sent: Wed Jul 13 06:10:10 2011  
Subject: Question

~~NOT FOR PUBLIC DISCLOSURE~~

Bill,

Sorry to bother you while you are participating in the South Korea IRRs but I need your perspective on the handling of the Near Term Task Force SECY paper.

Late yesterday morning the Commission received the Task Force report and the associated SECY paper (Notation Vote, per the SRM). The SECY paper included a brief statement about the benefit of a holistic approach vis-a-vis referral of the recommendations to the longer term review. However, in individual phone calls to each Commissioner early yesterday afternoon, the Chairman characterized distribution of the advanced copy of the SECY paper as "most unfortunate" because it did not reflect "his agreement with you" on the content of the paper.

My understanding is that the Chairman directed the staff to withdraw the paper and resubmit a brief paper without any senior management perspective/narrative/views.

SECY then sent an E-mail to the Commission at 1 pm yesterday that read "Today you received the subject report, and an advance copy of a SECY paper (SECY-11-0093). (b)(5) has requested return of the SECY paper in order to make changes. Please destroy the Advance Copy of the paper you received. You will be receiving a corrected version shortly."

Later afternoon a one-page, content-free SECY paper was provided to the Commission (i.e., free of any narrative/senior management perspective). Both the initial and revised papers were issued under your signature.

I have heard that the Chairman's office rewrote the paper, not the staff. I also understand Marty departed headquarters for a trip to Region III before the revised SECY was issued.

Can you help me better understand what happened yesterday and to what degree you were aware of these events?

eff

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811

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffrey

From: Lepre, Janet  
Sent: Wednesday, July 13, 2011 3:46 PM  
To: Svinicki, Kristine  
Cc: Sharkey, Jeffrey; Reddick, Darani; Riddick, Nicole  
Subject: FW: NRC Post-Fukushima Task Force  
Attachments: FW: NRC Post-Fukushima Task Force

Please see the e-mail from Linda Seeley from San Luis Obispo, CA to the Commission regarding the Fukushima Task Force.

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Sharkey, Jeffrey

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** CMRSVINICKI Resource  
**Sent:** Wednesday, July 13, 2011 3:42 PM  
**To:** Lepre, Janet; Riddick, Nicole  
**Subject:** FW: NRC Post-Fukushima Task Force

**From:** Linda Seeley [mailto:(b)(6)]  
**Sent:** Wednesday, July 13, 2011 3:13 PM  
**To:** CMRSVINICKI Resource; CMROSTENDORFF Resource; CMRMAGWOOD Resource; CMRAPOSTOLAKIS Resource; CHAIRMAN Resource  
**Subject:** NRC Post-Fukushima Task Force

I am pleased that the NRC created the task force in the wake of Fukushima's nuclear catastrophe.

Because the task force has found that U.S. nuclear reactors are not sufficiently prepared to respond to catastrophic events or even simple power outages like the one that triggered the Fukushima meltdowns, America's nuclear fleet remains vulnerable to a similar disaster. I urge the NRC to quickly move to order the adoption of the recommendations of this report as well as the full complement of lessons that can be learned from the Fukushima disaster before the issuance of any new nuclear power plant design or license, or approval of any relicense application.

Sincerely,

Linda Seeley, San Luis Obispo, CA

~~NOT FOR PUBLIC DISCLOSURE~~

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Sharkey, Jeffrey

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Svinicki, Kristine  
**Sent:** Friday, July 15, 2011 11:43 AM  
**To:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** FW: Path Forward on Task Force Recommendations

FYI.

**From:** Svinicki, Kristine  
**Sent:** Friday, July 15, 2011 11:41 AM  
**To:** Borchart, Bill; Virgilio, Martin  
**Subject:** Path Forward on Task Force Recommendations

Bill,  
I am sorry to interrupt the very hectic work you are leading for the IRRS Mission in Korea.

As you know, the Commission has received the results of the near term Task Force review of the Fukushima events and has a voting paper, SECY-11-093, before it now.

If you were not currently called away for the IRRS review, I would have requested to meet with you this week, to solicit your views and your recommendation regarding the path forward for considering and dispositioning the near term Task Force results.

I have had discussions with Marty Virgilio and believe I understand what view and recommendation you (and Marty, since I understand you both to be of a similar opinion) would provide to me.

In the interest of economizing your time, I will describe my understanding of your recommendation and request that you confirm, in response, whether or not you would provide this recommendation to me now, were you not on official travel and we had the opportunity to meet personally and discuss this matter.

I understand that you would recommend the following:

(b)(5)

I believe this to be your view, and the recommendation you would make to me in your capacity as Executive Director of Operations of the NRC. If you could confirm this by your response to this message, at your earliest convenience, I would be grateful. As a member of this Commission, the ability to solicit, and know, your advice on the path forward is an essential input to forming my view in the vote I will cast.

Thank you and I hope you are having a successful IRRS Mission.

Sincerely,  
Kristine Svinicki

815

~~NOT FOR PUBLIC DISCLOSURE~~

**Sharkey, Jeffrey**

---

**From:** Lepre, Janet  
**Sent:** Friday, July 15, 2011 12:40 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** FW: Japan Nuclear Accident - NRC Actions  
**Attachments:** FW: Japan Nuclear Accident - NRC Actions

Please see the attached e-mail to the Chairman with a cc to the Commission from Rebecca Chin, Co-Chair, Duxbury Nuclear Advisory Committee.

an

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~~NOT FOR PUBLIC DISCLOSURE~~

Harkey, Jeffrey

From: CMRSVINICKI Resource  
Sent: Thursday, July 14, 2011 5:03 PM  
To: Lepre, Janet; Riddick, Nicole  
Subject: FW: Japan Nuclear Accident - NRC Actions

From: Rebecca Chin [mailto:(b)(6)]  
Sent: Thursday, July 14, 2011 3:58 PM  
To: CHAIRMAN Resource  
Cc: CMRAPOSTOLAKIS Resource; CMRMAGWOOD Resource; CMROSTENDORFF Resource; CMRSVINICKI Resource  
Subject: Japan Nuclear Accident - NRC Actions

Dear Chairman Jaczko,

On Tuesday, July 19, when the NRC Commissioners meet to discuss the 60 day report by your Task Force,

the Town of Duxbury Nuclear Advisory Committee urges the Commissioners to take definitive action now to better

protect the public. Duxbury is within the 10 miles EPZ for Pilgrim Nuclear Power Plant in Plymouth,

Massachusetts, that is the same design as Fukushima.

We agree with Congressman Markey who has emphasized that the NRC first take interim measures (such as issuing

orders), and then implement additional regulations, to ensure that there are:

- requirements to upgrade nuclear reactor protections for severe events (and combinations of events)

such as earthquakes, tsunamis, fires or floods;

- requirements to strengthen protections against the sort of catastrophic loss of electricity that caused the

meltdowns in Japan, including a requirement for reactor cores and spent nuclear fuel to be cooled for up to 72 hours

following such a blackout; ~~NOT FOR PUBLIC DISCLOSURE~~

~~NOT FOR PUBLIC DISCLOSURE~~

- requirements for technologies to prevent or mitigate against the sort of hydrogen explosion that occurred in Japan;
- requirements to strengthen the currently voluntary emergency mitigation procedures for nuclear crises; and
- increased NRC oversight and enforcement of these regulations.

Among the 34 recommendations, we support the Task Force urging tougher standards for back-up power supplies, back-up

water supplies for pools holding plant waste, and improvements in reactors that share the same design as Japan's

Fukushima Daiichi plant.

We expect you to adopt the recommendations of this report before the issuance of any licensing application.

As the NRC will next embark on a six-month broader review, don't forget the public needs to participate.

Sincerely,

Rebecca J. Chin, Co-Chair, Duxbury Nuclear Advisory Committee

(b)(6)

Commissioner Apotolakis  
Commissioner Magwood  
Commissioner Ostendorff  
Commissioner Sznicki

~~NOT FOR PUBLIC DISCLOSURE~~

**Svinicki, Kristine**

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**From:** Svinicki, Kristine  
**Sent:** Friday, July 15, 2011 7:48 PM  
**To:** Borchardt, Bill; Virgilio, Martin  
**Subject:** RE: Path Forward on Task Force Recommendations

Thank you for this response.

**From:** Borchardt, Bill  
**Sent:** Friday, July 15, 2011 5:35 PM  
**To:** Svinicki, Kristine; Virgilio, Martin  
**Subject:** Re: Path Forward on Task Force Recommendations

Commissioner,

I continue to believe that there would be great benefit to thoroughly understanding stakeholder views and alternative approaches before the Commission makes decisions that will have a long term impact on the US nuclear program. There is agreement that the current situation enables adequate protection of public health and safety. I believe that it is more important that we make the best decisions possible and not necessarily the fastest decision possible.

I continue to believe that the approach I endorsed before I left for S Korea, and you summarized in your email to me, would accomplish the objective of obtaining meaningful stakeholder input. I am sure there are other approaches that could accomplish the same objective that deserve equal consideration.

Bill Borchardt  
Via blackberry

---

**From:** Svinicki, Kristine  
**To:** Borchardt, Bill; Virgilio, Martin  
**Sent:** Fri Jul 15 11:40:39 2011  
**Subject:** Path Forward on Task Force Recommendations

Bill,  
I am sorry to interrupt the very hectic work you are leading for the IRRS Mission in Korea.

As you know, the Commission has received the results of the near term Task Force review of the Fukushima events and has a voting paper, SECY-11-093, before it now.

If you were not currently called away for the IRRS review, I would have requested to meet with you this week, to solicit your views and your recommendation regarding the path forward for considering and dispositioning the near term Task Force results.

I have had discussions with Marty Virgilio and believe I understand what view and recommendation you (and Marty, since I understand you both to be of a similar opinion) would provide to me. In the interest of economizing your time, I will describe my understanding of your recommendation and request that you confirm, in response, whether or not you would provide this recommendation to me now, were you not on official travel and we had the opportunity to meet personally and discuss this matter.

I understand that you would recommend the following:

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(b)(5)

I believe this to be your view, and the recommendation you would make to me in your capacity as Executive Director for Operations of the NRC. If you could confirm this by your response to this message, at your earliest convenience, I would be grateful. As a member of this Commission, the ability to solicit, and know, your advice on the path forward is an essential input to forming my view in the vote I will cast.

Thank you and I hope you are having a successful IRRS Mission.

Sincerely,  
Kristine Svinicki

~~NOT FOR PUBLIC DISCLOSURE~~

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**Castleman, Patrick**

~~NOT FOR PUBLIC RELEASE~~

**From:** Castleman, Patrick  
**Sent:** Monday, July 18, 2011 2:38 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** Fw: INFO from RES -- Areas for Consideration -- Post-Fukushima Follow Up  
**Attachments:** Potential Long term Issues.docx

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Trocine, Leigh  
**To:** Castleman, Patrick; Snodderly, Michael; Orders, William; Franovich, Mike  
**Cc:** Marshall, Michael; Hipschman, Thomas; Sheron, Brian; Merzke, Daniel; Brock, Kathryn  
**Sent:** Mon Jul 18 12:42:59 2011  
**Subject:** INFO from RES -- Areas for Consideration -- Post-Fukushima Follow Up

Hello all,

During a 07/17 periodic with Chairman Jaczko, Brian Sheron (RES) discussed the post-Fukushima follow up and provided Chairman Jaczko with a copy of the attached list of ideas/areas that RES thought warranted further evaluation. The list was developed by RES shortly after the Fukushima accident when RES was considering the issues that came out of the Fukushima event.

Would you please pass this information along to your Commissioners? Thanks in advance for your help!

Cheers,  
Leigh

~~NOT FOR PUBLIC RELEASE~~

### Potential Long term Issues

- 1.) Is there a justifiable cost-benefit to off-loading from spent fuel pools all of the fuel that can be safely stored in dry casks? Removing all of the fuel that can be safely loaded in casks will not substantially reduce the heat load in the pool, but removing the fuel will increase the water volume in the pool. This will provide more time to boil off and uncover in a SBO. Also, spreading the fuel out in the pool will enhance cooling in the event of an uncover (e.g., no radiation heat source from adjacent assemblies) and may prevent or substantially delay melting.
- 2.) Are East and Gulf coast plants adequately protected from natural phenomena? There are reports that say that global warming is heating up the oceans, and this, in turn, spawns more violent hurricanes (e.g., Katrina). Have we conservatively estimated the storm surges associated with worst-case hurricanes that could hit the coasts, and are the plants along those coasts adequately protected from those storm surges and associated flooding?
- 3.) PWR Containments do not have filtered vents. It is also not clear if they have vents that can be operated without AC power. The benefits of putting a filtered vent on a PWR containment, along with vents that can be actuated without AC power (e.g. compressed air) should be evaluated.
- 4.) Do we need to revisit the need for non-AC dependent hydrogen igniters on IC plants?
- 5.) Are their accident management strategies in place for lower vessel flooding, and how well do we understand whether lower vessel flooding will work to retain a molten core inside the vessel?
- 6.) How well can we predict tsunami wave height? Can scale model testing help improve models?
- 7.) Do U.S. plants have the capability to inject ultimate heat sink water? How much time do plants with cooling ponds, like Palo Verde, have if they injected their ponds. Does that affect long term cooling strategies?
- 8.) Do plants have EDGs and their associated fuel tanks sufficiently protected from natural phenomena, especially floods?
- 9.) Do we need AC powered (with battery backup) hydrogen igniters in reactor buildings and/or in the vicinity of SFPs?
- 10.) Are there natural phenomena that can damage dry casks? Dry casks are designed for earthquakes. Do we know how well they can withstand a beyond DBA earthquake?
- 11.) Fukushima 3 had several MOX fuel assemblies in it. How would a core with more or a full load of MOX assemblies affect the outcome of severe accidents?

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12.) Do we have sufficient instrumentation in plants to accurately assess plant conditions following an accident, including severe accidents (e.g., water levels at various locations)? Is the instrumentation sufficiently robust to survive in the accident conditions?

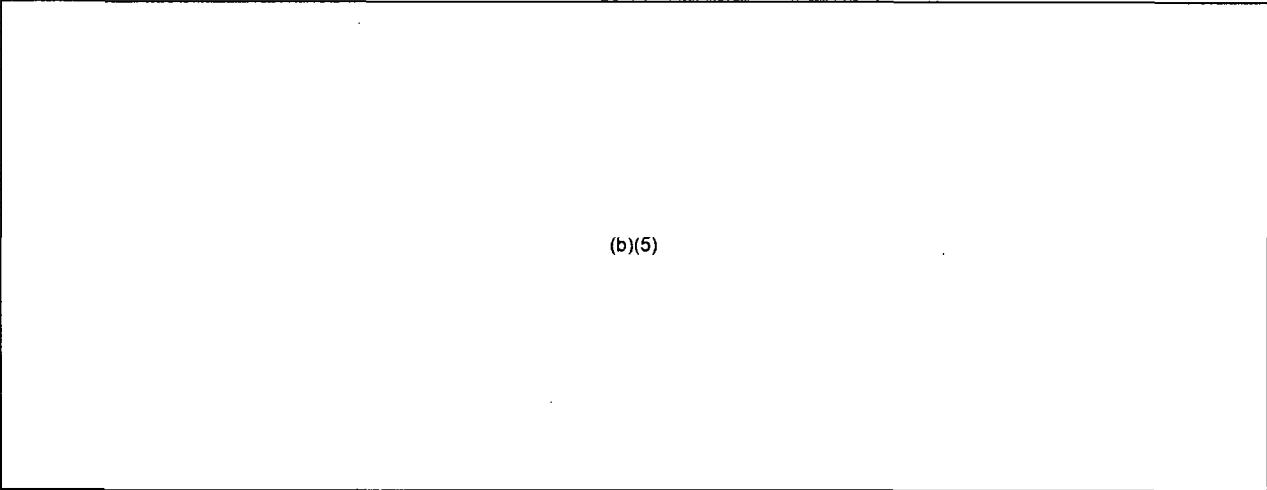
13.) The Fukushima event seemed to bring out shortcomings of our dose assessment codes, particularly RASCAL. Should we re-evaluate the need for improved, easy to use radiological dose assessment codes?

14.) During the evolution of the accident at Fukushima, there was not a lot of coordination (at least initially) among various agencies (e.g., DOE and NRC). Concern was that everyone was advising the Japanese, with no coordination. In the event of another reactor accident outside of the U.S., should U.S. agencies have worked out plans for coordination beforehand? Does the international community need to coordinate better?

15) It took a while before we called in industry and got an industry consortium going to interact directly with their Japanese counterparts (TEPCO). Should we encourage industry to create a standing consortium that would be poised to move in the event of another accident? Is this really a role for WANO?

(b)(5)

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~~NOT FOR PUBLIC DISCLOSURE~~

**Sharkey, Jeffry**

**From:** Sharkey, Jeffry  
**Sent:** Monday, July 18, 2011 6:49 PM  
**To:** Svinicki, Kristine  
**Cc:** Reddick, Darani  
**Subject:** FW: Memorandum to Commission on Fukushima Task Force and KI  
**Attachments:** 2011.July.NRCFukushimaTaskForceFinal.rtf

FYI

Lengthy memo from Peter Crane re KI distribution and the task force report. DMR may have provided to you separately.

**From:** Vietti-Cook, Annette  
**Sent:** Monday, July 18, 2011 6:43 PM  
**To:** Batkin, Joshua; Coggins, Angela; Monninger, John; Clark, Lisa; Sharkey, Jeffry; Reddick, Darani; Sosa, Belkys; Davis, Roger; Subar, Patrice; Nieh, Ho  
**Cc:** Baval, Rochelle; Laufer, Richard; Wright, Darlene; Lewis, Antoinette  
**Subject:** FW: Memorandum to Commission on Fukushima Task Force and KI

Just in case you have not seen yet, I am forwarding. Roger forwarded this earlier in the day to legal assistants. Angie and my staff made copies and walked around this evening.

**From:** Peter Crane [mailto:(b)(6)]  
**Sent:** Monday, July 18, 2011 11:44 AM  
**To:** Vietti-Cook, Annette  
**Cc:** Davis, Roger  
**Subject:** Memorandum to Commission on Fukushima Task Force and KI

Hi Annette --

The attached memorandum is directly relevant to the briefing that the Commission will be getting tomorrow on the report, issued last week, of the Fukushima Task Force. It is time-critical. Could you please see that it is printed out and delivered to Commission offices as soon as possible? Thanks.

By the way, in it I mention that there is a March 27, 2006, letter from HHS Secretary Leavitt to Chairman Diaz that I was not able to find on ADAMS, except as an attachment to a letter from Professor Frank von Hippel of Princeton and me to Senator Frank Lautenberg, with copies to the NRC. Maybe I missed it somehow with the search terms I used. In any event, if that letter is not on ADAMS, it should be, and it is puzzling that it isn't.

Thanks --  
Peter

Peter Crane / (b)(6) (b)(6) (b)(6) (home), (b)(6) (cell)

~~NOT FOR PUBLIC DISCLOSURE~~  
July 18, 2011

MEMORANDUM FOR: Chairman Gregory B. Jaczko  
Commissioner Kristine L. Svinicki  
Commissioner George Apostolakis  
Commissioner William D. Magwood, IV  
Commissioner William C. Ostendorff

FROM: Peter Crane  
Counsel for Special Projects, USNRC (retired)

On July 13, the NRC issued press announcements on two unrelated matters: the public release of the report of the NRC staff's Task Force on the Fukushima accident (news release No. 11-127), and the Commission's directive to the staff "to examine feasibility and need of study on radiation doses to public from nuclear medicine" (news release No. 11-128).

The Task Force report touches on, though only very minimally, the use of potassium iodide (KI) as a thyroid blocking agent; the directive on nuclear medicine relates directly to the issue of the release of patients with high doses of radioactive iodine-131 in their systems. Both as an NRC employee and as a retiree, I have been involved with these two subjects for many years – nearly 30 years, in the case of KI, and almost 20 years, with respect to radioactive patients – and I have considerable institutional knowledge in these areas.<sup>1</sup> I feel obligated to the current Commissioners, the agency, and the public, to share some of this history with them, and explain why the July 13 issuances are problematic. Since I see that the schedule calls for the Task Force to brief the Commission on July 19, I will in the interest of time deal with the first today and the second in a memorandum to be submitted in the near future.

The charter of the NRC staff Task Force on Fukushima was set forth in a March 23, 2011, tasking memorandum from Chairman Jaczko to R. W. Borchardt, the Executive Director for Operations (Appendix B to the report, p. 77), and the March 30, 2011, memorandum from Mr. Borchardt to Martin Virgilio and Charles Miller (Appendix C to the report, p. 79). The Task Force was given the specific task of considering, among other things, "Emergency preparedness (e.g. emergency communications, radiological protection, emergency planning zones, dose projections and modeling, protective actions)." [Emphasis added.]

<sup>1</sup>In an appendix, I will describe my 27-year service at NRC.

Protective actions include, as the report acknowledges, potassium iodide. The following seem like obvious questions: How widely was potassium iodide distributed in Japan? How far away from Fukushima did radioactive iodine show up in foodstuffs, water, and air? What kind of radiation doses to the thyroid were received by Japanese citizens, especially children, and at what distances from the reactors? What does this suggest about the need for KI beyond the 10 mile radius in which the NRC now offers it?

These are all questions that can be answered, to a greater or lesser extent, by any informed citizen who reads the newspapers and has access to a computer, but anyone whose only source of information is the NRC Task Force, which was in theory addressing such issues, would be out of luck. Indeed, such a person would not even realize that these issues existed, for the Task Force has tiptoed around them.

The Task Force must surely be aware that the NRC has come under sharp criticism for its role in preventing the implementation of a law, Section 127 of the Public Health Security and Bioterrorism Preparedness and Response Act of 2002, which would have extended the availability of KI out to a 20-mile radius. A January 2008 decision by the President's Science Advisor, Dr. John H. Marburger III, declined to implement that portion of the Act. The Task Force must also know that a bipartisan group of some 30 Members of Congress, including Rep. Ed Markey, the law's sponsor, has called on the President to revisit that decision and authorize the broader stockpiling and distribution of the drug, and that this issue is under reconsideration by the Administration.

But no reader of this report would realize any of that, or find a scintilla of information that might shed light on the question of whether current policy needs revision. What is more, an Associated Press story on March 31, 2011, quoted Patricia Milligan, the NRC's senior expert on KI matters, as saying that the NRC was "absolutely confident" that the 10 mile radius for stockpiling of KI was sufficient. Considering that the accident was still unfolding rapidly at that time, this was highly premature. It was only on March 23, after all, that Chairman Jaczko had directed the staff to examine, among other things, "emergency planning zones" and "protective actions." If the staff had completed its review of the KI issue in the intervening eight days, this was quick work indeed.<sup>2</sup>

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<sup>2</sup> Normally the NRC's consideration of KI policy is measured in years. When the NRC Commissioners, over the fierce opposition of the NRC staff, granted my petition for rulemaking on KI in early 2001, changing the NRC's regulations and also offering supplies of KI to states, it was the culmination of a process that had begun with a Differing Professional Opinion that I had filed 12 years earlier.

March 27, 2006, which though couched in superficially civil terms was an acid rebuke that made clear that NRC had quoted snippets of the NAS report out of context to produce a misleading impression. He quoted the actual words of the NAS report back to Diaz: "A specific incident might call for protective actions to be restricted to a small part of the EPZ **or require that they be implemented beyond the EPZ as well,**" boldfacing the last 11 words for emphasis.<sup>5</sup>

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NRC, which may be found as LTR-07-0685 on the ADAMS system. If Secretary Leavitt's letter is not on the system in its own right (and if not, one may ask why not), it should be added.

<sup>5</sup>Secretary Leavitt also wrote:

Section 127 of the Bioterrorism Preparedness and Response Act of 2002 requires the President to make KI available to State and local governments for stockpiling and distribution, and to establish guidelines for the stockpiling of KI and for its distribution and utilization in the event of a nuclear incident. Additionally, subsection 127(f) states that these requirements "*cease to apply as requirements if the President determines that there is an alternative and more effective prophylaxis or preventive measures for adverse thyroid conditions...*" The President has not made the necessary determination here. Rather, as the President stated in 2002 when forming the Department of Homeland Security, "*...one Department would be responsible for distributing Potassium Iodide to citizens exposed - no matter where they lived. There would no longer be an artificial ten-mile barrier to treatment.*" Currently, we do not believe there are "alternative and more effective... measures" than to make KI available up to 20 miles from a nuclear facility, in conjunction with the protective measures established by the NRC. [Emphasis in the original.]

Unaware at the time of HHS Secretary Leavitt's letter to NRC, I drew the Kane letter's mischaracterization of the NAS report to the attention both of the Commission, by email, and the NRC's Office of Inspector General. This was, as usual, fruitless. The EDO, Luis Reyes, replied a few weeks later with a short note that neither mentioned the NAS report nor gave a direct answer to the charge that the Kane letter had mischaracterized its findings. Instead, he wrote that "the Commission believes that Mr. Kane's letter reflected the NRC's well-considered, scientifically-based position on expanded distribution of KI." Apparently, it was a matter of indifference whether the Kane letter was factual, so long as it supported the Commission's position.

OIG declined to investigate. Its Allegations Coordinator, George Mulley, explained to me on the telephone that the first thing that OIG did, when examining an allegation, was to ask what federal law had been broken, and that there was nothing in the U.S. Code that made it illegal to deceive another federal agency. This was, I submit, an unduly pinched view of OIG's mandate.

