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**From:** OST01 HOC  
**Sent:** Monday, April 04, 2011 11:41 AM  
**To:** Howard, Tabitha  
**Cc:** Rheaume, Cynthia  
**Subject:** 03-26-2011 Ops Center Staffing Level.xlsx  
**Attachments:** 03-26-2011 Ops Center Staffing Level.xlsx

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Japanese Event Staffing Levels as of March 26, 2011

Position	# of shifts/day	Person/shift	people/day	Comment
ET Director	3	1	3	
ET Response Advisor	3	1	3	
ET Rx Prot Measures & State Coor	3	0	0	Eliminated position
EBT Admin Assistant	3	1	3	
EBT Coordinator	3	1	3	
EST Status Officer	3	1	3	
EST Actions Officer	2	1	2	11pm-7am shift eliminated
EST Coordinator	3	1	3	
EST Chronology Officer	3	1	3	
EST Response Operations Mgr	3	1	3	
EST Admin Assistant	2	1	2	11pm-7am shift eliminated
LT Director	3	1	3	
LT Coordinator	3	1	3	
LT State Liaison	3	0	0	essentially all shifts on call
LT Federal Liaison	3	1	3	
LT Congressional	3	0	0	all shifts on call
LT International	3	2	6	
PMTR Director	3	1	3	
PMTR Coordinator	3	1	3	
PMTR Protective Actions Asst Dir	3	1	3	
PMTR RAAD	3	1	3	
PMTR Dose Assessment (RASCAL)	3	2	6	
PMTR GIS	1	1	1	One GIS on call for 7am-3pm shift
PMTR Meteorologist	1	1	1	One meteorologist on call for 7am-3pm shift
RST Director	3	1	3	
RST Coordinator	3	1	3	
Severe Accident/PRA	3	1	3	
BWR Expertise	3	1	3	
RST Comm/ERDS Operator	3	1	3	
RST Support (Seismology Q &A)	3	0	0	all shifts on call
RST Support (Structural)	3	0	0	all shifts on call
Naval Reactors	2	0	0	Not included in pay structure
Contractors	2	1	2	
Guards	3	2	6	Estimated Average
Total	94	31	86	

**From:** [LIA07.Hoc](#)  
**To:** [LIA07.Hoc](#)  
**Subject:** USNRC Earthquake/Tsunami Status Update: 0430 EDT, April 11, 2011  
**Date:** Monday, April 11, 2011 4:29:27 AM  
**Attachments:** [USNRC Earthquake-Tsunami Update 041111 0430EDT.pdf](#)

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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)

6666/131

**Coe, Doug**

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**From:** Correia, Richard  
**Sent:** Monday, April 11, 2011 7:27 AM  
**To:** Barnes, Valerie; Hudson, Daniel; Nicholson, Thomas; Siu, Nathan; Stutzke, Martin; Beasley, Benjamin; Coe, Doug; Coyne, Kevin; Demoss, Gary; Ott, William; Peters, Sean; Salley, MarkHenry  
**Subject:** FW: 1800 EDT (April 10, 2011) USNRC Earthquake/Tsunami Status Update  
**Attachments:** USNRC Earthquake-Tsunami Update 041011 1800EDT.pdf

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

richard.correia@nrc.gov

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

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

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 (Operations Center)  
jeremy.susco@nrc.gov

6769/132

**Coe, Doug**

---

**From:** Correia, Richard  
**Sent:** Monday, April 11, 2011 12:17 PM  
**To:** Marksberry, Don; Barnes, Valerie; Hudson, Daniel; Nicholson, Thomas; Siu, Nathan; Stutzke, Martin; Beasley, Benjamin; Coe, Doug; Coyne, Kevin; Demoss, Gary; Ott, William; Peters, Sean; Salley, MarkHenry  
**Subject:** FW: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update  
**Attachments:** USNRC Earthquake-Tsunami Update.041111.1200EDT.pdf

Updated status report

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

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

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

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

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

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

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

Thank you,  
Sara

Sara Mroz  
US Nuclear Regulatory Commission  
[\(Operations Center\)](mailto:LIA07.HOC@nrc.gov)

---

**From:** OST02 HOC  
**Sent:** Thursday, April 07, 2011 1:25 PM  
**To:** OST01 HOC  
**Subject:** FW: NRC Japan Team Briefing Report.docx  
**Attachments:** NRC Japan Team Briefing Report.docx

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**From:** Weber, Michael  
**Sent:** Thursday, April 07, 2011 12:52 PM  
**To:** Zimmerman, Roy; ET01 Hoc; ET05 Hoc  
**Cc:** OST02 HOC; Virgilio, Martin  
**Subject:** FYI - NRC Japan Team Briefing Report.docx

Looks like the site team will need help from RST, Leadership Team, and PMT.

---

**From:** Hay, Michael  
**To:** Miller, Marie; Call, Michel; Salay, Michael; Blamey, Alan; Bernhard, Rudolph; Stahl, Eric; Emche, Danielle  
**Cc:** Collins, Elmo; Casto, Chuck; Weber, Michael  
**Sent:** Thu Apr 07 12:34:09 2011  
**Subject:** NRC Japan Team Briefing Report.docx

Folks,

I made some changes to our briefing report outline. RST has the same items as before (I clarified some of them). I added two bullets (the first two) and clarified some others so please read them carefully. In addition I added a couple sections. RST needs to provide a summary of "Consortium Activities." I assume we can get HQ RST to handle it. We'll need some support from the Embassey folks to handle the bullet in the "Overall US Support" section last bullet "Overall summary of US Government....." Eric and/or Danielle can work this one.

Thanks for the input I received so far. I'll be locking myself up in a quite place for a bit tomorrow to start putting this all together.

You all probably slept through quite an earthquake, I got nervous enough to grab my passport and leave the embassy until it was over. I heard it was near Fukushima but haven't yet confirmed it. Also the city lights went out so it wouldn't surprise me if some plants tripped. Let's hope they have power to the systems being used to cool units 1,2, and 3.

Mike

## NRC Japan Team Briefing Report

Executive Summary: Summary of event including current and projected near future plant conditions

NRC Response: Summary of NRC response activities immediately following and during event

US Industry Response: Summary of US Industry response activities immediately following and during event

Consortium Activities: Summary of creation of Consortium and activities performed during event

Chronology: Summary of events for each Fukushima unit

Protective Measures Team:

- Summary of radiological hazards following the event both in Japan and abroad
- Summary of radiation detection and analysis systems used following the event
- Summary of efforts to assess impact of liquid releases to the ocean
- Summary of source term and dispersion analysis, dose projections, and associated PAR's
- Summary of the bases for the return of those U.S. citizens who voluntarily evacuated areas beyond 50 miles
- Summary of criterion considered to relax the recommendation to evacuate U.S. citizens within 50 miles
- Summary of results from the Health Effects Working Groups (American-Japanese task force)
- Summary of Naval Reactors and DOE dose assessment in warm and hot zones

Reactor Safety Team:

- Summary of consortium assessments and recommendations associated with containment flooding
- Summary of consortium assessments associated with long term primary feed and bleed
- Summary of current differences between NRC understanding of plant conditions vs what TEPCO understands
- Summary of structural integrity assessments
- Summary of other technical assessments, for example MRDIR flow rates, status of spent fuel pools
- Summary of information gathering activities with an assessment to the degree of their effectiveness
- Summary of Sandia Lab assessments

International Programs:

- Summary of IP's support activities during the event

Overall US Support :

- Summary of activities to identify, prioritize, and deliver support items needed at the Fukushima site
- Summary of activities associated with industry support to TEPCO
- Overall summary of US Government roles and activities during event

## **OST01 HOC**

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**From:** Dyer, Jim  
**Sent:** Friday, April 15, 2011 11:27 AM  
**To:** Casto, Chuck; Virgilio, Martin; ET02 Hoc; Wiggins, Jim; OST01 HOC  
**Subject:** RE: global assessment presentation

Here's my comments on the presentation as input to the discussion. I'll be out of the office this PM so consider them for what they are worth. I'm sure OCFO won't have the lead for this item. Jim

Slide 2: Is this assessment "completed"? The Global Assessment is still a work in progress; so are we discussing the earlier stability assessments? Probably needs to be cleared up that it may be ongoing.

Slide 4: Agree with earlier comment on probabilities; I'm not sure of the basis and it may cause confusion to someone who is not familiar with "risk speak" and become a point of argument for someone who is conversant. Suggest we take the numbers our and try to relate qualitatively.

Slide 5: "Feed and Bleed" is nuclear slang that hasn't been defined earlier. We should keep to the same terminology between slides 4 (steam cooling) and slide 5 (Feed and bleed). Similarly, we haven't defined phase 1 and 2 stability, so I'm not sure it adds much to the slide than what's already described in the first section.

Jim

---

**From:** Casto, Chuck  
**Sent:** Friday, April 15, 2011 6:11 AM  
**To:** Virgilio, Martin; Dyer, Jim; ET02 Hoc  
**Subject:** global assessment presentation

Attached is the draft presentation

# NRC INTERIM COMPREHENSIVE ASSESSMENT of FUKUSHIMA EVENT

4/15/2011

Official Use Only - Sensitive Internal  
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 technical assessments completed
- Provided results to TEPCO and NISA

# Assessment Conclusions

- U.S. Protective Action decisions remain conservative through all scenarios
  - Tokyo is not seriously threatened
- Unknown Ocean impacts
- Active radiation releases ongoing
- Accident conditions static but fragile
- Mitigating features temporary and highly unconventional

*airborne or  
waterborne?  
alpha  
beta  
gamma  
water  
STEP*

# Assessment of Conditions

- Fuel Damage estimates: U-1 67%; U-2 44%; U-3 30% (est.)
- Reliance on steam cooling for reactors
- Time to react on a loss of injection is short – less than 10 hours for Unit 1
- Current situation results in a 1-10 to 1-100 probability of *energetic?* release
- Probability driven by seismic events without diversity or redundancy of injection system
- Can get 1-100,000 probability with training & preplanning of fire equipment and diverse & redundant injection system
- Containment flooding remains primary suggestion – especially for Units 1 & 3
- Flooding reduces consequences by one-to-two orders of magnitude

# Next Steps

- Feed and bleed assessment recommends more actions to mitigate additional events
  - Diversity and redundancy in feeding system
  - Automation of Giraffes and feeding systems
  - Additional feeding system injection points
  - Additional venting system
- Stability requires more actions
  - Completing actions to Phase 1 and Phase 2 stability
    - For example - decay heat removal system

**From:** [LIA08 Hoc](#)  
**To:** Correia, Richard  
**Subject:** RE: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update  
**Date:** Monday, April 11, 2011 12:40:57 PM

---

Just joshin... it's a bit crazy with just one body but Im working it out. My multiple personalities are getting a workout ☺

---

**From:** Correia, Richard  
**Sent:** Monday, April 11, 2011 12:32 PM  
**To:** LIA08 Hoc  
**Subject:** RE: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Sorry Lisa! My automatic response to LIA08 assumes it's Jeff...

How are things going in the EOC with the small staff?

Rich

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

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

---

**From:** LIA08 Hoc  
**Sent:** Monday, April 11, 2011 12:30 PM  
**To:** Correia, Richard  
**Subject:** RE: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Hey! Its' LISA....not Jeff...(Témple would be offended! ☺ )

---

**From:** Correia, Richard  
**Sent:** Monday, April 11, 2011 12:29 PM  
**To:** LIA08 Hoc  
**Subject:** RE: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Thanks Jeff. Yes this helps very much.

Take care.

Rich

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

6666/136

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

---

**From:** LIA08 Hoc  
**Sent:** Monday, April 11, 2011 12:20 PM  
**To:** Correia, Richard  
**Subject:** RE: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Hi Rich-

It is going to once a day...decision made today to move that once a day release time to NOON EDT. The Noon distribution allows us to incorporate the most recent information from the Japan Site team in a pattern that will best support the team in Japan.

Hope that helps!

LisaG

Lisa Gibney Wright  
Liaison Team Coordinator  
US Nuclear Regulatory Commission  
Email: [jia08.hoc@nrc.gov](mailto:jia08.hoc@nrc.gov)  
Desk Ph: 301-816-5185

---

**From:** Correia, Richard  
**Sent:** Monday, April 11, 2011 12:13 PM  
**To:** LIA08 Hoc; Temple, Jeffrey  
**Subject:** FW: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Jeff,

There was discussion Saturday to send these status reports out once/day. Any updated info on following that or other guidance?

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

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

---

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

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

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Thank you,  
Sara

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

**From:** [Temple, Jeffrey](#)  
**To:** [Correia, Richard](#)  
**Subject:** RE: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update  
**Date:** Monday, April 11, 2011 8:51:31 PM

---

The way it was explained to me when I left at 0700 this AM, we would do two editions Monday, and then back down to one a day starting Tuesday. Jeff

---

**From:** Correia, Richard  
**Sent:** Monday, April 11, 2011 12:13 PM  
**To:** LIA08 Hoc; Temple, Jeffrey  
**Subject:** FW: OUO -- 1200 EDT (April 11, 2011) USNRC Earthquake-Tsunami Update

Jeff,

There was discussion Saturday to send these status reports out once/day. Any updated info on following that or other guidance?

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

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

---

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

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Thank you,  
Sara

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

GGGG/137

**From:** [LIA07.Hoc](#)  
**To:** [LIA07.Hoc](#)  
**Subject:** RE: OOU -- 1200 EDT (April 12, 2011) USNRC Earthquake-Tsunami Update  
**Date:** Tuesday, April 12, 2011 12:01:20 PM  
**Attachments:** [USNRC Earthquake-Tsunami Update.041211.1200EDT.pdf](#)

---

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)

666/ 138

**From:** Dricks, Victor  
**To:** Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly  
**Subject:** talking points  
**Date:** Tuesday, April 12, 2011 4:11:11 PM  
**Importance:** High

---

Lest you think all your hard work in preparing talking points on a myriad of subjects is unappreciated, I just wanted to let you know they are invaluable. I just did a radio interview with a California radio station. I spoke at length with the reporter beforehand to get a sense of the topics we would cover and the specific questions he would ask. At the end he threw a curveball and asked about the situation in Japan and the uprating to a Category 7 event! I was very glad you had sent the talking points you over this morning...

Victor Dricks  
Public Affairs Officer  
U.S. Nuclear Regulatory Commission / Region IV  
612 E. Lamar Blvd., Suite 400  
Arlington, Texas 76011  
(817) 860-8128

6666/139

**From:** Hayden, Elizabeth  
**To:** WebWork Resource; WebContractor Resource  
**Cc:** Hardy, Sally  
**Subject:** Addition to Japan page  
**Date:** Tuesday, April 12, 2011 4:47:00 PM

---

Please add Marty Virgilio's (April 6) testimony at  
<http://pbadupws.nrc.gov/docs/ML1109/ML110960045.pdf> at the top of the page under  
**Commission Activity-Recent Activities**

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

*GIGIGI/140*

---

**From:** Casto, Chuck  
**Sent:** Friday, April 15, 2011 10:27 AM  
**To:** Wiggins, Jim; Virgilio, Martin; ET02 Hoc; Zimmerman, Roy  
**Cc:** Merzke, Daniel; Dyer, Jim; Evans, Michele; Holahan, Patricia  
**Subject:** Re: global assessment presentation

Jim

I think we would provide that insight verbally.

The entire report (I believe) was sent back there by mike hay today. It's in the machine somewhere.

Chuck

---

**From:** Wiggins, Jim  
**To:** Virgilio, Martin; ET02 Hoc; Zimmerman, Roy  
**Cc:** Merzke, Daniel; Casto, Chuck; Dyer, Jim; Evans, Michele; Holahan, Patricia  
**Sent:** Fri Apr 15 09:04:47 2011  
**Subject:** RE: global assessment presentation

The attached looks like Chuck's initial set of slides with my comments from the other night taken into account.

I'm not sure how the probabilities were calculated and this could be important especially if we're advertising that it could be as likely as a 1 in 10 chance that the conditions degrade and march further away from Phase 1 stability.

I continue to think that a question unanswered in the slides is whether we think TEPCO, NISA, GOJ, JDF have a handle on the situation and are taking actions, though maybe not what we would recommend, that are ok nonetheless. W/o some statement, members of the audience for the presentation....like the SoS...may feel action on their part is needed.

Can we see the current draft of the report text for background?

---

**From:** Virgilio, Martin  
**Sent:** Friday, April 15, 2011 7:49 AM  
**To:** Casto, Chuck; Dyer, Jim; ET02 Hoc; Wiggins, Jim; Evans, Michele; Holahan, Patricia; Zimmerman, Roy  
**Cc:** Merzke, Daniel  
**Subject:** global assessment presentation

Jim/Michele/Roy

Please ensure this is assigned to whoever has the lead for reviewing the Global Assessment. Who has the lead for that review? We need to confirm with Chuck the timeline for the review of this presentation material. I believe he is looking to use the slides to brief the SoS.

Marty

GGGG / 141

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**From:** Casto, Chuck  
**Sent:** Friday, April 15, 2011 6:11 AM  
**To:** Virgilio, Martin; Dyer, Jim; ET02 Hoc  
**Subject:** global assessment presentation

Attached is the draft presentation

**From:** [Hayden, Elizabeth](#)  
**To:** [Brenner, Eliot](#)  
**Subject:** FW: New ERF on NEWS, INES Rating: 7, Japan, Power Reactor  
**Date:** Tuesday, April 12, 2011 9:43:00 AM

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Now here's a real surprise--reevaluating from a "5" to a "7".

Beth

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

From: NEWS Administration [mailto:[NEWS\\_Administrator@iaea.org](mailto:NEWS_Administrator@iaea.org)]  
Sent: Monday, April 11, 2011 11:45 PM  
To: [NEWS.Contact-Point@iaea.org](mailto:NEWS.Contact-Point@iaea.org)  
Subject: New ERF on NEWS, INES Rating: 7, Japan, Power Reactor

Dear NEWS User,

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

"Re-evaluation of INES rating; Effect to the Nuclear Facilities from the earthquake on east area of Japan"

has as of today, Tuesday, 12 April 2011, 05:43:32 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan  
Location/Facility: Fukushima Daiichi  
Event Type: Power Reactor  
Event Date: 2011.04.12

Rating Date: 2011.04.12  
ERF Version: Provisional  
INES Rating Level: 7

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

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

NEWS Administration

61616/142

**From:** [WebContractor Resource](#)  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page  
**Date:** Tuesday, April 12, 2011 5:21:49 PM

---

Beth,

What should the title be?

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:19 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Fine. Need to add the Chairman's testimony from today to the Japan page above Marty's testimony.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 4:51 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Good Afternoon Beth,

Please review and approve for live posting.

<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 4:47 PM  
**To:** WebWork Resource; WebContractor Resource  
**Cc:** Hardy, Sally  
**Subject:** Addition to Japan page

Please add Marty Virgilio's (April 6) testimony at

666/143

<http://pbadupws.nrc.gov/docs/ML1109/ML110960045.pdf> at the top of the page under  
**Commission Activity Recent Activities**

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

**From:** Belmore, Nancy  
**To:** Hayden, Elizabeth  
**Subject:** Testimony attached  
**Date:** Tuesday, April 12, 2011 3:47:53 PM  
**Attachments:** FINAL EPW April 12 Testimony (2) (2).docx

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*Nancy Belmore  
Office of Congressional Affairs  
U.S. Nuclear Regulatory Commission  
nancy.belmore@nrc.gov  
301-415-1776*

*G1G2G3G7/14L4*

WRITTEN STATEMENT  
BY GREGORY B. JACZKO, CHAIRMAN  
UNITED STATES NUCLEAR REGULATORY COMMISSION  
TO THE  
ENVIRONMENT AND PUBLIC WORKS COMMITTEE  
AND THE  
CLEAN AIR AND NUCLEAR SAFETY SUBCOMMITTEE  
UNITED STATES SENATE

APRIL 12, 2011

Chairman Boxer, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso, and Members of the Committee, I appreciate the opportunity to appear before you to address the response of the United States Nuclear Regulatory Commission (NRC) to the recent tragic events in Japan. People across the country and around the world who have been touched by the magnitude and scale of this disaster are closely following the events in Japan and the repercussions in this country and in other countries.

I would first like to reiterate my condolences to all those who have been affected by the earthquake and tsunami in Japan. Our hearts go out to all who have been dealing with the aftermath of these natural disasters, and we are mindful of the long and difficult road they will face in recovering. We know that the people of Japan are resilient and strong, and we have every confidence that they will come through this horrific time and move forward, with resolve, to rebuild their vibrant country. Our agency stands together with the people of Japan at this most difficult and challenging time. As part of that, I made a brief visit to Japan two weeks ago. I wanted to convey a message of support and cooperation to our Japanese counterparts there and to assess the ongoing situation. I also met with senior Japanese government and TEPCO

officials, and consulted with our NRC team of experts who are in Japan as part of our assistance effort.

The NRC is an independent regulatory safety agency, with approximately 4000 staff. We play a critically important role in protecting the American people and the environment. Our agency sets the rules by which commercial nuclear power plants operate, and nuclear materials are used in thousands of academic, medical and industrial settings in the United States. We have at least two resident inspectors who work full-time at every nuclear plant in the country, and we are proud to have world-class scientists, engineers and professionals representing nearly every scientific discipline.

Since Friday, March 11<sup>th</sup>, when the earthquake and tsunami struck, the NRC's headquarters 24-hour Emergency Operations Center has been fully activated, with staffing augmented to monitor and analyze events at nuclear power plants in Japan. At the request of the Japanese government, and through the United States Agency for International Development (USAID), the NRC sent a team of its technical experts to provide on-the-ground support, and we have been in continual contact with them. Within the United States, the NRC has been working closely with other Federal agencies as part of our government's response to the situation.

During these past several weeks, our staff has remained focused on our essential safety and security mission. I want to recognize their tireless efforts and their critical contributions to the U.S. response to assist Japan. In spite of the evolving situation, the long hours, and the intensity of efforts over the past week, NRC staff has approached their responsibilities with dedication, determination and professionalism, and I am incredibly proud of their efforts. The American people also can be proud of the commitment and dedication within the Federal workforce, which is exemplified by our staff every day.

The NRC's primary responsibility is to ensure the adequate protection of the public health and safety of the American people. Toward that end, we have been very closely monitoring the activities in Japan and reviewing all currently available information. Review of this information, combined with our ongoing inspection and licensing oversight, gives us confidence that the U.S. plants continue to operate safely. To date, there has been no reduction in the licensing or oversight function of the NRC as it relates to any of the U.S. licensees.

Our agency has a long history of conservative safety decision-making. We have been intelligently using risk insights to help inform our regulatory process, and, for more than 35 years of civilian nuclear power in this country, we have never stopped requiring needed improvements to plant designs, and modifying our regulatory framework as we learn from operating experience.

At the same time the NRC is providing a very high level of support in response to the events in Japan, we continue to remain focused on our domestic responsibilities.

I'd like to begin with a brief overview of our immediate and continuing response to the events in Japan. I then want to further discuss the reasons for our continuing confidence in the safety of the U. S. commercial nuclear reactor fleet, and the path forward for the NRC in order to learn all the lessons we can, in light of these events.

On Friday, March 11<sup>th</sup>, an earthquake hit Japan, resulting in the shutdown of more than 10 reactors. The ensuing tsunami appears to have caused the loss of normal and emergency alternating current power to the six unit Fukushima Daiichi site. It is those six units that have received the majority of our attention since that time. Units One, Two, and

Three were in operation at the time of the earthquake. Units Four, Five, and Six were in previously scheduled outages.

Shortly after 4:00 AM EDT on Friday, March 11th, the NRC Emergency Operations Center made the first call, informing NRC management of the earthquake and the potential impact on U.S. plants. We went into monitoring mode later that morning at our Emergency Operations Center, and the NRC's first concern was possible impacts of the tsunami on U.S. plants and radioactive materials on the West Coast, and in Hawaii, Alaska, and U. S. Territories in the Pacific. We were in communication with licensees and NRC resident inspectors at Diablo Canyon Power Plant and San Onofre Nuclear Generating Station in California, and the Radiation Control Program Directors for California, Washington, Oregon and Hawaii.

On that same day, we began interactions with our Japanese regulatory counterparts and dispatched two experts to Japan to help at the U.S. embassy in Tokyo. By Monday, March 14, we had dispatched a total of 11 NRC staff to provide technical support to the American embassy and the Japanese government. We have subsequently rotated in additional staff to continue our on-the-ground assistance in Japan. The areas of focus for this team are: 1) to assist the Japanese government and respond to requests from our Japanese regulatory counterparts; and 2) to support the U. S. ambassador and the U.S. government assistance effort.

On Wednesday, March 16<sup>th</sup>, we collaborated with other U. S. government agencies and decided to advise American citizens to evacuate within a 50-mile range around the plant. The 50 mile evacuation recommendation that the NRC made to the U.S. Ambassador in Japan was made in the interest of protecting the health and safety of U.S. citizens in Japan. We based our assessment on the conditions as we understood them at the time. Since communications with

knowledgeable Japanese officials were limited and there was a large degree of uncertainty about plant conditions at the time, it was difficult to accurately assess the potential radiological hazard. In order to determine the proper evacuation distance, the NRC staff performed a series of calculations using NRC's RASCAL computer code to assess possible offsite consequences. The computer models used meteorological model data appropriate for the Fukushima Daiichi vicinity. Source terms were based on hypothetical, but not unreasonable, estimates of fuel damage, containment, and other release conditions. These calculations demonstrated that the Environmental Protection Agency's (EPA's) Protective Action Guidelines could be exceeded at a distance of up to 50 miles from the Fukushima site, if a large-scale release occurred from the reactors or spent fuel pools. The U.S. emergency preparedness framework provides for the expansion of emergency planning zones as conditions require. Acting in accordance with this framework, and with the best information available at the time, the NRC determined that evacuation out to 50 miles for U.S. citizens was a prudent course of action, and would be consistent with what we would do under similar circumstances in the United States, and we made that recommendation to the Ambassador and other U.S. Government agencies.

We have an extensive range of stakeholders with whom we have ongoing interaction regarding the Japan situation, including the White House, Congressional staff, our state regulatory counterparts, a number of other federal agencies, and international regulatory bodies around the world.

The NRC response in Japan and our Emergency Operations Center continue with the dedicated efforts of over 250 NRC staff on a rotating basis. The entire agency is coordinating and working together in response to this event so that we can provide assistance to Japan while continuing the vital activities necessary to fulfill our domestic responsibilities.