But it was hardly surprising. OIG's record of mishandling allegations concerning the staff's treatment of KI matters goes back many years, and includes one occasion on which, contrary to OIG procedures, Inspector General David Williams disposed of an allegation with no written record, and without even informing his head of investigations, Leo Norton, that the allegation had been received. Norton, an honorable and candid person, agreed with me that this was an "off the books" handling of an allegation, and said that I could quote him to that effect. It was unique in his experience, he said, and "no way to do business." For more on OIG and KI, see also the joint letter from Professor Frank von Hippel and me to Senator Joseph Lieberman, dated 9/26/2006, with copies to the NRC, cited above, and accessible through ADAMS as LTR-07-0685.

I might add that though the concurrence page on the Kane letter, as it appears on the NRC website, indicates that the originator of the document was Patricia Milligan, the responsibility for it extends to all who reviewed and signed off on it. The same applies to those who, after seeing Secretary Leavitt's letter, nevertheless approved the response to Senator Isakson's question, which will be discussed shortly.

Secretary Leavitt's letter plainly did not faze the NRC, however, which in an April 10, 2006, letter to Senator George Voinovich, responding to questions arising from a recent oversight hearing, repeated the assertion that the NAS supported the NRC position on the undesirability of stockpiling KI beyond ten miles, and attached the Kane letter.<sup>6</sup> (The answer came in response to a question from Sen. Isakson.) By now, there was no excuse for inaccuracy. If the staff had somehow contrived to misread the NAS report at the time it wrote to Dr. Claypool in November 2005, any such misunderstanding had been cleared up by Secretary Leavitt, in his letter of March 27, 2006.

With his declared intention of implementing the law and providing KI in the 10 to 20- mile radius, Secretary Leavitt was on a collision course with the NRC and the nuclear industry. The White House was persuaded to forget or ignore what it had said in 2002 about eliminating the "artificial 10 mile barrier" to the distribution of this "crucial" and "critical" drug. On July 2, 2007, President Bush signed an order that stripped Leavitt of his authority over the law and transferred it to the NRC and to his own Science Advisor, Dr. Marburger, who would have the

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<sup>6</sup> The relevant section of the letter, at pp. 29-30, reads as follows, and may be found on the NRC website using accession no. ML060930353:

QUESTIONS FROM SENATOR ISAKSON:

During the hearing, I brought up the issue of potassium iodide, but didn't get a chance to pursue my question with the Commission. It is my understanding that the Department of Health and Human Services (HHS) has made a recommendation to expand the stockpiling of potassium iodide beyond the 10-mile radius around a nuclear facility which is the current requirement. Please provide the Commission's position on the HHS's recommendation for the record.

ANSWER:

Based on the NRC's decades of experience with nuclear power plant emergency preparedness and radiological protection of the public, it is the NRC's conclusion that expanded distribution of potassium iodide (KI) is unnecessary. Expanded distribution of KI is unnecessary because of the current, well-established, and scientifically sound framework of the NRC's emergency preparedness regulations. This framework includes predetermined protective actions for populations within the 10- and 50-mile ingestion exposure pathway Emergency Planning Zones (EPZs) to provide the necessary protection of public health and safety. These predetermined protective actions include interdiction of contaminated milk, food, and water, as well as protective measures for livestock. NRC's conclusion is supported by a January 2004 study by the National Academy of Sciences, which found that food testing and interdiction programs in place throughout the United States are more effective preventive strategies than expanded distribution of KI for ingestion pathways. Additionally, many States and other interested entities, including Federal agencies, have expressed opposition to the distribution of KI beyond the existing 10-mile EPZs. Additional detail on the Commission's position on HHS's draft guidelines for expanded KI distribution are [sic] provided in the November 1, 2005 letter from Mr. William Kane, NRC's Deputy Executive Director for Reactor and Preparedness Programs, to Dr. Claypool of HHS's Office of Mass Casualty Planning, which is attached (Attachment 7) for your convenience.

final say on whether to implement the law.

At Marburger's request, a technical evaluation paper on KI was prepared by the Potassium Iodide (KI) Subcommittee of the Federal Radiological Preparedness Coordinating Committee (FRPCC), an interagency group. On October 23, 2007, FRPCC Chair Vanessa Quinn, of FEMA, transmitted the paper to Marburger, with a cover letter that made plain the leading role of the NRC staff in the effort.<sup>7</sup>

Marburger's decision, issued on January 22, 2008, predictably found no need to implement the 2002 law. This is not the place to get into the legal question of whether his refusal to do so was consistent with Congressional intent and a proper reading of the statute, though I have strong views on that point; I would like instead to stay with the technical and policy bases for his decision.

Perhaps the most extraordinary thing about the Marburger decision was that the President's Science Advisor felt able to issue a 13-page decision on a drug for the prevention of cancer without ever using the word "cancer." Instead, he referred euphemistically to "adverse thyroid conditions." From the chief scientist in the United States Government, this defies comprehension. Is it conceivable that any Government official would issue a decision on the use of Sabin vaccine without ever employing the word "polio"? Of course not. But when the subject is KI and thyroid cancer, this happens again and again.<sup>8</sup>

Let us now look at the important question of what exactly Marburger was relying on. At p. 12 of

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<sup>7</sup>Quinn wrote: "I would be remiss if I did not specifically mention the hard work and effort put into this project by Trish Milligan, KI Subcommittee Co-Chair. Her technical knowledge and willingness to spearhead the overall coordination of this technical evaluation paper was invaluable." Just the day before, October 22, 2007, an article in *USA Today*, entitled "White House may stop plan for anti-radiation pills," included the following: "Patricia Milligan, the NRC's senior adviser for preparedness, says the commission opposes broad distribution of the pills because the best way to eliminate risk is to make sure people don't eat contaminated food. She also says the NRC is concerned about undermining the reputation of the nuclear industry. 'It's always a concern that if you expand the distribution (of the pills), you don't have confidence in the plants,' she says. 'We have studies that show the safety of our plants.'"

<sup>8</sup>This is certainly true at NRC as well. For example, at NRC headquarters, on July 1, 1997, anyone whose office windows faced west might have seen a television crew, with the familiar eye of the CBS Evening News on its videocamera, interviewing me in front of the building. Four hours later, the NRC, under Chairman Shirley Jackson, issued a press release stating that agency would buy KI for any state that wanted it. (At the time, the matter had been pending for seven years.) But the news release was careful not to use the word "cancer," and therefore was less helpful to readers than it might have been. It probably made little difference, however, for the NRC did nothing to implement this commitment, and two years later, still under Chairman Jackson, the Commission retracted its promise, saying that budget constraints did not allow expenditures on new initiatives of this kind.

his decision, he wrote:

Some concerned citizens groups criticize meteorological analyses that assume a wind that blows constantly in a single direction, suggesting that variable trajectory models would better account for complex wind patterns, leading to accident consequences extending beyond current projections. In fact the opposite is true. The NRC and FEMA outline their strategies for emergency planning in the 2002 study *Assessment of the Use of Potassium Iodide (KI) as a Supplemental Public Protective Action during Severe Reactor Accidents* (NUREG 1633)<sup>9</sup>, which addresses the effect of meteorology on accident consequences, specifically its effect on where the offsite release goes....

The footnote included a citation to this document, which states on its cover page that it was "Prepared by P. A. Milligan/NRR."<sup>9</sup>

What Marburger evidently did not know was that officially, this document was in the dumpster. In November 2002, the Commission had decided, on a 4-1 vote, with Commissioner Dicus the lone dissenter, that it was unfit for publication, and that no more resources should be spent on bringing it up to standard. Commissioners' comments on it were not gentle. Commissioner McGaffigan noted that although it was the 9/11 attacks that had spurred states' interest in KI stockpiling, "the draft NUREG is silent on the subject." Commissioner Diaz wrote:

The draft NUREG now before us is the third version we have been asked to review since mid1998. (The first version was withdrawn by the Commission and we disapproved the second one.) ... In my opinion, it's time to pull the plug.<sup>10</sup>

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<sup>9</sup><http://www.nrc.gov/reading-rm/doc-collections/commission/secys/2002/secy2002-0089/attachment1.pdf>

<sup>10</sup>The story of the three rejected versions of NUREG-1633 is a curious one. The first version managed not to include, in its 37 pages, the fact that the Food and Drug Administration had found KI to be "safe and effective." (This was comparable to the FDA issuing a report casting doubt on the safety of a particular nuclear power plant without mentioning that there was an organization called the NRC that had found this plant to be safe.) The document strove to raise anxieties about the safety of the drug, and to warn of the lawsuits that would be faced by any state that gave it out in an emergency. It also asserted that American can authorities cautioned against giving the drug to children and pregnant women, whereas in reality, it is universally recognized, here and abroad, that the principal *benefit* of the drug is to children and pregnant women. (I should in fairness mention that NUREG-1633 was not wrong about everything, however. For example, it said of Chernobyl, at p. 14: "[I]nhalation most like was a major source of the dose received in some areas near the plant." This contradicts an assertion often made by opponents of KI: that virtually all the post-Chernobyl thyroid cancers resulted from drinking contaminated milk.)

The Commission soon received scathing comments from state health officials and others. Dr. Karim Rimawi, director of the Bureau of Environmental Radiation Protection in the New York State Health Department, wrote on September 29, 1998, that the Department "had looked forward to NRC's report in the

I do not know where Dr. Marburger got his copy of the draft NUREG – perhaps it was not from the NRC at all – but surely he could and should have been warned by his NRC advisor that the document had been rejected by the Commissioners and therefore had no place in his decision.

Relying as it did on an invalid document, Marburger's decision must therefore be considered at least partially tainted. Its pernicious effects, moreover, have extended far beyond the question of implementing the 2002 law. After its issuance, the interagency group that maintains the Strategic National Stockpile removed KI from the arsenal of protective drugs that comprise that stockpile, to which it had been added after 9/11.<sup>11</sup> I am told that the group felt that it had no choice, in light of the Marburger decision.

At a time at which in every other sphere of life, America is *increasing* its preparedness against terrorism, the NRC has thus been instrumental in *diminishing* our country's preparedness to deal with acts of nuclear terrorism or other nuclear catastrophes. It must be borne in mind what the consequences of insufficient preparedness will be, if such a disaster occurs: an increased incidence of thyroid cancer, especially in children who were very young, or still in the womb, at the time of exposure.<sup>12</sup>

I would be the last person to argue that KI is a panacea for protection against radiological

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hope that it would assist us," but found that it had been "prepared to justify a position advocating against the use of KI for public protection, rather than as an objective review of the relevant information." "This bias," he wrote, "raises doubt as to the value of the document." He also commented: "It selectively references sources that support that point of view and ignores others that tend to justify the use of KI."

Shortly afterwards, the Commission ordered NUREG-1633 withdrawn. Commissioner Ed McGaffigan, in a memorandum quoted in the October 12, 1998, issue of *Inside N.R.C.*, wrote: "As I admitted at the public meeting, I had not read enclosure 8 [draft NUREG-1633] in any detail when I agreed to put it out for public comment and peer review as the SRM was drafted. I made the mistake of thinking no harm could come from just putting a document out for public comment. I was wrong." (At p. 8.)

Revision of the NUREG was entrusted to a large Core Group, headed by Aby Mohseni. It was on his watch that the entire Core Group, during a particularly a cold February in Rockville, spent a week at NRC expense in Tempe, Arizona. This second version was also rejected, and the project then passed into the hands of Patricia Milligan, who produced the third and final version. By the time the Commission rejected it in 2002 and "pulled the plug," in Commissioner Diaz's words, the NRC had spent a small fortune on NUREG-1633, with nothing of value to show for it.

<sup>11</sup> [http://www.washingtonpost.com/national/us-health-care-system-unprepared-for-major-nuclear-emergency-officials-say/2011/04/07/AF6ZSavC\\_story.html](http://www.washingtonpost.com/national/us-health-care-system-unprepared-for-major-nuclear-emergency-officials-say/2011/04/07/AF6ZSavC_story.html)

<sup>12</sup> If the example of Chernobyl is an accurate guide, we will begin seeing the first post-Fukushima childhood thyroid cancers in about five years.



disasters. Indeed, in the early days of the Fukushima accident, I went on television in Seattle to say that it would "irresponsible scaremongering" to suggest that anyone in the U.S. should now be taking KI to protect against the releases from Japan. But it is likewise irresponsible in the extreme not to have adequate supplies on hand in this country, for accidents or acts of terrorism occurring here, and of all the possible reasons for failing to stockpile it, protecting the public image of the nuclear power industry is surely the rock-bottom worst.<sup>13</sup>

The real question is whether KI would be useful in the event of a major release, for if not, there is no point in having it, regardless of its low cost. The opponents of KI stockpiling have long maintained that KI is unnecessary, because the whole problem of thyroid protection can be solved by instructing people to refrain from drinking milk after a major nuclear release. For example, in the early days of the Fukushima accident, a March 13 article in the *New York Times* quoted a radiation expert at Columbia, Dr. David Brenner:

Dr. Brenner said the iodine pills were protective, but were "a bit of a myth" because their use is based on the belief that the risk is from inhaling radioactive iodine. Actually, he said, 98 percent of people's exposure comes from milk and other dairy products.

"The way radioactive iodine gets into human beings is an indirect route," he said. "It falls to the ground, cows eat it and make milk with radioactive iodine, and you get it from drinking the milk. You get very little from inhaling it. The way to prevent it is just to stop people from drinking the milk." He said that the epidemic of thyroid cancer around Chernobyl could have been prevented if the government had immediately stopped people from drinking milk.

I have no idea where Dr. Brenner got this 98% figure; most sources I have seen think that 70 or 80 percent of the Chernobyl exposures came from the milk pathway, not more. At any rate, once I-131 began showing up in Tokyo's tap water, I wrote a letter to the *New York Times*, published on March 26, that was implicitly a slap at Dr. Brenner and the reporter who had so uncritically relied on him.<sup>14</sup>

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<sup>13</sup> Even if we assume for purposes of argument that stockpiling KI would cause Americans to worry about the safety of nuclear power plants (and after Fukushima, it seems unlikely that KI would play any significant role in any such worries they may have), that is separate from the question of whether we should have the drug on hand as part of preparedness for acts of *terrorism*. The public relations needs of the nuclear power industry regarding power plant safety should have no bearing on whether we are ready to cope with a nuclear device exploded by terrorists.

<sup>14</sup> To the Editor:

The detection of radioactive iodine 131 in Tokyo's drinking water ("Anxiety Up as Tokyo Issues Warning on Its Tap Water," front page, March 24), in amounts considered unhealthy for children, makes clear that potassium

Whether for that reason or some other, Dr. Brenner's public position on KI changed almost instantaneously. On the afternoon of the same day, March 26, a glowing profile of him, "Countering Fears With Just the Facts," was posted on the *New York Times* website (it appeared in print on March 29), which included the following:

Potassium iodide pills are widely recommended to protect the thyroid gland from radioactive iodine, but Dr. Brenner said it was better just to stop drinking milk until the threat had passed.

His message changed, however, when radioactive iodine turned up in tap water in Tokyo. Though the public was advised that babies, children and pregnant women should not drink the water, Dr. Brenner conceded that some exposure might still be hard to avoid, and that using potassium iodide was a reasonable precaution.

"I've been maybe a little overstrong in saying that potassium iodide doesn't have a role to play," he said. "But usually the problem is milk. To me, the levels in water came as a surprise."

But is it really a "myth," as Dr. Brenner suggested in the earlier article, that inhalation of I-131 after a radiological release is a danger?

Nearly 20 years ago, the Environmental Protection Agency issued a "Manual of Protective Action Guides and Protective Actions for Nuclear Incidents," EPA 400-R-92-001 (May 1992)<sup>15</sup>, that included the following, at p. 5-20: "If a major release of radioiodine or respirable particulate

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iodide must be administered if children are to be adequately protected against thyroid cancer caused by ingested and inhaled iodine 131. Interdiction of milk supplies, though important, is plainly insufficient.

Japan's apparent preparedness with potassium iodide contrasts with the situation in the United States. In response to 9/11, Congress passed a law to create stockpiles of potassium iodide for populations within a 20-mile radius of nuclear reactors, rather than the 10-mile radius within which the Nuclear Regulatory Commission offers it to states that request it.

But the N.R.C., which had opposed the law, fought successfully to keep it from taking effect. In 2008 President George W. Bush's science adviser, John H. Marburger III, declared that potassium iodide was not needed beyond the 10-mile radius, and that the law therefore would not be implemented.

The events in Japan demand that the Obama administration act quickly to reverse this unjustified rejection of a sensible law.

Peter Crane  
Seattle, March 24, 2011

<sup>15</sup><http://www.epa.gov/radiation/docs/er/400-r-92-001.pdf>

materials occurs, **inhalation dose will be the controlling pathway.** [Emphasis added.] It recommended, among other things, consideration of the use of KI. It made the point that though evacuation in an emergency is the ideal option, you can get a radiation dose while evacuating, and that automobiles offer only about 10% shielding.

The Food and Drug Administration issued guidance on KI in 2001.<sup>16</sup> At p. 8, after noting that the post-Chernobyl exposures to radioiodines came “largely” from the milk pathway, it said:

In this or similar accidents, for those residing in the immediate area of the accident or otherwise directly exposed to the radioactive plume, **inhalation of radioiodines may be a significant contributor to individual and population exposures.** ... The risk depends on factors such as the magnitude and rate of the radioiodine release, wind direction and other atmospheric conditions, and thus may affect people both near and far from the accident site. [Emphasis added.]

There was also a useful report from the International Atomic Energy Agency in 2002.<sup>17</sup> At p. 52, the joint IAEA/WHO committee that prepared it makes the point that “iodine prophylaxis is intended **primarily as a protective action against inhalation,**” in the short term, and suggests amending the International Basic Safety Standards to reflect this. [Emphasis added.]

In 2003, the Medical Preparedness and Response Sub-Group of the Department of Homeland Security Working Group on Radiological Dispersal Device Preparedness prepared a report saying that if terrorists detonated a radiological dispersal device containing radioiodine or a 10-kiloton improvised nuclear weapon, millions of doses of KI might be needed to deal with the fallout. It said, at p. 62: “Urgent consideration for giving KI to pregnant women (especially 2nd and 3rd trimesters) and children is appropriate.”<sup>18</sup>

On June 30, 2011, in response to a Freedom of Information Act request, the NRC placed a large number of documents relating to the Fukushima accident onto the ADAMS system.<sup>19</sup> They

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<sup>16</sup> <http://www.fda.gov/downloads/Drugs/GuidanceComplianceRegulatoryInformation/Guidances/ucm080542.pdf>

<sup>17</sup> [http://www-pub.iaea.org/MTCD/publications/PDF/Pub1133\\_scr.pdf](http://www-pub.iaea.org/MTCD/publications/PDF/Pub1133_scr.pdf)

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[http://www.orau.gov/hsc/RadMassCasualties/content/resources/Radiologic\\_Medical\\_Countermeasures\\_051403.pdf](http://www.orau.gov/hsc/RadMassCasualties/content/resources/Radiologic_Medical_Countermeasures_051403.pdf)

<sup>19</sup> For this information, I am indebted to David Lochbaum, an NRC alumnus now with the Union of Concerned Scientists.

include a March 25, 2011, email from Elmo Collins, Regional Administrator in NRC's Region IV, to Linda Howell, as he prepared to leave for Japan. The subject line is "Japan," and it reads, in its entirety, as follows: "I'll need to pick up some KI and make sure I have my dosimetry as needed – what dose meter would be good for me to take? Thanks, Elmo."

Of course Mr. Collins provided himself with KI, and rightly so. NRC personnel are not reckless when it comes to their own safety or that of their children, nor should they be.<sup>20</sup> But if ever there is a nuclear catastrophe in this country, whether caused by terrorism or an accident, and Americans living more than 10 miles from a nuclear power plant discover that *their* children have been inadequately protected against radioactive iodine owing to the NRC's unremitting, no-holds-barred battle to prevent or limit KI stockpiling – a battle that has included misrepresenting, *including to Congress*, the findings of a Congressionally mandated study of the issue by the National Academies of Science, and working to ensure that the sensible recommendations of the NAS were rejected by the President – the consequences would be devastating, not only for the affected children, but also for the NRC.

What would the country say when it learned that KI had been removed from the Strategic National Stockpile, with the result that we are less well prepared to cope with the medical effects

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<sup>20</sup>By the same token, consider a March 4, 1994, letter from Jim Martin, an NRC retiree, to Hugh Thompson, then Deputy Executive Director for Operations, which was placed in the Public Document Room at that time:

Please hold the bottom line: do not require that utilities distribute KI to the general public as a license condition. This was my bottom line over many years of discussions of the subject at the staff and the commission levels. As I said to Peter Crane at one time: If I lived near a nuclear plant, I'd have some KI for my family (it's so cheap!), but I think it would be legally obscene to require KI predistribution to the public as a condition of a license. If Peter wants KI available in the schools, then let the PTAs run car washes and buy some! At the time, they cost only 2-3 cents apiece.

I recall this meeting well; Mr. Martin made the point that for the price of the pack of cigarettes in his shirt pocket (at the time, in 1983, they sold for about \$.75 a pack in the D.C. area), he could protect his whole family with KI, and he would be "crazy" not to do so. Please understand: I do not by any means intend to demonize Mr. Martin, whose letter, if read in its entirety, which I recommend, is more thoughtful and balanced than this one passage, taken in isolation, might suggest. The problem with his proposed solution, however, is that unless people are *told* that KI is desirable, the PTA's of America are not going to know to hold such bake sales, and in an actual emergency, only knowledgeable insiders, such as NRC personnel and their families, will be protected.

Incidentally, Mr. Martin made another observation in his letter, from which it can be inferred that the site at which KI would be of greatest value in preventing cancer is Indian Point (IP): "The major technical basis document at the time was the Blond & Aldrich report on the efficacy of KI. Indeed, it showed that a 'national' KI predistribution program would not be cost effective in terms of cancers avoided (half or more of the calculated cancers arise beyond 50 miles at most sites – all except for IP, as I recall, so the emphasis must be on the area beyond 50 miles, for the cancer issue)." [Emphasis added.]

of a nuclear disaster than we were a few years ago? The NRC Chairman and Commissioners would probably find themselves having to explain their actions not only to Congressional committees but to grand juries. Under those circumstances, it is hard to imagine that the Nuclear Regulatory Commission would even survive for long, at least under that name.<sup>21</sup> More likely, it would be abolished and replaced by some new regulatory body, as is currently happening in Japan.<sup>22</sup>

Press reports indicate that radioiodine from Fukushima has turned up in air, water, and foodstuffs far from the damaged nuclear plants.<sup>23</sup> To continue to insist that KI stockpiling in this country be limited to a 10 mile radius around nuclear plants, and then only in states which request the drug, would be irresponsible beyond measure. The sooner the NRC faces up to this reality, the better, and not only for the American public, but also for its own sake. The Task Force should be told to address the KI issue thoroughly and promptly. In addition, the Inspector General should be asked to investigate the staff's handling of KI matters in recent years, including, but not limited to, the appearance of NUREG-1633 in the Marburger decision, the accuracy of the 2005 Kane letter to

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<sup>21</sup> After 9/11, Commissioner McGaffigan called me to tell me that I had "saved the NRC from itself," through the efforts that resulted in the NRC's rule change on KI, a few months earlier.

<sup>22</sup> <http://mdn.mainichi.jp/mdnnews/news/20110717p2g00m0dm054000c.html>

<sup>23</sup> Consider this excerpt from an article carried by National Public Radio on March 20, at <http://www.npr.org/2011/03/20/134705754/japans-efforts-to-ease-nuke-crisis-hit-setback>:

**Government Admits Mistake**

Officials have begun distributing protective potassium iodide pills to people from the area around the power plant. But one official in Fukushima, Kazuma Yokota, told reporters that the government now realizes it should have distributed the pills earlier last week.

Potassium iodide protects people against thyroid cancer if they have been exposed to radioactive iodine, but it must be taken promptly.

The pills help reduce chances of thyroid cancer, one of the diseases that may develop from radiation exposure, by preventing the body from absorbing radioactive iodine. The official, Kazuma Yokota, said the explosion that occurred while venting the plant's Unit 3 reactor last Sunday should have triggered the distribution. But the order came only three days later.

"We should have made this decision and announced it sooner," Yokota told reporters at the emergency command center in the city of Fukushima. "It is true that we had not foreseen a disaster of these proportions. We had not practiced or trained for something this bad. We must admit that we were not fully prepared."

HHS, and the 2006 response to Senator Voinovich.<sup>24</sup>

What I have described in this memorandum are facts as I understand them, as informed by nearly 30 years of observing the NRC's handling of the KI issue. It has been prepared in a spirit of trying to be of service both to the American people and to the NRC. In this case, dealing as it does with a medication, a quotation from Gotthold Lessing's 18<sup>th</sup> Century play "Nathan the Wise" is particularly apposite: "It is medicine, not poison, that I am handing you."

/s/

Peter Crane, Counsel for Special Projects (retired)

- cc: Senator George Voinovich
- Senator Johnny Isakson
- Senator Thomas Carper
- Representative Ed Markey
- Representative Henry Waxman

---

<sup>24</sup> If need be, the Commission should explain to the Inspector General that his office's mandate in conducting investigations of "fraud, waste, and abuse" is not confined, as Mr. Mulley of OIG appeared to believe, to cases in which a federal crime appears to have been committed. Of course, federal law requires NRC communications to Congress to be accurate.

### Appendix -- My Service with NRC

For the benefit of Commissioners who do not know me, I joined the NRC in early 1975, when it was 10 weeks old, and spent 27 years serving the agency in various capacities. I had been hired as a legal assistant, GS-12, by Commissioner (later Chairman) Marcus A. Rowden. In those days, it was standard for Commissioners to have two assistants, one technical and one legal, and two secretaries. (The Chairman at the time had a staff of seven: one technical assistant for reactors, another for materials, a legal assistant, an executive assistant, and three secretaries.) For the first year I was there, however, Commissioner Rowden made do with just a single assistant, me, until he added Hugh Thompson as a technical assistant in 1976.