It is important to note that the U. S. government has an extensive network of radiation

monitors across this country. Monitoring by nuclear power plants and the EPA's system has not identified any radiation levels that affect public health and safety in this country. In fact, natural background radiation from sources such as rocks, the sun, and buildings, is 100,000 times more than doses attributed to any level that has been detected in the U.S. to date. Therefore, based on current data, we feel confident that there is no reason for concern in the United States regarding radioactive releases from Japan.

There are many factors that assure us of ongoing domestic reactor safety. We have, since the beginning of our regulatory programs, used a philosophy of Defense-in-Depth, which recognizes that nuclear reactors require the highest standards of design, construction, oversight, and operation, and does not rely on any single layer of protection for public health and safety. Designs for every individual reactor in this country take into account site-specific factors and include a detailed evaluation for natural events, such as earthquakes, tornadoes, hurricanes, floods, and tsunamis, as they relate to that site.

There are multiple physical barriers to radiation in every reactor design. Additionally, there are both diverse and redundant safety systems that are required to be maintained in operable condition and frequently tested to ensure that the plant is in a high condition of readiness to respond to any situation.

We have taken advantage of the lessons learned from previous operating experience to implement a program of continuous improvement for the U. S. reactor fleet. We have learned from experience across a wide range of situations, including most significantly, the Three Mile Island accident in 1979. As a result of those lessons learned, we have significantly revised emergency planning requirements and emergency operating procedures. We have addressed many human factors issues regarding how control room employees operate the plant, added new requirements for hydrogen control to help prevent explosions inside of containment, and

created requirements for enhanced control room displays of the status of pumps and valves.

The NRC requires licensees to have a post-accident sampling system that enables the monitoring of radioactive material release and potential fuel degradation. One of the most significant changes after Three Mile Island was an expansion of the Resident Inspector Program, which now has at least two full-time NRC inspectors on site at each nuclear power plant. These inspectors have unfettered access to all licensees' activities related to nuclear safety and security.

As a result of operating experience and ongoing research programs, severe accident management guidelines have been developed for use at nuclear power plants. These procedures were developed to ensure that, in the event all of the above-described precautions failed and a severe accident occurred, the plant would still protect public health and safety. Severe accident management guidelines have been in effect for many years and are evaluated by the NRC inspection program.

As a result of the events of September 11, 2001, we identified important equipment that, regardless of the cause of a significant fire or explosion at a plant, the NRC requires licensees to have available and staged in advance, as well as new procedures and policies to help deal with a severe situation.

Our program of continuous improvement, based on operating experience, will now include evaluation of the significant events in Japan and what we can learn from them. We already have begun enhancing inspection activities through temporary instructions to our inspection staff, including the resident inspectors and the region-based inspectors in our four Regional offices, to look at licensees' readiness to deal with both design-basis accidents and beyond-design-basis accidents.

We have also issued an information notice to licensees to make them aware of the events in Japan, and the kinds of activities they should undertake to verify the continued operability of these mitigation measures. It is expected that licensees review the information related to their capabilities to mitigate conditions that result from severe accidents, including the loss of significant operational and safety systems.

During the past several decades, there have been a number of new rulemakings that have enhanced the domestic fleet's preparedness against some of the problems we are seeing in Japan. The "station blackout" rule requires every plant in this country to analyze what the plant response would be if it were to lose all alternating current electricity so that it could respond using batteries for a period of time, and then have procedures in place to restore alternating current electricity to the site and provide cooling to the core.

The hydrogen control rule requires modifications to reduce the impacts of hydrogen generated for beyond-design-basis events and core damage. There are equipment qualification rules that require equipment, including pumps and valves, to remain operable under the kinds of environmental temperature and radiation conditions that you would see under a design-basis accident.

With regard to the type of containment design used by the most heavily damaged plants in Japan, the NRC has had a Boiling Water Reactor Mark I Containment Improvement Program since the late 1980s. This program resulted in the installation of hardened vent systems for containment pressure relief, as well as enhanced reliability of the automatic depressurization system.

A final factor that underpins our belief in the ongoing safety of the U. S. fleet is the emergency preparedness and planning requirements in place that provide ongoing training,

testing, and evaluations of licensees' emergency preparedness programs. In coordination with our federal partner, the Federal Emergency Management Agency (FEMA), these activities include extensive interaction with state and local governments, as those programs are evaluated and tested on a periodic basis.

Along with our confidence in the safety of U.S. nuclear power plants, our agency has a responsibility to the American people to undertake a systematic and methodical review of the safety of our domestic facilities, in light of the natural disaster and the resulting nuclear situation in Japan.

Examining all available information is an essential part of the effort to analyze the event and understand its impact on Japan and its implications for the United States. Our focus is always on keeping nuclear plants and radioactive materials in this country safe and secure.

On Monday, March 21, my colleagues on the Commission and I met to review the status of the situation in Japan and identify the steps needed to conduct that review. We consequently decided to establish a senior level agency task force to conduct a comprehensive review of our processes and regulations to determine whether the agency should make additional improvements to our regulatory system, and to make recommendations to the Commission for its policy direction.

The review will be conducted in both a short-term and a longer-term timeframe. The short-term review has already begun, and the task force will brief the Commission after 30, 60, and 90 day intervals and these meetings will be public web-cast meetings. At the 90 day interval, the staff will produce a public report to identify potential or preliminary near-term operational or regulatory issues. The task force then will undertake a longer-term review as

soon as NRC has sufficient information from the events in Japan. That longer-term review will be completed in six months from the beginning of the evaluation.

The task force will evaluate all technical and policy issues related to the event to identify additional potential research, generic issues, changes to the reactor oversight process, rulemakings, and adjustments to the regulatory framework that may warrant action by the NRC. We also expect to evaluate potential interagency issues, such as emergency preparedness, and examine the applicability of any lessons learned to non-operating reactors and materials licensees. We expect to seek input from all key stakeholders during this process. A report with appropriate recommendations will be provided to the Commission within six months of the start of this evaluation. Both the 90-day and final reports will be made publicly available.

As we move forward with these efforts, we also recognize the importance to sharing our lessons learned with our regulatory counterparts. I recently returned from the Fifth Review Meeting of the Convention on Nuclear Safety, which provided an important opportunity for participating nations to address the events in Japan and begin to formulate plans for short- and long-term cooperation. We look forward to continuing this dialogue. We also commend International Atomic Energy Agency (IAEA) Director General Amano's announcement of the Agency's intention to host a ministerial-level conference in June. We are pleased to support the IAEA as it works to address and incorporate the events at Fukushima into its activities, as well as continuing its work in areas that have already been identified as nuclear safety and security priorities.

In conclusion, I want to reiterate that we continue to make our domestic responsibilities for licensing and oversight of the U.S. licensees our top priority and that the U.S. plants continue

to operate safely. In light of the events in Japan, there will be a near-term evaluation of their relevance to the U.S. fleet, and we are continuing to gather the information necessary to take a longer, more comprehensive and thorough look at the events in Japan and their lessons for us. Based on these efforts, we will take all appropriate actions necessary to ensure the continuing safety of the American people.

Chairman Boxer, Ranking Member Inhofe, Chairman Carper, Ranking Member Barrasso, and Members of the Committee, on behalf of the Commission, thank you for the opportunity to appear before you. I look forward to continuing to work with you to advance the NRC's important safety mission.

**From:** Hayden, Elizabeth  
**To:** Janbergs, Holly  
**Subject:** IoI 4-8-11.docx  
**Date:** Tuesday, April 12, 2011 6:43:00 PM  
**Attachments:** IoI 4-8-11.docx

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Try this

6666/145

Office of Public Affairs (OPA)  
Items of Interest  
Week Ending April 8, 2011

OPA Received Significant Media Inquiries on the Following

The Japanese earthquake and tsunami disaster.

A leaked copy of a March 26 assessment of possible conditions at the Fukushima facility.

The un-redacted Volume 3 of the Yucca Mountain Safety Evaluation Report that the NRC provided last week to Rep. Issa (R-CA).

Spent fuel storage.

Submerged electrical cables at U.S. nuclear power plants.

Inspections of a containment separation issue at Crystal River nuclear power plant (FL).

The planning and execution of emergency planning zones.

A special inspection at Braidwood and Byron nuclear power plants (IL) to review the handling of two equipment issues.

The NRC's response to a potential government shutdown.

Other Public Affairs Items

OPA supported Chairman Jaczko in Vienna, Austria at the IAEA's Convention on Nuclear Safety side meeting on the Fukushima Daiichi Accident and press questions afterwards.

OPA participated in a taped interview with KVNO Radio (Omaha, NE) about the power uprate process at nuclear plants, specifically at Duane Arnold.

OPA supported public meetings around the regions, including meetings for Monticello, Quad Cities, Nuclear Fuel Services, and Surry to discuss annual plant assessments.

OPA did a recorded interview with WOBM-FM (of Ocean County, NJ) on the NRC brief filed with the 3<sup>rd</sup> Circuit Court of Appeals regarding the Oyster Creek nuclear power plant (NJ) license renewal application.

OPA did a radio interview with the N.C. News Network on next week's annual assessment meeting for the Shearon Harris nuclear power plant (NC).

OPA participated in a taped interview with the Rockford National Public Radio affiliate about the NRC's safety assessment of the Quad Cities nuclear power plant (IL).

<b>Press Releases Issued</b>	
<b>Headquarters:</b>	
11-063	NRC Presenting at National Academy of Sciences Meeting April 18 in Chicago Regarding NRC-Sponsored Cancer Risk Study (4/8)
<b>Regions:</b>	
I-11-005	NRC to Hold Public Meeting on April 13 in Delta, Pa., to Discuss Annual Assessment of Peach Bottom Nuclear Power Plant (4/4)
III-11-005	NRC Schedules Open House and Public Meeting for April 14 to Discuss Prairie Island Nuclear Power Plant Performance and NRC Oversight (4/6)
III-11-006	NRC to Discuss 2010 Performance Assessment for LaSalle Nuclear Power Plant Unit 1 and 2 April 13 (4/6)
III-11-007	NRC Begins Special Inspection at Braidwood and Byron Nuclear Plants (4/6)
IV-11-011	NRC to Discuss 2010 Performance Assessment for San Onofre Nuclear Generating Station (4/7)

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

Karen,

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

*Steve Garchow  
Chief Examiner  
817-276-4426  
[SMG@NRC.gov](mailto:SMG@NRC.gov)*

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

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

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

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

6666/146

**From:** Hayden, Elizabeth  
**To:** Anderson, Brian  
**Cc:** Brenner, Eliot  
**Subject:** RE: Need some talking points  
**Date:** Tuesday, April 12, 2011 6:22:00 PM

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I don't have anything from Scott in my inbox that addresses this "pushback." What you wrote looks fine to me.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

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**From:** Anderson, Brian  
**Sent:** Tuesday, April 12, 2011 12:15 PM  
**To:** Hayden, Elizabeth  
**Cc:** Brenner, Eliot  
**Subject:** RE: Need some talking points

This is the subject material...I wrote the following answer to re-create what I thought Scott had already written:

The Union of Concerned Scientists has misinterpreted an NRC internal evaluation of nuclear plant safety. The e-mail exchanges took place between two different NRC departments, each staffed with experts possessing diverse credentials. This e-mail exchange is an example of the professional discussion that NRC encourages amongst its engineers and scientists. Promoting a healthy discussion of differing professional viewpoints is an important part of the NRC's culture of safety and commitment to protect public health and safety.

If there's already something existing, I'd rather use that for consistency. Do you remember if Scott had written anything along these lines?

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**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 11:32 AM  
**To:** Anderson, Brian  
**Cc:** Brenner, Eliot  
**Subject:** FW: Need some talking points

Brian,

Eliot said you were looking for a paragraph that Scott wrote about SOARCA; is this what you are looking for?

*Beth*

*G6G6/147*

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**From:** Burnell, Scott  
**Sent:** Wednesday, April 06, 2011 4:50 PM  
**To:** Chang, Richard; Santiago, Patricia  
**Cc:** Hayden, Elizabeth  
**Subject:** RE: Need some talking points

Richard;

Please contact Beth tomorrow. Thanks.

Scott

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**From:** Chang, Richard  
**Sent:** Wednesday, April 06, 2011 4:50 PM  
**To:** Burnell, Scott; Santiago, Patricia  
**Cc:** Hayden, Elizabeth  
**Subject:** RE: Need some talking points

Scott,

I will try to work this issue and get you a response to you tomorrow.

Thanks,  
Richard

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**From:** Burnell, Scott  
**Sent:** Wednesday, April 06, 2011 4:47 PM  
**To:** Chang, Richard; Santiago, Patricia  
**Cc:** Hayden, Elizabeth  
**Subject:** Need some talking points  
**Importance:** High

Pat, Richard;

I'll be out of the office tomorrow through Tuesday, and OPA will need some talking points to handle questions on this. I spoke to a USA Today reporter and focused on:

- a) The difference between SOARCA and "straight" PRA, that the SRAs were complaining they didn't have the kinds of reliability data they'd need to plug B.5.b into their PRA. SOARCA covers the "either/or" case without worrying about probabilities. I left it that the ongoing internal review process would address the SRA concerns.
- b) The second document rang a bell as a peer review issue, so I pointed out the ongoing review of SOARCA had appropriately resolved most peer review comments, including that one.

Please feel free to revise and extend those as necessary. Please work with Beth Hayden on providing the talking points as soon as possible. Thanks.

Scott

**From:** Sarah Goldberg [mailto:[Sgoldberg@ucsusa.org](mailto:Sgoldberg@ucsusa.org)]  
**Sent:** Wednesday, April 06, 2011 11:37 AM  
**To:** Malone, Scott (M Edit Ops)  
**Subject:** UCS: Internal NRC docs show doubts about US nuke safety

FOR IMMEDIATE RELEASE  
CONTACT: Elliott Negin, 202-331-5439

## INTERNAL NRC DOCUMENTS REVEAL DOUBTS ABOUT MEASURES TO ENSURE U.S. PLANTS SURVIVE FUKUSHIMA-TYPE EVENTS

WASHINGTON (April 6, 2011) – In the weeks following the Fukushima accident, Nuclear Regulatory Commission (NRC) and nuclear industry officials have been asserting that U.S. nuclear plants are better prepared to withstand a catastrophic event like the March 11 earthquake and tsunami than Japanese plants because they have additional safety measures in place.

However, according to internal NRC documents (links provided below) released today by the Union of Concerned Scientists (UCS), there is no consensus within the NRC that U.S. plants are sufficiently protected. The documents indicate that technical staff members doubt the effectiveness of key safety measures adopted after the September 11, 2001, terrorist attacks.

UCS obtained the documents on March 25 from a Freedom of Information Act (FOIA) request it made a month before the Japanese disaster.

"While the NRC and the nuclear industry have been reassuring Americans that there is nothing to worry about -- that we can do a better job dealing with a nuclear disaster like the one that just happened in Japan -- it turns out that privately NRC senior analysts are not so sure," said Edwin Lyman, a physicist with the UCS Global Security Program and an expert in nuclear plant design.

NRC and industry officials recently testified before Congress that U.S. reactors are fully prepared for the worst. For example, at a hearing hosted by the Senate Energy and Water Appropriations Subcommittee on March 30, NRC Chairman Gregory Jaczko testified: "As a result of the events of September 11, 2001, we identified important pieces of equipment, that regardless of the cause of a significant fire or explosion at a plant, the NRC requires licensees to have available and staged in advance, as well as new procedures and policies to help deal with a severe situation."

Likewise, William Levis, the president and COO of the Public Service Enterprise Group, which owns two nuclear plants in New Jersey, told the subcommittee that "U.S. nuclear plant designs and operating practices since 9/11 are designed to mitigate severe accident scenarios such as aircraft impact, which include the complete loss of off-site power and all on-site emergency power sources and loss of large areas of the plant."

NRC calls these post-9/11 procedures "B.5.b measures," referencing the section of the compensatory-measures order the agency issued in 2002 to all reactor licensees. The agency codified them in its regulations in 2009 in a document titled CFR 50.54(hh)(2), but because their details are security-related, they are not publicly available.

At the March 30 hearing, both Jaczko and Levis sounded confident that B.5.b measures would protect U.S. reactors from the kind of disaster that befell the Fukushima Daiichi nuclear complex, which lost off-site and on-site power for an extended period, eventually leading to the loss of all cooling. Internal NRC documents obtained by UCS tell a different story.

In February 2011, UCS filed a FOIA request for all information associated with a secretive NRC program known as the "State of the Art Reactor Consequence Analyses." SOARCA, according to the NRC, is "a research effort to realistically estimate the outcomes of postulated severe accident scenarios that might cause a nuclear power plant to release radioactive material into the environment. The

SOARCA project applies many years of national and international nuclear safety research, and incorporates the improvements in plant design, operation and accident management to achieve a more realistic evaluation of the consequences associated with such accidents." The NRC also stated that SOARCA takes into account enhancements required by NRC after 9/11 -- the B.5.b measures.

The SOARCA program, which the agency initiated in 2006, focused on two plants: Surry in Virginia and Peach Bottom in Pennsylvania. Coincidentally, Peach Bottom is a Mark I boiling water reactor (BWR) like Fukushima Daiichi reactors 1 through 4. One of the hypothetical accidents that the SOARCA program analyzed was a station blackout at Peach Bottom where the plant failed to recover power before the backup batteries ran out -- the very situation that occurred at Fukushima. That analysis would be extremely useful to understand what happened at Fukushima. However, the NRC has withheld nearly all documents related to SOARCA from the public.

In most Mark I BWRs experiencing a station blackout, Lyman explained, a cooling system that runs on battery power, known as the Reactor Core Isolation Cooling system, or RCIC, is available. But when the battery runs down -- after eight hours or less -- the RCIC will stop operating. If plant workers do not restore alternating current power by then, no cooling systems will be available and the fuel in the reactor will overheat and eventually begin to melt. Most experts believe that is what happened at Fukushima Daiichi units 1 through 3.

According to the documents obtained by UCS, NRC's B.5.b measures contain unspecified strategies to continue operating the RCIC even after battery power is lost. However, the documents make clear that there are disagreements between NRC senior reactor analysts who work in NRC's regional offices under the Office of Nuclear Reactor Regulation and the staff conducting the SOARCA project, who are in the agency's Office of Research.

In particular, one NRC staff email exchange, dated July 28, 2010, described senior analysts' objections to SOARCA as follows: "One concern has been that SOARCA credits certain B5b mitigating strategies (such as RCIC operation w/o DC power) that have really not been reviewed to ensure that they will work to mitigate severe accidents. Generally, we have not even seen licensees credit these strategies in their own [probabilistic risk assessments] but for some reason the NRC decided we should during SOARCA. My recollection is that [Region I senior reactor analysts] in particular have been vocal with their concerns on SOARCA for several years, probably because Peach Bottom is one of the SOARCA plants."

In other words, senior reactor analysts who work directly with the Peach Bottom Mark I BWR apparently do not have faith in the effectiveness of the very B.5.b measures that the NRC and nuclear industry officials are touting as a reason why the United States is better prepared to deal with a Fukushima-like event than Japan.

Another (undated) document reinforces this concern: "The application of 10 CFR 50.54(hh) [2009 regulations] mitigation measures still concerns a number of staff in [the Office of Nuclear Reactor Regulation]. The concern involves the manner in which credit is given to these measures such that success is assumed.... 10 CFR 50.54(hh) mitigation measures are just equipment on-site that can be useful in an emergency when used by knowledgeable operators if post-event conditions allow. If little is known about these post-event conditions, then assuming success is speculative."

"If we are going to have any confidence that U.S. plants are safe, the NRC and the industry has to be completely open and honest about what they know and what they don't know," said Lyman. "They are doing Americans a disservice if they are saying publicly that these untested measures are effective when privately they are expressing doubts that they will work."

Note: UCS also released another NRC email today that briefly discusses the schedule of the SOARCA analysis.

###

The Union of Concerned Scientists is the leading U.S. science-based nonprofit organization working for a healthy environment and a safer world. Founded in 1969, UCS is headquartered in Cambridge, Massachusetts, and also has offices in Berkeley, Chicago and Washington, D.C. For more information, go to [www.ucsusa.org](http://www.ucsusa.org).

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**From:** Hayden, Elizabeth  
**To:** Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Tuesday, April 12, 2011 4:23:00 PM

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nope

*Beth Hayden  
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--- Protecting People and the Environment  
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---

**From:** Hardy, Sally  
**Sent:** Tuesday, April 12, 2011 3:53 PM  
**To:** Hayden, Elizabeth  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Try to access draft pages now...should work...let me know if it does not

Sally

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**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:45 PM  
**To:** Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Title of bullet should be **Presentation on Fukushima**

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

---

**From:** Hardy, Sally  
**Sent:** Tuesday, April 12, 2011 3:44 PM  
**To:** Hayden, Elizabeth  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Something is going on with the server we are looking into that now. Pages are loading really slow for some reason...I'll let you know when its back up

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:42 PM  
**To:** Hardy, Sally

6666/148

**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx

Please add this as last bullet in the right-hand box of current Japan Page. Also, move up bullets under "**FAQ**" so there's not so much space.

I can't bring up the test page.

**From:** Hayden, Elizabeth  
**To:** "Leslie.Forgach@AEI.org"  
**Cc:** Frumkin, Daniel; Burnell, Scott; Nelson, Robert  
**Subject:** FW: Speaker invitation: AEI-Japanese Business Roundtable, May 5th  
**Date:** Tuesday, April 12, 2011 6:12:00 PM

---

Ms. Forgach,

Thank you for your invitation. The Nuclear Regulatory Commission is responsible for regulating nuclear power plants and other uses of nuclear materials. The Department of Energy would be better suited to speak on U.S. energy policy in light of the ongoing crises in Japan and the Middle East. You can reach the DOE Public Affairs Office at 202-586-4940.

Regards,

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8200  
elizabeth.hayden@nrc.gov*

---

**From:** Leslie Forgach [mailto:[Leslie.Forgach@AEI.org](mailto:Leslie.Forgach@AEI.org)]  
**Sent:** Tuesday, April 12, 2011 4:27 PM  
**To:** OPA Resource  
**Cc:** Nelson, Robert  
**Subject:** RE: Speaker invitation: AEI-Japanese Business Roundtable, May 5th

Hello,

Small correction to the email below—we are hoping to hold the Roundtable Thursday, May 5<sup>th</sup>. I appreciate any suggestions you have towards the appropriate speaker to invite.

Best,  
Leslie

---

**From:** Frumkin, Daniel [mailto:[Daniel.Frumkin@nrc.gov](mailto:Daniel.Frumkin@nrc.gov)]  
**Sent:** Tuesday, April 12, 2011 2:17 PM  
**To:** Leslie Forgach; OPA Resource  
**Cc:** Nelson, Robert  
**Subject:** RE: Speaker invitation: AEI-Japanese Business Roundtable, May 4th

Leslie,

I have copied the general Office of Public Affairs email address with your request. OPA is our central contact for these types of requests.

676767 / 149

Dan

---

**From:** Leslie Forgach [mailto:[Leslie.Forgach@AEI.org](mailto:Leslie.Forgach@AEI.org)]  
**Sent:** Tuesday, April 12, 2011 2:08 PM  
**To:** Frumkin, Daniel  
**Subject:** FW: Speaker invitation: AEI-Japanese Business Roundtable, May 4th

Dear Dan,

Misha Auslin gave me your email address to get in touch with someone from the NRC to speak at private roundtable luncheon AEI is hosting with Japanese business reps in DC (see below). I reached out to Scott, per your previous suggestion for our public event on Japan last month. However, I received a notice that he is out of the office (no return date). We are looking for someone to speak on U.S. energy policy in light of the ongoing crises in Japan and the Middle East. Are you able to recommend someone or point me in the right direction? I appreciate your help.

Best,  
Leslie

---

**From:** Leslie Forgach  
**Sent:** Tuesday, April 12, 2011 11:45 AM  
**To:** Scott.Burnell@nrc.gov  
**Subject:** Speaker invitation: AEI-Japanese Business Roundtable, May 4th

Dear Scott,

My name is Leslie Forgach and I write on behalf of Michael Auslin, Director of Japan Studies at AEI. We write to you on the recommendation of Daniel Frumkin. We would like to invite someone from the NRC to participate in the "AEI-Japanese Business Roundtable" on Thursday, May 4<sup>th</sup>. This initiative aims to foster stronger ties with the Japanese business community by facilitating private, off-the record meetings with AEI economic experts, economic policymakers in DC, and other relevant government and business participants.

Our next roundtable will cover global energy issues in the context of the ongoing crises in Japan and the Middle East. We like to give free-range to speakers to cover whatever angle they feel most comfortable with, but basically we would like someone from the NRC to discuss how these events effect U.S. energy policy. We ask speakers to offer brief comments from 8 to 12 minutes, and then we will open it up for an informal, off-the-record discussion with a small group of 12-15 Japanese business representatives and AEI scholars.

The roundtable will take place on **Thursday, May 4<sup>th</sup> from 12:00 to 1:30** at AEI located at 1150 Seventeenth St. NW, Washington DC, on the twelfth floor. Please let me know at your earliest convenience if you can recommend someone who might be able to participate. Please do not hesitate to let me know if you have any questions.

I look forward to hearing from you.

Best,  
Leslie

Leslie Forgach  
Foreign Policy and Defense Studies  
American Enterprise Institute  
1150 17th St., NW  
Washington, DC 20036  
(phone) 202-862-7160  
(fax) 202-862-4877

**From:** Hayden, Elizabeth  
**To:** Landau, Mindy  
**Subject:** FW: Speaker invitation: AEI-Japanese Business Roundtable, May 5th  
**Date:** Tuesday, April 12, 2011 6:07:00 PM

---

Here's another request in to speak and an example of the kind of requests we're seeing now.

*Beth*

---

**From:** Janbergs, Holly **On Behalf Of** OPA Resource  
**Sent:** Tuesday, April 12, 2011 4:28 PM  
**To:** Hayden, Elizabeth  
**Subject:** FW: Speaker invitation: AEI-Japanese Business Roundtable, May 5th

---

**From:** Leslie Forgach [mailto:[Leslie.Forgach@AEI.org](mailto:Leslie.Forgach@AEI.org)]  
**Sent:** Tuesday, April 12, 2011 4:27 PM  
**To:** OPA Resource  
**Cc:** Nelson, Robert  
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**Sent:** Tuesday, April 12, 2011 2:08 PM  
**To:** Frumkin, Daniel  
**Subject:** FW: Speaker invitation: AEI-Japanese Business Roundtable, May 4th

Dear Dan,

6666/150

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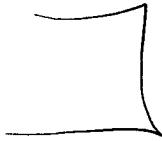
I look forward to hearing from you.

Best,  
Leslie

Leslie Forgach  
Foreign Policy and Defense Studies  
American Enterprise Institute  
1150 17th St., NW  
Washington, DC 20036

*T*

(phone) 202-862-7160  
(fax) 202-862-4877



**From:** Hayden, Elizabeth  
**To:** Akstulewicz, Brenda  
**Subject:** Fw: Need press releas on Japan Task Force  
**Date:** Tuesday, April 12, 2011 1:59:15 PM

---

Is Val working on this? We are about to end the mtg.

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

From: Hayden, Elizabeth  
To: Shannon, Valerie  
Sent: Tue Apr 12 13:50:41 2011  
Subject: Need press releas on Japan Task Force

Asap. Pls email me-in mtg

GGGG/151

**From:** Hayden, Elizabeth  
**To:** Hardy, Sally  
**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Tuesday, April 12, 2011 3:42:00 PM  
**Attachments:** NRR Presentation on Fukushima- April 2011 ppt.pptx

---

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I can't bring up the test page.

626969/152



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# **Presentation on Fukushima to NGA Center for Best Practices**

Eric Leeds, Director  
Office of Nuclear Reactor Regulation  
(NRR)



United States Nuclear Regulatory Commission

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## NRC Mission – What Do We Do?

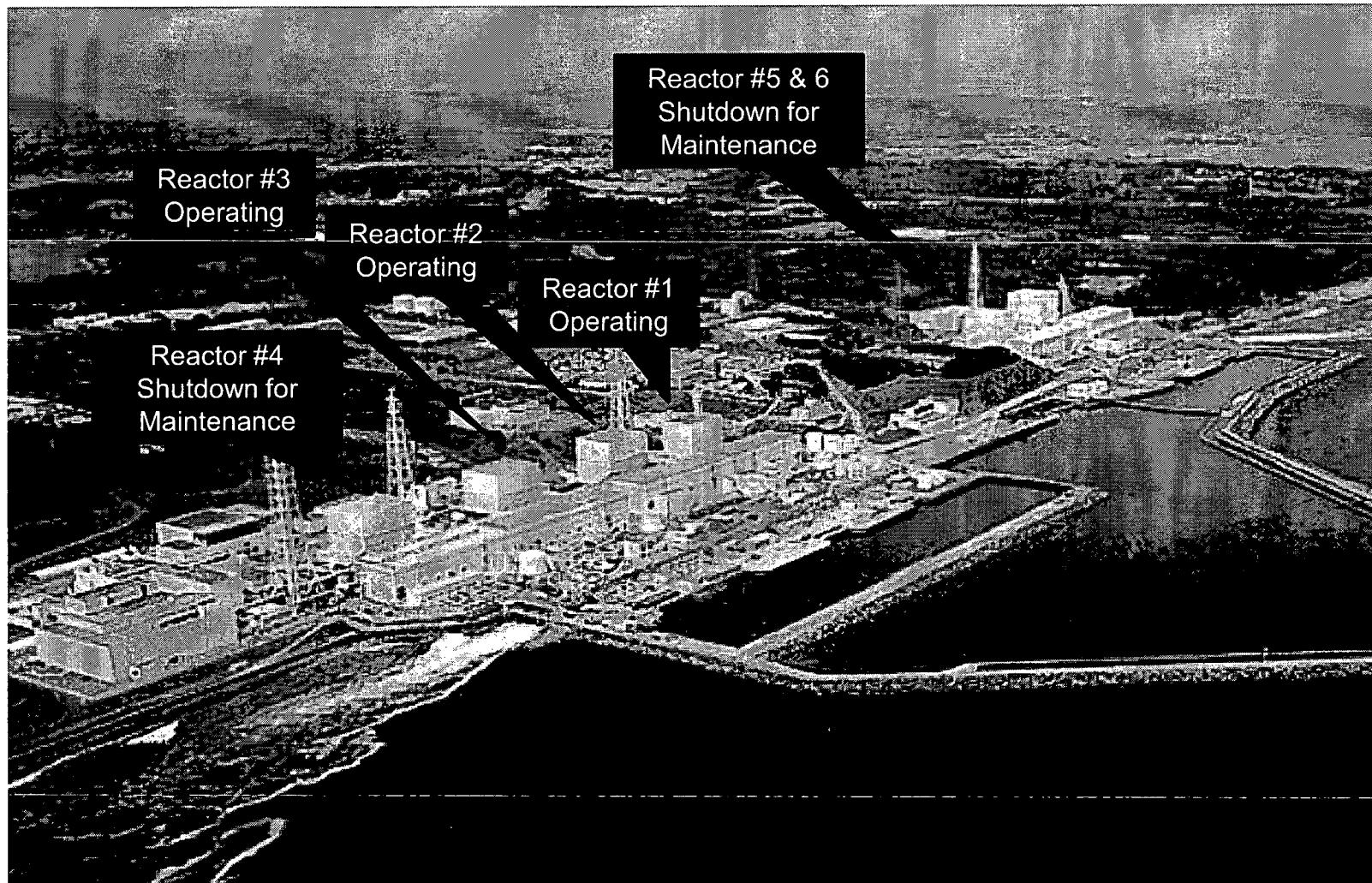
- The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to **protect public health and safety, promote the common defense and security, and protect the environment.**

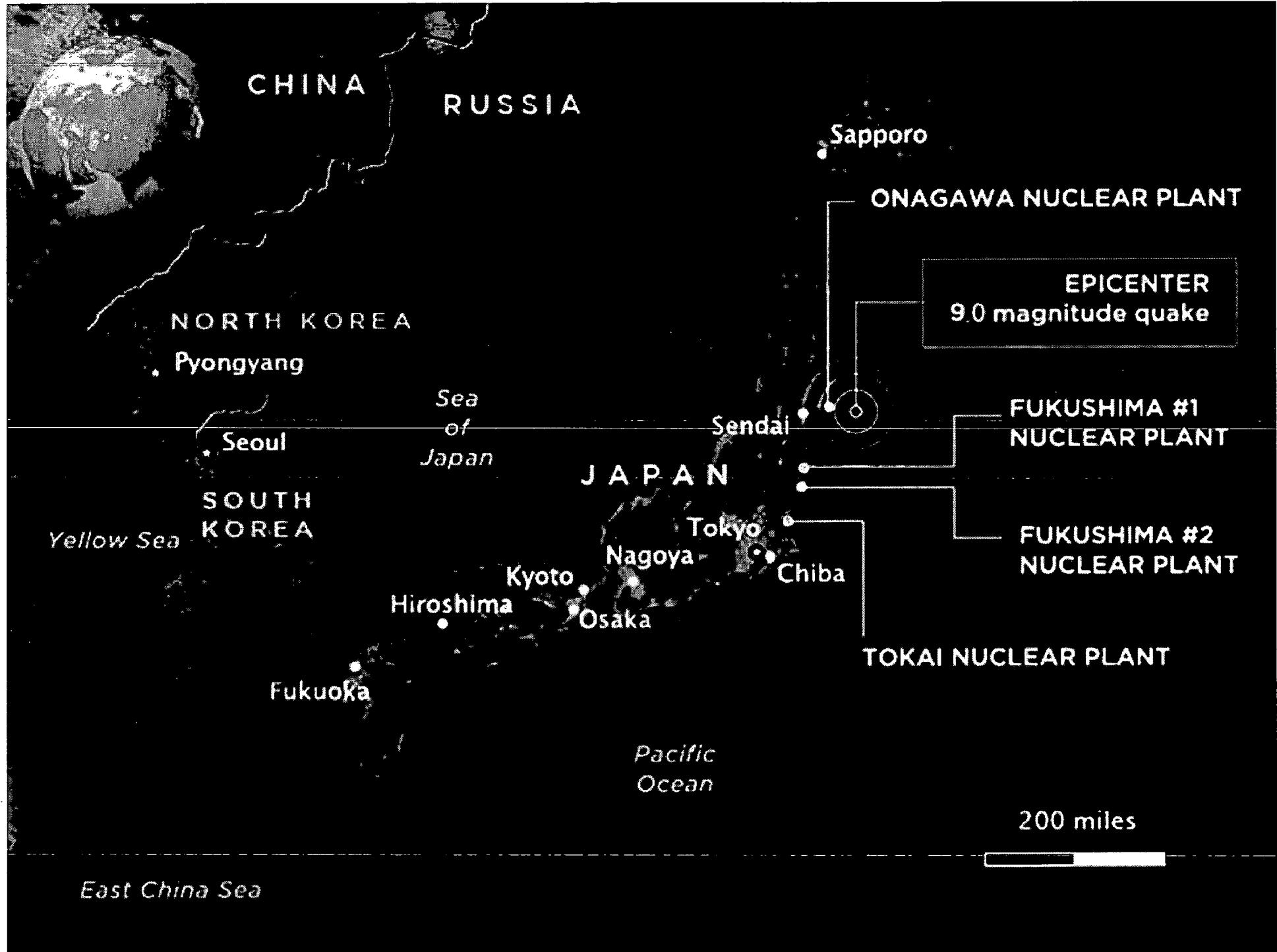


United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Overview of Fukushima Daiichi Nuclear Power Station





# Earthquake & tsunami sequence of events

Friday March 11<sup>th</sup> @ 2:36 pm local

- Magnitude 9.0 earthquake 231 miles northeast of Tokyo.
- Quake is fifth largest in the world (since 1900).
- Earthquake generated a 14m Tsunami



# Plant Response

## Earthquake

- Earthquake Caused Automatic Shutdown of 3 Operating Units
- Offsite Power Lost
- Initial indications were that Emergency Diesels operated

## 14m Tsunami (less than 1 hour later)

- All Emergency Back-up Power Lost
- 8-10 hours later Station Batteries Depleted



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

- Current status of the Reactors

- Core Damage in Unit 1,2, 3
- Electrical Power Restored
- Fresh Cooling Water supplied to  
All Units

- Spent Fuel Pool Status

- Suspect Fuel Damage in  
Pools 3 & 4
- Providing periodic make up water



## NRC Response

- Ops Center 24/7
- Team of experts to Tokyo
- Support to U.S. Ambassador and Japanese
- Coordinating Environmental Monitoring with DOE & EPA



## Domestic Considerations

- Harmful Levels of Radiation Not Expected in the U.S.
- U.S. Plants Designed for External Events
- U.S. Industry Initiated Review
- NRC has initiated additional inspections at all U.S. Plants
- NRC conducting Near-Term and Long-Term Reviews.



## NRC Near Term Actions

- Evaluate Fukushima Daiichi Events
- Domestic Operating Reactors and Spent Fuel Pools
  - External Events
  - Station Blackout
  - Severe Accident Mitigation
  - Emergency Preparedness
  - Combustible Gas Control
- Near Term Review due in 90 days (mid July)



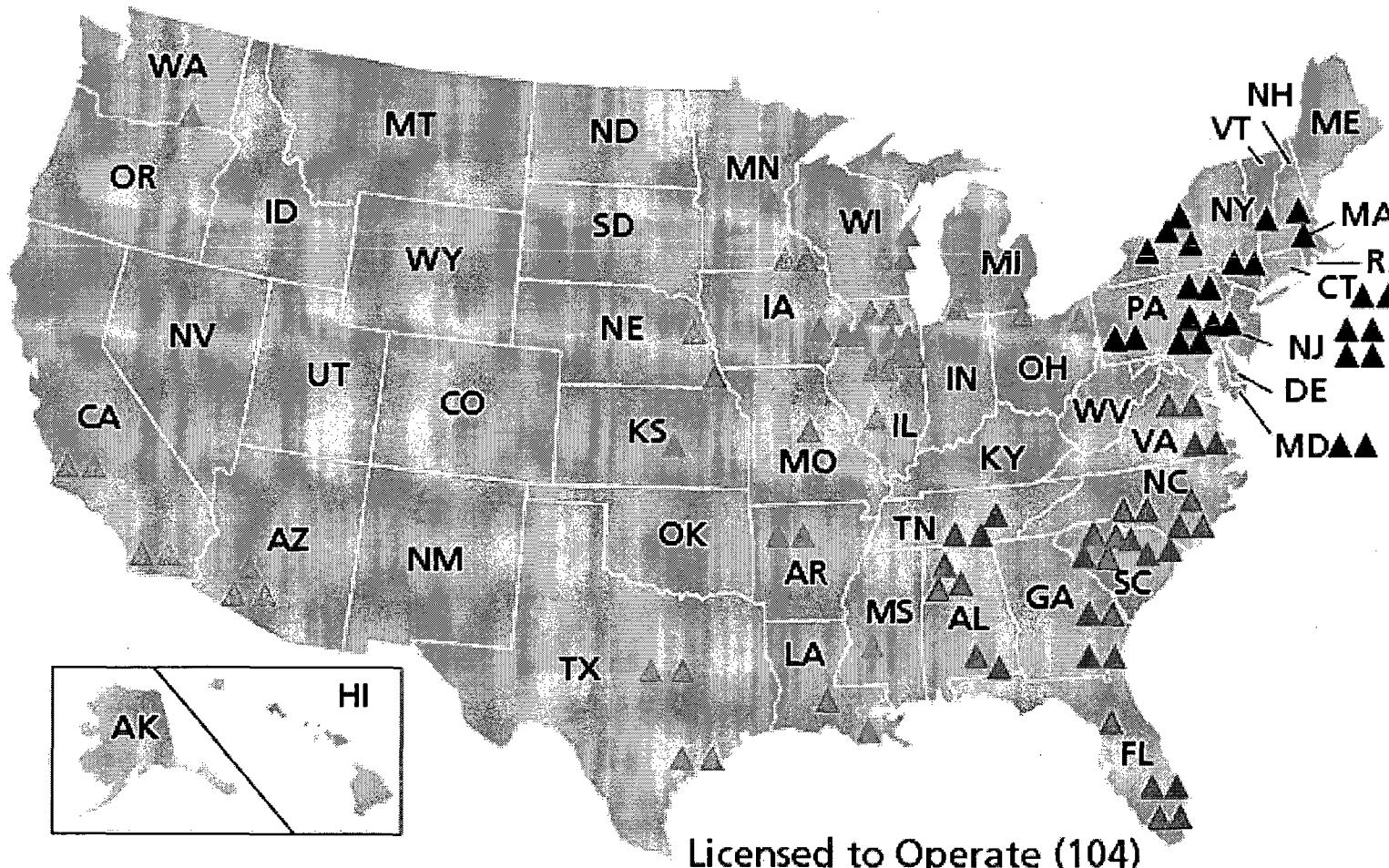
## NRC Longer Term Actions

- Based on Near Term Review and Additional Insights from Fukushima Event
- Identify Potential Technical and Policy Issues
  - Research Activities
  - Generic Issues
  - Reactor Oversight Process
  - Regulatory Framework
  - Interagency Emergency Preparedness



United States Nuclear Regulatory Commission  
*Protecting People and the Environment*

# Operating Commercial Power Reactors



# Protective Action Recommendations

- NRC Regulations have 2 Emergency Planning Zones (EPZs) 10/50 miles
- EPZs are not limits, but frameworks that allow for expansion as needed
- 50 miles in Japan due to extraordinary situation
  - 4 units severely challenged
  - Unclear information as to state of reactors, mitigative strategies, radiological releases
  - Decision to evacuate conservative, better to err on conservative
- Precautionary evacuation occurred days before fuel melt.

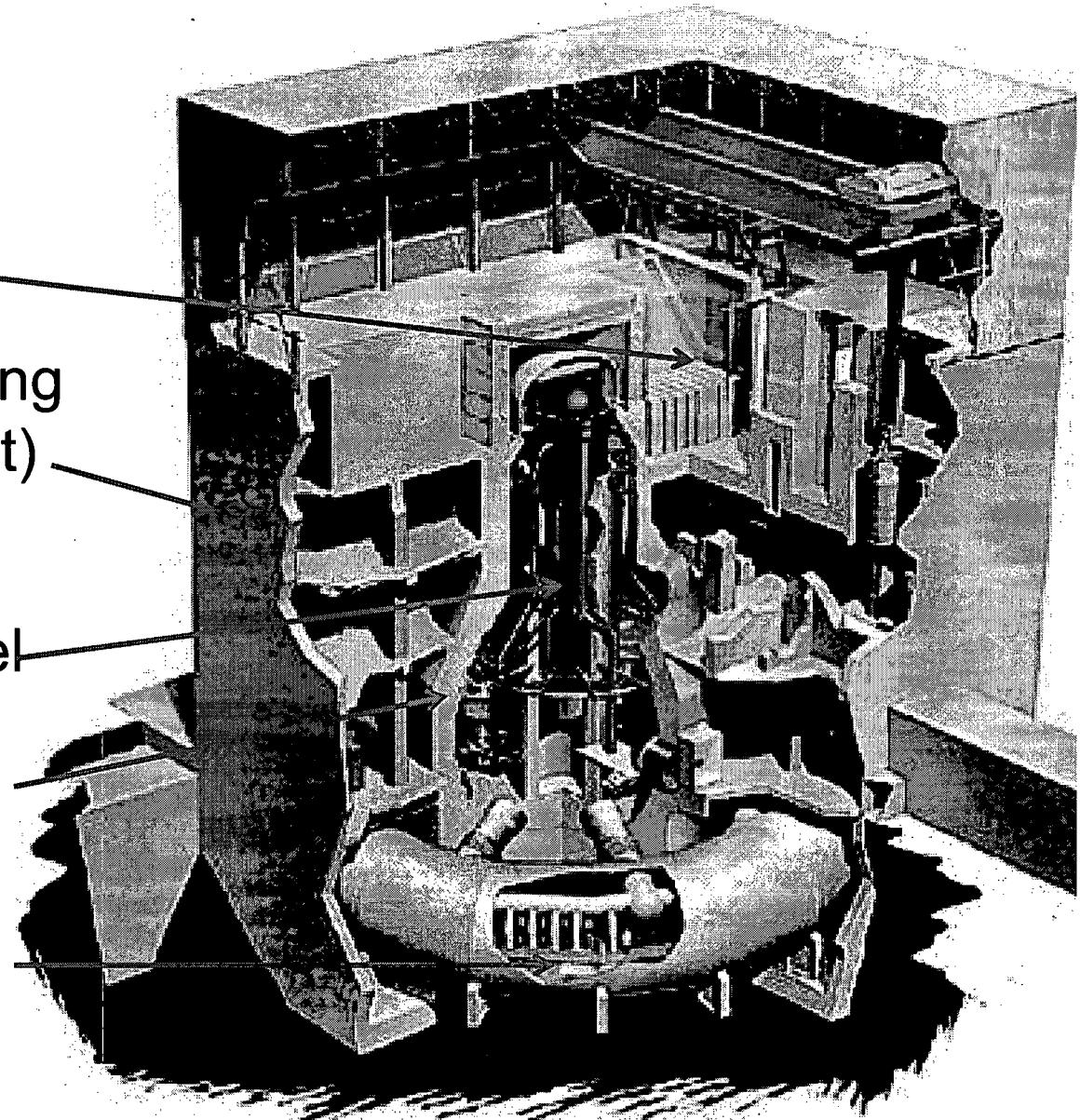


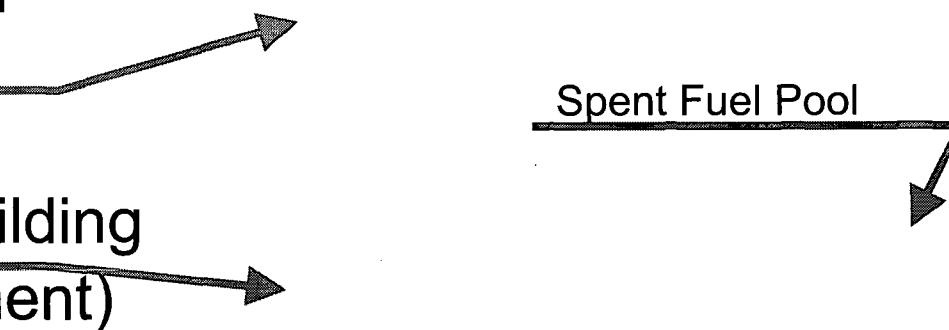
United States Nuclear Regulatory Commission

*Protecting People and the Environment*

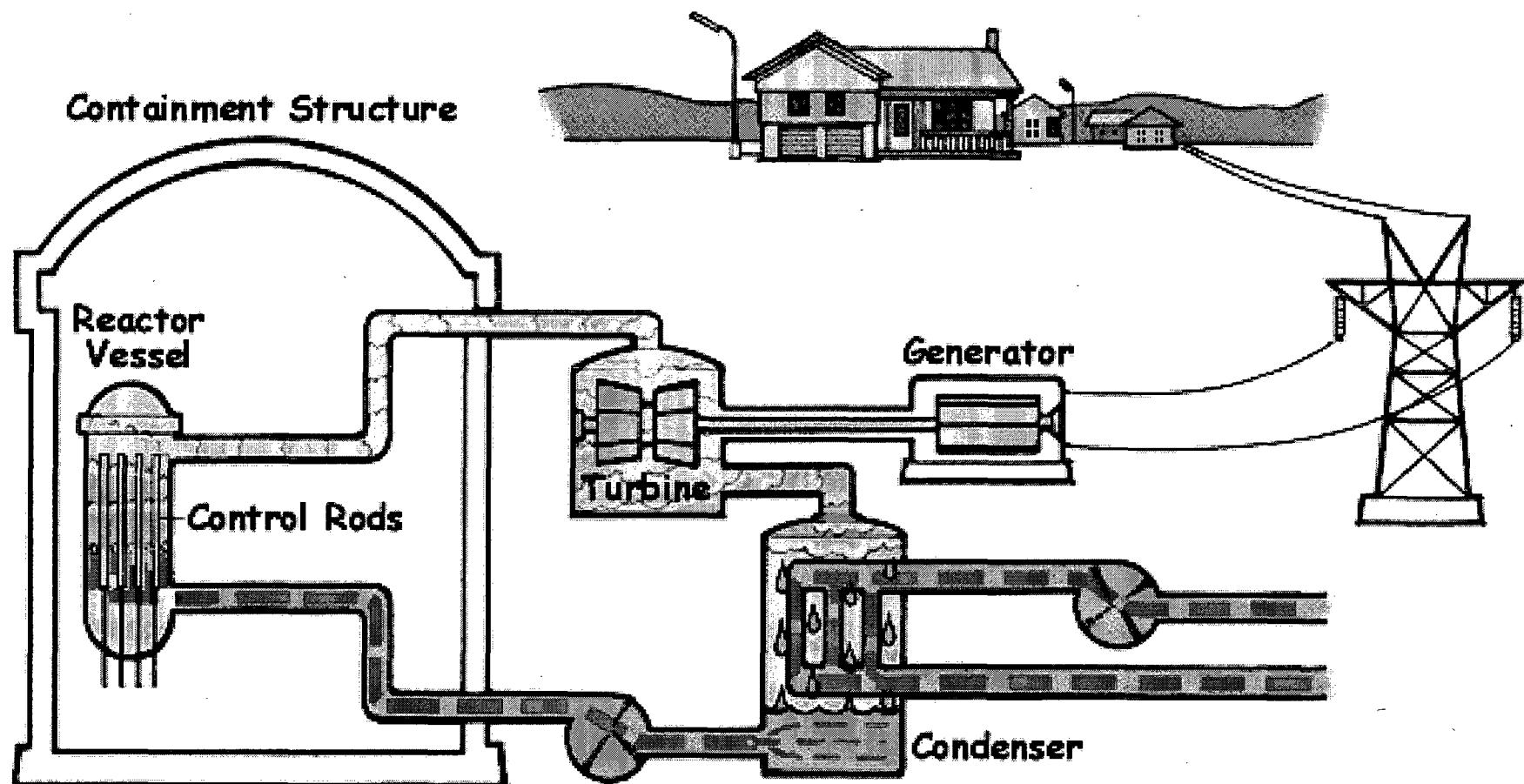
# BWR Mark I

- ▶ Spent Fuel Pool
- ▶ Concrete Reactor Building  
(secondary Containment)
- ▶ Reactor Pressure Vessel
- ▶ Containment (Drywell)
- ▶ Containment (Wet Well)



- ▶ Reactor Service Floor  
(Steel Construction) 
- ▶ Concrete Reactor Building  
(secondary Containment)
- ▶ Reactor Core
- ▶ Reactor Pressure Vessel
- ▶ Containment (Dry well)
- ▶ Containment (Wet Well)

# Generic BWR



**From:** Hayden, Elizabeth  
**To:** Shannon, Valerie  
**Subject:** Need press releas on Japan Task Force  
**Date:** Tuesday, April 12, 2011 1:50:42 PM

---

Asap. Pls email me-in mtg

666/153

**From:** [Hayden, Elizabeth](#)  
**To:** [Burnell, Scott](#)  
**Subject:** OGC Price Anderson presentation  
**Date:** Tuesday, April 19, 2011 11:24:00 AM

---

Scott,

Brian Anderson was originally going to do this presentation that OGC has organized, but he has a conflict. **Could you talk to a group of about 100 from NRR/NRO about the Japan calls, inquiries, and news stories re insurance for nuclear disasters?** Ira Dinitz is coordinating the seminar on April 26<sup>th</sup> (really) from 1-3 p.m. in the Commissioners' Conference Room. It's likely not necessary for you to spend 2 hours there and you can probably commit to 1 hour of your choice, if you are free.

Please let me know if you can do this and if so, what time slot

*Beth*

---

**From:** Dinitz, Ira  
**Sent:** Monday, April 18, 2011 2:51 PM  
**To:** Hayden, Elizabeth  
**Cc:** Regan, Christopher  
**Subject:** RE: I am unable to attend next week's Price Anderson presentation

Thanks Beth. We will talk details, but having someone from OPA to talk about calls and inquiries would most informative for those attending, NRR and some NRO folks. This is primarily a discussion about the details of Price-Anderson as well as the prospective from the public, the Congress and the insurance industry. If you can give me a name I will put in the Agenda. If not, I will just list an OPA rep.

---

**From:** Dinitz, Ira  
**Sent:** Monday, April 18, 2011 11:32 AM  
**To:** Hayden, Elizabeth  
**Cc:** Regan, Christopher  
**Subject:** RE: I am unable to attend next week's Price Anderson presentation

This seminar has gotten a great deal of visibility primarily because of the Japanese accident. There will be over 100 people attending as of the latest count and I am sure this number will increase. For this reason we have been afforded the use of the Commission Conference room. I originally believed and continue to believe that it would be of great interest to those attending to hear from an OPA representative who has been fielding calls from members of the public. OPA would be of great assistance for this seminar. Thanks for your assistance.