I moved to the Office of General Counsel on the expiration of Chairman Rowden's term in 1977. Over the next 24 years (there was a one-year break in service, during which I was an administrative judge in Micronesia), I defended the NRC's actions in court with vigor and conviction. My first case, in the D.C. Circuit, involved the Mark II containment; my last, in the Sixth Circuit, resulted in a decision upholding the NRC regulatory scheme for approving the design of dry casks for spent fuel storage.

In the Ninth Circuit, some 30 years ago, I briefed, argued, and won a case defending the adequacy of the fixes that the NRC ordered in Babcock and Wilcox reactors after the Three Mile Island accident. At one point in the 1980's, I served very briefly as Acting General Counsel, in which capacity I called on the Solicitor General, the late Rex Lee, to ask him to take to the Supreme Court a case which I had briefed, argued, and lost in the D.C. Circuit. It involved the NRC's refusal to treat the "psychological impacts" of the resumed operation of Three Mile Island Unit 1 as environmental impacts within the meaning of the National Environmental Policy Act. Lee was fully in accord. He took the case to the Supreme Court, which reversed the D.C. Circuit and upheld the NRC position on a unanimous vote.

I was made Counsel for Special Projects in the mid-1980's and retired with that title in 1999. In 2001, I was brought on as a contractor to write speeches for then Chairman Meserve, and I continued in that function under Chairman Diaz until 2005. During my long tenure with NRC, I was privileged, in addition to my usual legal duties, to write speeches, testimony, and/or personal statements for Chairmen Rowden, Palladino, Hendrie, Zech, Jackson, Selin, Meserve, and Diaz, including Senate confirmation testimony for three of those just named.

While at NRC, I was invited to speak at a United Nations conference in Moscow in 1997 on responding to man-made disasters. In 1998, in my private capacity, I was a speaker at a conference at Cambridge University in England on the U.S. Government's handling of the KI issue. The conference was co-sponsored by the university, the European Commission, the National Cancer Institute, and DOE. The paper I presented may be found in published form in the 1999 volume *Radiation and Thyroid Cancer*, edited by G. Thomas, A. Karaoglou, and E. D. Williams.

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**Reddick, Darani**

**From:** Castleman, Patrick  
**Sent:** Monday, July 18, 2011 2:39 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** Fw: Talking points from Comm Brief  
**Attachments:** Briefing Material Apostolakis 7 18 2011 (2).pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

**From:** Merzke, Daniel  
**To:** Hipschman, Thomas; Castleman, Patrick; Orders, William; Franovich, Mike  
**Sent:** Mon Jul 18 14:26:34 2011  
**Subject:** FW: Talking points from Comm Brief

I received the below material as a product from the briefing today on the technical basis for the 10 mile EPZ. I just wanted to make sure you all had the same information.

Dan

**From:** Sullivan, Randy  
**Sent:** Monday, July 18, 2011 11:53 AM  
**To:** Gilles, Nanette  
**Cc:** Merzke, Daniel  
**Subject:** Talking points from Comm Brief

Nanette

Per your request, please find the talking points from today's briefing attached

Dan

Please process this as need be..

hanks <<Briefing Material Apostolakis 7 18 2011 (2).pdf>>

Randolph Sullivan, CHP

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~~RESTRICTED INFORMATION~~



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

**EPZ Briefing Material  
for  
Commissioners  
Svinicki and Apostolakis**

**July 18, 2011**

*Reliance*

~~RESTRICTED INFORMATION~~

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## EPZ Briefing Material

What are the specific EPZ requirements for operating reactors and for new reactors?

- 10 CFR 50.47(c)(2) states the EPZ's are about 10 and 50 miles respectively, to be determined by local conditions.
- The requirements are the same for new reactors.
- EPZs for reactors less than 250 MW Thermal are case by case.

What is the basis for the current EPZ requirements? What equations, assumptions, sequences were used to determine the current EPZ requirements? What source term was used?

- 10 CFR 100 siting criteria doses and the class 9 accidents of WASH-1400, the Reactor Safety Study (1975).
- The analysis was approached a few different ways:
  1. 10 CFR 100 siting criteria doses were assumed and meteorology used to determine appropriate distance to reach (approximate) PAG levels
  2. Doses were projected at distance based on siting criteria and 5% meteorology for Thyroid and WB.
  3. Class 9 accidents were similarly analyzed conditional upon the source term and probability of met conditions.
  4. Class 9 (PWR 1-5) atmospheric release were analyzed conditional upon source term and probability of met conditions and show that PAGs are exceeded at distance, but fatalities are not likely beyond EPZ.
  5. Class 9 (PWR 6, 7) analyzed to show PAGs can be exceeded beyond 10 miles, but diminishing probability.
- See graphs

What role did external events play in the development of the requirements?

- To the extent considered in WASH-1400, they were considered in development of accident probabilities. WASH-1400 determined the accidents that were appropriate for consideration based on an analysis of probabilities and the accident sequences flow from that determination.
- But the EPZ basis is conditional upon the class 9 accidents selected by WASH-1400 happening, irrespective of the probability of the initiating event.

How did PRA influence the requirements?

- The early PRA of WASH-1400 is the basis.

Provide a timeline showing the evolution of EPZ requirements.

- There has been no evolution of the EPZ since 1980. There have been discussions about reducing and expanding it, but there has been no change.

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~~NOT FOR PUBLIC DISCLOSURE~~

NUREG-0396  
EPA 520/1-78-016

**PLANNING BASIS FOR THE DEVELOPMENT OF  
STATE AND LOCAL GOVERNMENT  
RADIOLOGICAL EMERGENCY RESPONSE PLANS  
IN SUPPORT OF  
LIGHT WATER NUCLEAR POWER PLANTS**

**A Report Prepared by a  
U. S. Nuclear Regulatory Commission and  
U. S. Environmental Protection Agency  
Task Force on Emergency Planning**

**DECEMBER 1978**



**Office of State Programs  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Office of Radiation Programs  
U. S. Environmental Protection Agency**

Reprinted March 1987

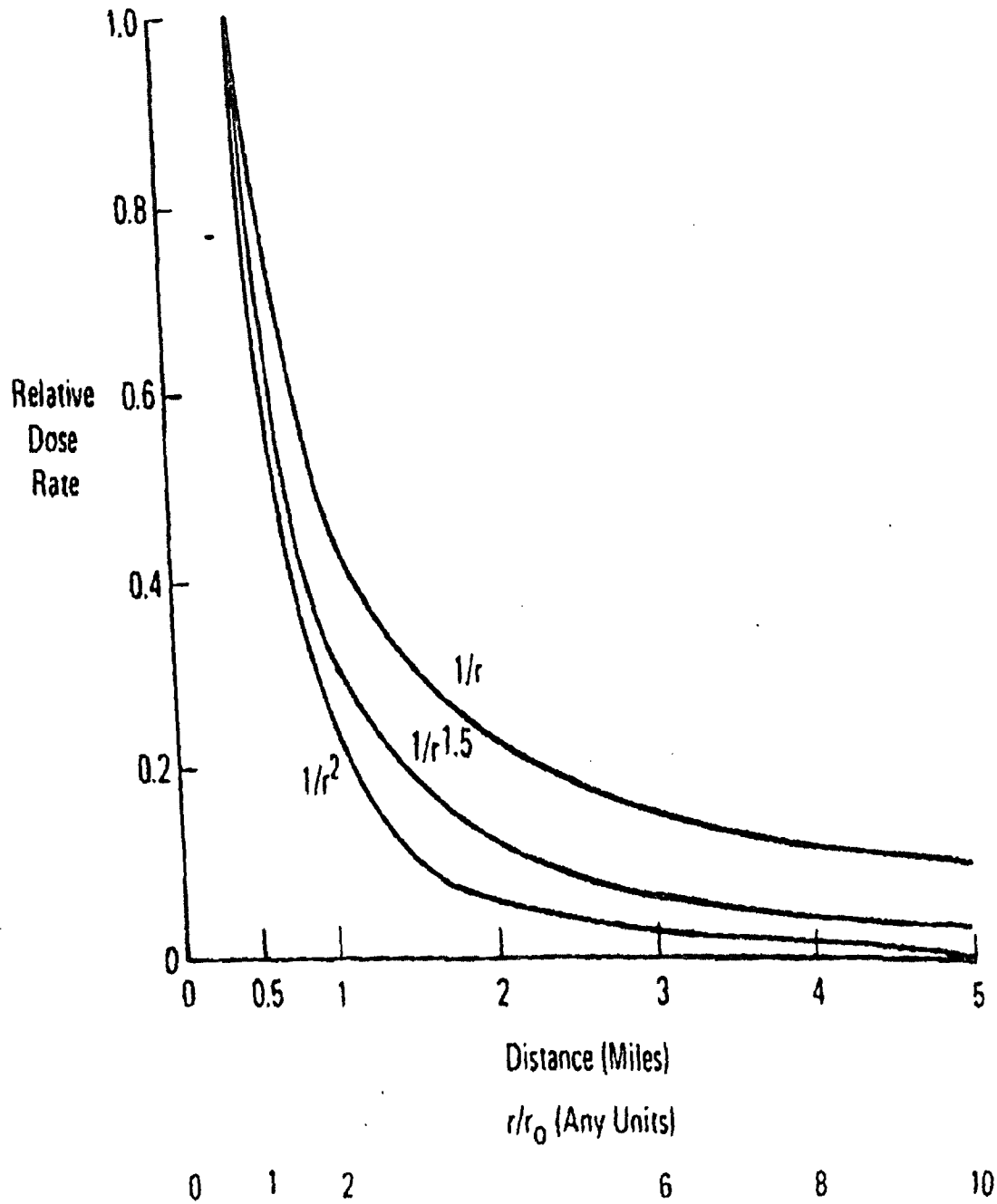
~~NOT FOR PUBLIC DISCLOSURE~~

EP 541 of 2107

~~NOT FOR PUBLIC DISCLOSURE~~

# DOSE FALLOFF WITH DISTANCE

(ALONG ACTUAL PLUME TRACK)



~~NOT FOR PUBLIC DISCLOSURE~~

UPPER BOUND PLUME EXPOSURE PATHWAY

PROJECTED DOSES BASED ON

10 CFR PART 100.11 VALUES

$r/r_0$	$(r/r_0)^{-1.5}$	0 to 2 HR DOSE LIMIT (REM)		ETA (hrs)
		Whole Body	THYROID	
1.	1.	25	300	0.5
1.5	0.54	14	162	0.75
2	0.35	8.8	105	1
3	0.19	4.8	57	1.5
4	0.13	3.3	39	2
5	0.089	2.2	27	2.5
6	0.068	1.7	20	3
8	0.044	1.1	13	4
10	0.032	0.8	9.6	5
15	0.017	0.43	5.2	7.5
20	0.011	0.28	3.3	10

NOTES: (1) Dose = Dose commitment on plume centerline.

(2)  $r_0$  = Exclusion area boundary, or exclusion radius for a given site;  $r/r_0$  = multiple of exclusion radius; lefthand column can be read as miles if  $r_0 = 1$  mile.

(3) Presumes 100% of noble gases and 50% of radioidines in core inventory released to containment, constant volumetric leak rate from containment, "five percentile" meteorology, straight line of sight travel of the plume, and conservative dose factors for plume exposure.

(4) ETA = Estimated time of arrival of plume front based on  $r_0 = 1$  mile and 2 mph wind speed. Higher wind speeds reduce travel times and calculated doses.

~~NOT FOR PUBLIC DISCLOSURE~~

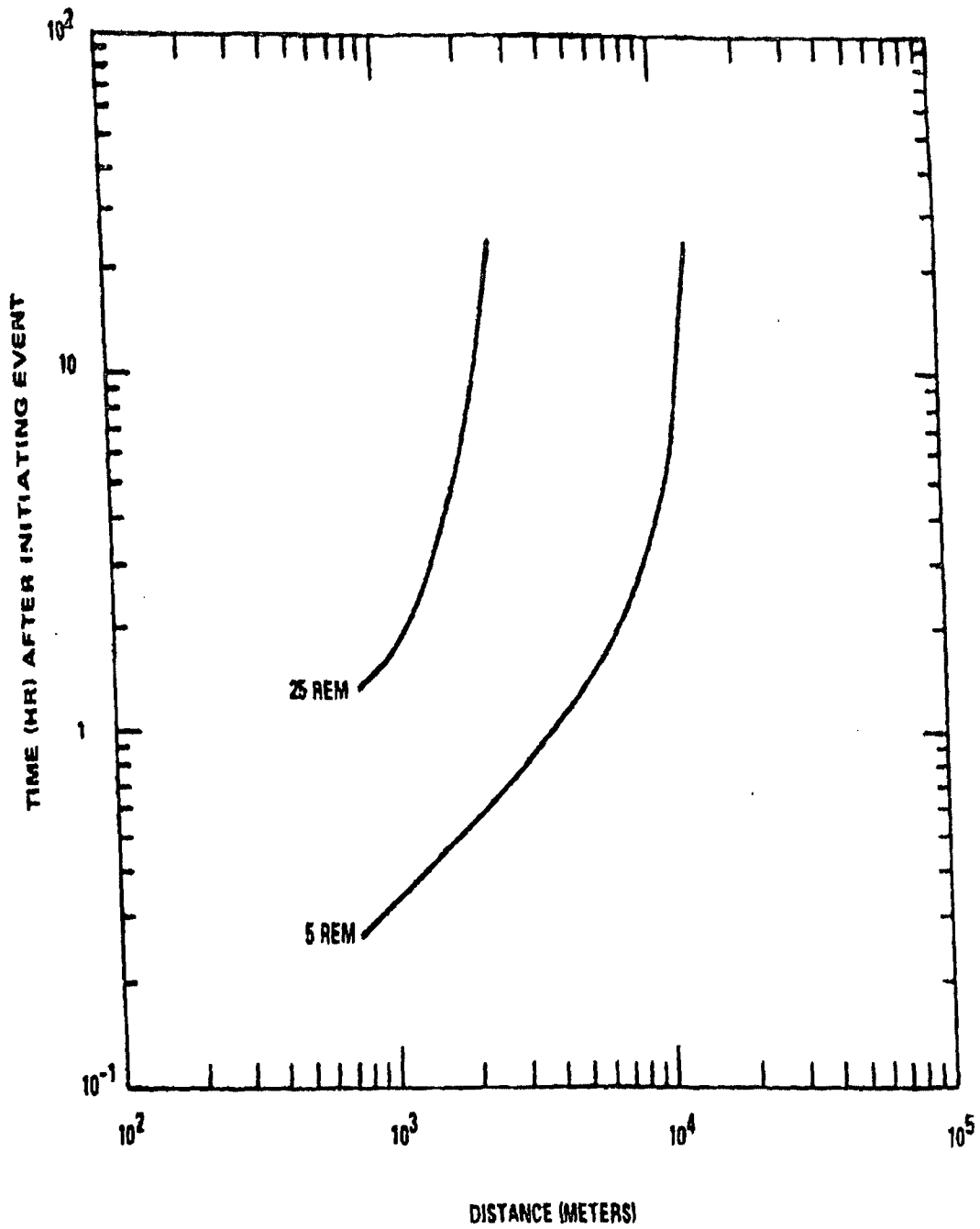


Figure I-5. Example of Time-Dose-Distance Relationships for Thyroid Inhalation Dose From DBA/LOCA (5% Meteorology and Straightline Plume Trajectory)

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~~NOT FOR PUBLIC RELEASE~~

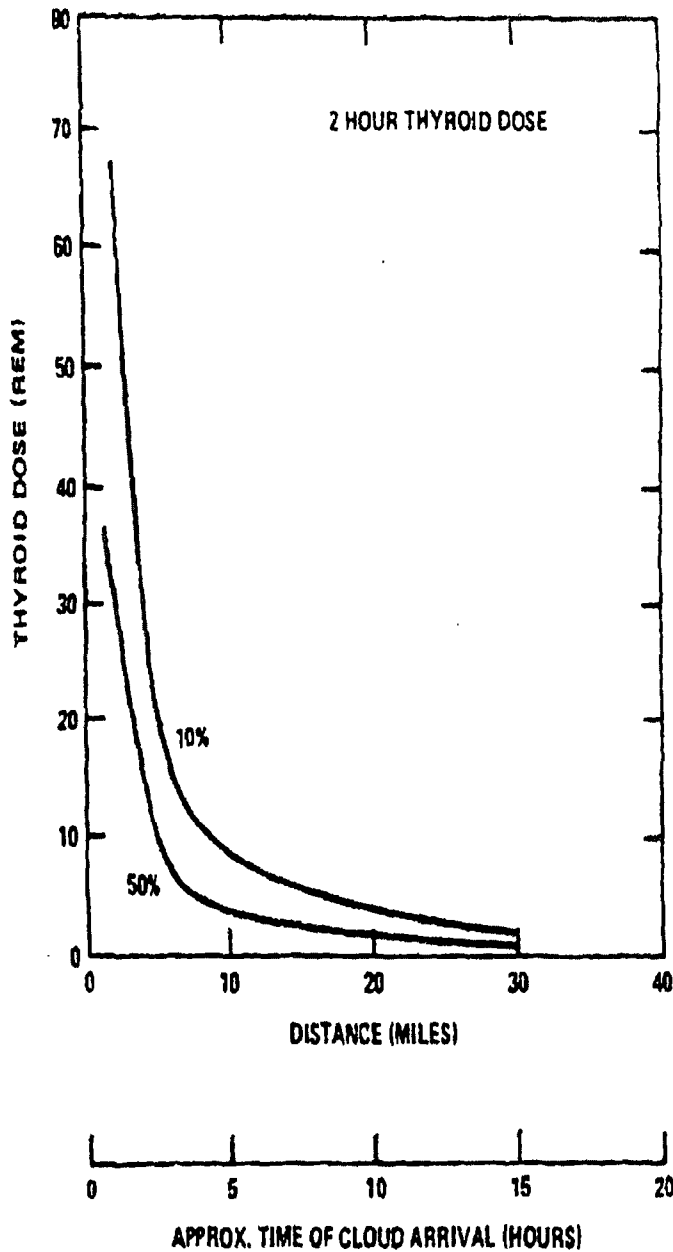


Figure I-6. Centerline Dose Versus Distance for Licensing Calculation of DBA/LOCA at 2 Hours Assuming 5 Percentile Meteorology and Straight Line Plume Trajectory.

50% Curve is Median of 67 Actual Site Calculations  
10% Curve is Highest 10% of Calculations

~~NOT FOR PUBLIC RELEASE~~

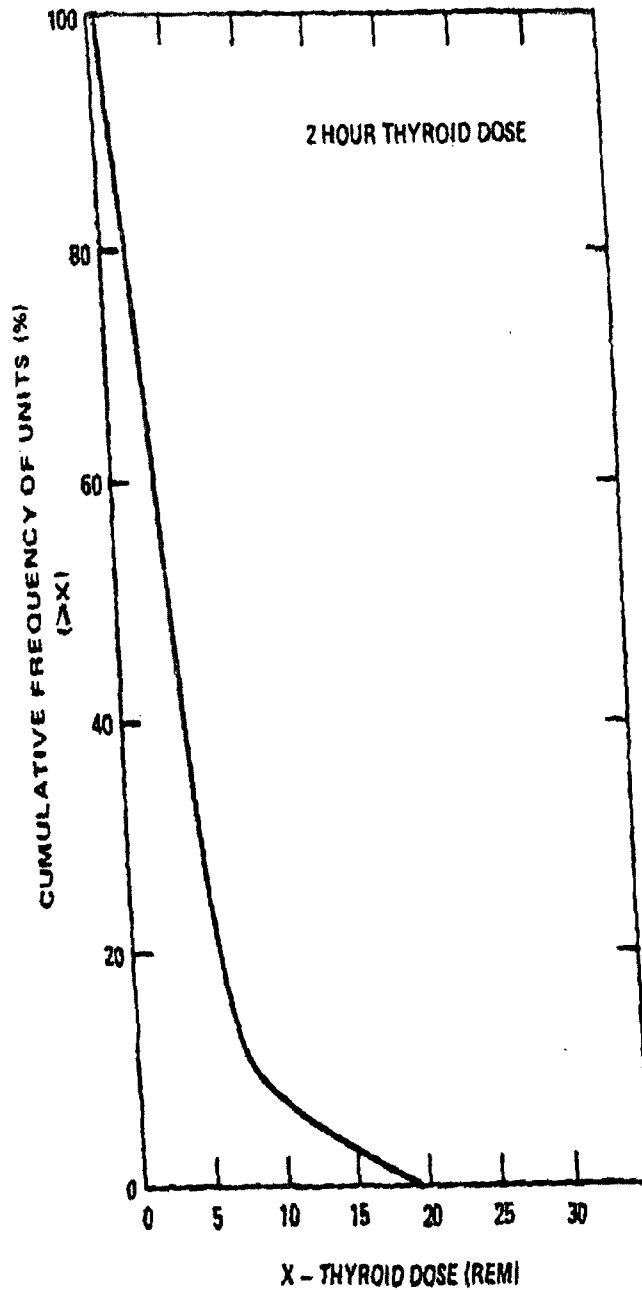


Figure 1-7. Cumulative Frequency of Units Versus Dose at 10 Miles for Licensing Calculation of DBA/LOCA at 2 Hours Assuming 5 Percentile Meteorology and Straight Line Trajectory.

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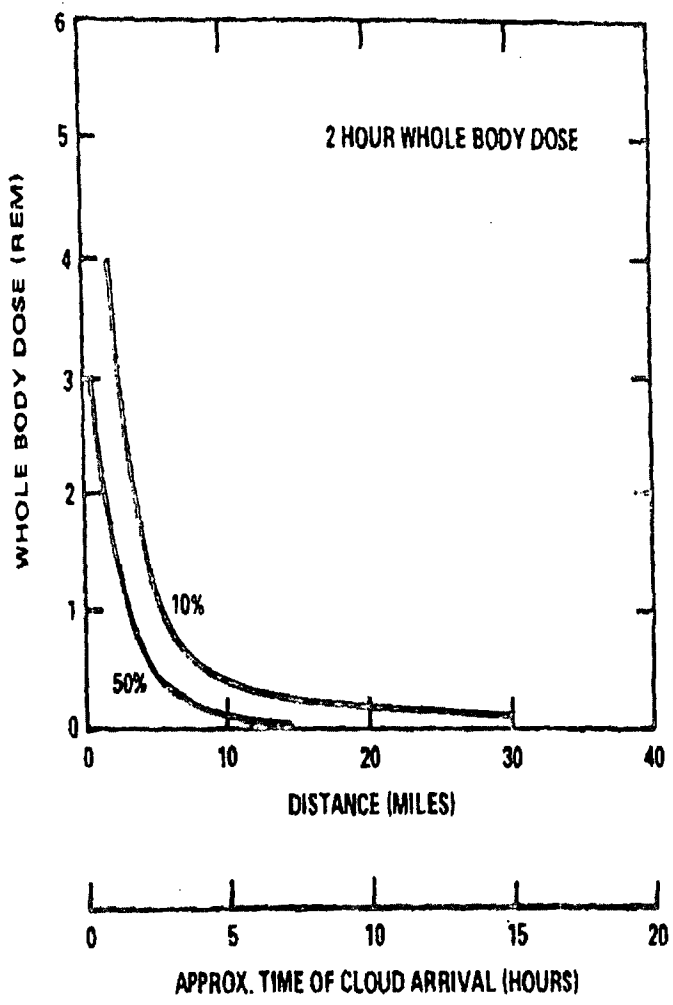


Figure I-8. Centerline Dose Versus Distance for Licensing Calculation of DBA/LCCA at 2 Hours Assuming 5 Percentile Meteorology and Straight Line Plume Trajectory.  
50% Curve is Median of 67 Actual Site Calculations  
10% Curve is Highest 10% of Calculations

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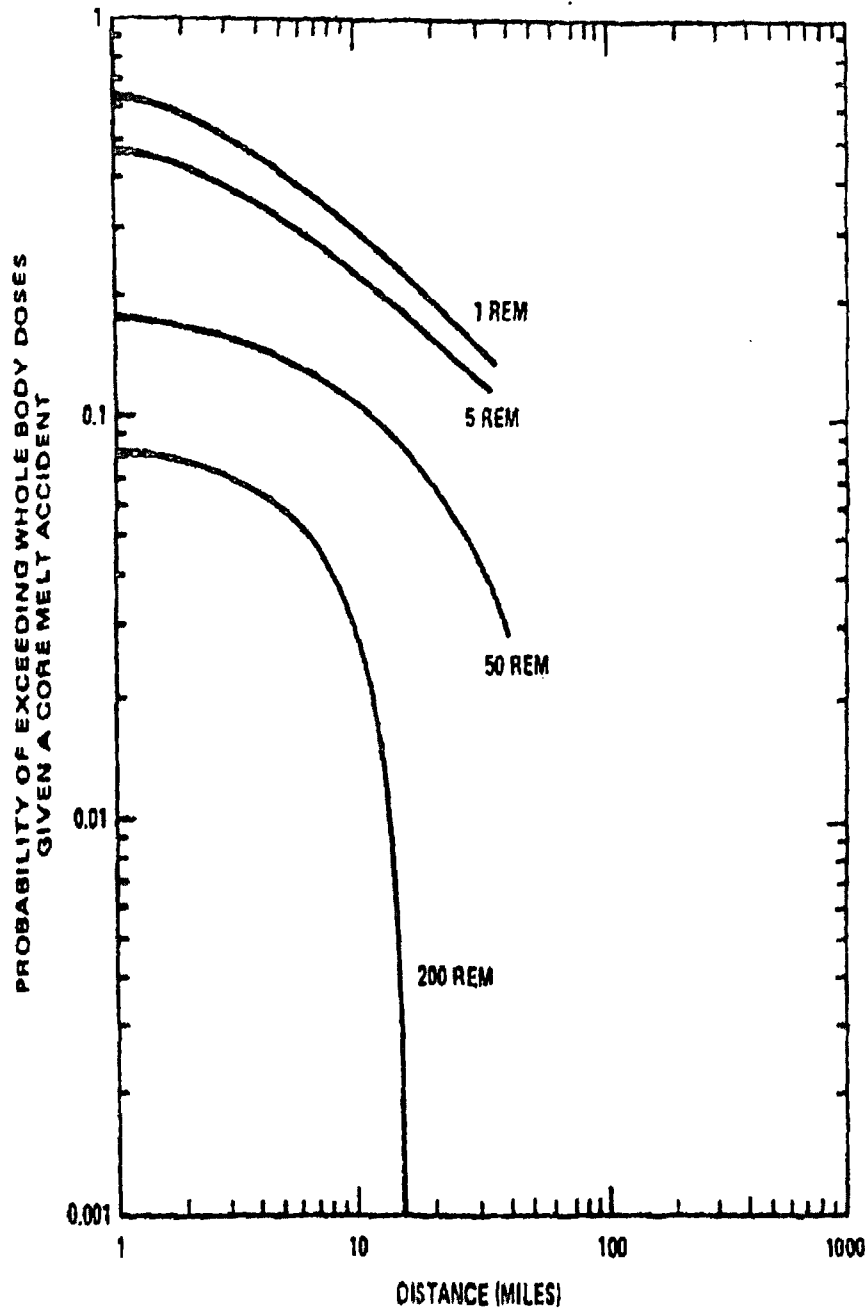


Figure I-11. Conditional Probability of Exceeding Whole Body Dose Versus Distance. Probabilities are Conditional on a Core Melt Accident ( $5 \times 10^{-5}$ ).