6666/154

**From:** Hayden, Elizabeth  
**To:** Anderson, Brian  
**Cc:** Dinitz, Ira  
**Subject:** Price Anderson Presentation  
**Date:** Wednesday, April 13, 2011 11:40:00 AM

---

Brian,

Will you be available to support the following request from Ira Dinitz that I previously spoke to you about?

We are planning with OGC and OCA to hold a seminar on Price-Anderson for interested NRR and NRO staff. We would like to have someone from your office to field any questions and share experiences resulting from the Japan incident. The seminar will be on April 26 from 1-3 in TWFN,10A01.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

6666/155

**From:** Hayden, Elizabeth  
**To:** Hardy, Sally  
**Subject:** RE: Drafts for Japan page  
**Date:** Tuesday, April 12, 2011 9:57:00 AM

---

Let's go with the first one—only a few changes/questions:

Change **Commission Activity** to **Recent Activities** (since we will be posting Marty Virgilio's Cong. Statement.

Change the title (and what's listed on home page) to: **Japan Nuclear Accident – NRC Actions**

Can we delete the link underneath each activity, and just link the individual word or the whole phrase, thereby removing one line?

Change the link for March 21 Comm Meeting to: <http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2011/>

For News Releases, remove number of press release and follow date with title; maybe put number in parenthetical at end of title.

Put Blog between the other 2 boxes on the right—as you can see, when the blog deals with a non-Japan subject, it is rather weird at the top.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

---

**From:** Hardy, Sally  
**Sent:** Monday, April 11, 2011 3:34 PM  
**To:** Hayden, Elizabeth  
**Subject:** Drafts for Japan page

Beth

Keeping within the standards that data federal came up with, here is what we have drafted on the Japan page, let me know if you like any of these:

<http://nrcweb:400/japan/japan-info7.html>

<http://nrcweb:400/japan/japan-info6.html>

<http://nrcweb:400/japan/japan-info1.html>

<http://nrcweb:400/japan/japan-info5.html>

6666/156

Thanks  
Sally

We are also working on the Facility page....

**From:** Hayden, Elizabeth  
**To:** WebContractor Resource  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Tuesday, April 12, 2011 4:44:00 PM  
**Attachments:** NRR Presentation on Fukushima- April 2011 ppt.pptx

---

For the new website, put this item at the top of the box on **Related Information**

Please shorten the title of the bullet to "Presentation on Fukushima." Also make this the title on the 1<sup>st</sup> page of the slides or use the attached revised presentation.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

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**Sent:** Tuesday, April 12, 2011 4:33 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource; Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Good Afternoon Beth,

Please review and approve for live posting.

<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:42 PM  
**To:** Hardy, Sally  
**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx

Please add this as last bullet in the right-hand box of current Japan Page. Also, move up bullets under "**FAQ**" so there's not so much space.

6/6/157



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Presentation on Fukushima

Eric Leeds, Director

Office of Nuclear Reactor Regulation  
(NRR)



## NRC Mission – What Do We Do?

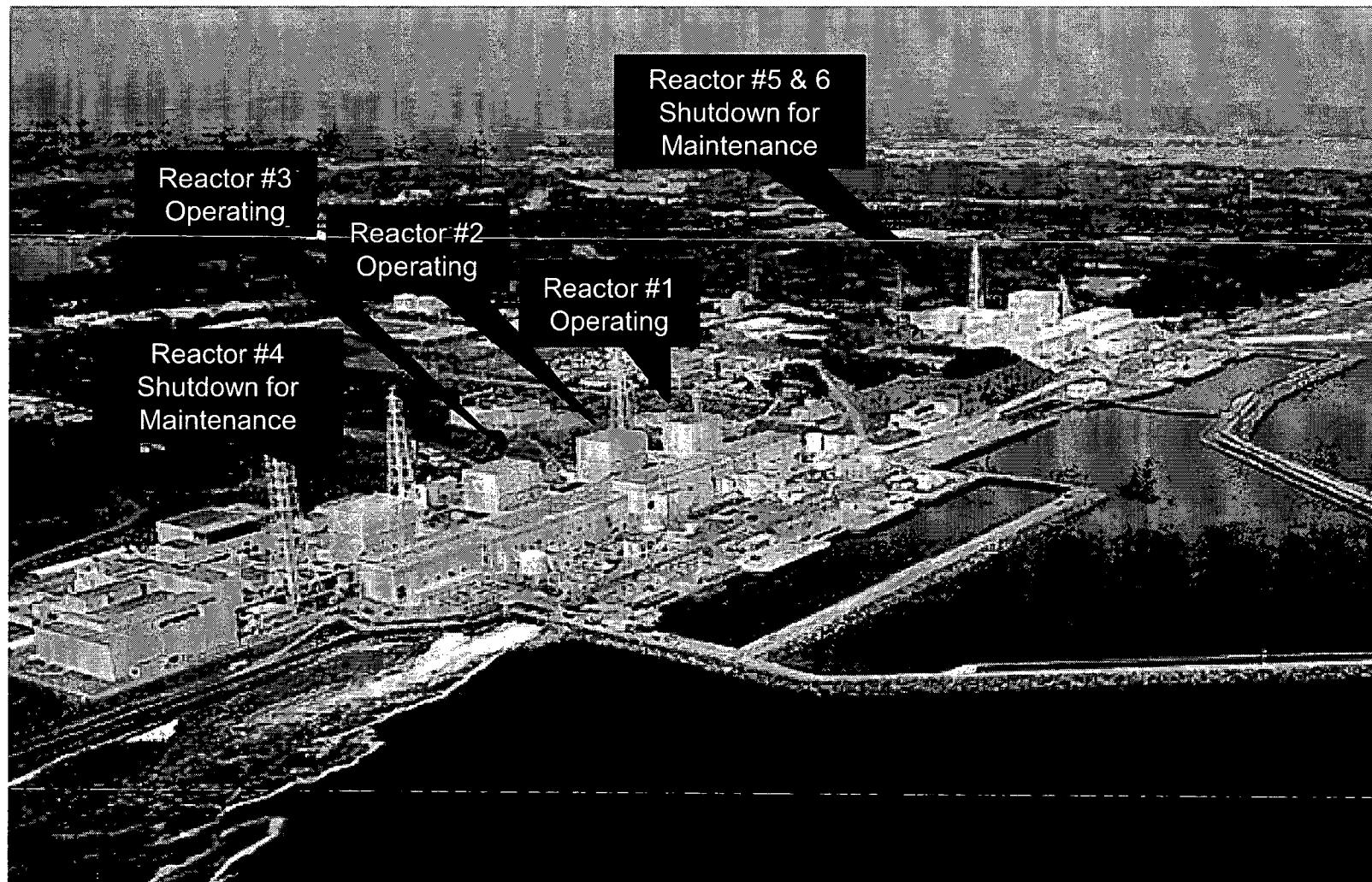
- The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to **protect public health and safety, promote the common defense and security, and protect the environment.**

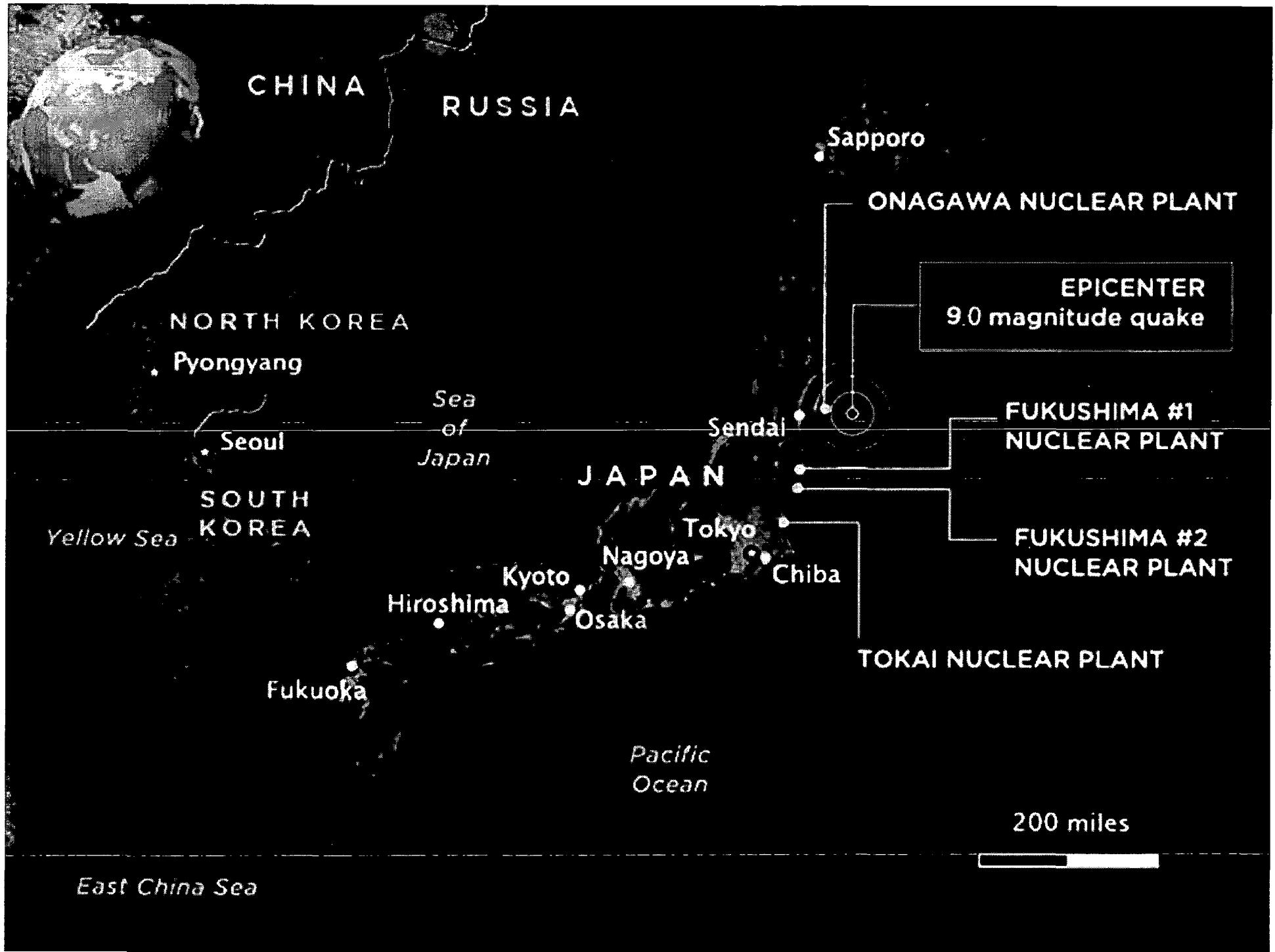


United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Overview of Fukushima Daiichi Nuclear Power Station







# Earthquake & tsunami sequence of events

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United States Nuclear Regulatory Commission

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- Current status of the Reactors
  - Core Damage in Unit 1,2, 3
  - Electrical Power Restored
  - Fresh Cooling Water supplied to
    - All Units
- Spent Fuel Pool Status
  - Suspect Fuel Damage in
    - Pools 3 & 4
  - Providing periodic make up water



## NRC Response

- Ops Center 24/7
- Team of experts to Tokyo
- Support to U.S. Ambassador and Japanese
- Coordinating Environmental Monitoring with DOE & EPA



## Domestic Considerations

- Harmful Levels of Radiation Not Expected in the U.S.
- U.S. Plants Designed for External Events
- U.S. Industry Initiated Review
- NRC has initiated additional inspections at all U.S. Plants
- NRC conducting Near-Term and Long-Term Reviews.



## NRC Near Term Actions

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United States Nuclear Regulatory Commission

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## NRC Longer Term Actions

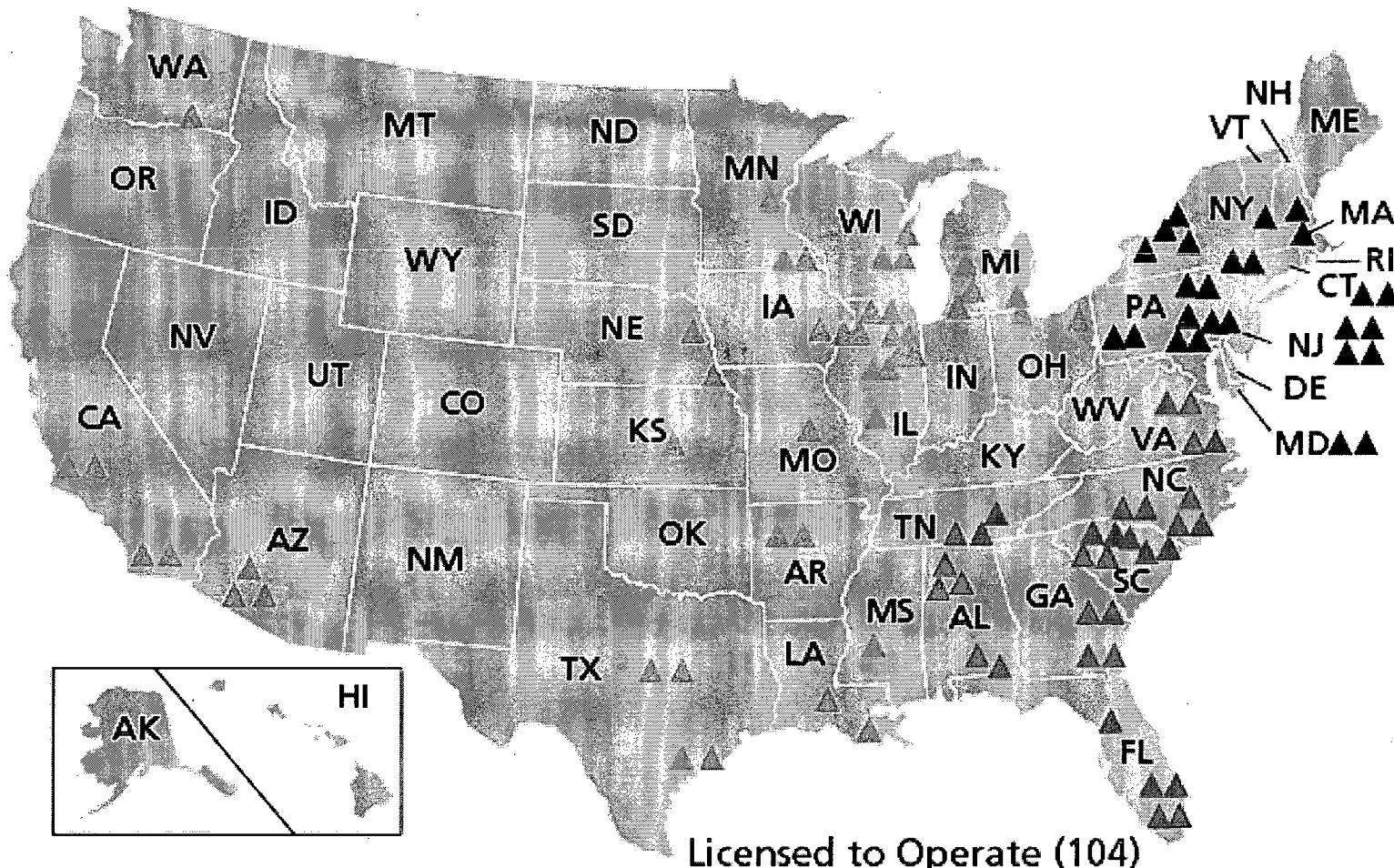
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United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Operating Commercial Power Reactors



# Protective Action Recommendations

- NRC Regulations have 2 Emergency Planning Zones (EPZs) 10/50 miles
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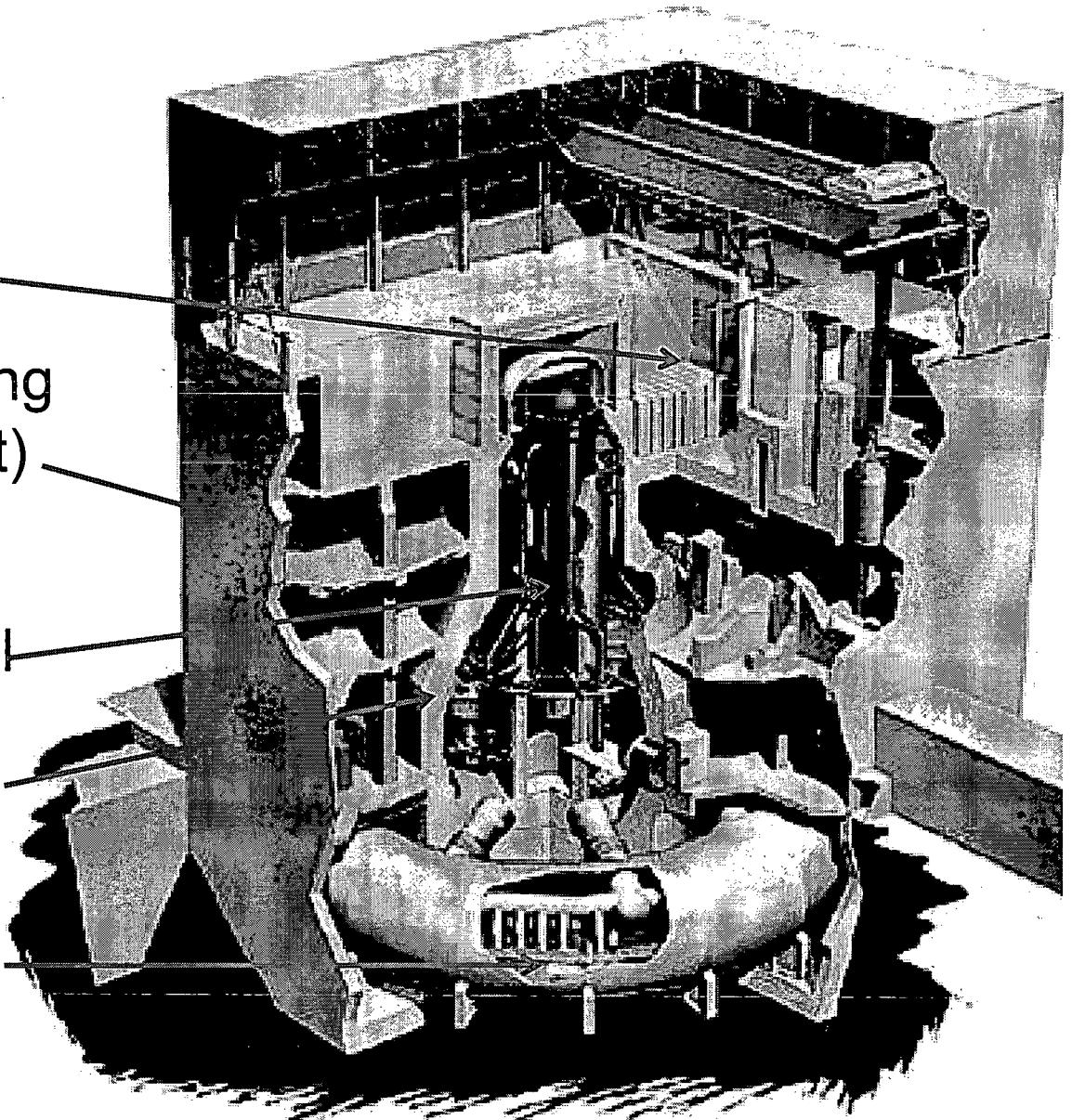


United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# BWR Mark I

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- ▶ Reactor Pressure Vessel
- ▶ Containment (Drywell)
- ▶ Containment (Wet Well)



- ▶ Reactor Service Floor  
(Steel Construction)

Spent Fuel Pool

- ▶ Concrete Reactor Building  
(secondary Containment)

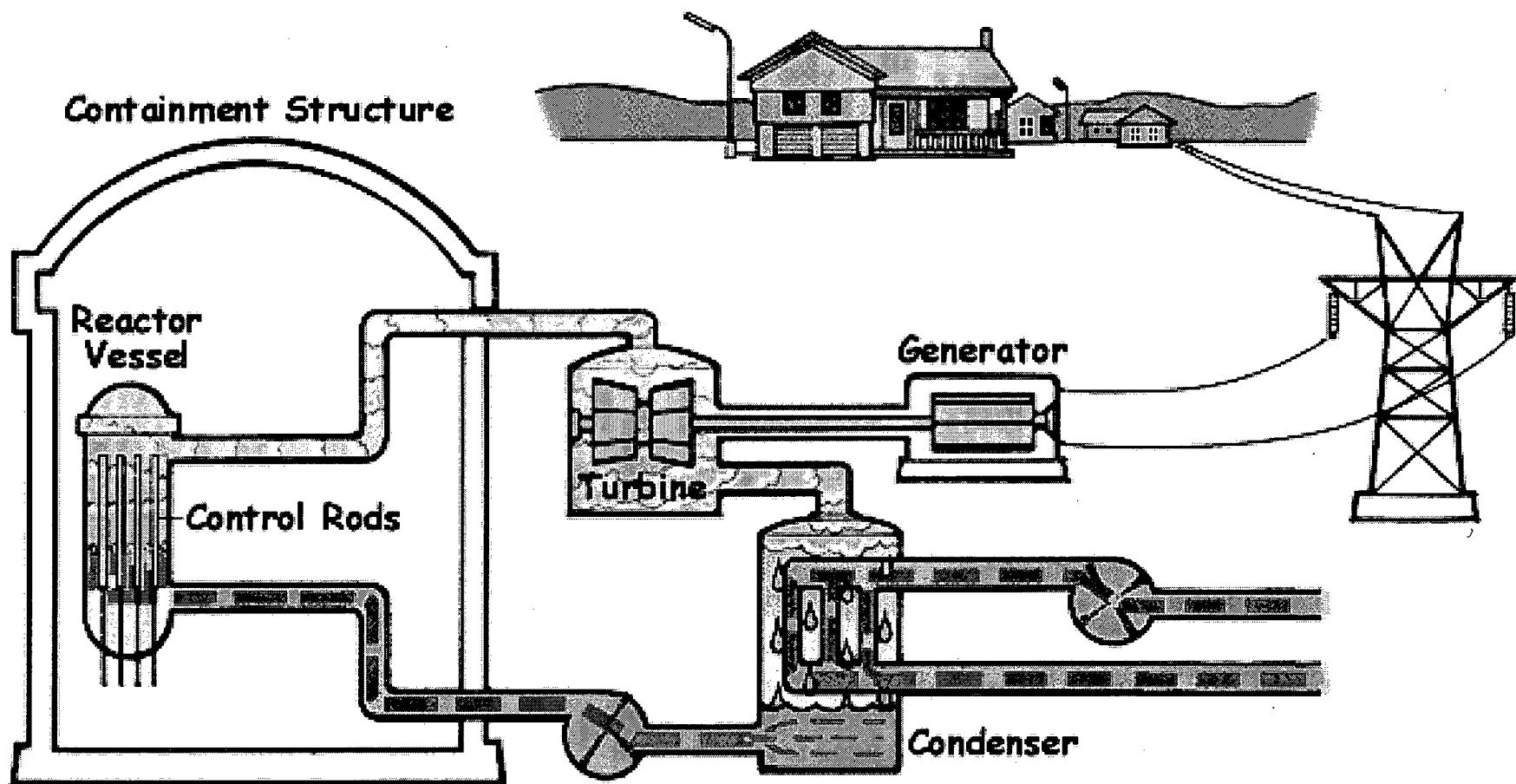
- ▶ Reactor Core

- ▶ Reactor Pressure Vessel

- ▶ Containment (Dry well)

- ▶ Containment (Wet Well)

# Generic BWR



**From:** Hayden, Elizabeth  
**To:** WebContractor Resource  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Tuesday, April 12, 2011 4:39:00 PM  
**Attachments:** NRR Presentation on Fukushima- April 2011 ppt.pptx

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*Beth Hayden  
Senior Advisor  
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301-415-8202  
elizabeth.hayden@nrc.gov*

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**Sent:** Tuesday, April 12, 2011 3:42 PM  
**To:** Hardy, Sally  
**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx

Please add this as last bullet in the right-hand box of current Japan Page. Also, move up bullets under "**FAQ**" so there's not so much space.