Whole body dose calculated includes: external dose to the whole body due to the passing cloud, exposure to radionuclides on ground, and the dose to the whole body from inhaled radionuclides.

Dose calculations assumed no protective actions taken, and straight line plume trajectory.

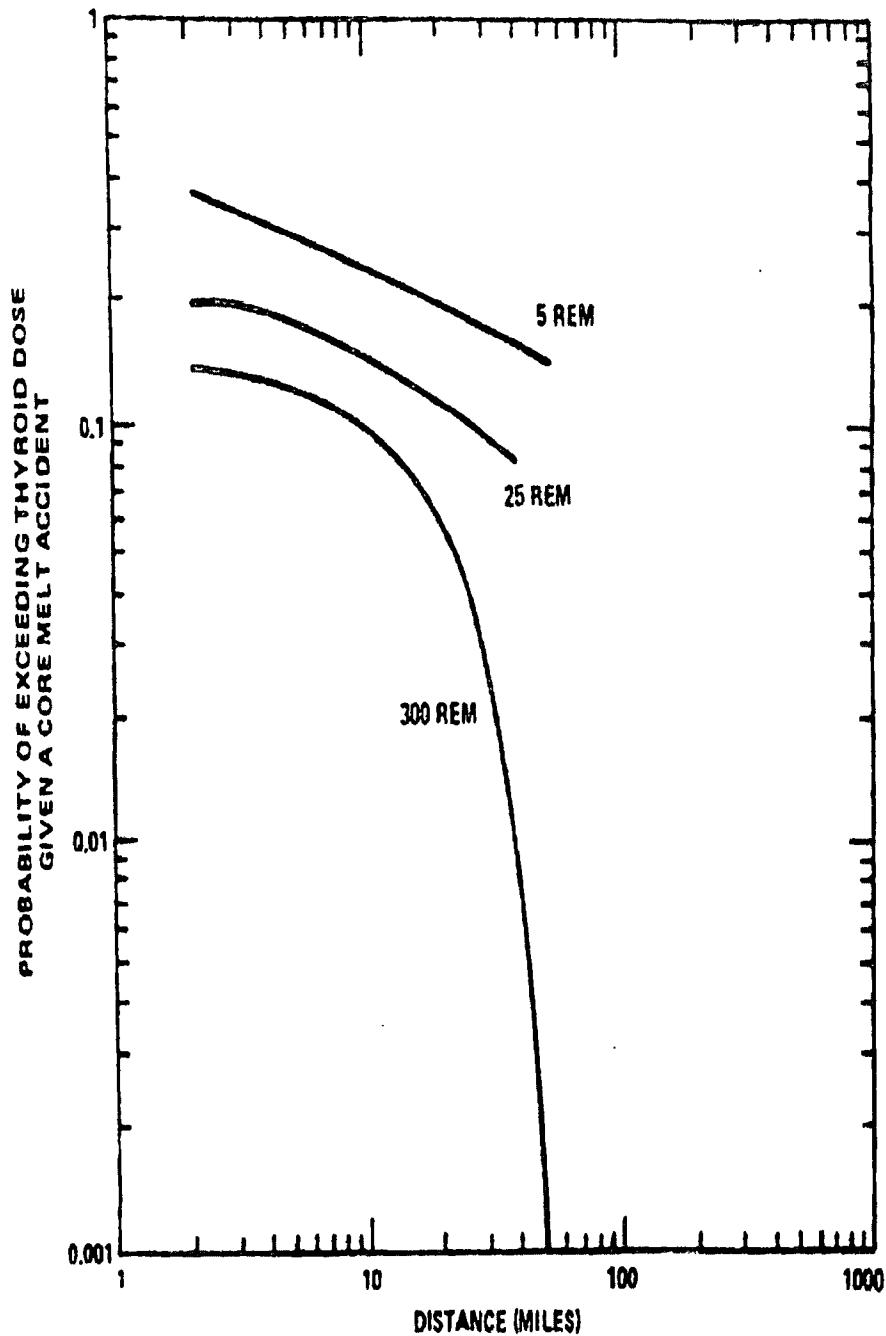


Figure I-13. Conditional Probability of Exceeding Thyroid Doses Versus Distance. Probabilities are Conditional on a Core Melt Accident ( $5 \times 10^{-6}$ ).

Thyroid dose calculated includes: external dose to the thyroid due to the passing cloud, exposure to radionuclides on ground, and the dose to the thyroid from inhaled radionuclides.

Dose calculations assumed no protective actions taken, and straight line trajectory.

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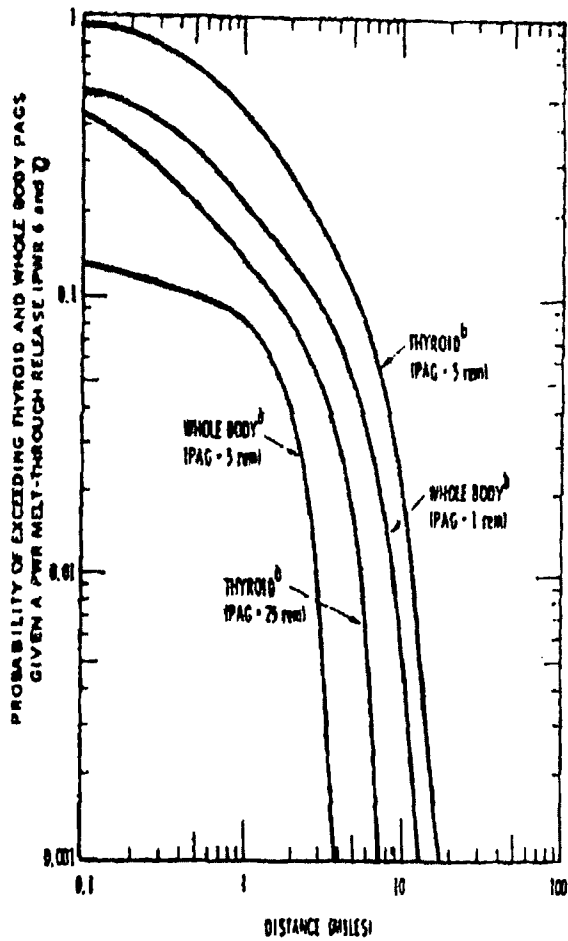


Figure 1-15. Conditional Probability of Exceeding Thyroid and Whole Body Protective Action Guides (PAGs) Versus Distance for an Individual Located Outdoors.<sup>a</sup> Probabilities are Conditional on a PWR "Melt-Through" Release (PWR 6 and 7).

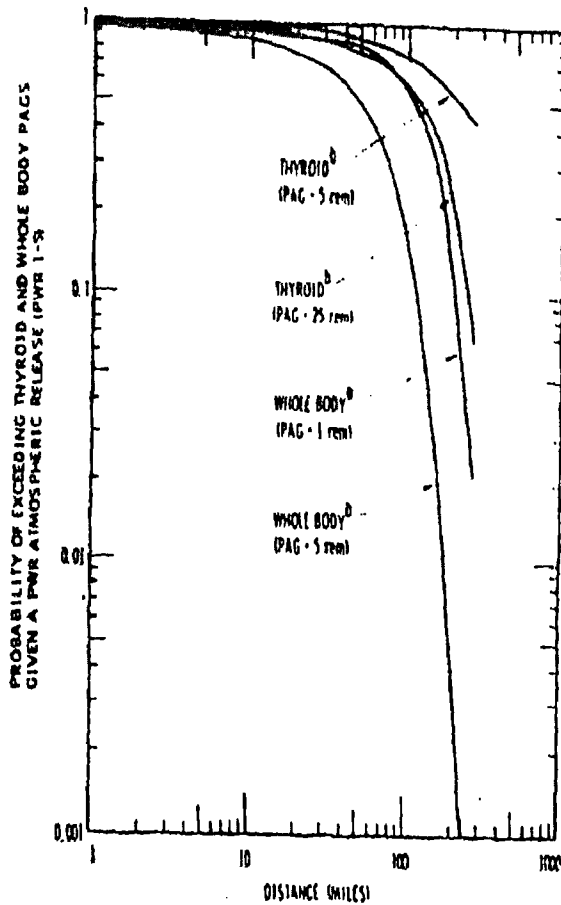


Figure 1-16. Conditional Probability of Exceeding Thyroid and Whole Body Protective Action Guides (PAGs) Versus Distance for an Individual Located Outdoors.<sup>a</sup> Probabilities are Conditional on a PWR "Atmospheric" Release (PWR 1-5).

**10 CFR 50.47(c) (2)**

Generally, the plume exposure pathway EPZ for nuclear power plants shall consist of an area about 10 miles (16 km) in radius and the ingestion pathway EPZ shall consist of an area about 50 miles (80 km) in radius. The exact size and configuration of the EPZs surrounding a particular nuclear power reactor shall be determined in relation to local emergency response needs and capabilities as they are affected by such conditions as demography, topography, land characteristics, access routes, and jurisdictional boundaries. The size of the EPZs also may be determined on a case-by-case basis for gas-cooled nuclear reactors and for reactors with an authorized power level less than 250 MW thermal. The plans for the ingestion pathway shall focus on such actions as are appropriate to protect the food ingestion pathway.

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829

**Sharkey, Jeffry**

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**From:** Sharkey, Jeffry  
**Sent:** Tuesday, July 19, 2011 8:36 AM  
**To:** Svinicki, Kristine  
**Cc:** Reddick, Darani; Lepre, Janet  
**Subject:** FW: NGO letter regarding Task Force's recommendations  
**Attachments:** 20110719-ngo-group-letter-to-nrc.pdf

-hardcopy in your book.

**From:** Dave Lochbaum [<mailto:DLochbaum@ucsusa.org>]  
**Sent:** Tuesday, July 19, 2011 8:17 AM  
**To:** CHAIRMAN Resource; CMRSVINICKI Resource; CMRAPOSTOLAKIS Resource; CMRMAGWOOD Resource; CMROSTENDORFF Resource  
**Subject:** NGO letter regarding Task Force's recommendations

Good Morning:

In behalf of 15 national, regional, and local public interest groups, I am submitting the attached electronic copy of a letter regarding the Task Force's recommendations. Hard copies of this letter will be in the mail today.

Thanks,  
David Lochbaum  
Director, Nuclear Safety Project  
Union of Concerned Scientists  
PO Box 15316  
Knoxville, TN 37415  
(615) 468-9272 office  
(615) (b)(6) cell  
[dlochbaum@ucsusa.org](mailto:dlochbaum@ucsusa.org)

837

Reddick, Darani

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Friday, July 22, 2011 9:10 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani  
**Subject:** Fw: Commissioner Apostolakis questions from 7/18 brief  
**Attachments:** Commissioner Apostolakis EPZ questions.docx

Sent from an NRC BlackBerry  
Patrick Castleman

(b)(6)

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**From:** Merzke, Daniel  
**To:** Hipschman, Thomas; Castleman, Patrick; Gilles, Nanette; Orders, William; Franovich, Mike  
**Cc:** Sosa, Belkys  
**Sent:** Fri Jul 22 09:06:04 2011  
**Subject:** FW: Commissioner Apostolakis questions from 7/18 brief

During the briefing on the basis for the 10 mile EPZ given to CMRs Apostolakis and Svinicki on the 18<sup>th</sup>, there were a couple of questions for which staff is providing the attached responses.

Dan

---

**From:** Sullivan, Randy  
**Sent:** Friday, July 22, 2011 8:43 AM  
**To:** Merzke, Daniel  
**Subject:** Commissioner Apostolakis questions from 7/18 brief

Thanks Dan

Attached

Randolph Sullivan, CHP

<<Commissioner Apostolakis EPZ questions.docx>>

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FP 553 of 2107

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Commissioner Apostolakis EPZ questions

We understood the Commissioner's questions to be as follows:

1. Were the source terms identified in NUREG-1150 used to reassess the basis for EPZ's? If so, what did the reassessment tell us?

No, to the best of our knowledge. It is possible that such an analysis was considered, but we know of no evidence to substantiate the premise. Chapter 11 of NUREG-1150 Vol.1 provides analyses of health consequences of various protective action strategies with the updated source terms and these analyses use the 10-mile EPZ. There is no attempt to vary the size of the EPZ although the protective actions are varied.

2. Why wasn't the source terms of NUREG-1150 used to develop the EPZ?

We do not have a definitive answer to this question, but the likely answer is that the EPZ had been accepted by state and local authorities and any revision would have been quite difficult and steeped in political controversy. The Commission has stated on many occasions that the EPZ is protective of public health and safety.

3. If the NUREG-1150 source term had been used, would it have made a difference?

We do not believe NUREG-1150 provides a technical basis for reducing the EPZ. The bulk of the analyses in NUREG-0396 use the design basis accidents and the siting criteria doses of 25 Rem whole body and 300 Rem thyroid dose at the exclusion area boundary. These source terms did not change with NUREG -1150.

The NUREG-0396 analysis of the most severe Reactor Safety Study (RSS) accidents are presented in NUREG-0396 figures 1-11, 1-13, 1-15 & 1-16 (provided in the July 18<sup>th</sup> talking points). These figures show doses well in excess of the protective action guides beyond the 10-mile EPZ.

In many cases the source terms for severe accidents developed by NUREG-1150 are smaller than those of the RSS. However, NUREG-1150 presents a range of probable source terms for a given accident bin and the RSS source term is typically, but not always toward the high end of the NUREG-1150 band (Vol. 1 Chapter 10). If the NRC had chosen to conservatively use the source terms at the upper end of the NUREG-1150 bands, the differences with the RSS source terms would be reduced.

The EPZ basis is instructive on this point:

The size (about a 10-mile radius) of the plume exposure EPZ was based primarily on the following considerations:

- projected doses from the traditional (*unmitigated*) design-basis accidents would not exceed Protective Action Guide levels outside the zone;
- projected doses from most core melt sequences would not exceed Protective Action Guide levels outside the zone;

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- for the worst core melt sequences, immediate life threatening doses would generally not occur outside the zone;
- detailed planning within 10 miles would provide a substantial base for expansion of response efforts in the event that this proved necessary.

For the worst case accidents the purpose of the EPZ is to ensure that immediate life threatening doses would not occur outside the zone. The NUREG-1150 source terms support this basis, but given the range of potential source terms would probably not support a substantial reduction of the EPZ.

4. Have the SOARCA results been used to inform the EPZ analyses?

No, the staff has been directed to not use SOARCA results for any regulatory purpose until it is approved. However, the techniques we developed in SOARCA are informing our own work which attempts to risk inform EP oversight techniques. (By "risk inform" we mean the risk of consequences conditional upon severe accidents and not risk of core damage as the term is typically used within NRC.)

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839

**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Wednesday, July 27, 2011 4:27 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Astwood, Heather; Lepre, Janet  
**Subject:** FW: DRAFT SRM - M110719 (Briefing re Japan)  
**Attachments:** m110719.srm.docx

Commissioner,

(b)(5)

Pat

**From:** Wright, Darlene  
**Sent:** Thursday, July 21, 2011 7:26 AM  
**To:** Baggett, Steven; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamlsh, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffry; Shea, Pamela Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Vietti-Cook, Annette; Warren, Roberta; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Jimenez, Patricia; Nieh, Ho; Ostendorff, William; Apostolakis, George; Lul, Christiana; Lisann, Elizabeth; Golder, Jennifer; Gilles, Nanette; Le, Hong; Sexton, Kimberly; Beasley, Benjamin; Riddick, Nicole  
**Cc:** Mitchell-Funderburk, Natalie  
**Subject:** DRAFT SRM - M110719 (Briefing re Japan)

The attached file contains a draft SRM which is being circulated for the normal 3-day period for Commission review. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, schedular, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Baval (RCB5), and Pam Shea (PWS).

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July 20, 2011

MEMORANDUM TO: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

FROM: Annette L. Vietti-Cook, Secretary /s/

SUBJECT: DRAFT STAFF REQUIREMENTS MEMORANDUM – BRIEFING  
ON THE TASK FORCE REVIEW OF NRC PROCESSES AND  
REGULATIONS FOLLOWING THE EVENTS IN JAPAN, 9:30  
A.M., TUESDAY, JULY 19, 2011, COMMISSIONERS'  
CONFERENCE ROOM, ONE WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND (OPEN TO PUBLIC ATTENDANCE)

(b)(5)

Attachment:  
As stated

cc: EDO  
OGC

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~~NOT FOR PUBLIC DISCLOSURE~~

IN RESPONSE, PLEASE  
REFER TO: M110719

MEMORANDUM TO: R. W. Borchardt  
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS – BRIEFING ON THE TASK FORCE  
REVIEW OF NRC PROCESSES AND REGULATIONS  
FOLLOWING THE EVENTS IN JAPAN, 9:30 A.M., TUESDAY,  
JULY 19, 2011, COMMISSIONERS' CONFERENCE ROOM, ONE  
WHITE FLINT NORTH, ROCKVILLE, MARYLAND (OPEN TO  
PUBLIC ATTENDANCE)

(b)(5)

cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
CFO  
OCA  
OIG  
OPA  
Office Directors, Regions, ACRS, ASLBP (via E-Mail)  
PDR

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840

Reddick, Darani

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Svinicki, Kristine  
**Sent:** Thursday, July 28, 2011 1:39 PM  
**To:** Reddick, Darani  
**Subject:** FW: action on the recent Task Force recommendations

**Follow Up Flag:** Follow up  
**Flag Status:** Flagged

He asks for suspension of licensing. Don't know if that classifies this as a petition.

**From:** CMRSVINICKI Resource  
**Sent:** Wednesday, July 27, 2011 10:55 AM  
**To:** Lepre, Janet; Riddick, Nicole  
**Subject:** FW: action on the recent Task Force recommendations

**From:** Robert R. Holt [mailto:(b)(6)]  
**Sent:** Wednesday, July 27, 2011 10:25 AM  
**To:** CMRSVINICKI Resource  
**Subject:** action on the recent Task Force recommendations

Dear Commissioner Svinicki,

I was distressed to read your reaction to the July 12 document, *Recommendations for Enhancing Reactor Safety in the 21st Century: The Near Term Task Force Review of Insights from the Fukushima Dai-ichi Accident*. According to a story in the New York Times of July 20, you wrote that "I do not have a sufficient basis to accept or reject the recommendations of the Near-Term Task Force." Since you have a background as a nuclear engineer, I find that surprising. The data presented by the task force are quite sufficient for some precautionary action while further consideration of other issues proceeds.

Several very important changes, based on good data, have time-urgency, and any delay might have serious consequences.

Those changes are well summarized by the recommendation that the Commission issue "orders to ensure that licensees take [12] near-term actions" specified in Appendix A. Enough has been established to back most of them up conclusively. Consider, for example, the undeniable fact that none of the spent fuel cooling pools in American nuclear plants have monitoring devices that can provide the control room with immediate information about the integrity of the pool, the temperature of the water and its level. It should be immediately evident that no reactor, especially not those of the GE Mark I boiling water design, should be allowed to continue operating until such instrumentation has been installed. And this is only one such design deficiency, some of which—e.g., the defective vents for hydrogen—have long been known but have been ignored. Now we know it was a mistake not to require that action years ago instead of merely recommending it. It is a good example of known problems which the industry has been merely urged to fix, and has ignored or postponed indefinitely.

Let me add one strong recommendation of my own: that the licensing and license-extension process be suspended until the stations in question have fully complied with all 12 recommended orders. It would be intolerable to go ahead and grant a 20-year extension of an operating license before knowing that the worst dangers in design and practice had been successfully addressed, an abdication of your basic mission: Protecting people and the environment, not the nuclear industry.

~~CONFIDENTIAL DISCONTINUED~~

Sincerely yours,

Robert R. Holt, Ph. D.  
Professor Emeritus, New York University

~~CONFIDENTIAL DISCONTINUED~~

850

~~NOT FOR PUBLIC RELEASE~~  
**Svinicki, Kristine**

**From:** CMRSVINICKI Resource  
**Sent:** Wednesday, August 03, 2011 7:56 AM  
**To:** Lepre, Janet; Riddick, Nicole  
**Subject:** FW: Browbeating from Sen. Boxer

**From:** Betsy & Steve Shepherd [mailto:(b)(6)]  
**Sent:** Tuesday, August 02, 2011 10:40 PM  
**To:** CMRSVINICKI Resource  
**Cc:** CMRAPOSTOLAKIS Resource; CMRMAGWOOD Resource; CMROSTENDORFF Resource  
**Subject:** Browbeating from Sen. Boxer

Ms. Svinicki,

I was disappointed to observe the browbeating that Senator Boxer gave you and other Commissioners in today's Senate hearing as she attempted to coerce you into agreeing to take unilateral action to implement recommendations from the Dai-ichi Task Force. As a long time industry professional, I would like to recommend a response for you to consider if you find yourself in a similar situation in the future.

Put simply, you can counter a senator's imperial demands for premature, individual, commitment to a rushed course of action by asking the senator to remember the wisdom of the architecture of the NRC, specifically the existence of the Advisory Committee on Reactor Safeguards. The ACRS provided the former AEC with significant credibility in the adolescence of nuclear regulation. Time and time again its involvement satisfied the members of the Joint Committee on Atomic Energy regarding the safety of AEC activities. If you were to suggest to Senator Boxer that you not only wish to obtain staff and industry input regarding the Dai-ichi Task Force recommendations, but wish a formal evaluation from ACRS before proceeding, I believe that she would be hard pressed to browbeat you about your not exercising premature, independent judgement.

Sincerely Yours,  
Stephen Shepherd

~~NOT FOR PUBLIC RELEASE~~

FP 561 of 2107

~~CONFIDENTIAL~~

974

**Riddick, Nicole**

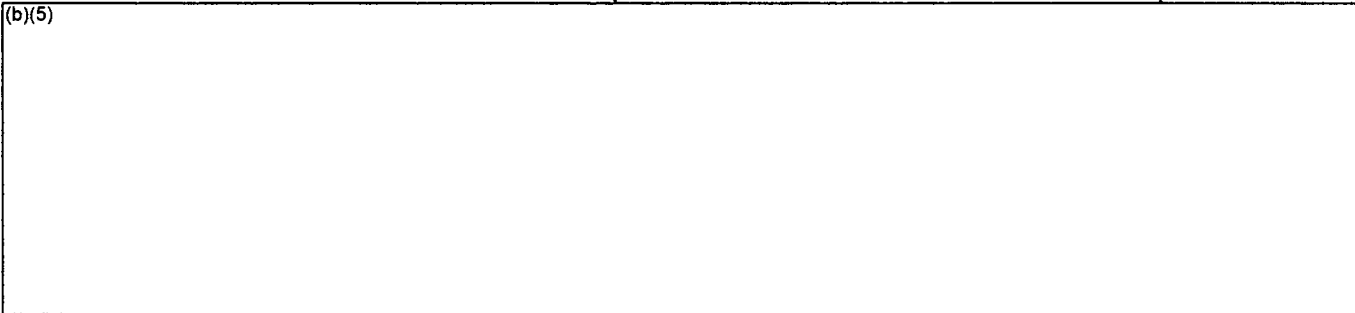
**From:** Laufer, Richard  
**Sent:** Tuesday, August 16, 2011 10:04 AM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschmar, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffry; Shea, Pamela; Vietti-Cook, Annette; Astwood, Heather; Bradford, Anna; Kock, Andrea; Tadesse, Rebecca  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Crawford, Carrie; Davis, Roger; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Loyd, Susan; Mitchell-Funderburk, Natalie; Monninger, John; Montes, David; Moore, Scott; Nieh, Ho; Olive, Karen; Pace, Patti; Poole, Brooke; Reddick, Darani; Riddick, Nicole; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** VERSION B - DRAFT SRM - COMWDM-11-0001/COMWCO-11-0001 (Events in Japan)  
**Attachments:** comwdm.wco.11-0001.b.docx

Please review the changes to the draft SRM on COMWDM-11-0001/COMWCO-11-0001 (Events in Japan) in the attached file (comwdm.wco.11-0001.b.docx). This is **Version B**. Please respond by August 18, 2011.