*GIGIGI / 158*



United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Presentation on Fukushima

Eric Leeds, Director

Office of Nuclear Reactor Regulation  
(NRR)



## NRC Mission – What Do We Do?

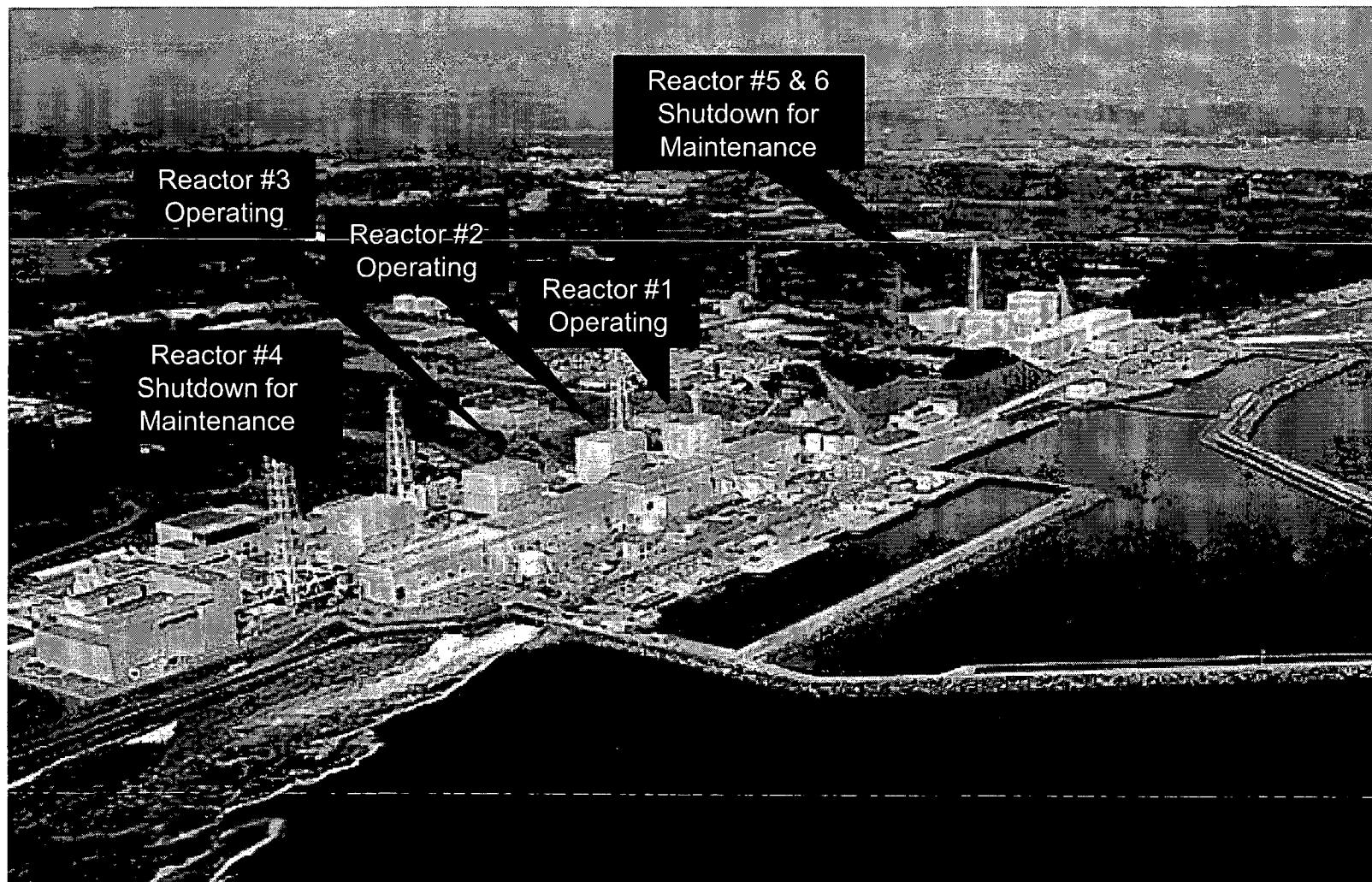
- The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to **protect public health and safety, promote the common defense and security, and protect the environment.**

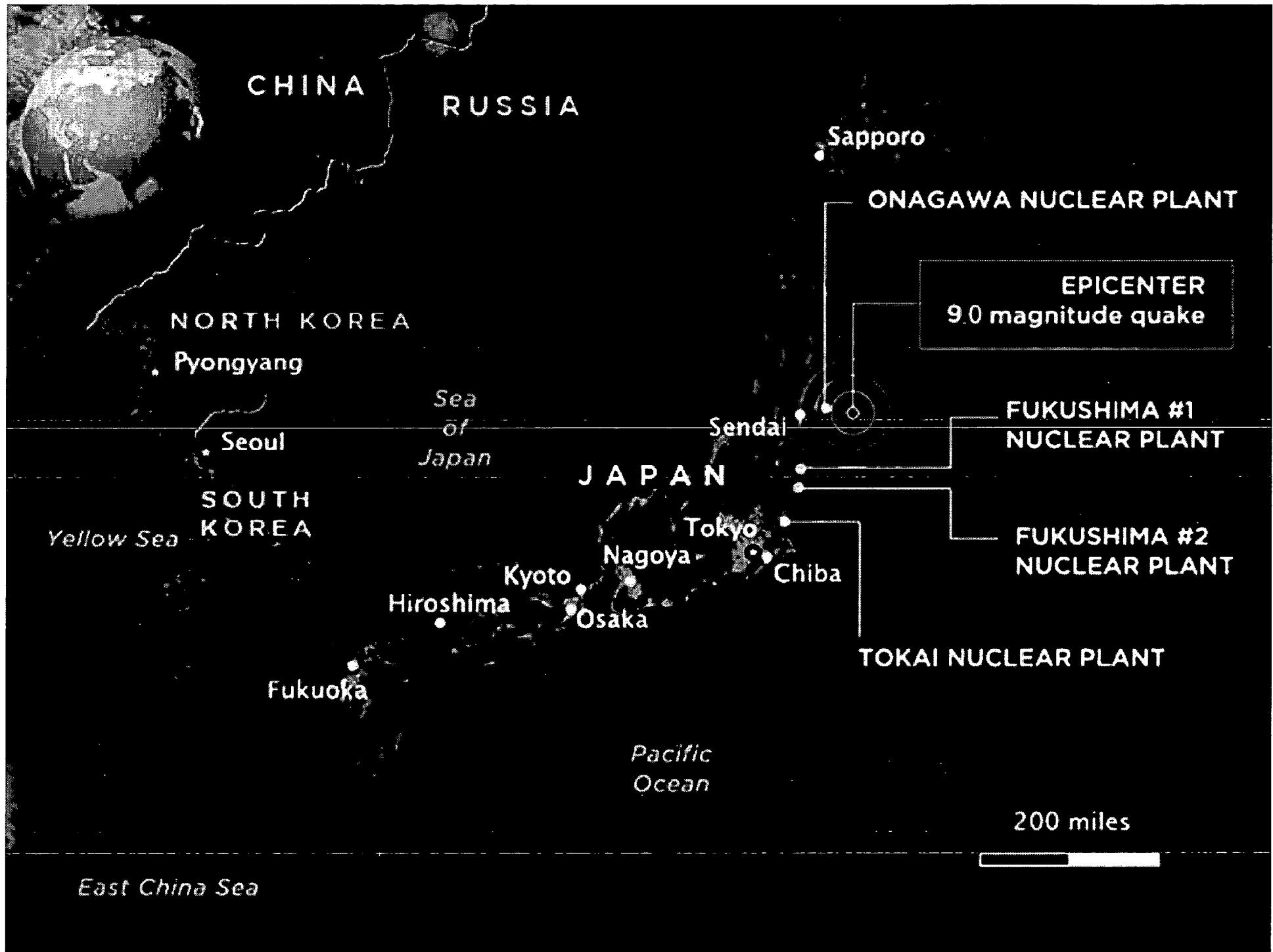


United States Nuclear Regulatory Commission

*Protecting People and the Environment*

# Overview of Fukushima Daiichi Nuclear Power Station







# Earthquake & tsunami sequence of events

Friday March 11<sup>th</sup> @ 2:36 pm local

- Magnitude 9.0 earthquake 231 miles northeast of Tokyo.
- Quake is fifth largest in the world (since 1900).
- Earthquake generated a 14m Tsunami



# Plant Response

## Earthquake

- Earthquake Caused Automatic Shutdown of 3 Operating Units
- Offsite Power Lost
- Initial indications were that Emergency Diesels operated

## 14m Tsunami (less than 1 hour later)

- All Emergency Back-up Power Lost
- 8-10 hours later Station Batteries Depleted



United States Nuclear Regulatory Commission

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- Current status of the Reactors
  - Core Damage in Unit 1,2, 3
  - Electrical Power Restored
  - Fresh Cooling Water supplied to
    - All Units
- Spent Fuel Pool Status
  - Suspect Fuel Damage in
    - Pools 3 & 4
  - Providing periodic make up water



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## NRC Response

- Ops Center 24/7
- Team of experts to Tokyo
- Support to U.S. Ambassador and Japanese
- Coordinating Environmental Monitoring with DOE & EPA



## Domestic Considerations

- Harmful Levels of Radiation Not Expected in the U.S.
- U.S. Plants Designed for External Events
- U.S. Industry Initiated Review
- NRC has initiated additional inspections at all U.S. Plants
- NRC conducting Near-Term and Long-Term Reviews.



## NRC Near Term Actions

- Evaluate Fukushima Daiichi Events
- Domestic Operating Reactors and Spent Fuel Pools
  - External Events
  - Station Blackout
  - Severe Accident Mitigation
  - Emergency Preparedness
  - Combustible Gas Control
- Near Term Review due in 90 days (mid July)



## NRC Longer Term Actions

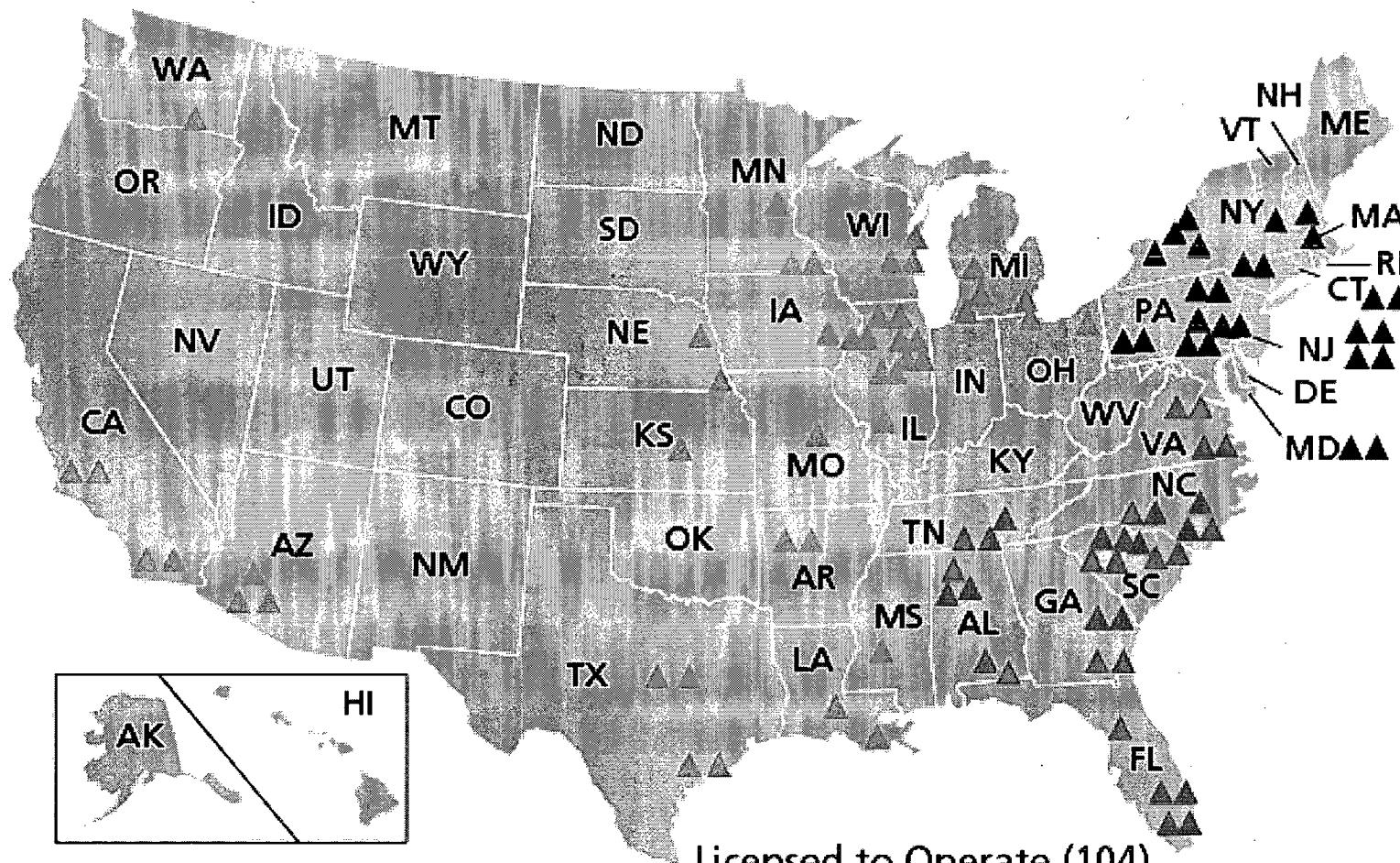
- Based on Near Term Review and Additional Insights from Fukushima Event
- Identify Potential Technical and Policy Issues
  - Research Activities
  - Generic Issues
  - Reactor Oversight Process
  - Regulatory Framework
  - Interagency Emergency Preparedness



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# Operating Commercial Power Reactors



# Protective Action Recommendations

- NRC Regulations have 2 Emergency Planning Zones (EPZs) 10/50 miles
- EPZs are not limits, but frameworks that allow for expansion as needed
- 50 miles in Japan due to extraordinary situation
  - 4 units severely challenged
  - Unclear information as to state of reactors, mitigative strategies, radiological releases
  - Decision to evacuate conservative, better to err on conservative
- Precautionary evacuation occurred days before fuel melt.

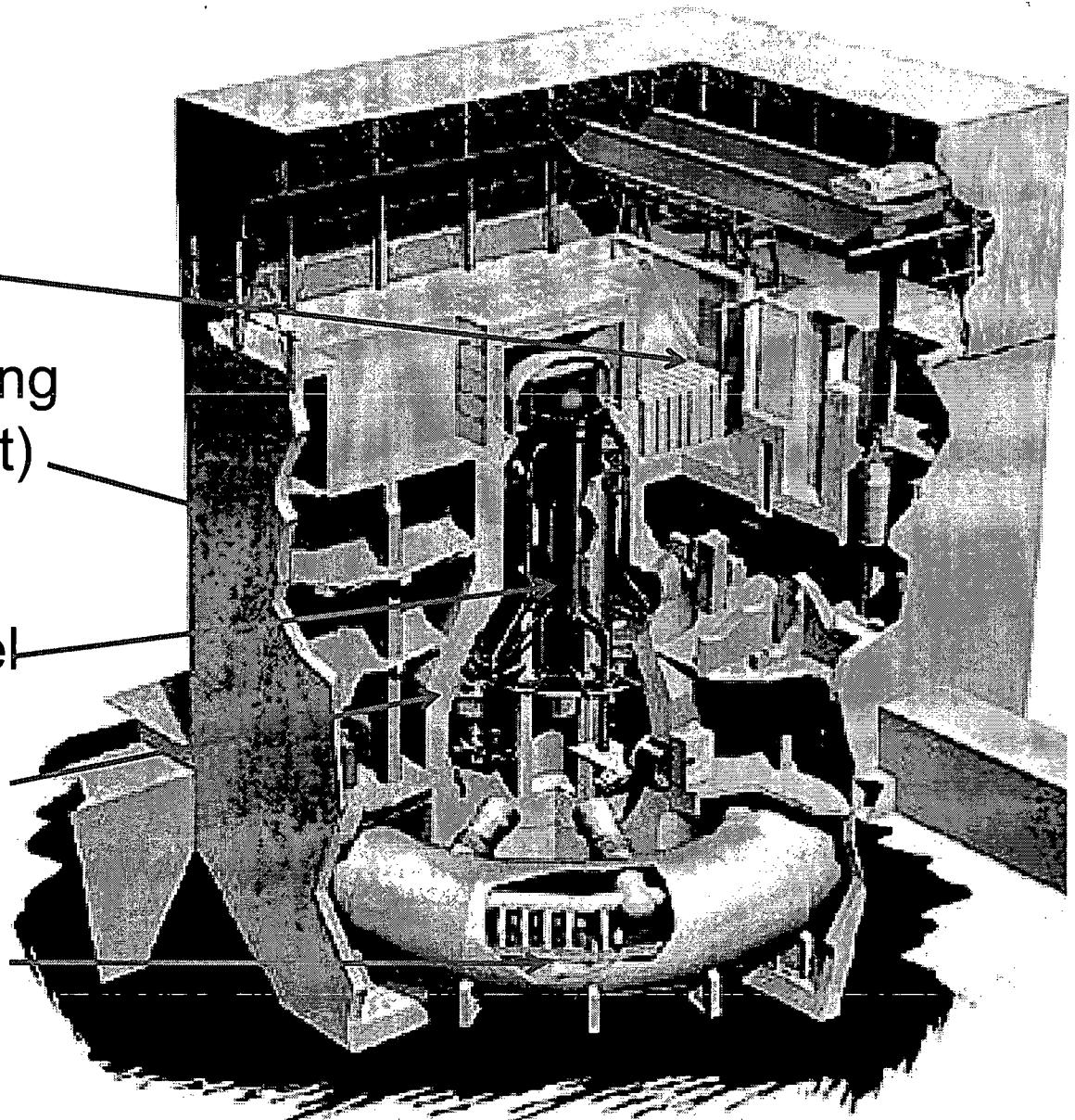


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# BWR Mark I

- ▶ Spent Fuel Pool
- ▶ Concrete Reactor Building  
(secondary Containment)
- ▶ Reactor Pressure Vessel
- ▶ Containment (Drywell)
- ▶ Containment (Wet Well)



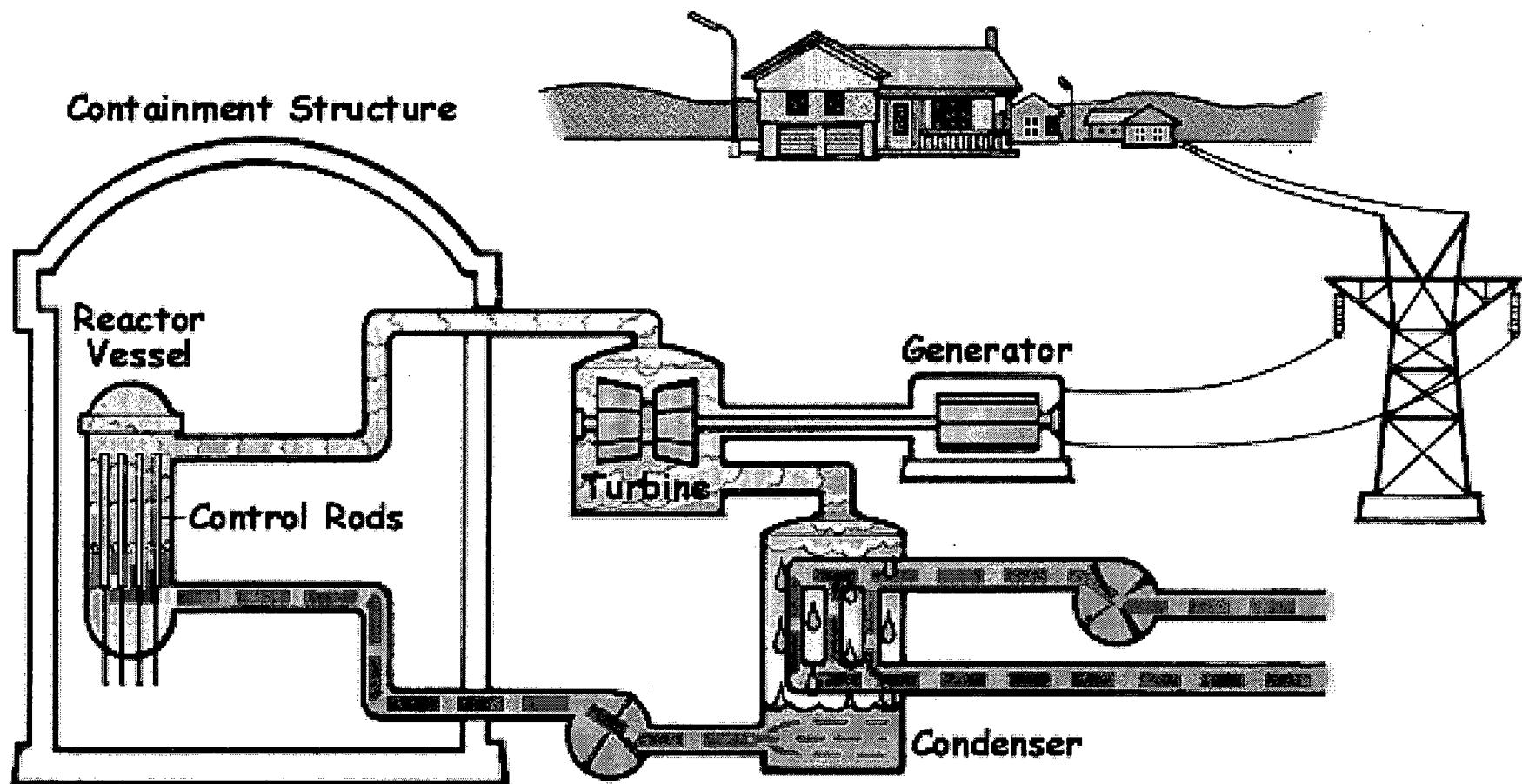


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- ▶ **Reactor Service Floor  
(Steel Construction)** →
  - ▶ **Concrete Reactor Building  
(secondary Containment)** →
  - ▶ **Reactor Core** →
  - ▶ **Reactor Pressure Vessel** →
  - ▶ **Containment (Dry well)** →
  - ▶ **Containment (Wet Well)** →
- Spent Fuel Pool →

# Generic BWR



**From:** Hayden, Elizabeth  
**To:** Hardy, Sally  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx  
**Date:** Tuesday, April 12, 2011 3:44:00 PM

---

Title of bullet should be **Presentation on Fukushima**

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

---

**From:** Hardy, Sally  
**Sent:** Tuesday, April 12, 2011 3:44 PM  
**To:** Hayden, Elizabeth  
**Subject:** RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Something is going on with the server we are looking into that now. Pages are loading really slow for some reason...I'll let you know when its back up

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 3:42 PM  
**To:** Hardy, Sally  
**Subject:** NRR Presentation on Fukushima- April 2011 ppt.pptx

Please add this as last bullet in the right-hand box of current Japan Page. Also, move up bullets under "**FAQ**" so there's not so much space.

I can't bring up the test page.

6666/159

**From:** Wertz, Trent  
**To:** Hayden, Elizabeth  
**Subject:** Presentation  
**Date:** Tuesday, April 12, 2011 2:58:22 PM  
**Attachments:** Presentation to NGA (Energy Panel) April 2011.ppt.pptx

---

Beth,

Here it is. Let me know if you have any questions.

Trent L. Wertz  
Technical Assistant  
Office of Nuclear Reactor Regulation  
301-415-1568  
trent.wertz@nrc.gov

GGGG/160



# **Presentation on Fukushima to NGA Center for Best Practices**

Eric Leeds, Director  
Office of Nuclear Reactor Regulation  
(NRR)



## NRC Mission – What Do We Do?

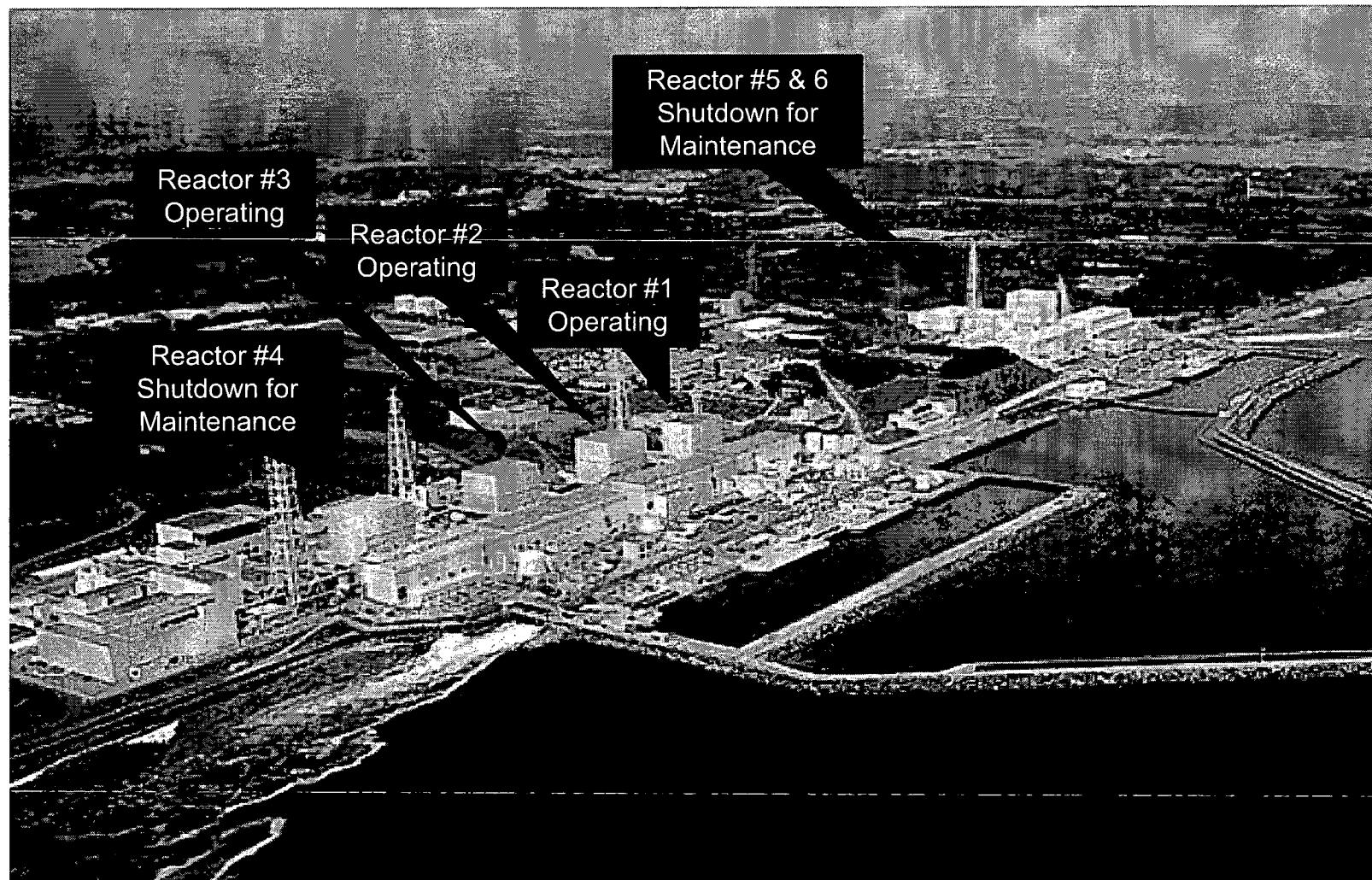
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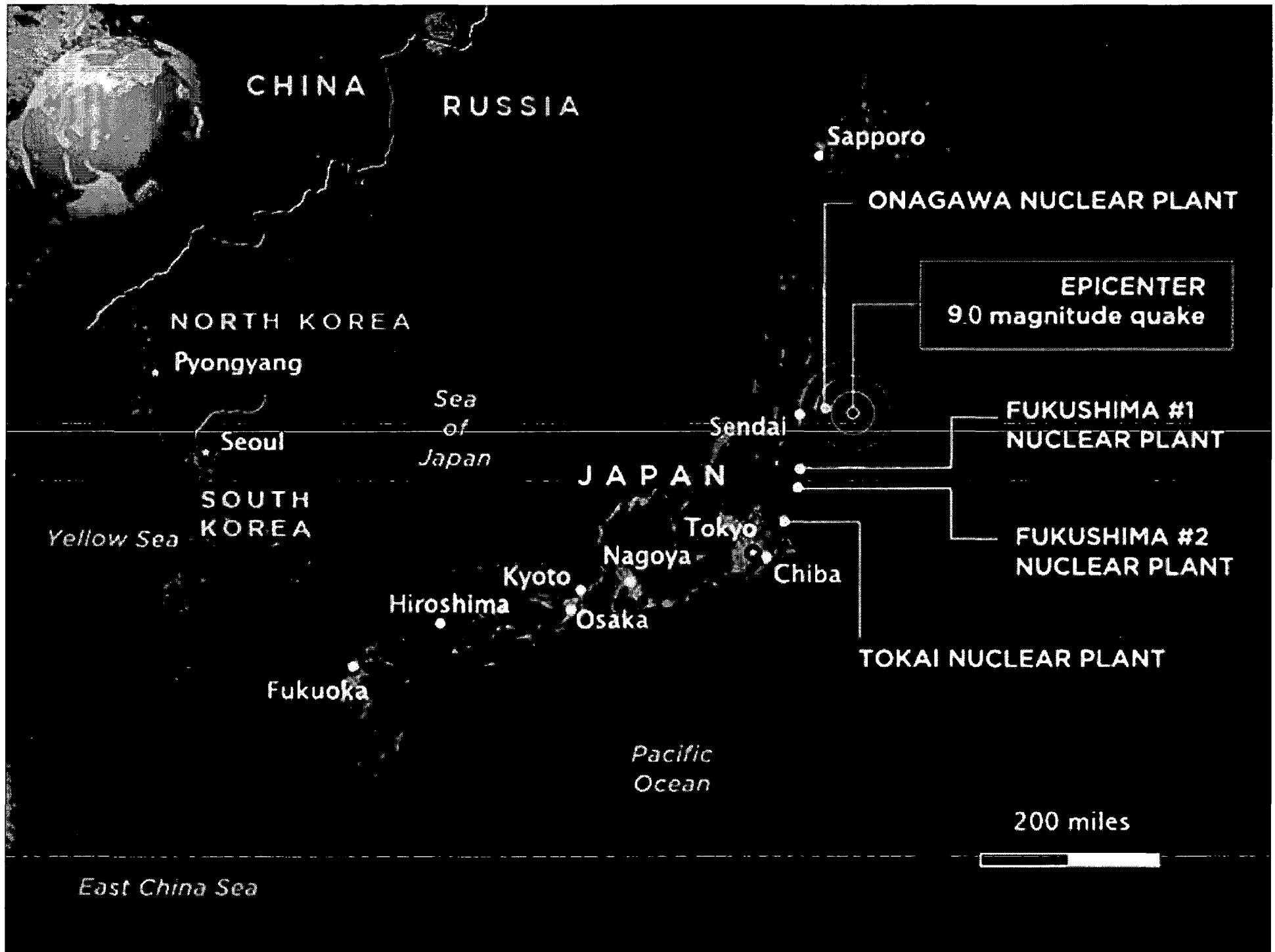


United States Nuclear Regulatory Commission

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# Overview of Fukushima Daiichi Nuclear Power Station







United States Nuclear Regulatory Commission

*Protecting People and the Environment*

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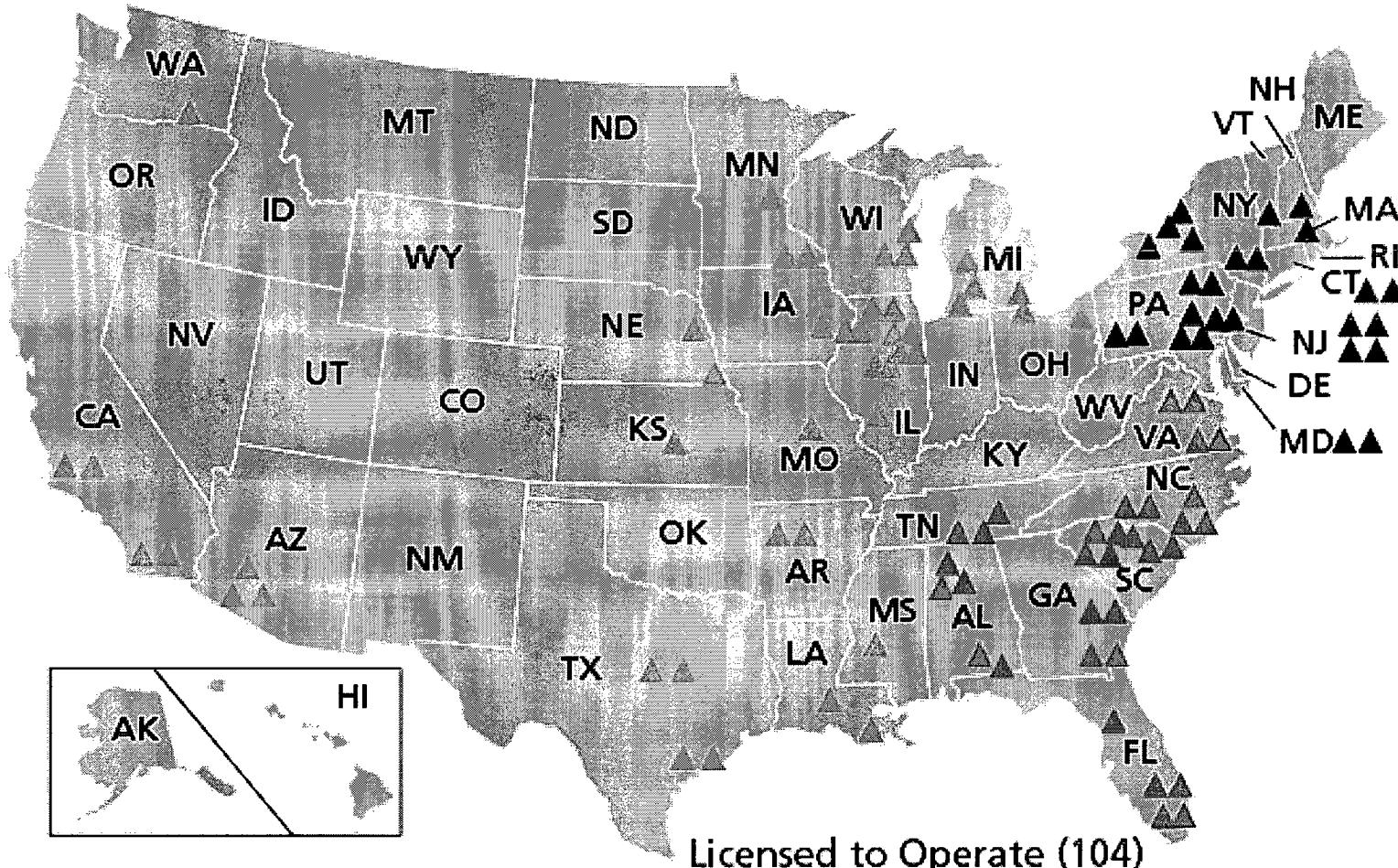
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  - Generic Issues
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  - Regulatory Framework
  - Interagency Emergency Preparedness



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# Operating Commercial Power Reactors





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# Questions?

# PARS

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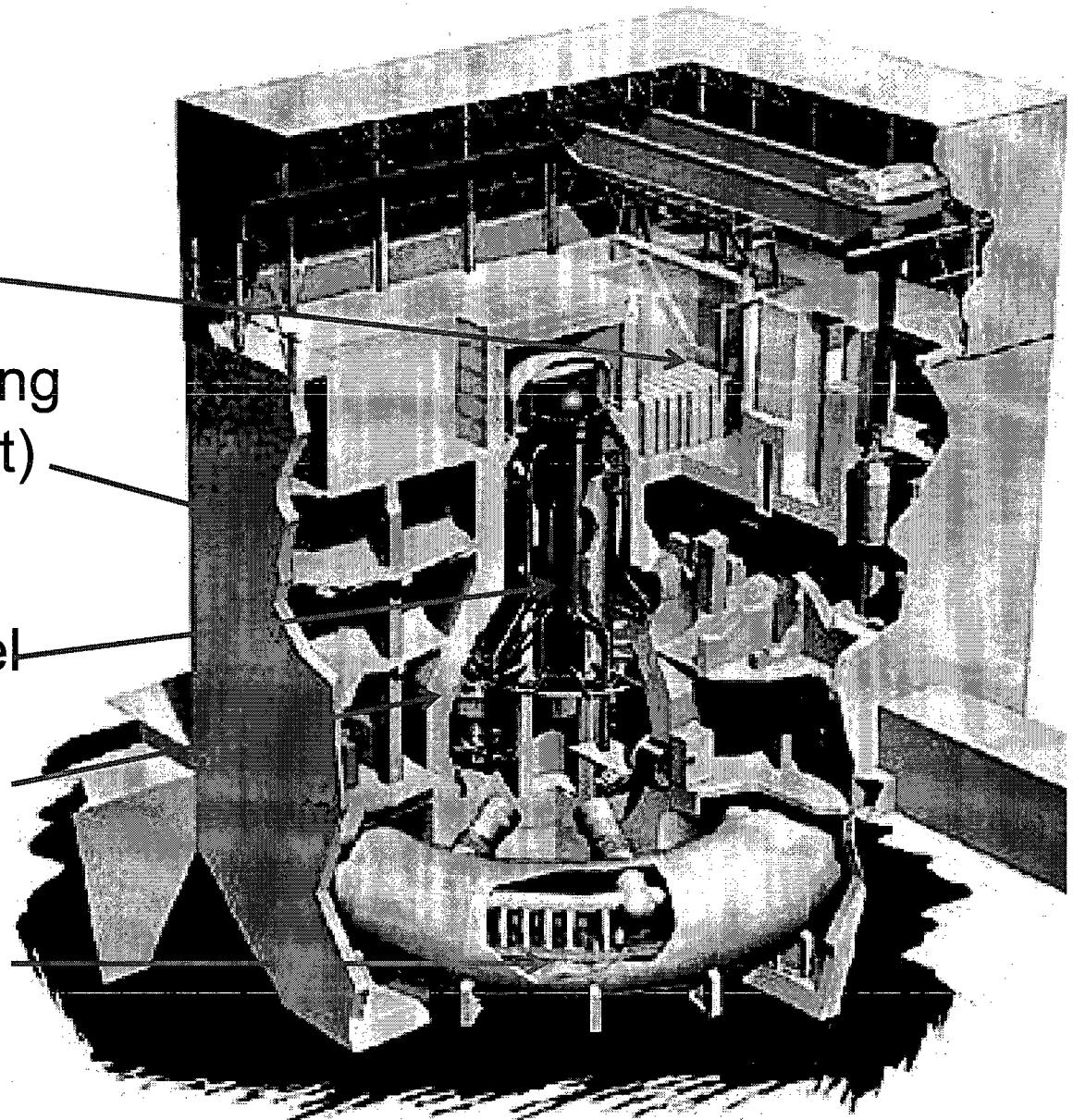


United States Nuclear Regulatory Commission

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# BWR Mark I

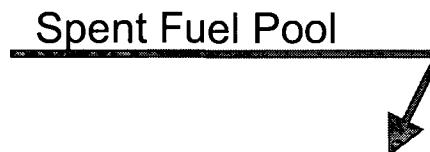
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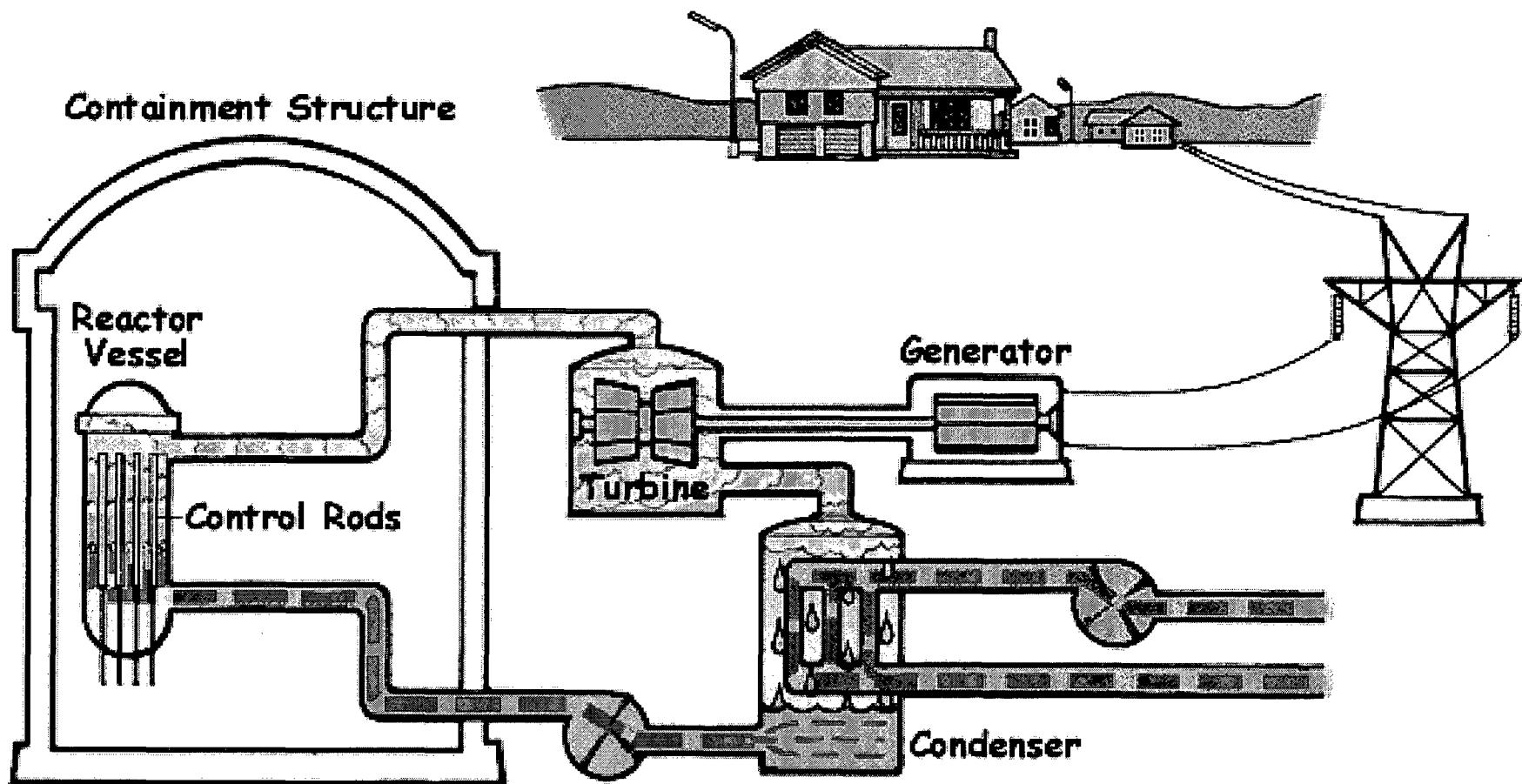


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(Steel Construction) 
  - ▶ Concrete Reactor Building  
(secondary Containment) 
  - ▶ Reactor Core 
  - ▶ Reactor Pressure Vessel 
  - ▶ Containment (Dry well) 
  - ▶ Containment (Wet Well) 
- Spent Fuel Pool 

# Generic BWR

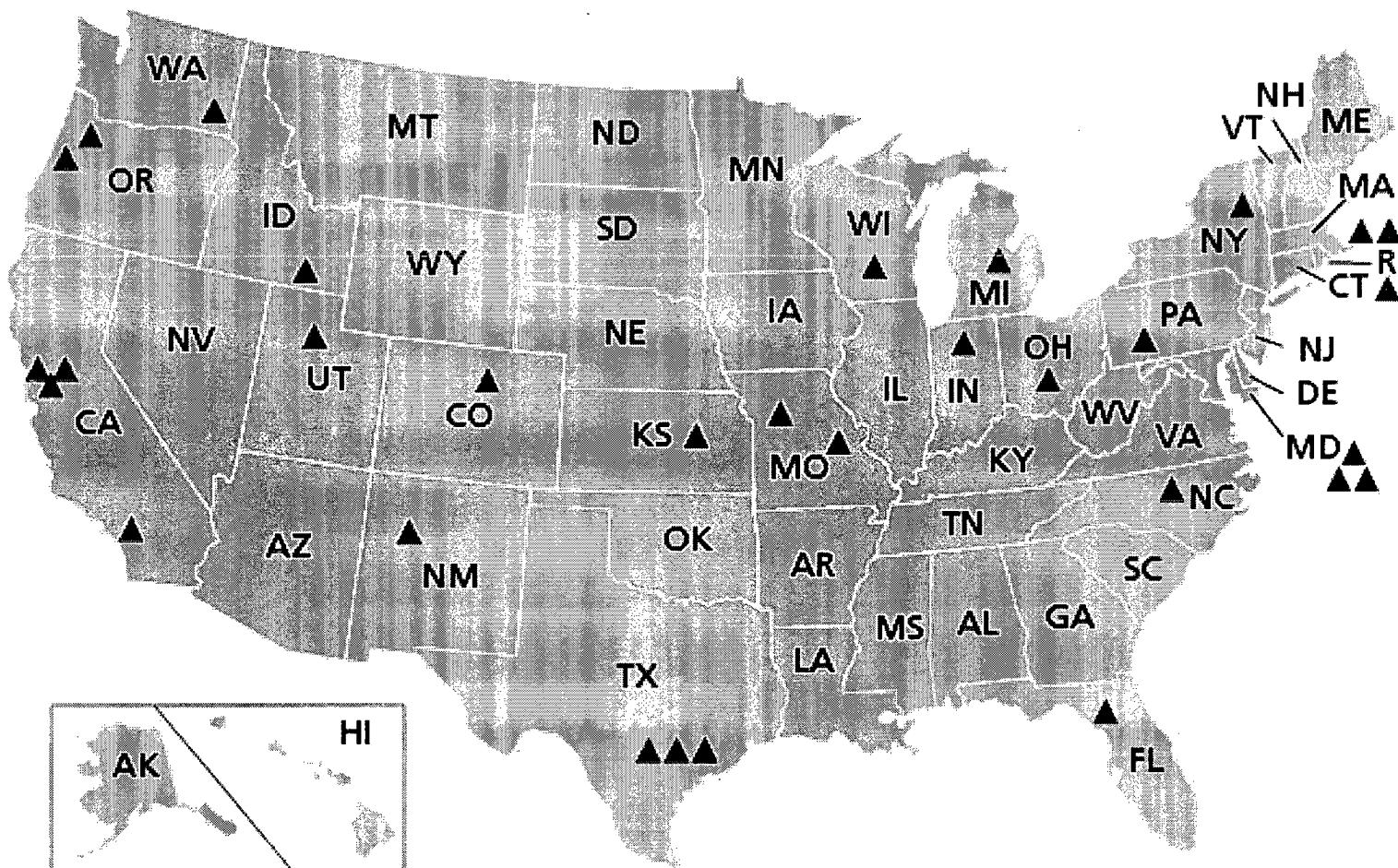




United States Nuclear Regulatory Commission

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## Research and Test Reactors



▲ Licensed/Currently Operating (31)

**From:** Reiter, Stuart  
**To:** Goldberg, Francine; Hayden, Elizabeth; Landau, Mindy; Harrington, Holly; Leong, Edwin  
**Subject:** OGD Advisory Grp Meeting -4-12-2011 agenda & notes.docx  
**Date:** Tuesday, April 12, 2011 1:21:56 PM  
**Attachments:** OGD\_Advisory\_Grp\_Meeting\_-4-12-2011\_agenda\_&\_notes.docx

---

Draft of meeting notes, please let me have any comments Thursday, I'll then finalize.

Txs Stu

6/6/16

**Draft**  
**NRC - Open Government Advisory Group**  
**Meeting on April 12, 2011 / 10:00 – 11:00– OPA Conf. Rm.**  
**Agenda & Notes**

1. Update on Data Inventory/Dataset download statistics – Edwin  
Data widgets/mash-up – Proposed sol'n strategy + Demo

Edwin provided March's download statistics. The high number for the plant inspection reports (132 downloads) was attributed to both the event in Japan, and the dataset being highlighted on the Data.gov home page.

Fran raised the question of an appropriate measure to assess the usefulness of the published datasets (i.e. are they viewed as high-value?). The suggestion was to track usage overtime to get a sense of usage trends. Edwin will work with Fran to determine means.

Edwin demonstrated the widgets/mash-up demo.

2. Participation in Socrata Pilot? – Stu/Edwin

It was agreed that NRC should take advantage of the opportunity to participate in the GSA sponsored Socrata pilot. The datasets suggested by Fran and Edwin were also thought to be suitable for use in the pilot.

1. Reactor Event Notification Report
2. Reactor Status
3. Power Reactors
4. Expected New Nuclear Power Plant Applications

Stu and Edwin will follow-up with Socrata, and Stu will share the Socrata video with Attendees.

3. Update on Enforcement dataset publication – Edwin

OE is targeting for publication in May. The ability to have events grouped by severity was discussed, Edwin will follow-up with OE.

4. Highlights from Agency Reported 1<sup>st</sup> Year Accomplishments – Stu

It was agreed that the first anniversary assessment NRC provided OMB should be added to the NRC/Open site, and, if possible, to have it easily findable.

Stu will complete a summary of other agency 1<sup>st</sup> year self-assessments to flesh out "good ideas" and for future discussion/sharing with agency management.

**From:** [NEWS Administration](#)  
**To:** [NEWS.Contact-Point@iaea.org](mailto:NEWS.Contact-Point@iaea.org)  
**Subject:** New ERF on NEWS, INES Rating: 5, Japan, Power Reactor  
**Date:** Tuesday, April 12, 2011 12:21:12 AM

---

Dear NEWS User,

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

"The core damage by loss of all cooling function due to the big tsunami."

has as of today, Tuesday, 12 April 2011, 05:32:39 UTC, been added to the NEWS Web site. Additional information regarding the ERF is as follows:

Country: Japan  
Location/Facility: FUKUSHIMA-DAIICHI-3  
Event Type: Power Reactor  
Event Date: 2011.03.11

Rating Date: 2011.03.18  
ERF Version: Provisional  
INES Rating Level: 5

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

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

NEWS Administration

6666/162

**From:** Janney, Margie  
**To:** Goldberg, Francine  
**Cc:** Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Leong, Edwin; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur  
**Subject:** RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events  
**Date:** Tuesday, April 12, 2011 4:27:35 PM

---

Fran,

I spoke with Anna McGowan about the following Action Item:

"Can we get an electronic copy of documents that are digitized for the public by the PDR contractor? May need to modify the contract. (IRSD)"

Anna said that we can get an electronic copy, but the issue is that there needs to be a SUNSI review performed by the program office prior to its being added to ADAMS. The Technical Library has digitized many NUREGs, but has been unable to add them to ADAMS because the program offices don't have time to perform the SUNSI reviews. The same problem exists for the following Action Item:

"Add backfit of pre-1995 enforcement actions and other information about safety infractions and associated penalties (OE) on top priority for digitization. Add the older enforcement actions to the associated document collection page. Chris Holtz is OE contact. (IRSD)"

I have not contacted OE yet to see if they are willing/have the time to perform the SUNSI review.

Thoughts?

-Margie

---

**From:** Goldberg, Francine  
**Sent:** Friday, April 08, 2011 5:20 PM  
**To:** Janney, Margie  
**Cc:** Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Leong, Edwin; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur  
**Subject:** RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events

Thanks, Margie. I've made a few changes to the attached version.

Fran

Francine.Goldberg@nrc.gov

(301) 415-6921 (O)

NRC Operator - Best way to reach me on Mondays and Wednesdays

---

**From:** Janney, Margie  
**Sent:** Friday, April 08, 2011 4:18 PM  
**To:** Goldberg, Francine  
**Cc:** Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Leong, Edwin; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur

666/163

**Subject:** Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events

Fran,

Attached is the list of actions items that I identified from this morning's meeting on what we can do from an Open Government standpoint to facilitate proactively putting information out to the public in response to the FOIA requests on the Japan events.

I may have missed some action items; feel free to add any!

-Margie

Margie Janney, CRM/NS  
Deputy Director  
Information and Records Services Division  
Office of Information Services  
U.S. Nuclear Regulatory Commission  
301-415-7245  
[margie.janney@nrc.gov](mailto:margie.janney@nrc.gov)

**From:** [WebContractor Resource](#)  
**To:** Hayden, Elizabeth  
**Subject:** RE: Addition to Japan page  
**Date:** Tuesday, April 12, 2011 5:27:54 PM

---

Is this the testimony you're looking to post?

<http://pbadupws.nrc.gov/docs/ML1110/ML111020070.pdf>

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:27 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Don't know. Nancy Belmore, OCA is responsible for getting testimony posted.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:27 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

What's the ML number for this?

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:24 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Chairman's Testimony on the Fukushima Nuclear Plant Accident, April 12, 2012

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202*

626262/164

*elizabeth.hayden@nrc.gov*

---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:22 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Beth,

What should the title be?

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:19 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Fine. Need to add the Chairman's testimony from today to the Japan page above Marty's testimony.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 4:51 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Good Afternoon Beth,

Please review and approve for live posting.

<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 4:47 PM  
**To:** WebWork Resource; WebContractor Resource  
**Cc:** Hardy, Sally  
**Subject:** Addition to Japan page

Please add Marty Virgilio's (April 6) testimony at  
<http://pbadupws.nrc.gov/docs/ML1109/ML110960045.pdf> at the top of the page under  
**Commission Activity Recent Activities**

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
301-415-8202  
elizabeth.hayden@nrc.gov*

**From:** Hardy, Sally  
**To:** Hayden, Elizabeth  
**Subject:** RE: Drafts for Japan page  
**Date:** Tuesday, April 12, 2011 10:12:47 AM

---

We will make the changes and send back to you to review one final time...we should also have a the facility page to you shortly to review...

Sally

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 9:58 AM  
**To:** Hardy, Sally  
**Subject:** RE: Drafts for Japan page

Let's go with the first one—only a few changes/questions:

Change **Commission Activity** to **Recent Activities** (since we will be posting Marty Virgilio's Cong. Statement.

Change the title (and what's listed on home page) to: **Japan Nuclear Accident – NRC Actions**

Can we delete the link underneath each activity, and just link the individual word or the whole phrase, thereby removing one line?

Change the link for March 21 Comm Meeting to: <http://www.nrc.gov/reading-rm/doc-collections/commission/tr/2011/>

For News Releases, remove number of press release and follow date with title; maybe put number in parenthetical at end of title.