Thanks,  
Rich

KLS -

(b)(5)



Jeff

~~CONFIDENTIAL~~



~~CONFIDENTIAL~~

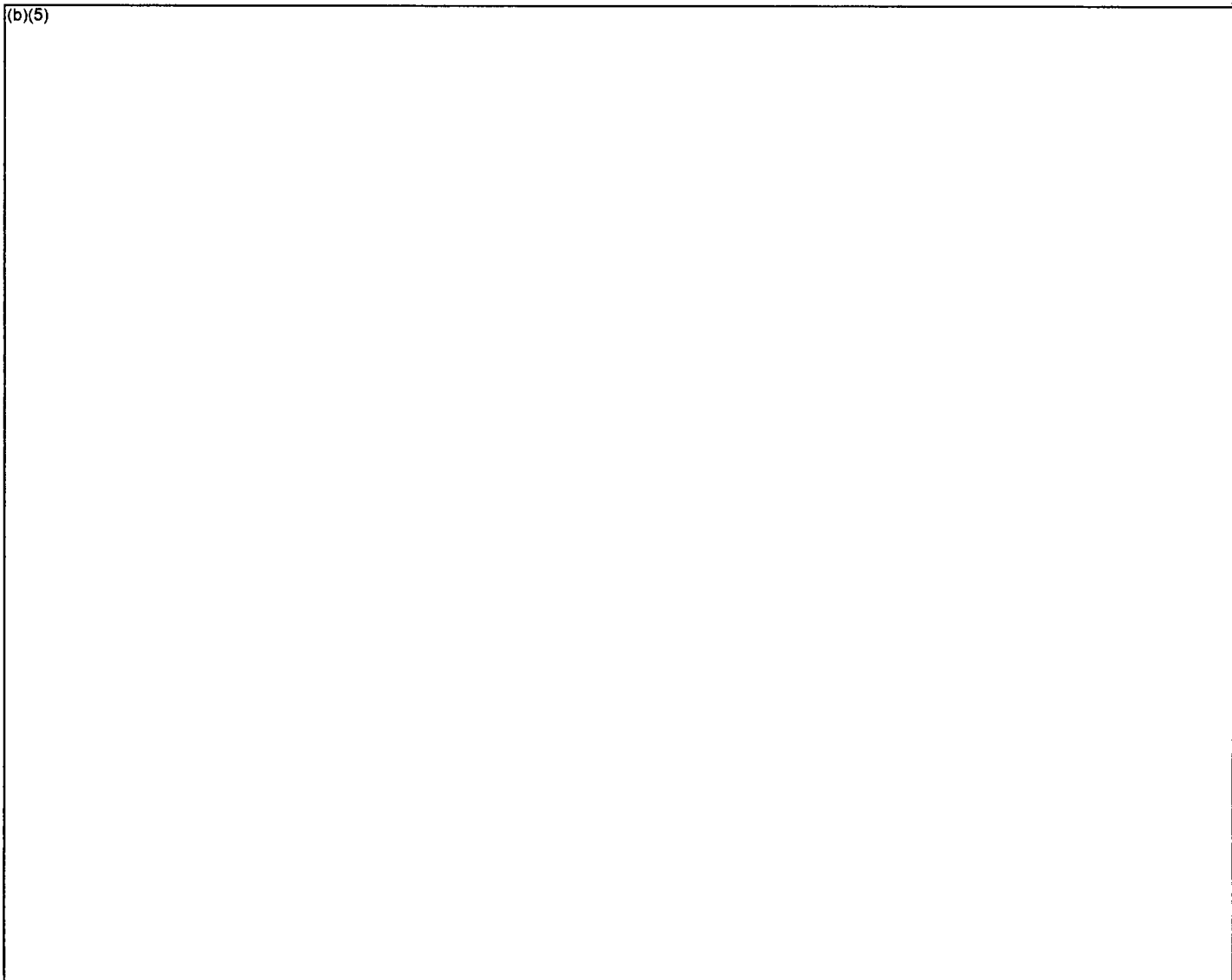
**VERSION B; 8/16/11; 10:00 a.m.**

**MEMORANDUM TO:** R. W. Borchardt  
Executive Director for Operations

**FROM:** Annette L. Vietti-Cook, Secretary

**SUBJECT:** STAFF REQUIREMENTS – COMWDM-11-0001/COMWCO-11-0001 – ENGAGEMENT OF STAKEHOLDERS REGARDING THE EVENTS IN JAPAN

(b)(5)



~~CONFIDENTIAL~~

~~NOT FOR PUBLIC DISCLOSURE~~

(b)(5)

cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
CFO  
OCA  
OPA  
Office Directors, Regions, ACRS, ASLBP (via E-Mail)  
PDR

~~NOT FOR PUBLIC DISCLOSURE~~

882

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffry

**From:** Coggins, Angela  
**Sent:** Friday, August 19, 2011 10:02 AM  
**To:** Sharkey, Jeffry; Batkin, Joshua  
**Cc:** Brenner, Eliot; Nieh, Ho; Bubar, Patrice; Sosa, Belkys  
**Subject:** RE: Prompt Action on Japan Task Force Recommendations

(b)(5)

Angela B. Coggins  
Policy Director  
Office of Chairman Gregory B. Jaczko  
U.S. Nuclear Regulatory Commission  
01-415-1828/angela.coggins@nrc.gov

**From:** Sharkey, Jeffry  
**Sent:** Friday, August 19, 2011 9:53 AM  
**To:** Coggins, Angela; Batkin, Joshua  
**Cc:** Brenner, Eliot; Nieh, Ho; Bubar, Patrice; Sosa, Belkys  
**Subject:** FW: Prompt Action on Japan Task Force Recommendations

Angela/Josh,

(b)(5)

Thanks,

Jeff

**From:** OPA Resource

**Sent:** Friday, August 19, 2011 9:34 AM

**To:** Abbott, Coleman; Apostolakis, George; Ash, Darren; Baggett, Steven; Barkley, Richard; Batkin, Joshua; Bell, Hubert; Belmore, Nancy; Bergman, Thomas; Blake, Kathleen; Bollwerk, Paul; Bonaccorso, Amy; Borchardt, Bill; Bozln, Sunny; Brenner, Eliot; Brock, Gary; Brown, Boris; Bubar, Patrice; Burnell, Scott; Burns, Stephen; Carpenter, Cynthia; Chandrathil, Prema; Clark, Theresa; Collins, Elmo; Couret, Ivonne; Crawford, Carrie; Dacus, Eugene; Dapas, Marc; Davis, Roger; Dean, Bill; Decker, David; Dricks, Robert; Droggitis, Spiros; Flory, Shirley; Franovich, Mike; Gibbs, Catina; Gilles, Nanette; Haney, Catherine; Hannah, Roger; Haddock, Craig; Harrington, Holly; Hasan, Nasreen; Hayden, Elizabeth; Holahan, Gary; Holahan, Patricia; Holian, Brian; Johnson, Robert; Jones, Andrea; Kock, Andrea; Kotzalas, George; Ledford, Joey; Lee, Samson; Leeds, Eric; Lepre, Janet; Lew, David; Lewis, Antoinette; Loyd, Susan; Magwood, William; Marry, Cheryl; McGrady-Finneran, Patricia; McIntyre, David; Mensah, Tanya; Mitylmg, Viktoria; Monninger, John; Montes, David; Nieh, Ho; Ordaz, Vonna; Ostendorff, William; Owen, Lucy; Powell, Amy; Quayle, Lisa; Quesenberry, Jeannette; Reddick, Darani; Riley, Christopher; Reyes, Luis; Riddick, Nicole; RidsSecyMailCenter Resource; Riley (OCA), Timothy; Rohrer, Shirley; Samuel, Robert; Satorius, Mark; Schaaf, Robert; Schmidt, Rebecca; Scott, Catherine; Scenci, Diane; Shaffer, Vered; Shane, Raeann; Sharkey, Jeffry; Sheehan, Neil; Sheron, Brian; Siurano-Perez, Osiris; Sosa, Belkys; Steger (Tucci), Christine; Stuckle, Elizabeth; Tack, Kristine; Tabatabal, Omid; Tannenbaum, Anita; Taylor, Renee; Temp, WDM; Uhle, Jennifer; Uselding, Lara; Vietti-Cook, Catherine; Virgilio, Martin; Virgilio, Rosetta; Walker-Smith, Antoinette; Weaver, Doug; Weber, Michael; Weil, Jenny; Werner, Greg; Williams, Jim; Williams, Evelyn; Zimmerman, Roy

**Subject:** Prompt Action on Japan Task Force Recommendations

distribution at approximately 10:30am.

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

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

890

**Sharkey, Jeffry**

~~NOT FOR PUBLIC RELEASE~~

**From:** Merzke, Daniel  
**Sent:** Thursday, September 01, 2011 7:47 AM  
**To:** Monninger, John; Sharkey, Jeffry; Sosa, Belkys; Bubar, Patrice; Holahan, Patricia  
**Cc:** Warren, Roberta  
**Subject:** FW: Status Update - Japan FOIA - August 31 2011  
**Attachments:** image001.gif; Status Update - Japan FOIA - August 31 2011.pdf

It was suggested I keep the Commission offices apprised of staff's FOIA efforts regarding the Fukushima response. There's a one-page summary attached, for your information.

Dan

**From:** Morris, Scott  
**Sent:** Wednesday, August 31, 2011 11:18 AM  
**To:** Wiggins, Jim; Dapas, Marc; Boyce, Thomas (OIS); Rothschild, Trip; Virgilio, Martin; Ash, Darren; Borchardt, Bill; Weber, Michael  
**Cc:** Evans, Carolyn; Marshall, Jane; Bowers, Anthony; Holonich, Joseph; Corbett, James; Young, Gary; Hirsch, Patricia; Janney, Margie; Merzke, Daniel  
**Subject:** Status Update - Japan FOIA - August 31 2011

All:

Attached please find a one-page status update on the staff's Fukushima-related FOIA effort. While the inter-office team performing the FOIA reviews has made great progress, there remains a huge amount of work left to be completed.

Please let me know if have any questions or concerns.

**Scott A. Morris**

Director (Acting)  
 Division of Preparedness and Response  
 Office of Nuclear Security and Incident Response

U.S. Nuclear Regulatory Commission  
 Mail Stop T4-A43  
 1555 Rockville Pike  
 Rockville, MD 20852

[scott.morris@nrc.gov](mailto:scott.morris@nrc.gov)  
 1-415-7482 (Office)  
 (b)(6) (BlackBerry/Cell)  
 1-415-5278 (Fax)



~~NOT FOR PUBLIC RELEASE~~

## Fukushima Daiichi - FOIA Processing Status Report

August 31, 2011

### Scope of Effort

- 33 FOIA requests received
- Estimated 2.8 million pages of information requested
- Estimated time to complete review – approximately 20 years
  - Assumptions include an intra-agency task force (TF) led by NSIR consisting of 8 full-time members performing a manual (eyes on paper) review of documentation without the benefit of any technology-based efficiencies (e.g., "de-duplication" screening)
- Estimated costs for TF team performing review over the term of project – approximately \$24 million
- Other costs (e.g., Operations Center phone line audio recording transcription) - \$2 Million
- **Phase 1:** Key information from the first 7 days following the event (e.g., SITREPS, ET bridge audio transcription, team logs and chronologies, meteorological and radiological data)
- **Phase 2:** Everything else for the first 7 days (i.e., all Operations Center e-mail accounts and the audio transcriptions from the RST, PMT, LIA (Federal and Int'l), and HOO's main phone lines)

### Status

- Phase 1 review of records is complete, with one exception. The TF is awaiting guidance from the White House Counsel regarding information that may be withheld under Executive Privilege of the President. This feedback is necessary for the TF to complete its final review of some Phase 1 records (e.g., ET phone bridge audio transcripts and chronology).
- Approximately 62,000 pages of information have been reviewed
- 15,000 pages have been released to the public and are available on the NRC public website (the remaining information is awaiting final processing by the FOIA Privacy Section (e.g., referral to other agencies, redaction of information to be withheld, etc.)
- 10 FOIA requests have been closed
- Partial releases of information have been made for 20 of the open FOIA requests

### Current Challenges

- The existing FOIA process requires a manual review of each hard copy record. Numerous duplicate records exist. It is extremely challenging to identify and eliminate all duplicate records without the aid of a technological solution. In addition, because of the large number of records, use of a manual-only review process increases the potential for inconsistently withholding sensitive information. An automated de-duplication tool is being acquired and is on schedule for implementation by mid-September. This tool should help to reduce the number of records that the TF will need to review.
- The FOIA Privacy Officers supporting (FPOs) available to support this effort are unable to keep up with the volume of records being processed by the TF, resulting in a backlog of records waiting to be processed. OIS is actively working to obtain contractor support to supplement the FPOs; contractor support should be available by mid-September.

900

~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, September 06, 2011 12:43 PM  
**To:** Sharkey, Jeffrey  
**Cc:** Reddick, Darani; Astwood, Heather  
**Subject:** RE: Public release of SECY paper on Japan Task Force Short Term Action recommendations.

(b)(5)

**From:** Laufer, Richard  
**Sent:** Tuesday, September 06, 2011 12:02 PM  
**To:** Baggett, Steven; Baval, Rochelle; Castleman, Patrick; Franovich, Mike; Gilles, Nanette; Hart, Ken; Hipschman, Thomas; Batkin, Joshua; Laufer, Richard; Lisann, Elizabeth; Marshall, Michael; Orders, William; Sharkey, Jeffrey; Shea, Pamela; Vietti-Cook, Annette; Astwood, Heather; Bradford, Anna; Kock, Andrea; Tadesse, Rebecca; Ammon, Bernice; Bupp, Margaret; Burns, Stephen; Clark, Lisa; Coggins, Angela; Davis, Roger; Nieh, Ho; Reddick, Darani; Sexton, Kimberly  
**Cc:** Armstrong, Janine; Batkin, Joshua; Blake, Kathleen; Bozin, Sunny; Bubar, Patrice; Chairman Temp; Crawford, Carrie; Dhir, Neha; Doane, Margaret; Droggitis, Spiros; EDO\_ETAs; Fopma, Melody; Gibbs, Catina; Greathead, Nancy; Hayden, Elizabeth; Henderson, Karen; Herr, Linda; Hudson, Sharon; Jimenez, Patricia; Joosten, Sandy; KLS Temp; Lepre, Janet; Loyd, Susan; Mitchell-Funderburk, Natalie; Monninger, John; Montes, David; Moore, Scott; Olive, Karen; Pace, Patti; Poole, Brooke; Riddick, Nicole; Rothschild, Trip; Savoy, Carmel; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Warren, Roberta; Wright, Darlene  
**Subject:** Public release of SECY paper on Japan Task Force Short Term Action recommendations.

On Friday, September 9, in response to the SRM for SECY-11-0093, "Near-Term Report and Recommendations for Agency Actions Following the Events in Japan," the Commission will receive a Notation Vote paper with the staff's recommendations regarding any Task Force recommendations that can, and in the staff's judgment, should be implemented, in part or in whole, without unnecessary delay.

SECY is requesting early public release of this SECY paper to allow time for stakeholder's to review it prior to the Commission meeting on Wednesday, September 14.

Please let SECY know if your office supports the early release of this paper.

Thanks,  
Rich

~~NOT FOR PUBLIC DISCLOSURE~~

931

Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Monday, October 10, 2011 11:43 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Lepre, Janet; Castleman, Patrick  
**Subject:** Fukushima Commission Meeting Summary  
**Attachments:** 2011\_10\_11\_Japan\_CM\_notes.doc

Commissioner,

Attached is the summary and proposed questions for tomorrow's Commission meeting. We still don't have presentation material from NRDC, New Jersey, FEMA, and Riverkeeper, so the questions are based on what these groups have said in previous Commission meetings and other public forums.

Pat



~~NOT FOR PUBLIC DISCLOSURE~~

**Commission Briefing on the Japan Near Term Task Force Report – Prioritization of Recommendations**

(b)(5)

Proposed Questions:

(b)(5)

(b)(5)

(b)(5)

(b)(5)

(b)(5)

934

**Svinicki, Kristine**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, October 11, 2011 3:02 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Frazier, Alan  
**Subject:** FW: INPO IER 11-1 Supplement 1  
**Attachments:** INPO IERL1-11-1Supp1.pdf

Commissioner,

This is a supplement to an INPO document issued in response to Fukushima. It's worth briefly skimming when you have time—it's just a few pages. It demonstrates voluntary initiatives along the lines of some of the Japan task force recommendations.

Pat

**From:** Sanfilippo, Nathan  
**Sent:** Tuesday, October 11, 2011 10:14 AM  
**To:** Marshall, Michael; Hipschman, Thomas; Orders, William; Castleman, Patrick; Gilles, Nanette; Franovich, Mike  
**Cc:** Brock, Kathryn; Bowman, Gregory  
**Subject:** FYI: INPO IER 11-1 Supplement 1

Reactor TAs:

Attached is a copy of INPO IER 11-1, Supplement 1, issued last week.

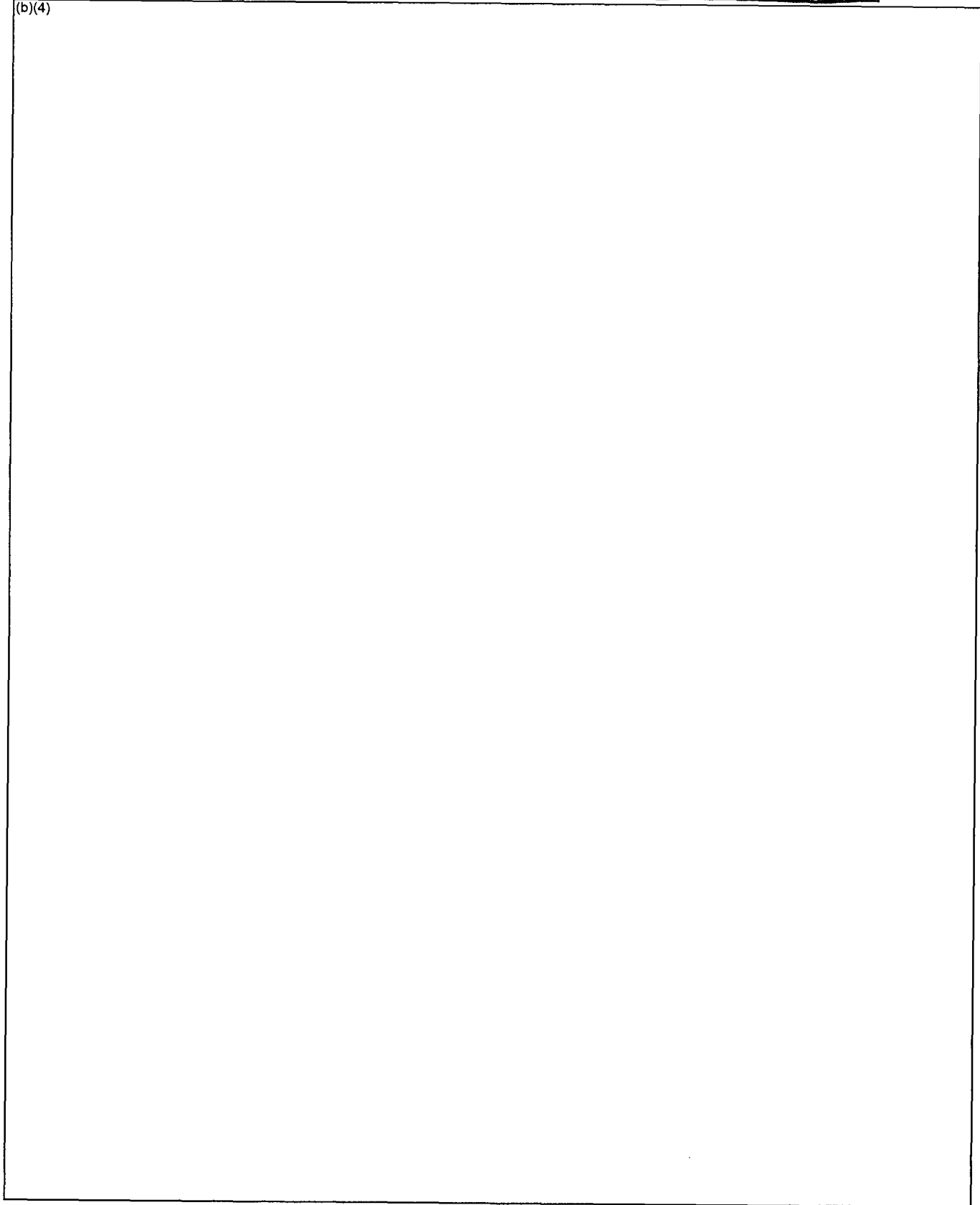
As with most INPO documents this is limited distribution that falls under the controls stated in the INPO-NRC MOA and affidavit, so please control accordingly.

Thanks,  
Nathan

INVESTIGATION REPORT

Report Level 1

(b)(4)



(b)(4)



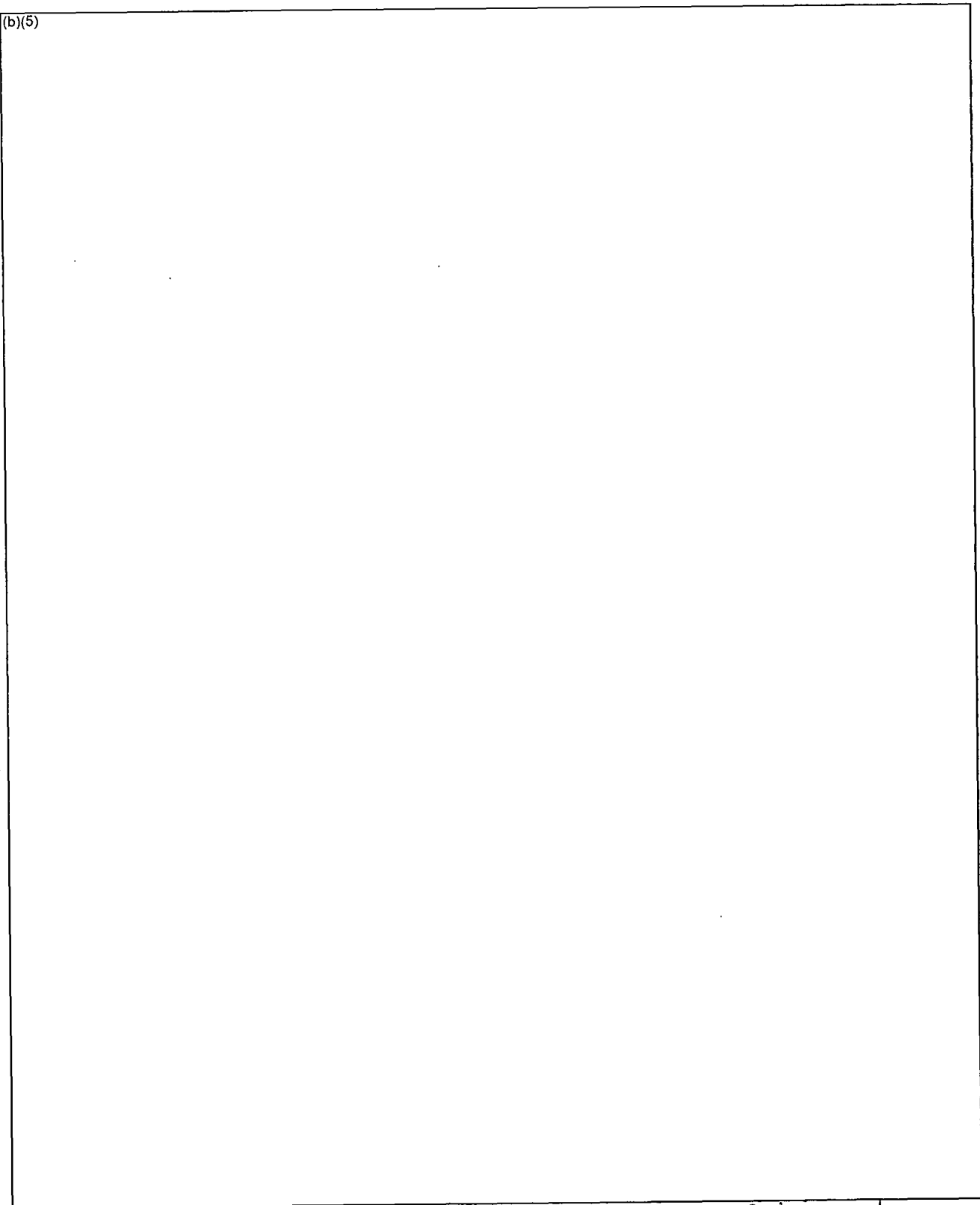
(b)(4)



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Justification of Information Request of Bulletin 11-01

(b)(5)



(b)(5)

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(b)(5)

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(b)(5)

(b)(5)

937

**Frazier, Alan**

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**From:** Frazier, Alan  
**Sent:** Thursday, October 13, 2011 9:11 AM  
**To:** Lepre, Janet  
**Subject:** RE: Periodic Files  
**Attachments:** Weber DEDMRT.doc

Jan,

Since I still do not have access to the G drive, would you mind updating the Weber file for me with the attached?

Alan

**From:** Lepre, Janet  
**Sent:** Wednesday, October 12, 2011 5:08 PM  
**To:** Frazier, Alan  
**Subject:** Periodic Files

Are attached.

Jan



**Periodic with Mike Weber, DEDMRT**  
**October 14, 2011, 2:00 – 2:30 pm**  
*(last met October 4, 2011)*

Outside of Scope

(b)(5)

Outside of Scope

(b)(5)

Outside of Scope

939

~~NOT FOR PUBLIC DISSEMINATION~~

**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Tuesday, October 18, 2011 12:01 PM  
**To:** Sharkey, Jeffrey; Reddick, Darani  
**Subject:** RE: DRAFT SRM - SECY-11-0124 (Near-Term Task force Report)

(b)(5)

**From:** Marshall, Michael  
**Sent:** Tuesday, October 18, 2011 11:37 AM  
**To:** Wright, Darlene; Baggett, Steven; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Vietti-Cook, Annette; Warren, Roberta; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Jimenez, Patricia; Nieh, Ho; Ostendorff, William; Apostolakis, George; Lui, Christiana; Lisann, Elizabeth; Golder, Jennifer; Gilles, Nanette; Sexton, Kimberly; Riddick, Nicole  
**Cc:** Mitchell-Funderburk, Natalie  
**Subject:** RE: DRAFT SRM - SECY-11-0124 (Near-Term Task force Report)

(b)(5)

(b)(5)

Michael L. Marshall, Jr.  
Policy Advisor for Reactors  
Office of the Chairman  
U.S. Nuclear Regulatory Commission

Phone: 301-415-1750  
Email: michael.marshall@nrc.gov

**From:** Wright, Darlene

**Sent:** Thursday, October 06, 2011 4:44 PM

**To:** Baggett, Steven; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Vietti-Cook, Annette; Warren, Roberta; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Jimenez, Patricia; Nieh, Ho; Ostendorff, William; Apostolakis, George; Lui, Christiana; Lisann, Elizabeth; Golder, Jennifer; Gilles, Nanette; Sexton, Kimberly; Riddick, Nicole

**Cc:** Mitchell-Funderburk, Natalie

**Subject:** DRAFT SRM - SECY-11-0124 (Near-Term Task force Report)

The attached file contains a draft SRM which is being circulated for the normal 3-day period for Commission review. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, scheduler, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Baval (RCB5), and Pam Shea (PWS).

943

~~NOT FOR PUBLIC DISCLOSURE~~

Sharkey, Jeffrey

**From:** Castleman, Patrick  
**Sent:** Wednesday, October 19, 2011 2:52 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Lepre, Janet  
**Subject:** FW: DRAFT SRM - Briefing on the Japan Near Term Task Force Report- Prioritization of Recommendations (SECY-11-0137) on 10/11/11  
**Attachments:** image001.gif; 111011.srm.docx

Commissioner,

(b)(5)

at

**From:** Mitchell-Funderburk, Natalie  
**Sent:** Tuesday, October 11, 2011 4:01 PM  
**To:** Baggett, Steven; Mitchell-Funderburk, Natalie; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, unny; Bradford, Anna; Wright, Darlene; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark, Lisa; Coggins, ngela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; enderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; epre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, rooke; Reddick, Darani; RidsEdoDraftSrmVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffrey; Shea, Pamela; Sosa, elkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Vietti-Cook, Annette; Warren, Roberta; adesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Jimenez, Patricia; Nieh, Ho; Ostendorff, illiam; Apostolakis, George; Lui, Christiana; Lisann, Elizabeth; Golder, Jennifer; Gilles, Nanette; Sexton, Kimberly; Riddick, cole; Frazier, Alan  
**cc:** Wright, Darlene  
**Subject:** DRAFT SRM - Briefing on the Japan Near Term Task Force Report- Prioritization of Recommendations (SECY-11-0137) 10/11/11

The attached file contains a draft SRM which is being circulated for the normal 3-day period for Commission review. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, scheduler, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Baval (CB5), and Pam Shea (PWS).

*Natalie Mitchell-Funderburk*  
 Nuclear Regulatory Commission  
 Office of the Secretary of the Commission  
 55 Rockville Pike  
 Rockville, MD 20852  
 Tstop: O-16G4  
 Phone: (301) 415-1968  
 Fax: (301) 415-1101  
[Natalie.Mitchell-Funderburk@nrc.gov](mailto:Natalie.Mitchell-Funderburk@nrc.gov)

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

October 11, 2011

MEMORANDUM TO: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff

FROM: Annette L. Vietti-Cook, Secretary /s/

SUBJECT: DRAFT STAFF REQUIREMENTS MEMORANDUM – BRIEFING  
ON THE JAPAN NEAR TERM TASK FORCE REPORT –  
PRIORITIZATION OF RECOMMENDATIONS (SECY-11-0137),  
9:00 A.M., TUESDAY, OCTOBER 11, 2011, COMMISSIONERS'  
CONFERENCE ROOM, ONE WHITE FLINT NORTH,  
ROCKVILLE, MARYLAND (OPEN TO PUBLIC ATTENDANCE)

(b)(5)

Attachment:  
As stated

cc: EDO  
OGC

IN RESPONSE, PLEASE  
REFER TO: M111011

MEMORANDUM TO: R. W. Borchardt  
Executive Director for Operations

FROM: Annette Vietti-Cook, Secretary

SUBJECT: STAFF REQUIREMENTS – BRIEFING ON THE JAPAN NEAR  
TERM TASK FORCE REPORT – PRIORITIZATION OF  
RECOMMENDATIONS (SECY-11-0137), 9:00 A.M., TUESDAY,  
OCTOBER 11, 2011, COMMISSIONERS' CONFERENCE ROOM,  
ONE WHITE FLINT NORTH, ROCKVILLE, MARYLAND (OPEN  
TO PUBLIC ATTENDANCE)

(b)(5)



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cc: Chairman Jaczko  
Commissioner Svinicki  
Commissioner Apostolakis  
Commissioner Magwood  
Commissioner Ostendorff  
OGC  
CFO  
OCA  
OIG  
OPA  
Office Directors, Regions, ACRS, ASLBP (via E-Mail)  
PDR

944

~~NOT FOR PUBLIC DISCLOSURE~~

Castleman, Patrick

**From:** Svinicki, Kristine  
**Sent:** Wednesday, October 19, 2011 6:43 PM  
**To:** Castleman, Patrick  
**Subject:** RE: DRAFT SRM - Briefing on the Japan Near Term Task Force Report- Prioritization of Recommendations (SECY-11-0137) on 10/11/11

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Wednesday, October 19, 2011 2:52 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Lepre, Janet  
**Subject:** FW: DRAFT SRM - Briefing on the Japan Near Term Task Force Report- Prioritization of Recommendations (SECY-11-0137) on 10/11/11

Commissioner,

(b)(5)

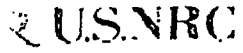
Pat

**From:** Mitchell-Funderburk, Natalie  
**Sent:** Tuesday, October 11, 2011 4:01 PM  
**To:** Baggett, Steven; Mitchell-Funderburk, Natalie; Bates, Andrew; Batkin, Joshua; Baval, Rochelle; Blake, Kathleen; Bozin, Sunny; Bradford, Anna; Wright, Darlene; Bubar, Patrice; Bupp, Margaret; Burns, Stephen; Chairman Temp; Clark Lisa; Coggins, Angela; Cordes, John; Crawford, Carrie; Davis, Roger; Fopma, Melody; Franovich, Mike; Gibbs, Catina; Hackett, Edwin; Hart, Ken; Henderson, Karen; Herr, Linda; Hipschman, Thomas; Hudson, Sharon; Joosten, Sandy; KLS Temp; Kock, Andrea; Laufer, Richard; Lepre, Janet; Loyd, Susan; Mamish, Nader; Marshall, Michael; Monninger, John; Moore, Scott; Orders, William; Pace, Patti; Poole, Brooke; Reddick, Darani; RidsEdoDraftSrnVote Resource; Rothschild, Trip; Savoy, Carmel; Sharkey, Jeffry; Shea, Pamela; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Temp, GEA; Temp, WCO; Temp, WDM; Vietti-Cook, Annette; Warren, Roberta; Tadesse, Rebecca; Joosten, Sandy; Castleman, Patrick; Montes, David; Dhir, Neha; Jimenez, Patricia; Nieh, Ho; Ostendorff, William; Apostolakis, George; Lui, Christiana; Lsann Elizabeth; Golder, Jennifer; Gilles, Nanette; Sexton, Kimberly; Riddick, Nicole; Frazier, Alan  
**Cc:** Wright, Darlene  
**Subject:** DRAFT SRM - Briefing on the Japan Near Term Task Force Report- Prioritization of Recommendations (SECY-11-0137) on 10/11/11

The attached file contains a draft SRM which is being circulated for the normal 3-day period for Commission review. As provided in the Internal Commission Procedures, the staff is "...afforded an opportunity to review the SRM to ensure that the Commission decision is clear and understandable and that resource, schedular, and legal constraints are properly considered." Please provide any responses to Ken Hart (KRH), Richard Laufer (RJL), Rochelle Baval (RCB5), and Pam Shea (PWS).

Natalie Mitchell-Funderburk  
S. Nuclear Regulatory Commission

Office of the Secretary of the Commission  
11555 Rockville Pike  
Rockville, MD 20852  
Mailstop: O-16G4  
Phone: (301) 415-1968  
Fax: (301) 415-1101  
[Natalie.Mitchell-Funderurk@nrc.gov](mailto:Natalie.Mitchell-Funderurk@nrc.gov)

 U.S. NRC

*Protecting People and the Environment*

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**Castleman, Patrick**

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**From:** Sharkey, Jeffry  
**Sent:** Thursday, October 20, 2011 3:01 PM  
**To:** Castleman, Patrick  
**Subject:** FW: Japan, Fukushima: Interactive radiation map gives close-up fallout readings

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**From:** Breskovic, Clarence  
**Sent:** Thursday, October 20, 2011 3:01:16 PM  
**To:** Breskovic, Clarence  
**Subject:** Japan, Fukushima: Interactive radiation map gives close-up fallout readings  
**Auto forwarded by a Rule**

Radiation map gives close-up fallout readings ·

Japan Times, 2011-10-20

By TAKAHIRO FUKADA

The science ministry said Wednesday it has posted a radiation map that visitors to its website can enlarge to see to what extent their neighborhoods had been contaminated by fallout from the crippled Fukushima No. 1 nuclear plant.

The website, <http://ramap.jaea.go.jp/map/map.html>, launched by the Education, Culture, Sports, Science and Technology Ministry is now available in Japanese only.

The map shows measurements of radiation and radioactive cesium taken from aircraft in 10 prefectures, including Tokyo and Fukushima, between April and September. It also includes data the ministry collected from soil samples at around 2,200 sites in Fukushima Prefecture and radiation levels within a 100-km radius of the power plant.

Roads, schools and other public facilities such as city halls are visible on the 1-to-12,500 scale map, in which 1 cm is equivalent to 125 meters. Areas with the highest radiation level, over 19.0 microsieverts per hour, are colored in red, while dark blue indicates the lowest level, no more than 0.1 microsievert per hour.

Users can also locate sites, such as police boxes and post offices, by typing in their names.

According to aerial measurements taken on Sept. 14-18, the Imperial Palace is covered in dark blue, indicating the lowest radiation level. In contrast, a post office in Namie, Fukushima Prefecture, is colored red, based on measurements taken from May 31 to June 24.

"We are providing the public with the information in a way that anyone can view," said Hirotaka Oku, a ministry official. "It would be appropriate for people to refer to this and consider the best way to avoid exposure to radiation."

Clarence Breskovic  
International Policy Analyst  
U.S. Nuclear Regulatory Commission

Office of International Programs

11555 Rockville Pike

Rockville, MD 20852, USA

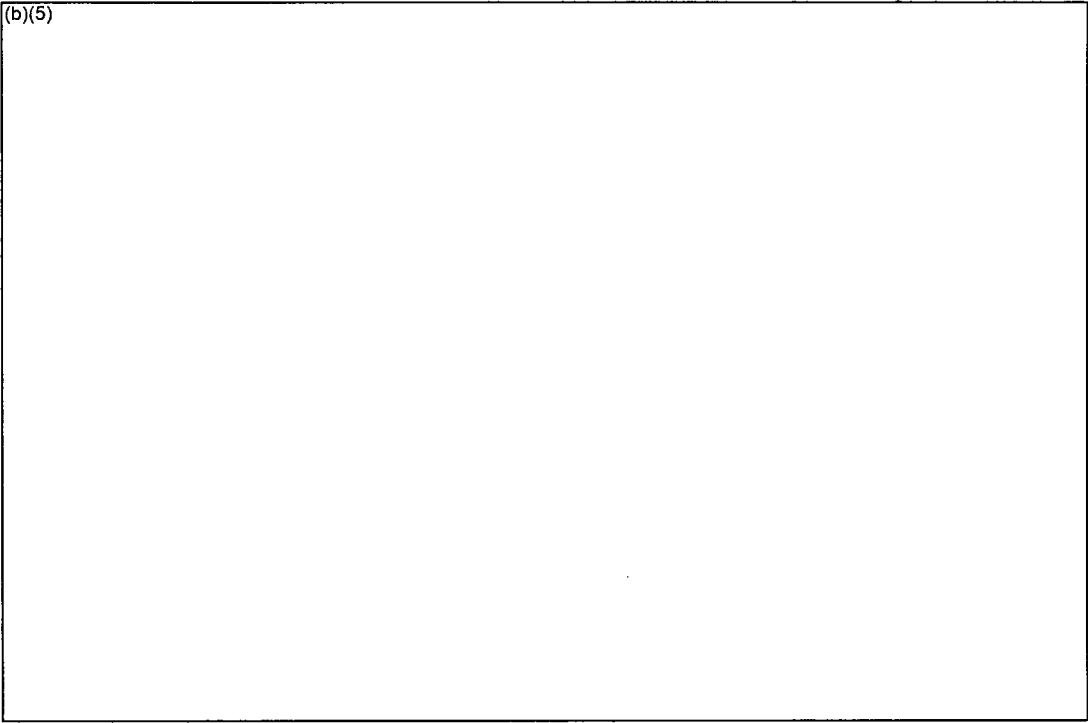
Tel: 301-415-2364

Mobile: (b)(6)

Fax: 1-301-415-2395

561

(b)(5)

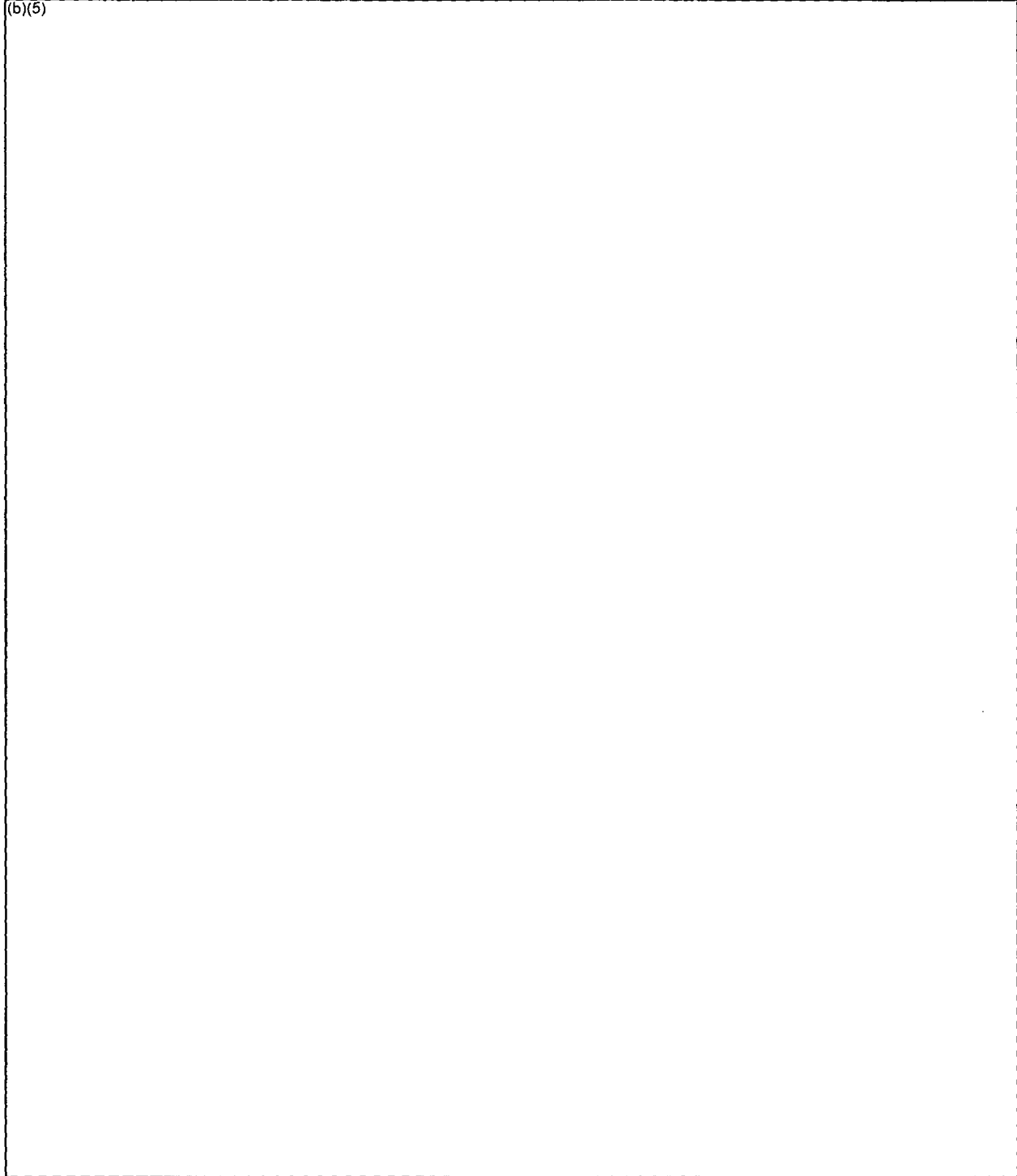


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Pkg. No: ML11089A002 Ltr: ML11089A009 Incoming: ML110760172

OFFICE	OEDO	OCA	OGC	EDO	OCM
NAME	R.Rihm	T.Riley	S.Turk	<i>MV</i>	
DATE	3/31/11	3/31/11	3/29/11	4/4/11	4/1/11

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FP 602 of 2107



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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 6:41 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** Fw: Corrected 0600 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** NRC Status Update 3.24.11--0600 EDT.pdf

Sent from an NRC Blackberry  
Patrick Castleman

(b)(6)

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**From:** LIA07 Hoc  
**Cc:** LIA07 Hoc  
**Sent:** Thu Mar 24 06:40:09 2011  
**Subject:** Corrected 0600 EDT (March 24, 2011) USNRC Earthquake/Tsunami Status Update

Please find attached a 0600 EDT (March 24, 2011) status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami. **This corrects the previous version that was incorrectly marked draft.**

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

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

-Jim

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

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**Castleman, Patrick**

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**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:06 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

Sure. I am busy but come on by. Bring a diet coke pls. thanks door is closed. Just knock. Am trying to avoid the masses.

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:05 PM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

What does your schedule look like today? We should meet and chat for a half hour. I could stop by your place if that works.

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:04 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:03 PM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:02 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:01 PM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 12:00 PM  
**To:** Castleman, Patrick  
**Subject:** RE: Hi

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 11:59 AM  
**To:** Milligan, Patricia  
**Subject:** RE: Hi

~~CONFIDENTIAL~~

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 11:42 AM  
**To:** Castleman, Patrick  
**Subject:** Hi

FYI

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~~Not For Public Release~~

**Castleman, Patrick**

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**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 1:42 PM  
**To:** Castleman, Patrick  
**Subject:** RE: article

ok

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 1:42 PM  
**To:** Milligan, Patricia  
**Subject:** RE: article

Interested in hearing it...if you're there, I'll head over now with diet coke in hand.

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 1:16 PM  
**To:** Castleman, Patrick  
**Subject:** RE: article

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 1:11 PM  
**To:** Milligan, Patricia  
**Subject:** RE: article

(b)(5)

**From:** Milligan, Patricia  
**Sent:** Thursday, March 24, 2011 1:06 PM  
**To:** Castleman, Patrick  
**Subject:** RE: article

(b)(5)

**From:** Castleman, Patrick  
**Sent:** Thursday, March 24, 2011 12:55 PM  
**To:** Milligan, Patricia  
**Subject:** article

(b)(5)

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whether that distance is enough, given that last week, the Nuclear Regulatory Commission urged US citizens in Japan to stay at least 50 miles away from the earthquake and tsunami stricken Fukushima Dai-ichi nuclear plant. Japanese officials had only required a 12-mile zone. The Journal notes that MIT professor Michael Golay suggested that the NRC's recommendation certainly took into account issues that would not necessarily impact a similar disaster response in this country, such as the limited ability of the US government to aid its citizens in another country. Still, Golay doubted a 50-mile evacuation radius would be very feasible in the US, where almost half of the 104 reactors are within 50 miles of a metropolitan area. "We're certainly not prepared for it," said Golay.

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Wednesday, April 13, 2011 1:35 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: OUG -- 1200 EDT (April 13, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.041311.1200EDT.pdf

**From:** LIA07 Hoc  
**Sent:** Wednesday, April 13, 2011 12:13 PM  
**To:** LIA07 Hoc  
**Subject:** OUG -- 1200 EDT (April 13, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 13, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is not intended to be shared outside of the Federal government without NRC approval.

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

Thank you,  
Sara

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

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Thursday, April 14, 2011 12:33 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: OOO -- 1200 EDT (April 14, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.041411.1200EDT.pdf

**From:** LIA07 Hoc  
**Sent:** Thursday, April 14, 2011 12:23 PM  
**To:** LIA07 Hoc  
**Subject:** OOO -- 1200 EDT (April 14, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 14, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is not intended to be shared outside of the Federal government without NRC approval.

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

Thank you,  
Jim

Jim Anderson  
US Nuclear Regulatory Commission  
LIA07.HOC@nrc.gov (Operations Center)

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Saturday, April 16, 2011 2:54 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** FW: OOO -- 1200 EDT (April 16, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update 041611 1200EDT.pdf

**From:** LIA07 Hoc  
**Sent:** Saturday, April 16, 2011 1:01 PM  
**To:** LIA08 Hoc  
**Subject:** OOO -- 1200 EDT (April 16, 2011) USNRC Earthquake-Tsunami Update

Attached, please find the 1200 EDT, April 16, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami in Japan.

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

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

Clyde Ragland  
Liaison Team Coordinator  
US Nuclear Regulatory Commission  
email: [lia08.hoc@nrc.gov](mailto:lia08.hoc@nrc.gov)  
Desk Ph: 301-816-5185

~~NO FORN DISSEM TO UNCLASSIFIED~~

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Castleman, Patrick

~~NOT FOR PUBLIC RELEASE~~

**From:** Castleman, Patrick  
**Sent:** Sunday, April 17, 2011 12:37 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** FW: USNRC Emergency Operations Center Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 041711 1200EDT.pdf

**From:** LIA08 Hoc  
**Sent:** Sunday, April 17, 2011 12:25 PM  
**Subject:** USNRC Emergency Operations Center Status Update

Liaison Team Coordinator  
US Nuclear Regulatory Commission  
email: [lia08.hoc@nrc.gov](mailto:lia08.hoc@nrc.gov)  
Desk Ph: 301-816-5185

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Monday, April 18, 2011 3:05 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** FW: RESEND: USNRC Emergency Operations Center Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 041811 1200EDT.docx

**From:** LIA08 Hoc

**Sent:** Monday, April 18, 2011 1:30 PM

**To:** Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE\_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitis, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Glitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Logaras, Harral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR\_DDSP\_ILTAB\_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Nelson, Robert; ROO hoc; Rothschild, Trip; RST01 Hoc; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffrey; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tift, Doug; Kolb, Timothy; Ulses, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp; Trapp, James; Trojanowski, Robert; Turtill, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zimmerman, Roy; Zorn, Jason

**Subject:** RESEND: USNRC Emergency Operations Center Status Update

Resent to internal NRC to include missed contacts.

\*\*\* Attachment is Official Use Only \*\*\*

Liaison Team Coordinator  
 US Nuclear Regulatory Commission  
 email: [lia08.hoc@nrc.gov](mailto:lia08.hoc@nrc.gov)  
 Desk Ph: 301-816-5185

~~NOT FOR PUBLIC DISCLOSURE~~



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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Tuesday, April 26, 2011 1:53 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Thoma, John  
**Subject:** FW: USNRC Earthquake-Tsunami Update 042611 1200 EDT (Final email distribution)  
**Attachments:** USNRC Earthquake-Tsunami Update 042611 Revision 00, 1200 EDT.pdf; SharePoint Information Japan.pdf

There is not much new here.

**From:** LIA08 Hoc

**Sent:** Tuesday, April 26, 2011 12:26 PM

**To:** Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Murray, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE\_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitts, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Gitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; Holahan, Vincent; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA08 Hoc; Logaras, Herral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR\_DDSP\_ILTAB\_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Riley (OCA), Timothy; Nelson, Robert; ROO hoc; Rothschild, Trip; RST01 Hoc; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffry; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tift, Doug; Kolb, Timothy; Ulses, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp; Trapp, James; Trojanowski, Robert; Turtill, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zorn, Jason

**Subject:** USNRC Earthquake-Tsunami Update 042611 1200 EDT (Final email distribution)

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICAL USE ONLY\*\*\*\*\*

The next NRC Update will be distributed at 1200 EDT on Wednesday, April 27, 2011

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICAL USE ONLY\*\*\*\*\*

Per direction from the Executive Team, this will be the final USNRC Status Update sent via email to the Internal distribution. Future updates will be loaded to the Japan SharePoint page at <http://nsir-ops.nrc.gov/>. You may subscribe to email alerts through the SharePoint page (instructions in 2<sup>nd</sup> attachment). Please let us know if you have any problems or questions. Thank you.