Put Blog between the other 2 boxes on the right—as you can see, when the blog deals with a non-Japan subject, it is rather weird at the top.

*Beth Hayden  
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U.S. Nuclear Regulatory Commission  
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elizabeth.hayden@nrc.gov*

---

**From:** Hardy, Sally  
**Sent:** Monday, April 11, 2011 3:34 PM  
**To:** Hayden, Elizabeth  
**Subject:** Drafts for Japan page

Beth

*G1 G2 G3 / 165*

Keeping within the standards that data federal came up with, here is what we have drafted on the Japan page, let me know if you like any of these:

<http://nrcweb:400/japan/japan-info7.html>

<http://nrcweb:400/japan/japan-info6.html>

<http://nrcweb:400/japan/japan-info1.html>

<http://nrcweb:400/japan/japan-info5.html>

Thanks

Sally

We are also working on the Facility page....

**From:** Hardy, Sally  
**To:** Hayden, Elizabeth  
**Subject:** RE: Drafts for Japan page  
**Date:** Tuesday, April 12, 2011 11:29:16 AM

---

Take a look at the Japan page = <http://nrcweb:400/japan/japan-info7.html>

And also we have drafted a new look for the Facility page, see if this makes more sense:

<http://nrcweb:400/info-finder-draft.html>

Let me know if you have any additional edits/comments.

Thanks  
Sally

---

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**Sent:** Tuesday, April 12, 2011 9:58 AM  
**To:** Hardy, Sally  
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*Beth Hayden  
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301-415-8202  
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666/166

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**To:** Hayden, Elizabeth

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<http://nrcweb:400/japan/japan-info1.html>

<http://nrcweb:400/japan/japan-info5.html>

Thanks

Sally

We are also working on the Facility page....

**From:** [LIA07 Hoc](#)  
**To:** [LIA07 Hoc](#)  
**Subject:** OOU -- 1200 EDT (April 13, 2011) USNRC Earthquake-Tsunami Update  
**Date:** Wednesday, April 13, 2011 12:12:59 PM  
**Attachments:** [USNRC Earthquake-Tsunami Update.041311.1200EDT.pdf](#)

---

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)

6 6 6 6 / 167

**From:** [WebContractor Resource](#)  
**To:** Hayden, Elizabeth  
**Cc:** Edmond, Michael  
**Subject:** RE: Addition to Japan page  
**Date:** Wednesday, April 13, 2011 8:07:23 AM

---

Good Morning Beth,

This has been posted. I also added to the Chairman's Testimony page:  
<http://webwork.nrc.gov:300/about-nrc/organization/commission/comm-gregory-jaczko/testimony-speeches.html#testimony>

Please approve for posting.

Thank You,  
*David*  
Web Team

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:43 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Yes. It needs to go on the congressional testimony page, too.

*Beth Hayden  
Senior Advisor  
Office of Public Affairs  
U.S. Nuclear Regulatory Commission  
--- Protecting People and the Environment  
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elizabeth.hayden@nrc.gov*

---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:28 PM  
**To:** Hayden, Elizabeth  
**Subject:** RE: Addition to Japan page

Is this the testimony you're looking to post?

<http://pbadupws.nrc.gov/docs/ML1110/ML111020070.pdf>

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**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:27 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Don't know. Nancy Belmore, OCA is responsible for getting testimony posted.

666/16 8

*Beth Hayden  
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---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:27 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

What's the ML number for this?

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:24 PM  
**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Chairman's Testimony on the Fukushima Nuclear Plant Accident, April 12, 2012

*Beth Hayden  
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---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 5:22 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Beth,

What should the title be?

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 5:19 PM

**To:** WebContractor Resource  
**Subject:** RE: Addition to Japan page

Fine. Need to add the Chairman's testimony from today to the Japan page above Marty's testimony.

*Beth Hayden  
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---

**From:** WebContractor Resource  
**Sent:** Tuesday, April 12, 2011 4:51 PM  
**To:** Hayden, Elizabeth  
**Cc:** WebWork Resource  
**Subject:** RE: Addition to Japan page

Good Afternoon Beth,

Please review and approve for live posting.

<http://webwork.nrc.gov:300/japan/japan-info.html>

Thank you,  
Michael

---

**From:** Hayden, Elizabeth  
**Sent:** Tuesday, April 12, 2011 4:47 PM  
**To:** WebWork Resource; WebContractor Resource  
**Cc:** Hardy, Sally  
**Subject:** Addition to Japan page

Please add Marty Virgilio's (April 6) testimony at  
<http://pbadupws.nrc.gov/docs/ML1109/ML110960045.pdf> at the top of the page under  
**Commission Activity Recent Activities**

*Beth Hayden  
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**From:** [Bulletin News](#)  
**To:** [NRC-editors@bulletinnews.com](mailto:NRC-editors@bulletinnews.com)  
**Subject:** NRC News Summary for Wednesday, April 13, 2011  
**Date:** Wednesday, April 13, 2011 7:05:06 AM  
**Attachments:** [NRCSummary110413.doc](#)  
                  [NRCSummary110413.pdf](#)  
                  [NRCClips110413.doc](#)  
                  [NRCClips110413.pdf](#)

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This morning's Nuclear Regulatory Commission News Summary and Clips are attached.

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GGGG/169



# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

WEDNESDAY, APRIL 13, 2011 7:00 AM EDT

[WWW.BULLETINNEWS.COM/NRC](http://WWW.BULLETINNEWS.COM/NRC)

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## NRC NEWS:

**NRC Chairman Offers New Theory Of Hydrogen Explosions.** The New York Times (4/13, A6, Wald, Subscription Publication, 950K) reports NRC Chairman Gregory Jaczko told the Senate Environment and Public Works Committee Tuesday that the "condition of the damaged Fukushima Daiichi reactors in Japan is 'static,' but with improvised cooling efforts they are 'not stable.'" He added, "We don't see significant changes from day to day," but said the risk of major additional releases is decreasing. The Times adds that Jaczko offered a new theory about the explosions that destroyed several Fukushima reactors' secondary containment structures. He said the explosions may have been caused by hydrogen created in the spent-fuel

pools. "If true, that would mean that the introduction of hardened vents at reactors at nuclear plants in the United States — cited as an improvement that would prevent such an explosion from happening — would not in fact make any difference."

NRC Chairman Gregory Jaczko appeared on CNN's Piers Morgan Tonight (4/13, 9:43pm) to discuss the Fukushima plant crisis, and how much risk there is to the US. He said, "Well, I want to be clear, Piers, there really is no risk from any of the radiation, having an impact on health and safety in the United States. And in Japan, we continue our efforts to support the Japanese government to really take what we think right now is basically a static situation, so there's not of change in the reactor condition right now, and trying to move that into what we're talking about is a stable situation. So something that can withstand some of the

changes and challenges at the site in a more permanent way."

USA Today (4/13, Dorell, 1.83M) added that Chairman Jaczko said the primary focus of the commission is to help Japanese authorities continue to cool the Fukushima Dai-ichi plant's nuclear reactors and spent-fuel pools, though problems persist. "Last night, they had an aftershock and had to remove people from the plant, and cooling was shut down for a period of time," he said. "We want to move to a situation where we don't lose cooling." According to a "rough analysis" of the radiation exposure in Japan, "excess cancers there will be roughly 10 to 100 times greater than with the Three Mile Island nuclear disaster, said Tom Cochran, senior scientist at the nuclear program of the Natural Resources Defense Council, an environmental group." Cochran said he expected there to be "about 100 times less" cases of cancer than the Chernobyl accident.

Reuters (4/13, Rampton) notes that Jaczko said the efforts continue to "transition from static to stable to ensure long-term ultimate ability to cool the reactors and to provide cooling to the spent fuel pools."

On its "E2-Wire" blog, The Hill (4/13, Restuccia, Geman, Cohn, 21K) reports that "Jaczko's comments come on the same day that Japanese officials raised the rating of the nuclear crisis to the highest level on the international scale. That's the same rating that the 1986 Chernobyl disaster received. Jaczko took only two quick questions from reporters after Tuesday's hearings and did not expand on his comments."

Kyodo News (4/13) reports, Jaczko said the "most important job at the plant remains to keep water in the spent fuel pools to cool the highly radioactive fuel rods." He also said that the NRC "has begun a two-pronged approach to review the safety of the 104 commercial US nuclear reactors in the aftermath of the Japanese crisis. A 90-day review should be completed in June, with another report expected by the end of the year."

Also offering coverage on the hearing are Reuters (4/13, Rampton), Buenos Aires Herald (4/13, 100K) and WDEL-Radio Delaware (4/13, Gerace).

KFOX-TV El Paso, TX (4/12, 9:37 p.m. MT, 40,089) reports that a Senate panel met today in Washington to examine "how prepared US nuclear plants are in the cause of multiple disasters." The NRC Chairman said that US plants are safe, "designed for the worst and have three or four levels of protection." However, "some say that's not enough." Sen. Barbara Boxer of California said we need to "do everything in our power to make" the plants safe. KFOX-TV added that the NRC plans to release a 90-day report on the Japanese Crisis this summer.

WKTV-TV Utica, NY (4/12, 11:28 p.m. ET, 13,878), WMGT-TV Macon, GA (4/12, 11:26 p.m. ET, 767) and over

30 other stations nationwide provided similar coverage throughout the day.

**Jaczko Discusses 10-Mile Evacuation Zone.** CNN (4/13, Barnett) reports, NRC Chairman Gregory Jaczko discussed the 10-mile evacuation zone around US nuclear power plants, especially in light of the NRC recommendation "that Americans in Japan stay at least 50 miles away from the damaged reactors." Jaczko said, "As we've seen in Japan, nuclear events tend to develop over a long period of time." He added that three weeks into the event, "we've had the time and the ability to make protective action recommendations, and to update and modify them as conditions of the plant changed." He said that the 10-mile zone is "really based around the idea of what do you need to have prepared right away so that if you have an event that develops quickly, you can address that and have prestaged and prepared what to do."

Bloomberg News (4/13, Lomax) reports that the NRC Chairman said the "US will study expanding the evacuation zones near power plants as part of the safety review triggered by Japan's reactor crisis," and he assured lawmakers the 10-mile zone "can 'go farther if necessary' should conditions worsen." The NRC "will consider revising the minimum evacuation zone 'as part of the review that we're doing,' Jaczko said."

**Jaczko Defends Monitoring Mode Authority.** In an "Ingenuity Of The Commons" blog entry for Forbes (4/13, 924K), Jeff McMahon writes that Sen. James Inhofe (R-Okla.) accused NRC Chairman Gregory Jaczko of "invoking emergency powers without cause and taking authority away from other members of the NRC." Inhofe said "Jaczko has evoked emergency authority and transferred commission functions to himself in the wake of the earthquake in Japan." Inhofe called for transparency and suggested Jaczko may have overstepped his authority. Jaczko said the "NRC went into 'monitoring mode' on March 11," allowing it to "deploy a 24-hour assistance team to Japan. ... 'That's an authority the chairman has.'"

E&ENews PM (4/13, Northey) reports Sen. Inhofe said NRC Chairman Jaczko "used emergency authority and transferred commission functions to himself in the wake of the Japanese events and failed to inform the committee," and said the "law confers emergency authority on the chairman in the wake of an emergency at a particular facility or materials regulated by NRC. But Inhofe said at present he is not 'aware that an emergency condition exists at any US facility.'" Jaczko said he has been "acting within his current authority, and NRC officials said Inhofe had sent a letter to the agency earlier expressing his concerns, although that letter has not yet been made public."

**Spent Fuel Storage Problems Spread Concerns About Nuclear Power.** McClatchy (4/13, Schoof) reports, "As Japan struggles with radioactive contamination from one of the world's worst nuclear accidents, American nuclear experts are watching for clues on how to make US nuclear power plants more resistant to the forces of nature or hostile attacks." US regulators cite a "stringent regulatory program, redundant security systems and improvements since" the Three Mile Island accident and the 9/11 terrorist attacks, but the Fukushima crisis has reenergized concerns about the "risks of US nuclear reactors," and the spent fuel pools in particular and according to David Lochbaum of the Union of Concerned Scientists, "The irrefutable bottom line is that we have utterly failed to properly manage the risk from irradiated fuel stored at our nation's nuclear power plants."

## NRC Files Brief On Oyster Creek Relicensing Challenge.

The Lacey (NJ) Patch (4/13, Miller) reports the NRC "asked a federal appellate court to deny a petition by a coalition of citizen groups to re-examine the relicensing of the Oyster Creek nuclear plant, in the wake of the nuclear mishaps in Japan." The NRC said in a brief to the court that no "safety, technical, or policy justification exists to single out particular reactors for different treatment, just because of their place in the licensing queue or status on judicial review." The NRC brief cites the "agency's 'Defense in Depth'" concept of redundant defenses against unanticipated events, and says the agency has "severe accident management guidelines, revisions to the emergency operating procedures and processes for dealing with large fires and explosions, regardless of the cause."

## NRC Investigating Cooper Station Workers Exposed To Radiation.

The AP (4/13) reports, "Federal inspectors are trying to find out why three maintenance workers were exposed to higher than expected radiation levels at Cooper Nuclear Station near Brownville in southeast Nebraska." According to the NRC, the "workers were exposed to unplanned radiation on April 3 at the power plant run by the Nebraska Public Power District," which told regulators it doesn't believe the exposure exceeded NRC limits. NRC regulators said the workers "didn't follow the proper procedure for removing a long tube contaminated with radioactive material from the reactor because the tube was taken out of the bottom of the reactor vessel instead of the top."

The Omaha World-Herald (4/12, Perez, 148K) reported NPPD spokesman Mark Becker, "said bioassay samples from the affected workers confirmed that they were not exposed to radiation levels that exceed the nuclear commission's safety limits." NRC inspectors' concerns "surround a 27-foot-long

stainless steel rod known as a 'shuttle tube' that is placed inside a nuclear plant's reactor vessel. ... NRC officials said the incident occurred when workers removed the tube — highly contaminated with radioactive material — through the bottom of the station's reactor vessel."

## Three Day Radiological Response Exercise Begins At San Onofre Station.

The AP (4/12, Schwartz) reports, "A month after the devastating earthquake and tsunami in Japan, local, state and federal officials are participating in a mock drill in Irvine involving a disaster scenario at California's San Onofre Nuclear Generating Station." The drill at "a cavernous Southern California Edison truck bay is held and evaluated by Federal Emergency Management Agency every other year" and "typically involves three days of a worsening radiological scenario at San Onofre in San Diego County or the Diablo Canyon nuclear plant in San Luis Obispo County."

On its "L.A. Now" blog, the Los Angeles Times (4/12, Barboza, 657K) reports San Onofre nuclear power plant operators "are starting a drill Tuesday to test the ability of the facility and local, state and federal agencies to respond to a radiological emergency." Nuclear emergency sirens will sound during the three-day drill, "which will be overseen and evaluated by state and federal disaster officials," said California Emergency Management Agency spokeswoman Tina Walker. "The simulation was long-scheduled and is required every two years at every commercial nuclear plant in the nation, officials said. But it has garnered more interest due to the Japanese nuclear crisis that followed last month's earthquake and tsunami."

The San Diego (CA) Union-Tribune (4/12, Soto) adds "Fake reporters gathered at the joint information center while officials stood at a podium announcing and fielding questions about an explosion, fire and radioactive leak at backup generating station at San Onofre." Thursday, "officials are expected to do more drills related to the aftermath of the disaster scenario, moving a week ahead in time and simulating how people would return to their homes." Friday, the NRC and FEMA "will discuss what they find at a public meeting."

The LAist (4/13) notes that a "public meeting is scheduled for Friday in San Juan Capistrano to review the initial findings."

The Los Angeles Daily Breeze (4/13, 66K) adds, Southern California Edison Gil Alexander "said Edison hopes the increased coverage of the drills will help calm some fears as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety about radioactive leaks. 'We're hopeful the news stories this week will show our extensive planning efforts,' Alexander said."

Similar coverage appeared on the Orange County (CA) Register (4/12).

On its website, KABC-TV Los Angeles (4/12) reported, "As for the plant itself, emergency shutdown procedures were ran through, and San Onofre's two radioactive fuel rods were being secured. The California Emergency Management Agency, or Cal EMA, coordinated the tests."

On its website, KCBS-TV Los Angeles (4/12) added, "There has never been a radiation leak at the 42-year-old facility, but FEMA and the Nuclear Regulatory Commission require emergency testing every two years."

On its website, KFMB-TV San Diego (4/12) adds, "The exercise, which is done every two years, is the San Onofre's most extensive that is monitored by the Federal Emergency Management Agency, Gil Alexander of SCE said. The main difference this year, Tina Walker of the state's Emergency Management Agency said, was the amount of interest shown by the news media. She called that a positive change."

KGET-TV Bakersfield, California (4/12) added, "The exercise was planned long before Japan's Fukushima Daiichi nuclear complex was crippled by a magnitude nine earthquake and tsunami."

**San Onofre Owner To Seek \$64 Million For Seismic Study.** Reuters (4/13, Groom) Southern California Edison is looking for \$64 million from the California Public Utilities Commission for seismic studies near San Onofre station. SCE said in a statement that it would file a funding request with the commission on April 15.

**Capps, Blakeslee Testify On Diablo Canyon Plant.** The San Luis Obispo (CA) Tribune (4/13, Snead) reports, "Some of the nation's top nuclear experts and two Central Coast lawmakers testified at a Senate hearing Tuesday in Washington, D.C., about what can be learned from the triple tragedy of a powerful earthquake, tsunamis and nuclear meltdown in Japan." At "Diablo Canyon, each reactor has three diesel generators with seven days' worth of fuel and enough batteries for eight hours." The "plant also has gravity-fed pools that can supply additional cooling water." But, Sen. Blakeslee, and Rep. Lois Capps, "renewed their pleas to the NRC to stop license renewal of Diablo Canyon until detailed seismic studies are done, peer reviewed and incorporated into the renewal process."

According to a news release (4/12) from Rep. Lois Capps' (CA-23) office, Capps "testified before the Senate Environment and Public Works Committee and expressed her concerns about safety at the Diablo Canyon Nuclear Power Plant. Capps also renewed her call to the Nuclear Regulatory Commission to stay the relicensing process pending the completion and peer-review of advanced seismic studies and 3-D mapping." State Senator Sam Blakeslee (R-San Luis Obispo) also spoke to the committee, "offering his perspective

as a state elected official and scientist with a PhD in seismic studies."

**Board Of Supervisors Wants Seismic Study Independently Reviewed.** The San Luis Obispo Tribune (4/13, Cuddy, 34K) reports, "PG&E's weekend letter to nuclear regulators asking that relicensing of its Diablo Canyon nuclear power plant be delayed until advanced earthquake studies have been completed is a good 'half step' but does not go far enough, the Board of Supervisors said Tuesday." Supervisors advised PG&E "that the advanced studies the utility says it will undertake should be 'independently reviewed,'" meaning "independent of PG&E." The Supervisors also said they want "clarity about PG&E's intentions."

KSBY-TV San Luis Obispo, California (4/12, Chen) added, "San Luis Obispo County leaders say today PG&E should have gone a step further with its letter to the Nuclear Regulatory Commission yesterday. ... The County Board of Supervisors voted 5-0 today to ask PG&E to do just that until better seismic studies are done." KSBY-TV added the letter's ambiguous language is "making some uneasy." Board chairman Adam Hill said "I do think that it is an important step forward, though it's not necessarily as much as we would like to see."

**PG&E Asks NRC For Delay In Diablo Canyon Relicensing Review.** MarketWatch (4/12, Gelsi) reported that PG&E had asked the NRC to "delay final action on the renewal of its operating license for the Diablo Canyon nuclear-power plant, while it steps up efforts to study seismic data near the reactor. 'We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses,' the company said. 'We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so they may have added assurance of the plant's seismic integrity.'"

On its website, KABC-TV Los Angeles (4/12) added, "At a legislative hearing last month, company officials said the plant was safe and gave no hint that PG&E would agree to complete three-dimensional seismic studies before a renewal of the licenses. But in a statement Monday, PG&E Senior Vice President John Conway referred to the Japanese crisis and said, 'we recognize that many in the public have called for this research to be completed before the NRC renews the plants' licenses.'"

**Mock Emergency Drill Conducted At Three Mile Island.** The York (PA) Daily Record (4/13, Adkins, 56K) reports on the mock emergency drill Tuesday evening at Three Mile Island, during which alarms sound, and "plant operators, under the watchful eyes of federal regulators, move swiftly to man individual stations and flip through

manuals. A major emergency at Three Mile Island Unit 1 has just jumped in severity – a crisis that could ultimately force the governor to order residents who live within 10 miles of the plant to either evacuate or take shelter within their homes.” Emergency “responders from areas that surround Three Mile Island in Dauphin County took part in a dry run Tuesday that evaluated how officials would respond to a plant-borne radiological crisis.” NRC spokesman Neil Sheehan said the “team of six TMI control room operators started the drill” and NRC officials were also on hand to evaluate “how the control room operators responded to the rising mock crisis at the plant, said, a commission spokesman.”

On its website, WPMT-TV York, PA (4/12, Arbogast) reported, “The particular test, conducted every two years, is evaluated by The Department of Homeland Security’s Federal Emergency Management Agency or FEMA. Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions.”

WGAL-TV Harrisburg, PA (4/12, 11:06 p.m. ET, 77,788) reported that an emergency drill to test Three Mile Island’s operators was performed last night. The drill took place “in a simulation room at the TMI Training Center” and was “mandated by the Nuclear Regulatory Commission as a result of the partial meltdown at TMI in 1979.”

**State Senators Plan To Hold Hearings On Indian Point Safety.** On its website, Nyack (NY) News And Views (4/12, Weathers) reports, “State Senators David Carlucci, George Maziarz and Greg Ball will host a hearing on May 12 in Stony Point regarding the public’s worries about Indian Point’s nuclear reactors in light of the recent disaster involving the Fukushima Nuclear Power Plant in Japan.” The three senators plan to issue a formal report and recommendation based on the hearing results and the testimony heard. Said Carlucci, “The Indian Point nuclear power plant, which sits within two miles of two intersecting fault lines has the highest risk of an earthquake causing its reactors core damage in the United States.”

The Pearl River Patch (4/13, Demarest) reports, “State Sen. David Carlucci, D-New City, said the May 12 hearing will look at contingency plans for natural disasters and the reliability of the power grid.” Sen. Maziarz “said the massive earthquake and tsunami that hit Japan continue to raise concerns among New Yorkers about nuclear power plants and their ability to withstand damage from natural disasters.”

**Indian Point Opponents Gather For Forum.** The Yorktown Patch (4/12, Giegerich) reports, “Indian Point Safe Energy Coalition (IPSEC) hosted a community forum Monday in Greenburgh Town Hall to discuss the similarities between Indian Point and the Fukushima Daiichi Nuclear Power Station,” which has “released radiation causing mass evacuations of the land around the plant and concern over

the safety of food and water.” Expert panelists “invited to speak were doctors, officials, scientists and concerned citizens—but all had one thing in common: the desire to close Indian Point. ‘There is no such thing as safe exposure to radiation,’ said Dr. Andrew Kenter, president of the New York Chapter of Physicians for Social Responsibility.”

**Riverkeeper Coordinator Slams Indian Point.** The Pleasantville Patch (4/13, Pickett) reported, “Emily Griffin, outreach and merchandise coordinator for the Ossining-based Riverkeeper organization, spoke to a group at the Briarcliff Manor Public Library recently.” Said Griffin, “As evidenced by the recent earthquake and ensuing tsunami in Japan, no nuclear plant is safe. Indian Point sits on the convergence of two fault lines. Scientists from Columbia University suggest that an earthquake of 7.0 magnitude is ‘quite possible.’”

**More Commentary: Nuclear Power Faulted.** In a commentary for the Epoch Times (4/12, 1.4M) Evan Mantyk wrote, “There is no doubt in my mind that reducing our carbon footprint by cutting carbon emissions is a good thing to do.” While Mantyk said he has “written about the danger to our water supply presented by the gas industry’s use of hydraulic fracturing,” now, “probably worst of them all, the environmental crisis caused by nuclear energy is now vividly unfolding in Japan.” Mantyk added nuclear reactors “split atoms apart in uranium, which makes it extremely hot, heating water and creating steam power” and while coal turbines stop burning when they are turned off, “the splitting of atoms continues, essentially burning through the composition of matter itself and not stopping for thousands of years.”

**Missouri Senate Begins Debate On CWIP Nuclear Measure.** According to the Jefferson City (MO) News Tribune (4/12, Watson), “Senate leaders expect to begin debating” the bill that “would let a Missouri utility company charge its customers for the costs of seeking and winning a US Nuclear Regulatory Commission early site permit. Ameren Missouri and a statewide consortium of commercial, cooperative and municipal electric utilities support the idea.” Sen. Mike Kehoe said, “We’re looking forward to getting it on the floor and having a full debate on it.”

The St. Louis Business Journal (4/13, Volkmann, Subscription Publication) reports, “A new poll released Tuesday shows that 77 percent of Missouri voters think that energy companies — rather than consumers — should pay for the costs of developing a new nuclear power plant.” The poll was commissioned by the Fair Energy Rate Action Fund, “which represents some of Ameren’s biggest customers.”

The Fulton (MO) Sun (4/12, Freeze, 4K) reports, “What could have turned into a lengthy discussion about a proposed resolution was cut short by quick thinking at the Holts Summit Board of Aldermen meeting Monday.” The measure

"expressed support for the construction of a second nuclear plant in Callaway County, as well as support for legislation before the General Assembly that would allow a Missouri utility company to charge its customers for the costs of seeking and winning an early site permit, as well as funding for the Office of Public Counsel." But the board voted to "remove the section of language addressing the proposed legislation," and simply express support for the expansion of a second nuclear plant in Callaway County.

### **Millstone Would Still Be Profitable Under Malloy Tax Bill.**

The Norwich Bulletin (4/13) reports, "Millstone Nuclear Power Station would still be profitable if a \$33 million tax bill supported by Gov. Dannel P. Malloy becomes law, although it would double the plant's total tax bill, a Millstone spokesman said Tuesday." Dominion's Ken Holt "said it would become unprofitable if the \$335 million measure, contained in Senate Bill 1176, goes into effect." Referring to Senate Bill 1007, Holt said, "Is the number more palatable? ... Yes, it is. But we still object to it."