\*\* Attachments are QUO \*\*\*

eth Reed  
 T Coordinator

~~NOT FOR PUBLIC DISCLOSURE~~

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Castleman, Patrick

~~NOT FOR PUBLIC DISCLOSURE~~

**From:** Castleman, Patrick  
**Sent:** Thursday, April 28, 2011 12:42 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Thoma, John  
**Subject:** FW: USNRC Earthquake-Tsunami Update 042811 Revision 1, 1230 EDT  
**Attachments:** USNRC Earthquake-Tsunami Update 042811 Revision 0, 1200 EDT.pdf

**From:** LIA08 Hoc  
**Sent:** Thursday, April 28, 2011 12:30 PM  
**To:** OST01 HOC; A Green; A Rock; Al Coons; Aleshia Duncan; alexancg; Anthony Herbold; Appleman Binkert; B Green; B Russo; Bill King; Bill King2; Bruce Howard; C Lay; C Noser; C Ops; Charles Burrows; Charles Donnell; Christopher Meadow; Conrad Burnside; D Drakeley; D May; D Murakami; D Webb; Damian Peko; Dan Feighert; Darrell Hammons; Devin Bush G LTJG RIA-Midwest MPLS.N47922; DHS Ops; DOE NIT; DOT; DTRA; DTRA; Dudek; E Wright; Elmer Naples; EOP; EPA; EPA2; Eric Sinibaldi; F Lewis; G Szeto; G Whitmire; George Higdon; gregopk; Gregory Simonson; Gretchen McCoy; H; Harry Sherwood; HHS; I Clark; Intel DIA; J Barnes; J Bartlett; J Moeller; J Noonkester; J Szymanski; J Tippets; James Purvis; Japan Embassy Task Force; Jason CIA; Jason Pepin; Jeremy Demott; Jeremy Morrow; Jeremyft1; Jim Kish; Johanna Berkey; John Holdren; Joyce Connery; K Donald; K Gonzalez; K Ousley; Karyn Keller; Kyle Viayra; L Mayer; Lee Nickel; Lisa; Lisa Hammond; Lukas McMichael; M Huchla; M Kerber; M Lansley; M Thon; M Thon2; maceck; MARFORPAC CAT All Hazards Div; MARFORPAC CAT G2; Mark Shaffer; markwb2; Marshall Shull; Michelle Ralston; Nan Calhoun; Navy; NICC; NMIC; NOC; NOC Duty Director; Nulcear SSA; P Gardner; pentagon; Peter Lyons; Phillip Barks; R Roesler; R Schueneman; Rebecca Thomson; roberhh; Ron Cherry; Ron McCabe; S Basile; S Buntman; S Levy; scotc1; Seamus O'Boyle; seiden; state; Stephen Trautman; Steve Colman; Steve Horwitz; T Roberts; Thomas Conran; Thomas Zerr; Tim Greten; Timothy Hitzelberger; Trent Hughes; Troy Heytens; USDA, John; USMC; Vanessa Quinn; Victoria Kinsey; W Cluff; W Young; Will Friese; William Webb; A Aviles; A Brown; A Estes; A Hough; A Tribble; B goldberg; B Moffat; B Perry; B Woo; Beavers, Shane; Brinser, Andrew; Brooks, Andrae; Brown, Michael; C Fiore; C Good; C Kim; Carlos Islas; CPF CATN5; Craig Gaddis; D Fletcher; D Putthoff; D Scully; D Smith; D Souza; D Wade; D Williams; David Graves; DOE DART; E Fiser; E kaye; E Price; E Shelland; E Train; Elder, Troy M SGT MIL USA USARPAC; Eric Wright; F Bantell; Fossum, Sgt Zachary; Guathier, Ronald; H Zito; Hickam; Hickam; J Blankenburg; J Kreykes; J McCallister; J Rhodes; J Rivera; J Scarbrough; J Soderbeck; J Stewart; J Trussler; James Williams; JR Haley; JTF505-MAIN-JOC-J2; JTF505-MAIN-JOC-J2-INTEL-ANAY; K Bollow; K Bollow; K Tomlinson; Koluch, SSgt Eric; L Bolling; L Elkins; L Heinrich; L Walter; Laurel Steinhurst; M Howsare; M Kabbur; M Nguyen; M Opfer; M Taafe; Marina Llewellyn; Michael Anderson; Micheal Eberlein; Monaghan, Dylan; N Albritton; N Albritton; NCMi Ops; Office of Secretary of Defense Watch Officer; Olson, Niels; OST01 HOC; P Almquist; P Higginbotham; P Higgins; P Lyons; P Smalley; P Somboonpakron; PACOM; PACOM; Pasit Somboonpakron; Powers, Jeffrey; R Backley; R Fisher; R Garrett; R Neff; R Stephenson; R Tashma; Reid Tanaka; Richard, Sgt William; Robert Duke; Robert P; RST01 Hoc; RST01B Hoc; RST03 Hoc; S Aoki; S Jerabek; Sean Basile; Shirey, Sgt Eric; Simmers, Keith; Spencer Nordgran; Spurlock, Kenneth; Stephen Greco; T Lowman; T Miller; T True; Thomas Vavoso; Tovar, SSgt Eric; (b)(6); USFJ; USFJ Intel; V Raphael; Valerie Makino; Vaughn, Sgt Ierrod; Walter Hokett; Wanda Ayuso; William Brysacz; Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Murray, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE\_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitis, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Glitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; Holahan, Vincent; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA08 Hoc; Logaras, Harral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; cNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Gary; NRCHQ; NSIR\_DDSP\_ILTAB\_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Matt; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3

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IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Riley (OCA), Timothy; Nelson, Robert; ROO hoc; Rothschild, Trip; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffrey; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tiff, Doug; Kolb, Timothy; Ulses, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp; Trapp, James; Trojanowski, Robert; Turtil, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zorn, Jason; Borchardt, Bill; Cohen, Shari; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Hudson, Sharon; Schwarz, Sherry; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael

**Subject:** USNRC Earthquake-Tsunami Update 042811 Revision 1, 1230 EDT

This information is ~~OFFICIAL USE ONLY~~. Revision 1 to the 1200 distribution changes from earlier distribution are highlighted

DUP of  
6710

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Castleman, Patrick

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From:  
Sent:  
To:

LIA08 Hoc  
Wednesday, May 04, 2011 1:10 PM  
LIA08 Hoc; Droggitis, Spiros; Riley (OCA), Timothy; A Green; A Rock; Al Coons; Aleshia Duncan; alexancg; Anthony Herbold; Appleman Binkert; B Green; B Russo; Bill King; Bill King2; Bruce Howard; C Lay; C Noser; C Ops; Charles Burrows; Charles Donnell; Christopher Meadow; Conrad Burnside; D Drakeley; D May; D Murakami; D Webb; Damian Peko; Dan Feighert; Darrell Hammons; Devin Bush G LTJG RIA-Midwest MPLS.N47922; DHS Ops; DOE NIT; DOT; DTRA; DTRA; Dudek; E Wright; Elmer Naples; EOP; EPA; EPA2; Eric Sinibaldi; F Lewis; G Szeto; G Whitmire; George Higdon; gregopk; Gregory Simonson; Gretchen McCoy; H; Harry Sherwood; HHS; I Clark; Intel DIA; J Barnes; J Bartlett; J Moeller; J Noonkester; J Szymanski; J Tippets; James Purvis; Japan Embassy Task Force; Jason CIA; Jason Pepin; Jeremy Demott; Jeremy Morrow; Jeremeyft1; Jim Kish; Johanna Berkey; John Holdren; Joyce Connery; K Donald; K Gonzalez; K Ousley; Karyn Keller; Kyle Viayra; L Mayer; Lee Nickel; Lisa; Lisa Hammond; Lukas McMichael; M Huchla; M Kerber; M Lansley; M Thon; M Thon2; maceck; MARFORPAC CAT All Hazards Div; MARFORPAC CAT G2; Mark Shaffer; markwb2; Marshall Shull; Michelle Ralston; Nan Calhoun; Navy; NICC; NMIC; NOC; NOC Duty Director; Nulcear SSA; P Gardner; pentagon; Peter Lyons; Phillip Barks; R Roesler; R Schueneman; Rebecca Thomson; roberhh; Ron Cherry; Ron McCabe; S Basile; S Buntman; S Levy; scotc1; Seamus O'Boyle; seiden; state; Stephen Trautman; Steve Colman; Steve Horwitz; T Roberts; Thomas Conran; Thomas Zerr; Tim Greten; Timothy Hitzelberger; Trent Hughes; Troy Heytens; USDA, John; USMC; Vanessa Quinn; Victoria Kinsey; W Cluff; W Young; Will Friese; William Webb; A Aviles; A Brown; A Estes; A Hough; A Tribble; B goldberg; B Moffat; B Perry; B Woo; Beavers, Shane; Brinser, Andrew; Brooks, Andrae; Brown, Michael; C Fiore; C Good; C Kim; Carlos Islas; Christopher Firman; CPF CATN5; Craig Gaddis; D Fletcher; D Putthoff; D Scully; D Smith; D Souza; D Wade; D Williams; Danielle Moen; David Graves; DOE DART; E Fiser; E kaye; E Price; E Shelland; E Train; Elder, Troy M SGT MIL USA USARPAC; Eric Wright; F Bantell; Fossum, Sgt Zachary; Guathier, Ronald; H Zito; Hickam; Hickam; J Blankenburg; J Kreykes; J McCallister; J Rhodes; J Rivera; J Scarbrough; J Soderbeck; J Stewart; J Trussler; James Williams; JR Haley; JTF505-MAIN-JOC-J2; JTF505-MAIN-JOC-J2-INTEL-ANAY; K Bollow; K Bollow; K Tomlinson; Koluch, SSgt Eric; L Bolling; L Elkins; L Heinrich; L Walter; Laurel Steinhurst; M Howsare; M Kabbur; M Nguyen; M Opfer; M Taafe; Marina Llewellyn; Mark Russo; Michael Anderson; Micheael Eberlein; Monaghan, Dylan; N Albritton; N Albritton; NCMi Ops; Office of Secretary of Defense Watch Officer; Olson, Niels; OST01 HOC; P Almqvist; P Higginbotham; P Higgins; P Lyons; P Smalley; P Somboonpakron; PACOM; PACOM; Pasit Somboonpakron; Powers, Jeffrey; R Backley; R Fisher; R Garrett; R Neff; R Stephenson; R Tashma; Reid Tanaka; Richard, Sgt William; Robert Duke; Robert P; RST01 Hoc; RST01B Hoc; RST03 Hoc; S Aoki; S Jerabek; Sean Basile; Shirey, Sgt Eric; Simmers, Keith; Spencer Nordgran; Spurlock, Kenneth; Stephen Greco; T Lowman; T Miller; T True; Thomas Vavoso; Tovar, SSgt Eric<sup>(b)(6)</sup>; USFJ; USFJ Intel; V Raphael; Valerie Makino; Vaughn, Sgt Jerrod; Walter Hokett; Wanda Ayuso; William Brysacz; Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchart, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Murray, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE\_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Giitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; Holahan, Vincent; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; Logaras, Herral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR\_DDSP\_ILTAB\_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis;

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To: Devercelly, Richard; Nelson, Robert; ROO hoc; Rothschild, Trip; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffry; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tiff, Doug; Kolb, Timothy; Uises, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp; Trapp, James; Trojanowski, Robert; Turtill, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zorn, Jason; Borchardt, Bill; Cohen, Shari; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Hudson, Sharon; Schwarz, Sherry; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael

Cc: LIA08 Hoc

Subject: USNRC Emergency Operations Center Status Update 05032011 1200 EDT Revision 01

Attachments: USNRC Earthquake-Tsunami Update 050411 Revision 01 1200 EDT.docx

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY\*\*\*\*\*

Good Afternoon,

Attached is the Status Update for May 4, 2011. The next USNRC Status Update will be distributed at 1200 EDT on May 5, 2011.  
Revision 01

Thank You

\*\*\*\*\*NOTE: THE ATTACHED IS FOR OFFICIAL USE ONLY\*\*\*\*\*

Liaison Team Coordinator  
US Nuclear Regulatory Commission  
email: [lia08.hoc@nrc.gov](mailto:lia08.hoc@nrc.gov)  
Desk Ph: 301-816-5185

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**Castleman, Patrick**

**From:** Castleman, Patrick  
**Sent:** Saturday, March 19, 2011 6:53 AM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffrey; Reddick, Darani; Thoma, John  
**Subject:** FW: USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)  
**Attachments:** USNRC Earthquake-Tsunami Update.031911.0600EDT.pdf

**From:** LIA07 Hoc  
**Sent:** Saturday, March 19, 2011 6:16 AM  
**Subject:** USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)

Attached, please find an 0600 EDT March 19, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Thanks,  
Christine

Christine A. Steger  
US Nuclear Regulatory Commission  
[Christine.Steger@nrc.gov](mailto:Christine.Steger@nrc.gov)  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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**Castleman, Patrick**

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**From:** Sheron, Brian  
**Sent:** Sunday, March 27, 2011 9:54 PM  
**To:** Brenner, Eliot  
**Cc:** LIA06 Hoc; McDermott, Brian; Batkin, Joshua; Weber, Michael; Burns, Stephen; RST01 Hoc; Borchardt, Bill; Wiggins, Jim; Virgilio, Martin; Haney, Catherine; Uhle, Jennifer  
**Subject:** Your Question

Eliot, we checked on your question about the statement in the White House White paper on spent fuel storage that said dry cask storage allows spent fuel that has been cooled in the spent fuel pool at least 3 years to be surrounded by an inert gas inside a container called a cask.

The regulations only require spent fuel to have been cooled in a pool for one year before it could be moved to a cask. Bernie White of NMSS told us that the paper said 3 years because that is the shortest time a discharged fuel assembly has ever been approved for loading in a dry cask.

However, five years is the typical amount of time it takes a fuel assembly to cool down so it can be stored safely in a dry cask.

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**Castleman, Patrick**

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**From:** Castleman, Patrick  
**Sent:** Tuesday, April 12, 2011 1:27 PM  
**To:** Svinicki, Kristine  
**Cc:** Sharkey, Jeffry; Reddick, Darani; Thoma, John  
**Subject:** FW: OHO -- 1200 EDT (April 12, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.041211.1200EDT.pdf

**From:** LIA07 Hoc  
**Sent:** Tuesday, April 12, 2011 12:01 PM  
**To:** LIA07 Hoc  
**Subject:** RE: OHO -- 1200 EDT (April 12, 2011) USNRC Earthquake-Tsunami Update

Attached, please find a 1200 EDT, April 12, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

As of April 11, 2011, the NRC transitioned a great portion of its response support efforts to its line organizations, requiring fewer staff at the Headquarters Operations Center. As such, we will only be issuing the status update once a day at 1200 EDT. The timing and frequency of the updates may change to support evolving needs of the NRC Site Team in Japan.

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

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

Thank you,  
Jim

Jim Anderson  
US Nuclear Regulatory Commission  
[LIA07.HOC@nrc.gov](mailto:LIA07.HOC@nrc.gov) (Operations Center)

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**From:** Vargo, George <gvargo@state.pa.us>  
**Sent:** Wednesday, April 13, 2011 12:49 PM  
**To:** Tosh Ushino ((b)(6)); Dan Strom ((b)(6)); Dan Strom (strom@pnl.gov); George J. Vargo (vargo@physicist.net); Mike Stabin (michael.g.stabin@vanderbilt.edu); Reeves, Glen I. CONTRACTOR; Hasselberg, Rick; 'Ronald E Goans, MD, PhD'; Whitehead, Jeffrey; Allard, David; Barnhart, James; Chipppo, John (DEP); Easton, Randolph; Gallagher, Dennis (DEP); Gilcrist, Tara; Handley, Lu-Ann; Janati, Rich; Kutchman, Randy; Melnic, Joseph; Seiber, Benjamin; Skelton, Donielle; Tamanini, Henry; Wagner, William  
**Cc:** 'Susan E. Vargo'; Vargo Susan; 'vargo@physicist.net'; 'Karen Barcal'  
**Subject:** Fukushima Daiichi NPP Update #34 - 4/14/11 1230  
**Attachments:** Fukushima\_Daiichi\_NPP\_Status\_Report#0034-041311-1230.doc

## **Fukushima Daiichi NPP Status Report #34 April 13, 2011 – 1230**

(4/14/11 0130 JST)

*Ed Note: After a flurry of coverage in the domestic media yesterday over the reclassification of the Fukushima Daiichi NPP Accident to Level 7 on the IAEA International Nuclear Event Scale there is little, if any interest today. In the words of NRC Chairman Jaczko the situation appears to be relatively "static but not stable".*

From IAEA (<http://www.iaea.org/newscenter/news/tsunamiupdate01.html>) accessed 4/12/11 0730:

### **IAEA Briefing on Fukushima Nuclear Accident (13 April 2011, 14:30 UTC)**

#### **Presentations:**

→ Summary of Reactor Status

#### **1. Current Situation**

Overall, the situation at the Fukushima Daiichi plant remains very serious but there are early signs of recovery in some functions such as electrical power and instrumentation

There have been no changes concerning the provisional INES Level 7 rating and protective measures as reported in yesterday's brief.

#### **Earthquakes of 11th and 12th April**

The IEC received information from the IAEA International Seismic Safety Center on the following recent earthquakes (equal or higher than magnitude  $M_w = 6.0$ ) which occurred in the time interval from 23:08 UTC on 2011-04-11 to 05:07 UTC on 2011-04-12:

1) At 23:08 UTC, 2011-04-11, an earthquake with a magnitude of 6.2 occurred offshore of the East Coast of Honshu, Japan) at a depth of 13.1 km. Distances from epicentre of the earthquake to NPP sites were: 188 km to Tokai, 217 km to Fukushima Daini, 229 km to Fukushima Daiichi, 236 km to Hamaoka and 285 km to Kashiwazaki-Kariwa.

2) At 05:07 UTC, 2011-04-12, an earthquake with a magnitude of 6.0 occurred inland east of Honshu, Japan at a depth of 10.6 km. Distances from epicentre of the earthquake to NPP sites were; 46 km to Fukushima Daini, 53 km to Fukushima Daiichi, 72 km to Tokai, 165 km to Onagawa and 179 km to Kashiwazaki-Kariwa.

NISA press release regarding the earthquake which occurred on 12th April, states that there was no effect on the following NPP sites: Fukushima Dai-ichi, Fukushima Dai-ni, Tokai Dai-ni, Onagawa. Other nuclear related facilities (Mitsubishi Nuclear Fuel, Nuclear Fuel Industries Ltd., JAEA Tokai & its recycling plant) in Tokai area were reported to be safe by their respective operators.

## Changes to Fukushima Daiichi Plant Status

On 11th April, a fire broke out in the housing outlet structure for cooling water for Units 1-4. The fire was extinguished manually. No consequences were identified in terms of release of radioactive material, cooling of the plants, or values recorded by radiation monitoring posts.

In Unit 1 fresh water is being continuously injected into the RPV through the feed-water line at an indicated flow rate of 6 m<sup>3</sup>/h using a temporary electric pump with off-site power. In Units 2 and 3 fresh water is being continuously injected through the fire extinguisher lines at an indicated rate of 7 m<sup>3</sup>/h using temporary electric pumps with off-site power.

Nitrogen gas is being injected into the Unit 1 containment vessel to reduce the possibility of hydrogen combustion within the containment vessel. The pressure in this containment vessel has stabilised. The pressure in the RPV is increasing as indicated on one channel of instrumentation. The other channel shows RPV pressure as stable.

In Units 2 and 3 Reactor Pressure Vessel and Drywell pressures remain at atmospheric pressure.

RPV temperatures remain above cold shutdown conditions in all Units, (typically less than 95°C). In Unit 1 temperature at the feed water nozzle of the RPV is 206°C and at the bottom of the RPV is 119°C. In Unit 2 the temperature at the feed water nozzle of the RPV is 165°C. The temperature at the bottom of RPV was reported as 208°C (this measurement has been available since the 12th April). In Unit 3 the temperature at the feed water nozzle of the RPV is 99°C and at the bottom of the RPV is 116°C.

There has been no change in status in Units 4, 5 and 6 and the Common Spent Fuel Storage Facility.

## 2. Radiation monitoring

On 12th April, deposition of both iodine-131 and cesium-137 was detected in 7 and 6 prefectures respectively. The values reported for iodine-131 ranged from 1.6 to 460 Bq/m<sup>2</sup> and for cesium-137 from 31 to 700 Bq/m<sup>2</sup>. The highest deposition was observed in the Ibaraki prefecture.

Gamma dose rates are measured daily in all 47 prefectures, the values tend to decrease. For Fukushima, on 12th April a dose rate of 2.1 µSv/h, for the Ibaraki prefecture a gamma dose rate of 0.14 µSv/h was reported. The gamma dose rates in all other prefectures were below 0.1 µSv/h.

Only in a few prefectures, iodine-131 or cesium-137 is detectable in drinking water at very low levels. As of 12th April, a restriction for infants related to iodine-131 (100 Bq/l) is in place as a precautionary in a small scale water supply in one village of the Fukushima prefecture.

MEXT reported on measurements of strontium-89 (half-life: 50.5 days) and strontium-90 (half-life: 28.8 years) in three samples taken in one village in the Fukushima prefecture on 16 March. The activities in soil for Sr-89 ranged from 13 and 260 Bq/kg and for Sr-90 between 3.3 and 32 Bq/kg. Sr-90 was also distributed globally during nuclear weapons' testing in the atmosphere, typical global levels of Sr-90 in surface soils are in the order of one to a few becquerel per kg.

Strontium was also measured in plant samples in four other villages, with values ranging from 12 to 61 Bq/kg for Sr-89 and 1.8 to 5.9 Bq/kg for Sr-90.

On 12th April, the IAEA Team made measurements at 7 different locations in the Fukushima area at distances of 32 to 62 km, North and Northwest from the Fukushima nuclear power plant. At these locations, the dose rates ranged from 0.6 to 1.6  $\mu\text{Sv/h}$ . At the same locations, results of beta-gamma contamination measurements ranged from 0.6 to 1.7 Megabecquerel/m<sup>2</sup>.

NISA reported on 12th April that the three workers who had previously been exposed to high dose rates while working in the turbine building of Unit 3 have undergone further medical checks. No negative outcomes were identified. In the case of the two workers who received doses of a few Sievert to their legs as a result of walking in contaminated water, medical tests showed no evidence of either skin burns or erythema.

Analytical results related to food contamination were reported by the Japanese Ministry of Health, Labour and Welfare on 12th April that covered a total of 55 samples taken on the 8th and 10th -- 12th April. Analytical results for 53 of the samples of various vegetables, fruit (strawberry), seafood and unprocessed raw milk in eight prefectures (Chiba, Fukushima, Gunma, Ibaraki, Kanagawa, Niigata, Saitama and Yamagata) indicated that I-131, Cs-134 and/or Cs-137 were either not detected or were below the regulation values set by the Japanese authorities. In Ibaraki prefecture for samples taken on 11th April, one sample of seafood (sand lance) was above the regulation values set by the Japanese authorities for I-131 and one sample of spinach was above the regulation values set by the Japanese authorities for Cs-134/Cs-137.

On 13th April, the Prime Minister of Japan requested the Governor of Fukushima prefecture to restrict the consumption of shiitake mushrooms (grown on logs in open fields only) produced at Iitate-village until further notice. Instructions were also issued to restrict the distribution of shiitake mushrooms (grown on logs in open fields only) produced in the cities of Date, Soma, Minamisoma, Tamura and Iwaki; the towns of Shinchi, Kawamata, Namie, Futaba, Ookuma, Tomioka, Naraha and Hirono, and; the villages of Iitate, Katsurao and Kawauchi until further notice.

### **3. Marine Monitoring**

#### **TEPCO Monitoring Programme**

TEPCO is conducting a programme for seawater (surface sampling) at a number of near-shore and off-shore monitoring locations (see Map 1. TEPCO Seawater Sampling Locations).

On same days, two samples were collected at the same sampling point, a few hours apart and analysed separately.

Until 3rd April a general decreasing trend was observed at the sampling points TEPCO1 to TEPCO4. After the discharge of contaminated water on 4th April, a temporary increase has been reported.

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On 13th April new data for samples collected on 11th April at TEPCO1-10 sampling points have been reported. As for the near-shore stations TEPCO1, 3 and 4 levels of I-131 and Cs-137 below 1.5 kBq/l have been reported. At TEPCO 2, for both I-131 and Cs-137 concentrations of about 7 kBq/l were measured.

As for the six TEPCO stations 15 km offshore, at TEPCO 5-6-10 the concentration of I-131 was below 0.3 kBq/l and that of Cs-137 below 0.2 kBq/l. At TEPCO 7 and 8, I-131 and Cs-137 below 0.05 kBq/l below 0.02 kBq/l were measured. At TEPCO 9 concentrations of about 1 kBq/l of both I-131 and Cs-137 were recorded.

### **MEXT Off-shore Monitoring Programme**

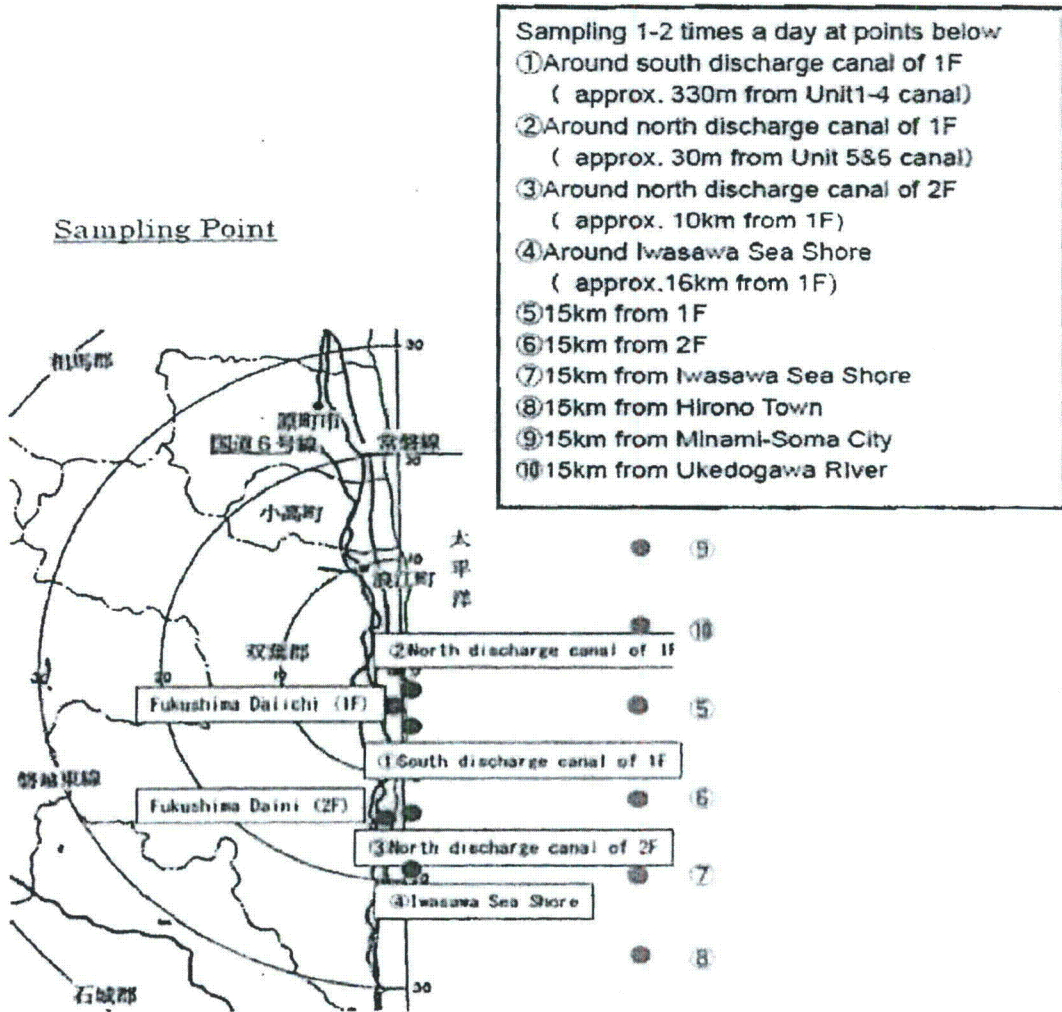
MEXT initiated the off-shore monitoring program on 23rd March and subsequently points 9 and 10 were added to the off-shore sampling scheme. On 4th April, MEXT added two sampling points to the north and west of sampling point 1. These are referred to as points A and B (see Map2: MEXT Seawater sampling Locationsc).

On 13th April new data for samples collected on 11th April at MEXT 2, 4, 6, 8, 10 and B sampling points have been reported.

Cs-137 was only detected at MEXT 4 at a concentration level of about 70 Bq/l.

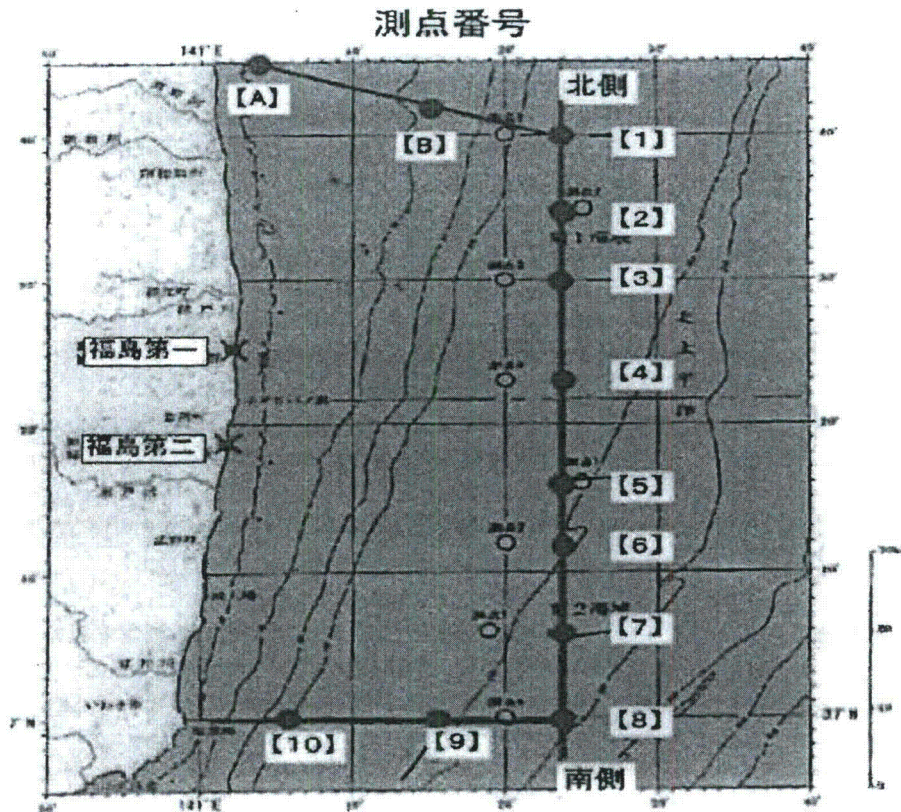
I-131 concentration of about 90 Bq/l was measured at Station MEXT4. At MEXT6, 8, 10 and B, I-131 below about 15 Bq/l was reported.

Map 1: TEPCO Seawater Sampling Locations:





Map 2: MEXT Seawater Sampling Locations:



#### 4. IAEA activities

No new activities to report.

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From NEI (<http://www.nei.org/newsandevents/information-on-the-japanese-earthquake-and-reactors-in-that-region/>) accessed 4/13/11 1050:

#### UPDATE AS OF 10 A.M. EDT, WEDNESDAY, APRIL 13:

Workers at the Fukushima Daiichi nuclear power plant are pumping radioactive water from the concrete enclosure near reactor 2 into a turbine condenser. A series of aftershocks that rattled the area Tuesday has put the work behind schedule. Tokyo Electric Power Co. (TEPCO) is inspecting another storage facility on the site to determine if it can hold contaminated water from the basement of the reactor 2 turbine building. Radioactive water in the turbine buildings is hampering efforts to restore cooling operations at the plant.

TEPCO continues to inject cooling water into reactors 1, 2 and 3 and to spray water as needed into the used fuel pools for reactors 1-4. TEPCO also continues injection of nitrogen gas into the

containment vessel of reactor 1 to prevent a possible explosion of hydrogen that may be accumulating inside.

**UPDATE AS OF 6:30 P.M. EDT, TUESDAY, APRIL 12:**

NEI has posted a new fact sheet, "Comparing Chernobyl and Fukushima." The key facts show that although the events at the Fukushima nuclear plant and the Chernobyl accident are both at a level 7 according to the International Nuclear and Radiological Event Scale, the situations are starkly different because of different reactor designs and much less severe public health consequences at Fukushima.

**UPDATE AS OF 11:30 A.M. EDT, TUESDAY, APRIL 12:**

Tokyo Electric Power Co. (TEPCO) is planning to pump highly radioactive water from reactor 2 into a condenser, as the utility works to control radiation and restore cooling systems at the Fukushima Daiichi nuclear power plant.

TEPCO continues to inject cooling water into reactors 1, 2 and 3 and to spray water into the used fuel pools for reactors 1-4. TEPCO also continues injection of nitrogen gas into the containment vessel of reactor 1 to prevent a possible explosion of hydrogen that may be accumulating inside.

A fire that broke out early Tuesday at a distribution switchboard near the south water discharge channel for reactors 1-4 was extinguished without interruption of reactor cooling operations or the release of radioactivity, TEPCO said.

The crisis rating of the Fukushima Daiichi accident was raised from 5 to 7 on the seven-level International Nuclear and Radiological Event Scale by the Japan Nuclear and Industrial Safety Agency. The new level, the highest on the scale, designates Fukushima as a "major accident." The new rating puts the Japanese incident on the same level as the 1986 Chernobyl accident—even though Japanese authorities estimate that radiation released at Fukushima is only 10 percent of the amount released from the Ukrainian plant.

Authorities said much of the high-level radiation leaked from reactor 2 on March 15 and 16, early in the accident. Abnormalities in the reactor's suppression pool caused the radiation release, the Japan Nuclear Safety Commission said. Radiation continues to leak from the suppression pool, the commission said, but the volume has dropped considerably.

###

From NIK ([http://www3.nhk.or.jp/daily/english/13\\_33.html](http://www3.nhk.or.jp/daily/english/13_33.html)) accessed 4/13/11 835:

**Work to remove contaminated wastewater continues**

Workers at the damaged Fukushima Daiichi nuclear power plant are continuing efforts to remove highly radioactive water from parts of the facility.

Highly contaminated water needs to be transferred to the plant's waste processing facility from the basement of the Number 2 reactor's turbine building before workers can continue efforts to restore the cooling system.



On Wednesday, workers checked the waste processing facility to make sure it could hold the contaminated water to be transferred.

Work also continued to transfer contaminated water from an underground utility tunnel outside the Number 2 reactor to a turbine condenser.

The plant's operator, Tokyo Electric Power Company, says the water level in the tunnel was nearly one meter below the ground's surface as of Wednesday morning, dropping 8 centimeters from the previous day.

On Tuesday last week, workers stopped leakage into the sea of highly radioactive water from a concrete pit near the underground tunnel.

Another challenge is how to stop the spread of radioactive material in the sea.

Seawater sampled on Monday 30 kilometers offshore contained 2.2 times the national safety limit of radioactive iodine-131. The level 15 kilometers offshore was 23 times the safety limit. Both figures were the highest yet observed.

On Wednesday, workers put up underwater barriers in the sea near water intakes at the Number 2, Number 3 and Number 4 reactors. The barriers are to be reinforced in the coming days.

Wednesday, April 13, 2011 19:33 +0900 (JST)  
###

From NHK ([http://www3.nhk.or.jp/daily/english/13\\_07.html](http://www3.nhk.or.jp/daily/english/13_07.html)) accessed 4/13/11 0840:

#### **High radiation levels in sea off Fukushima coast**

The science ministry says radiation levels in seawater off the coast of Fukushima Prefecture are the highest since it began monitoring them about 3 weeks ago.

The ministry says the level of iodine-131 was 88.5 becquerels per liter in a sample taken on Monday in the sea about 30 kilometers east of the Fukushima Daiichi nuclear plant. The figure is 2.2 times the government's upper limit for wastewater from nuclear facilities.

The level of cesium-137 was also the highest observed so far, but was below the limit.

Tokyo Electric Power Company says the iodine-131 level was 23 times the upper limit in a sample taken 15 kilometers from the plant.

This was the highest figure since TEPCO began taking samples 15 kilometers offshore on April 2nd.

Radiation levels are higher in the sea to the north of the crippled plant.

The government's Nuclear and Industrial Safety Agency says radioactive substances seem to be flowing and diffusing northward.

The agency says predicting the course of the flow is difficult and it will step up monitoring in locations where high radiation levels have been detected.

Wednesday, April 13, 2011 09:04 +0900 (JST)

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From NHK ([http://www3.nhk.or.jp/daily/english/13\\_05.html](http://www3.nhk.or.jp/daily/english/13_05.html)) accessed 4/13/11 0845:

**Radioactive strontium detected outside 30km zone**

Japan's science ministry says small amounts of radioactive strontium have been detected in soil and plants outside the 30-kilometer zone around the Fukushima plant where the government has advised people to stay indoors. Strontium could cause cancer.

The ministry has been monitoring the level of radioactive substances in soil and weeds in Fukushima Prefecture.

It found 3.3 to 32 becquerels of strontium 90 per kilogram of soil in samples taken from 3 locations in Namie Town and Iitate Village, 30 kilometers from the plant.

An extremely small amount of strontium was also found in plants taken from Motomiya City, Ono Town and Otama and Nishigo Villages. The areas are 40 to 80 kilometers from the Fukushima plant.

Strontium 90 has a half-life of 29 years. It tends to accumulate in bones and could cause cancer.

The ministry says the amount found is extremely low and will not have a negative health impact even if a person ingested one kilogram of the contaminated soil.

The samples were taken between March 16 and 19.

A nuclear engineering expert says the fact that strontium was detected proves that the fuel in the reactor or the spent fuel in the pool was damaged at that point. He says a hydrogen explosion occurred at Reactor 3 around that time and the particles may have been carried by winds.

Wednesday, April 13, 2011 07:52 +0900 (JST)

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From NHK ([http://www3.nhk.or.jp/daily/english/13\\_03.html](http://www3.nhk.or.jp/daily/english/13_03.html)) accessed 4/13/11 0850:

**TEPCO: 1% of radioactive iodine released outside**

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Tokyo Electric Power Company estimates that about one percent of the radioactive iodine at the Fukushima Daiichi nuclear power plant has been released since the March 11th earthquake and tsunami damaged the facility.

The company on Tuesday announced the estimated radioactivity levels of all substances at the plant's 6 reactors and fuel storage pools at the time of the disaster.

The estimates are classified under radioactive noble gases, iodine or other materials.

81 million tera-becquerels of iodine-131 are believed to have existed at the plant.

The utility says the amount of iodine-131 released outside the plant is about one percent of the total with a margin of error included.

The Nuclear and Industrial Safety Agency said earlier in the day that 130,000 tera-becquerels of iodine-131 have been released so far.

The company also says that, provided no leak occurred, the level of iodine-131 at the plant had fallen to less than one-hundredth of the pre-disaster level as of Monday.

The level declines naturally, as the radioactivity of iodine-131 falls by half in 8 days.

Wednesday, April 13, 2011 03:18 +0900 (JST)

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From NHK ([http://www3.nhk.or.jp/daily/english/13\\_28.html](http://www3.nhk.or.jp/daily/english/13_28.html)) accessed 4/13/11 0855:

#### **Diffusion of radioactive substances predicted**

Japan's science ministry says radioactive substances will continue to diffuse to the northeast in the Pacific Ocean for several days after being released from the troubled Fukushima Daiichi nuclear power plant.

The ministry conducted a computer-simulated prediction of movements of such substances, based on a seawater survey as well as data on currents in nearby waters.

On April 2nd, levels of radioactive iodine-131 near the water intake of the plant's No. 2 reactor were found to be 7.5 million times higher than the legal limit.

The ministry says the radiation levels are on the decline, but remain high.

The ministry's short-term prediction says the substances will spread from the coast to the northeast, maintaining their levels for several days.

The ministry's long-term prediction says the substances will be carried south by a current 100 kilometers offshore in lowered concentrations, then move east with a rapidly-moving current off Ibaraki Prefecture in about a month.

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The ministry said the concentration of radioactive substances in the sea is likely to decrease gradually.

The ministry plans to step up monitoring of the movement of radioactive substances in waters around the plant and release another prediction.

Wednesday, April 13, 2011 19:44 +0900 (JST)

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From **NHK** ([http://www3.nhk.or.jp/daily/english/13\\_37.html](http://www3.nhk.or.jp/daily/english/13_37.html)) accessed 4/13/11 1105:

#### **Most spent fuel not damaged at No. 4 reactor**

TEPCO says most of the spent fuel in the storage pool of the No. 4 reactor is apparently undamaged.

At a news conference on Wednesday, the firm said the finding is based on interim results of an analysis of samples taken from the pool water on Tuesday.

But it said levels of radioactive substances including iodine-131 in the samples were higher than those in storage pools under normal circumstances, suggesting that some of the spent fuel may have been damaged.

TEPCO says it found 220 becquerels of iodine-131 per cubic centimeter of water, as well as 88 becquerels of cesium-134 and 93 becquerels of cesium-137. The firm says the materials are usually produced by nuclear fission.

Wednesday, April 13, 2011 21:08 +0900 (JST)

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From **The Japan Times** (<http://search.japantimes.co.jp/cgi-bin/nn20110413x1.html>) accessed 4/13/11 00905:

#### **Radiation surges above 4's fuel pool**

By Kanako Takahara  
Staff Writer

Radiation has risen to high levels above the spent-fuel pool at reactor No. 4 and its temperature is rising, the nuclear safety agency said Wednesday, indicating the fuel rods have been further damaged and emitting radioactive substances.

The radiation level 6 meters above the spent-fuel storage pool at the crippled Fukushima No. 1 nuclear plant was measured at 84 millisieverts per hour Tuesday. Normally, it's 0.1 microsievert.

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The temperature of the pool was 90 degrees, compared with 84 before it caught fire on March 15 in a suspected hydrogen explosion, the agency said.

"It's quite an amount," figured Hidehiko Nishiyama, a spokesman for the Nuclear and Industrial Safety Agency.

Tokyo Electric Power Co. was unsure whether the surge in radiation was being caused by the spent fuel rods or radioactive material leaking from the reactor's pressure vessel.

Tepco used a robot to take a water sample from the pool Tuesday to analyze the radioactive materials in it, which can tell them in greater detail what is happening to the spent fuel rods.

Tepco dumped 195 tons of fresh water onto the rods early Wednesday to stop the temperature from rising.

"The temperature was rising and we don't know the water level of the pool, so we thought it would be safer to pour water," said NISA's Nishiyama said.

Tepco said it is planning to move the spent fuel rods out of the storage pools at reactors 1 through 4 so they can be moved to a safer location, although details on when and how haven't been decided yet.

Some of the options Tepco is considering include pulling the rods out with a crane or building a special structure nearby to pull them out.

But these tasks will be tough because the site is so radioactive and cluttered with debris from last month's hydrogen explosions. Meanwhile, the water level of radiation-contaminated water in the tunnel-like trench at Unit 2 dropped by 4.3 cm Wednesday morning after Tepco started pumping lethally radioactive water from its flooded turbine room into a nearby storage facility the day before.

Getting the 6,000 tons of water out is expected to take four to five days, Tepco said.

NISA also said the utility was rushing to finish installing seven steel sheets around a seawater intake for reactor 2 later in the day and silt fences near intakes for reactors 3 and 4 to hinder the spread of thousands of tons of radioactive water it dumped into the ocean.

Nishiyama also said that a seawater sample taken Monday 15 km away from the nearby city of Minamisoma, Fukushima Prefecture, showed that the concentration of radioactive iodine-131 was about 23 times the legally permissible level.

NISA said that level does not pose any health risks.

Separately, Tepco said the fuel rods in the Unit 4 pool had released cesium-134 and -137 in the process of being damaged. Cesium-137 has a half-life of 30 years. "Contaminated water leaked from the Unit 2 may have gathered as a lump and drifted offshore," Nishiyama said. "We need to continue monitoring it."

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Massive amounts of water have been poured into the reactors and the spent-fuel pools as a stopgap measure to cool them down and prevent them from burning. But pools of highly contaminated water have been detected in various parts of the nuclear complex, with some of it leaking into the Pacific, as an apparent side effect of the emergency measure.

Prime Minister Naoto Kan said Tuesday that the situation of the troubled reactors is "improving step by step" and that the release of radioactive particles from the plant is declining.

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From **The Japan Times** (<http://search.japantimes.co.jp/cgi-bin/nn20110413x3.html>) accessed 4/13/11 0910:

**East Fukushima shiitake banned**

By Kanako Takahara  
Staff Writer

Prime Minister Naoto Kan on Wednesday banned the shipment of shiitake raised outdoors in eastern Fukushima Prefecture near the crippled nuclear power plant after radioactive substances exceeding government standard were detected.

Subject to the ban are shiitake harvested outdoors on logs in the cities of Date, Soma, Minamisoma, Tamura, Iwaki, and the towns of Shinchi, Kawamata, Namie, Futaba, Okuma, Tomioka, Naraha, Hirono as well as the villages of Iitate, Katsurao and Kawauchi.

"Shiitake mushrooms subject to the shipment ban this time are those raised outdoors and those produced indoors did not exceed the standard," Chief Cabinet Secretary Yukio Edano said. "We will lift the ban when the (level of radioactive substances) stays below the standard in a stable manner."

According to government regulations, a shipment ban will not be lifted unless contamination levels of produce near the Fukushima No. 1 nuclear plant remain below legal limits in three consecutive tests.

A test Sunday found 12,000 becquerels per kg of radioactive iodine and 13,000 becquerels per kg of cesium in shiitake harvested in Iitate. The figure is well above the legal limit of 2,000 becquerels for radioactive iodine and 500 becquerels for cesium.

Shiitake in Iwaki was found to have 3,100 becquerels of radioactive iodine and 890 becquerels of cesium.

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~~NOT FOR PUBLIC DISCLOSURE~~

**Castleman, Patrick**

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**From:** Merzke, Daniel  
**Sent:** Wednesday, April 13, 2011 4:17 PM  
**To:** Bradford, Anna; Thoma, John; Baggett, Steven; Tadesse, Rebecca; Kock, Andrea  
**Subject:** Interagency Meetings on Cleanup Standards and Re-Entry Criteria

One of the Commission offices requested information on all currently scheduled interagency meetings in which the NRC is being asked to participate in with other federal agencies relating to Protective Action Guidelines and cleanup levels in this country as well as re-entry guidance for US citizens in Japan. At this time, the only meeting I know for sure is being led by EPA on 4/21, and it's concerning the working group paper being developed for long-term cleanup criteria, which was one of the PLE topics. There is supposed to be a Deputies meeting to make a decision during the last week of April/first week of May, but it hasn't been scheduled, yet, and I'm hearing the due date for the paper got extended to 4/29, so it may get pushed back even further.

So far there are no meetings scheduled with external stakeholders on the re-entry issue to Japan. I just attended an alignment meeting on the draft re-entry paper, and it looks like the plan is to hopefully get it finalized by Friday. Then it will be rolled out to external stakeholders for comment. If that results in an interagency meeting, I'll try to remember to let you know when that is scheduled. Other than that, I know of no other interagency meetings on these topics. If I hear more, I'll let you know.

Dan

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Earthquake/Tsunami Status Update R01 May 4, 2011

1200 EDT

atm - Atmosphere (unit of pressure)

DW - Drywell

FW - Feed Water

gpm - gallons per minute

RHR - Residual Heat Removal

SFP - Spent Fuel Pool

SRV - Safety Relief Valve

TAF - Top of Active Fuel

RPV - Reactor Pressure Vessel

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**Castleman, Patrick**

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**From:** Reddick, Darani  
**Sent:** Thursday, June 30, 2011 5:44 PM  
**To:** Castleman, Patrick  
**Subject:** long-term task force charter

Pat,

Yesterday, we got the long-term task force's charter via CA note. KLS would like you to review it for any red flags. I think just a short email to her would suffice.

Thanks!  
Darani

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**Reddick, Darani**

**From:** Cianci, Sandra  
**Sent:** Tuesday, June 28, 2011 5:29 PM  
**To:** Batkin, Joshua; Monninger, John; Coggins, Angela; Hipschman, Thomas; Sharkey, Jeffrey; Castleman, Patrick; Bubar, Patrice; Orders, William; Sosa, Belkys; Snodderly, Michael; Nieh, Ho; Franovich, Mike  
**Cc:** Borchardt, Bill; Virgilio, Martin; Weber, Michael; Ash, Darren; Mamish, Nader; Brock, Kathryn; Bowman, Gregory; Speiser, Herald; Pace, Patti; Gibbs, Catina; Chairman Temp; Svinicki, Kristine; Sharkey, Jeffrey; Lepre, Janet; Harves, Carolyn; Blake, Kathleen; Savoy, Carmel; Temp, GEA; Crawford, Carrie; Jimenez, Patricia; Temp, WDM; Bupp, Margaret; Herr, Linda; Bozin, Sunny; Warnick, Greg; Boyer, Rachel; Riddick, Nicole; Taylor, Renee; Wyatt, Melissa; RidsEdoMailCenter Resource  
**Subject:** RE: CA Note: 6/28/11 - Draft Charter and Timeline for Transition to the NRC's Longer-Term Review of the Events in Japan

Date: June 28, 2011

From: Nader L. Mamish, Assistant for Operations

**You can access the document in ADAMS by clicking the following link: 6/28/11 DRAFT CHARTER AND TIMELINE FOR TRANSITION TO THE NRC'S LONGER TERM REVIEW OF THE EVENTS IN JAPAN (To: Commissioners' Assistants From: Nader L. Mamish)**

ADAMS Accession Number: ML11179A066

Hard copies are being mailed to each Commission office.

*cc's electronic Distribution only*

OEDO – Note placed in EDO Daily Information Folder for 06/28/11

Thank you,

*Sandy Cianci*

Administrative Assistant to Marty Virgilio, DEDR  
Office of the Executive Director for Operations

O-17 H13

301-415-1714

[sandra.cianci@nrc.gov](mailto:sandra.cianci@nrc.gov)

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