AP (4/13) reports, "State Sen. Andrea Stillman and Rep. Betsy Ritter have scheduled a news conference Wednesday to discuss the legislation." The bill "would tax generators of electricity to provide relief for ratepayers, finance alternative energy and raise \$340 million in revenue — including \$332 million from Millstone nuclear plants." Representatives from Dominion "will attend the news conference."

An article by the Waterford Patch (4/12, Petrone) yesterday reported on Monday night's public meeting in Waterford Town Hall.

**NRC Says UniStar Not Eligible To Build A New Calvert Cliffs Reactor.** Power-Gen Worldwide (4/13) reports the NRC said last week "that UniStar Nuclear Energy is not eligible to build a third reactor at Calvert Cliffs because it is not a U.S.-owned company," however "it would continue to process the application." The company "said it believes it will have a US partner for the proposed project." PGW notes, "Federal law prohibits complete ownership or control of a US nuclear plant by a foreign entity."

### **Columnist Says Coal Is More Dangerous Than Nuclear Power.**

Holman W. Jenkins, Jr. writes in the Wall Street Journal (4/13, Jenkins, Jr., Subscription Publication, 2.02M) that in light of Japan's nuclear reactor disaster, countries around the globe are transitioning away from nuclear power to coal. Despite the recent nuclear concerns, Jenkins says that coal is overall more dangerous than nuclear power. He cites that coal plants emit more toxins, such as mercury, than nuclear plants.

### **Environmental Groups Mount Legal Challenge Against Licensing Of New Vogtle Reactors.**

The True Citizen (4/13, Kyzer) reports, "Citing concerns raised by the Fukushima nuclear disaster, several public interest groups launched a joint legal challenge against design approval for the reactors selected for Plant Vogtle's expansion." The groups are asking the NRC "to suspend its approval process, stating there are design problems that need to be resolved and lessons from Japan that need to be applied." The paper said officials of "the Shaw Group, which was contracted to build the Westinghouse reactors at Plant Vogtle, continue to be optimistic about nuclear power in the US," despite concerns by the AP1000 Oversight Group, an alliance of the environmental groups.

### **Budget Details Show Yucca Funding Has Been Zeroed Out.**

Under the headline "More Nails In Yucca Coffin," the Las Vegas Review-Journal (4/13, Tetreault, 178K) reports that according to the details of the budget deal reached Friday, which were released Tuesday, Senate Majority Leader Harry Reid's (D-NV) claims that the Yucca Mountain nuclear waste repository project was dead were confirmed. The details showed that civilian funding as well as defense nuclear waste disposal funding were zeroed out. In addition to the funding, Reid also killed a provision that would have blocked the Nuclear Regulatory Commission with proceeding with the shutdown of its portion of the Yucca project.

### **Pump In Use At SRS' MOX Plant Arrives In Tokyo.**

The Augusta (GA) Chronicle (4/13, Pavey) reports, "A 190,000-pound concrete pump formerly deployed at Savannah River Site arrived safely in Tokyo late Monday and was escorted to Chiba, Japan, where engineers were being trained to use the device at the tsunami-damaged Fukushima Dai-ichi nuclear plant." The pump "is the largest device of its kind in the world and was in use by Augusta-based Ashmore Concrete Contractors at the construction site of the National Nuclear Security Administration's mixed-oxide fuel plant in South Carolina." Kelly Bickle, a spokeswoman at Putzmeister, the pump's manufacturer, said it "was airlifted from Hartsfield-Jackson Atlanta International Airport aboard a mammoth Antonov cargo plane."

### **Newspaper Says Earthquake Risks At Y-12 Validate Need For UPF.**

The Knoxville (TN) News Sentinel (4/13) editorializes, "The vulnerability to an earthquake of the primary uranium processing center at the Y-12 nuclear weapons plant in Oak Ridge underscores the need for a new facility built to modern seismic standards." Citing National Nuclear Security Administration spokesman Steven Wyatt's recent statement that "a major earthquake

could result in significant structural damage and process failure" at the plant, the News Sentinel says that "in light of the massive earthquake off the coast of Japan that sent a tsunami crashing into a nuclear power plant, resulting in catastrophic damage, Wyatt's statement could be seen as a warning that a proposed \$6.5 billion uranium processing facility is needed."

## **Secret Service Agent Says International Cooperation Needed To Fight Cybercrime.**

Bloomberg News (4/13, Riddell) reports the US "should cooperate more with other countries on cross-border investigations of cybercrime to bolster national security and protect consumers from identity theft, witnesses told lawmakers during a Senate hearing today." While cybercriminals "operate in a world without borders, the law enforcement community does not, limiting the enforceable penalties on cybercrime, said Pablo Martinez, a deputy special agent in charge with the Secret Service's criminal investigation division." Martinez said "international cooperation was vital in investigating the network intrusion of Heartland Payment Systems Inc., the fifth-largest payments processor in the US, where 130 million credit card accounts were compromised two years ago."

## **IN THE BLOGS:**

**Blog: NRDC Physicist Assembles List Of Major Nuclear Incidents.** On its "Green" blog, the New York Times (4/13, Wald, 950K) says that Natural Resources Defense Council Physicist, Thomas B. Cochran, assembled a review of major events in chronological order, including: the Santa Susana Field Laboratory, where a partial core meltdown accident occurred from July 12 to 26, 1959; the National Reactor Testing Station (now Idaho National Laboratory), prompt criticality accident happened Jan. 3, 1961; Fermi Unit 1 Reactor where a partial fuel melt accident occurred Oct. 5, 1966;; Three Mile Island Unit 2 where a partial core melt accident occurred March 1979; Chernobyl Unit 4 in Ukraine, where a full-core melt accident happened April 26, 1986;; and the Fukushima Daiichi Units 1, 2 and 3, which experienced partial core meltdowns after earthquake on March 11, 2011.

## **INTERNATIONAL NUCLEAR NEWS:**

**After Strong Aftershocks, Japanese Focusing On Safety.** The Wall Street Journal (4/13, Obe, Sekiguchi,

Subscription Publication, 2.02M) reports that Japanese officials are redoubling their efforts to safeguard the doomed Daiichi plant from aftershock dangers. Severe aftershocks have rocked Japan over the past few weeks, further eroding the safety of the plant. An official with Japan's nuclear regulator, Hidehiko Nishiyama, admitted that Daiichi's reactors aren't fully protected against tsunamis. Monday's 6.6-magnitude aftershock knocked three of Daiichi's offline for roughly 50 minutes. Prime Minister Naoto Kan is ordering all of Japan's nuclear plants to identify their plans to stay online in the event of a large earthquake.

**Japanese Authorities Challenged On Failure To Disclose Radioactive Levels.** The New York Times (4/13, A5, Bradsher, Tabuchi, Pollack, Subscription Publication) reports, "Japanese officials struggled through the day on Tuesday to explain why it had taken them a month to disclose large-scale releases of radioactive material in mid-March at a crippled nuclear power plant, as the government and an electric utility disagreed on the extent of continuing problems there." Seiji Shiroya, "a commissioner of Japan's Nuclear Safety Commission...said that the government had delayed issuing data on the extent of the radiation releases because of concern that the margins of error had been large in initial computer models." But Shiroya went on to say, "Some foreigners fled the country even when there appeared to be little risk. ... If we immediately decided to label the situation as Level 7, we could have triggered a panicked reaction."

WTOC-TV Savannah, GA (4/12, 11:11 p.m. ET, 43,898) reported that the Japanese nuclear crisis has now gone from "a level five, on par with the Three Mile Island accident, to a seven" which was the same level "as the Chernobyl nuclear disaster." WTOC-TV adds that, according to Japan's Nuclear Regulatory Agency, "there was no deliberate attempt to delay the elevation of this crisis" and that they were waiting on "reliable data" which took a month to receive.

WMGT-TV Macon, GA (4/12, 11:27 p.m. ET, 767) added that, according to the IAEA, this disaster is "very different" from the disaster that took place in Chernobyl. However, the Tokyo Electric Company said that "if the leak isn't stopped, ultimately the radiation released could be more than Chernobyl."

**WHO Says Health Risks Unchanged For Those Outside Exclusion Zone.** AFP (4/13) reports, "The World Health Organisation said Tuesday that health risks outside the exclusion zone of the failed Fukushima Daiichi nuclear plant have not augmented, even though Japanese authorities upgraded the emergency." WHO spokesman Gregory Hartl said, "The risk assessment for health hasn't changed outside the 40 kilometres zone... outside the 40 kilometres zone we do not believe that the risk is greater today than it was yesterday." Reuters (4/13, Nebehay, Callus) also reports this.

**Daiichi Radiation Level Equals One-Tenth The Amount Released From Chernobyl.** Reuters (4/12, Lyn) reports that the latest data on Daiichi shows that the plant has released roughly one-tenth the radiation of Chernobyl. However, some experts cautioned that there will be long-term consequences for health. According to the Japanese Nuclear and Industrial Safety Association, Daiichi has released 370,000 and 630,000 terabecquerels. Chernobyl released roughly 5.2 million terabecquerels.

**Hitachi Submits Plan To Dismantle Crippled Japanese Reactors.** Reuters (4/13), citing the Nikkei business daily, reported that Hitachi Ltd. has filed a plan to dismantle the crisis-ridden reactors at the Fukushima Daiichi atomic power plant in Japan. Toshiba Corp has already submitted a plan last week to dismantle the reactors.

The Power-Gen Worldwide (4/12) reported that the "five-stage plan was submitted to Tokyo Electric Power Co, which operates the Fukushima plant." Notably, "Hitachi estimated it would take about 30 years to fully dismantle the reactor cores."

**Areva Sends Specialists To Help Handle Reactor Crisis In Japan.** Bloomberg News (4/13, Snyder) reports, "Areva SA, the biggest supplier of nuclear fuel and services, sent 20 nuclear specialists to help handle the reactor crisis at Japan's Fukushima Dai-Ichi plant, the chief executive of the company's US subsidiary said." Jacques Besnainou, who heads Areva Inc., said "Areva's team in Japan will propose how best to clean and dismantle the facility."

**Kan Urges Japanese To Remain Calm.** The AP (4/13) reports that after the Japanese government heightened the severity of the Daiichi disaster to match Chernobyl, Prime Minister Naoto Kan remarked, "Right now, the situation of the nuclear reactors at the Fukushima plant has been stabilizing step by step. The amount of radiation leaks is on the decline. But we are not at the stage yet where we can let our guards down." Furthermore Kan urged Japanese to avoid panic.

**Japan Mulling Options For TEPCO.** Reuters (4/13, Kubota, Takada, Subscription Publication) reports that Japan's government is considering a proposal that would split TEPCO into two entities. One entity would be government controlled, with a mission to administer claims arising from the Daiichi disaster. The other entity would remain a publicly-traded firm focused on power generation. A government official also said that Tokyo is considering nationalizing TEPCO.

**Kyushu Electric Company's New Plant Plan Delayed.** Japan Today (4/13) reports that Japan's Kyushu Electric Power Co "has frozen procedures to build a third reactor at its nuclear power plant in Kagoshima Prefecture in light of the country's quake-triggered nuclear disaster, a company official said Tuesday." The freeze delay's Kyushu's

1.59 million kilowatt plan that was expected to come online in 2019. "Following a request from Kagoshima Gov Yuichiro Ito, who had agreed to the project last year, Mamoru Dangami, vice president of the regional power supplier, notified the governor Monday that the firm will not apply for reclamation near the plant for the time being, according to the official." As the aftermath of the Daiichi disaster continues to unfold, Prime Minister Naoto Kan has indicated he's open to reevaluating Japan's energy policy.

### **In Move Away From Nuclear, German Government Set To Approve CCS Law.**

Bloomberg News (4/13, Czuczka, Comfort) reports, "German Chancellor Angela Merkel's Cabinet is set to discuss steps to let utilities pump greenhouse gases underground as the government bids to shift energy policy away from nuclear power." According to the report, "Ministers will decide on legislation to permit so-called carbon capture and storage, or CCS, when they meet in Berlin today for their regular weekly Cabinet meeting." The Chancellor's plan, "which implements a European Union law, would help her plug a potential gap in the energy mix serving Europe's largest economy caused by a retreat from nuclear after the disaster in Japan."

In a related story, the Dow Jones Newswires (4/13, Hinkel, Hromadko) reports that Germany currently does not have a law that allows the storage and transportation of carbon dioxide from power generation. The article notes that in order to comply with a European Commission directive, Germany's government must pass a CSS law by June 25.

**French Senators Say Germany's Nuclear Phase Out Harms Relations.** Reuters (4/13, Barkin, Subscription Publication) reports members of the French Senate's finance committee criticized Berlin's decision to eventually close German nuclear plants. While visiting Berlin, the senators said the move harms bilateral relations and should have been brought before the EU. After the Japanese disaster, German citizens have become more vocal in their opposition against nuclear plants.

In related news, the Wall Street Journal (4/13, Radowitz, 2.02M) reports that Merkel's decision to phase out nuclear power remains scant on details. Funding for alternatives hasn't been identified. However, some say renewable funding could come from the government selling off shares of Deutsche Telecom. Groups are likely to appear that oppose renewable projects existing in their neighborhoods.

### **Taipower Reconsidering Additional Plants.**

Bloomberg News (4/13, Yu) reports, Taiwan Power Co. also known as Taipower, "which operates the island's three atomic-power plants and is building a fourth, halted plans for additional reactors and will study its options after Japan's

nuclear accident from the March 11 earthquake." The company canceled a contract to bring two advisers to study the specifics of building two more reactors at its No. 4 plan. Additionally, the Taiwanese "government..has frozen a review of the state-run utility's application to extend the license of its No. 1 plant, which has been operating for 33 years."

### **Armenia's Metsamor Plant Among World's Most Dangerous, National Geographic Says.**

The National Geographic (4/13, Lavelle, Garthwaite) profiles Armenia's Metsamor nuclear plant. The plant remains "one of a mere handful of remaining nuclear reactors of its kind that were built without primary containment structures." The plant's proximity to fault lines make, combined with its design, make it one of the most dangerous in the world, according to National Geographic. The Armenian government faces renewed questions about the plant's safety "in the wake of Japan's quake-and-tsunami-Fukushima Daiichi crises."

**Indonesia Maintains Nuclear Plans.** The Guardian (UK) (4/13, Terzis, 286K) reports that the Japanese nuclear crisis has done little to curb Indonesia's appetite for nuclear energy. "Two weeks after Japan's nuclear crisis, the Indonesian government stated that it will continue to pursue an ambitious nuclear power programme of its own that will triple the country's electricity output by 2025." The country plans to build two nuclear plants by the end of 2022, with a total capacity of 18GW. "Supporters of Indonesia's nuclear bid are adamant that Bangka is far from active fault lines, thus minimising the potential for a Fukushima-style crisis." Officials say the plants will feature the better technology and safeguards than the Daiichi plant.

### **Sharp: Pyongyang Unlikely To Abandon Nuclear Program.**

As Secretary Clinton prepares to visit Seoul later this week, Reuters (4/13, Stewart) reports Admiral Walter Sharp, commander of US forces in South Korea, told lawmakers yesterday that North Korea is unlikely to cave to international pressure to abandon its nuclear program. Asked by Sen. John McCain if there is any scenario under which leader Kim Jong-il would give up his nuclear weapons program, Sharp replied, "To answer your question directly: No, I do not see that he will give up his nuclear capability. ... I think it is clear that Kim Jong-il believes he has to have it for regime survival."

### **WPost: Obama Lacks Strategy Toward Iran.**

The Washington Post (4/13, 572K) editorializes, "Several months ago, administration officials were speaking confidently of an Iran that, pinched by sanctions and hamstrung by problems in its nuclear work, seemed ready to begin talks.

Now the talks are off, the economic pressure is easing and the nuclear work once again could be gaining momentum." However, "the administration seems to have no clear alternative to its long-standing strategy of waiting for the regime to negotiate." Adds the Post, "Passivity is a dangerous option; while the world watches the Middle East, Iran's drive for a bomb relentlessly continues."

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# NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

WEDNESDAY, APRIL 13, 2011 7:00 AM EDT

[WWW.BULLETINNEWS.COM/NRC](http://WWW.BULLETINNEWS.COM/NRC)

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## NRC NEWS:

**NRC Chairman Offers New Theory Of Hydrogen Explosions.** The New York Times (4/13, A6, Wald, Subscription Publication, 950K) reports NRC Chairman Gregory Jaczko told the Senate Environment and Public Works Committee Tuesday that the "condition of the damaged Fukushima Daiichi reactors in Japan is 'static,' but with improvised cooling efforts they are 'not stable.'" He added, "We don't see significant changes from day to day," but said the risk of major additional releases is decreasing. The Times adds that Jaczko offered a new theory about the explosions that destroyed several Fukushima reactors' secondary containment structures. He said the explosions may have been caused by hydrogen created in the spent-fuel

pools. "If true, that would mean that the introduction of hardened vents at reactors at nuclear plants in the United States — cited as an improvement that would prevent such an explosion from happening — would not in fact make any difference."

NRC Chairman Gregory Jaczko appeared on CNN's Piers Morgan Tonight (4/13, 9:43pm) to discuss the Fukushima plant crisis, and how much risk there is to the US. He said, "Well, I want to be clear, Piers, there really is no risk from any of the radiation, having an impact on health and safety in the United States. And in Japan, we continue our efforts to support the Japanese government to really take what we think right now is basically a static situation, so there's not of change in the reactor condition right now, and trying to move that into what we're talking about is a stable situation. So something that can withstand some of the

changes and challenges at the site in a more permanent way."

USA Today (4/13, Dorell, 1.83M) added that Chairman Jaczko said the primary focus of the commission is to help Japanese authorities continue to cool the Fukushima Dai-ichi plant's nuclear reactors and spent-fuel pools, though problems persist. "Last night, they had an aftershock and had to remove people from the plant, and cooling was shut down for a period of time," he said. "We want to move to a situation where we don't lose cooling." According to a "rough analysis" of the radiation exposure in Japan, "excess cancers there will be roughly 10 to 100 times greater than with the Three Mile Island nuclear disaster, said Tom Cochran, senior scientist at the nuclear program of the Natural Resources Defense Council, an environmental group." Cochran said he expected there to be "about 100 times less" cases of cancer than the Chernobyl accident.

Reuters (4/13, Rampton) notes that Jaczko said the efforts continue to "transition from static to stable to ensure long-term ultimate ability to cool the reactors and to provide cooling to the spent fuel pools."

On its "E2-Wire" blog, The Hill (4/13, Restuccia, Geman, Cohn, 21K) reports that "Jaczko's comments come on the same day that Japanese officials raised the rating of the nuclear crisis to the highest level on the international scale. That's the same rating that the 1986 Chernobyl disaster received. Jaczko took only two quick questions from reporters after Tuesday's hearings and did not expand on his comments."

Kyodo News (4/13) reports, Jaczko said the "most important job at the plant remains to keep water in the spent fuel pools to cool the highly radioactive fuel rods." He also said that the NRC "has begun a two-pronged approach to review the safety of the 104 commercial US nuclear reactors in the aftermath of the Japanese crisis. A 90-day review should be completed in June, with another report expected by the end of the year."

Also offering coverage on the hearing are Reuters (4/13, Rampton), Buenos Aires Herald (4/13, 100K) and WDEL-Radio Delaware (4/13, Gerace).

KFOX-TV El Paso, TX (4/12, 9:37 p.m. MT, 40,089) reports that a Senate panel met today in Washington to examine "how prepared US nuclear plants are in the cause of multiple disasters." The NRC Chairman said that US plants are safe, "designed for the worst and have three or four levels of protection." However, "some say that's not enough." Sen. Barbara Boxer of California said we need to "do everything in our power to make" the plants safe. KFOX-TV added that the NRC plans to release a 90-day report on the Japanese Crisis this summer.

WKTV-TV Utica, NY (4/12, 11:28 p.m. ET, 13,878), WMGT-TV Macon, GA (4/12, 11:26 p.m. ET, 767) and over

30 other stations nationwide provided similar coverage throughout the day.

**Jaczko Discusses 10-Mile Evacuation Zone.** CNN (4/13, Barnett) reports, NRC Chairman Gregory Jaczko discussed the 10-mile evacuation zone around US nuclear power plants, especially in light of the NRC recommendation "that Americans in Japan stay at least 50 miles away from the damaged reactors." Jaczko said, "As we've seen in Japan, nuclear events tend to develop over a long period of time." He added that three weeks into the event, "we've had the time and the ability to make protective action recommendations, and to update and modify them as conditions of the plant changed." He said that the 10-mile zone is "really based around the idea of what do you need to have prepared right away so that if you have an event that develops quickly, you can address that and have prestaged and prepared what to do."

Bloomberg News (4/13, Lomax) reports that the NRC Chairman said the "US will study expanding the evacuation zones near power plants as part of the safety review triggered by Japan's reactor crisis," and he assured lawmakers the 10-mile zone "can 'go farther if necessary' should conditions worsen." The NRC "will consider revising the minimum evacuation zone 'as part of the review that we're doing,' Jaczko said."

**Jaczko Defends Monitoring Mode Authority.** In an "Ingenuity Of The Commons" blog entry for Forbes (4/13, 924K), Jeff McMahon writes that Sen. James Inhofe (R-Okla.) accused NRC Chairman Gregory Jaczko of "invoking emergency powers without cause and taking authority away from other members of the NRC." Inhofe said "Jaczko has evoked emergency authority and transferred commission functions to himself in the wake of the earthquake in Japan." Inhofe called for transparency and suggested Jaczko may have overstepped his authority. Jaczko said the "NRC went into 'monitoring mode' on March 11," allowing it to "deploy a 24-hour assistance team to Japan. ... 'That's an authority the chairman has.'"

E&ENews PM (4/13, Northey) reports Sen. Inhofe said NRC Chairman Jaczko "used emergency authority and transferred commission functions to himself in the wake of the Japanese events and failed to inform the committee," and said the "law confers emergency authority on the chairman in the wake of an emergency at a particular facility or materials regulated by NRC. But Inhofe said at present he is not 'aware that an emergency condition exists at any US facility.'" Jaczko said he has been "acting within his current authority, and NRC officials said Inhofe had sent a letter to the agency earlier expressing his concerns, although that letter has not yet been made public."

## **Spent Fuel Storage Problems Spread**

**Concerns About Nuclear Power.** McClatchy (4/13, Schoof) reports, "As Japan struggles with radioactive contamination from one of the world's worst nuclear accidents, American nuclear experts are watching for clues on how to make US nuclear power plants more resistant to the forces of nature or hostile attacks." US regulators cite a "stringent regulatory program, redundant security systems and improvements since" the Three Mile Island accident and the 9/11 terrorist attacks, but the Fukushima crisis has reenergized concerns about the "risks of US nuclear reactors," and the spent fuel pools in particular and according to David Lochbaum of the Union of Concerned Scientists, "The irrefutable bottom line is that we have utterly failed to properly manage the risk from irradiated fuel stored at our nation's nuclear power plants."

## **NRC Files Brief On Oyster Creek Relicensing Challenge.**

The Lacey (NJ) Patch (4/13, Miller) reports the NRC "asked a federal appellate court to deny a petition by a coalition of citizen groups to re-examine the relicensing of the Oyster Creek nuclear plant, in the wake of the nuclear mishaps in Japan." The NRC said in a brief to the court that no "safety, technical, or policy justification exists to single out particular reactors for different treatment, just because of their place in the licensing queue or status on judicial review." The NRC brief cites the "agency's 'Defense in Depth'" concept of redundant defenses against unanticipated events, and says the agency has "severe accident management guidelines, revisions to the emergency operating procedures and processes for dealing with large fires and explosions, regardless of the cause."

## **NRC Investigating Cooper Station Workers Exposed To Radiation.**

The AP (4/13) reports, "Federal inspectors are trying to find out why three maintenance workers were exposed to higher than expected radiation levels at Cooper Nuclear Station near Brownville in southeast Nebraska." According to the NRC, the "workers were exposed to unplanned radiation on April 3 at the power plant run by the Nebraska Public Power District," which told regulators it doesn't believe the exposure exceeded NRC limits. NRC regulators said the workers "didn't follow the proper procedure for removing a long tube contaminated with radioactive material from the reactor because the tube was taken out of the bottom of the reactor vessel instead of the top."

The Omaha World-Herald (4/12, Perez, 148K) reported NPPD spokesman Mark Becker, "said bioassay samples from the affected workers confirmed that they were not exposed to radiation levels that exceed the nuclear commission's safety limits." NRC inspectors' concerns "surround a 27-foot-long

stainless steel rod known as a 'shuttle tube' that is placed inside a nuclear plant's reactor vessel. ... NRC officials said the incident occurred when workers removed the tube — highly contaminated with radioactive material — through the bottom of the station's reactor vessel."

## **Three Day Radiological Response Exercise Begins At San Onofre Station.**

The AP (4/12, Schwartz) reports, "A month after the devastating earthquake and tsunami in Japan, local, state and federal officials are participating in a mock drill in Irvine involving a disaster scenario at California's San Onofre Nuclear Generating Station." The drill at "a cavernous Southern California Edison truck bay is held and evaluated by Federal Emergency Management Agency every other year" and "typically involves three days of a worsening radiological scenario at San Onofre in San Diego County or the Diablo Canyon nuclear plant in San Luis Obispo County."

On its "L.A. Now" blog, the Los Angeles Times (4/12, Barboza, 657K) reports San Onofre nuclear power plant operators "are starting a drill Tuesday to test the ability of the facility and local, state and federal agencies to respond to a radiological emergency." Nuclear emergency sirens will sound during the three-day drill, "which will be overseen and evaluated by state and federal disaster officials," said California Emergency Management Agency spokeswoman Tina Walker. "The simulation was long-scheduled and is required every two years at every commercial nuclear plant in the nation, officials said. But it has garnered more interest due to the Japanese nuclear crisis that followed last month's earthquake and tsunami."

The San Diego (CA) Union-Tribune (4/12, Soto) adds "Fake reporters gathered at the joint information center while officials stood at a podium announcing and fielding questions about an explosion, fire and radioactive leak at backup generating station at San Onofre." Thursday, "officials are expected to do more drills related to the aftermath of the disaster scenario, moving a week ahead in time and simulating how people would return to their homes." Friday, the NRC and FEMA "will discuss what they find at a public meeting."

The LAist (4/13) notes that a "public meeting is scheduled for Friday in San Juan Capistrano to review the initial findings."

The Los Angeles Daily Breeze (4/13, 66K) adds, Southern California Edison Gil Alexander "said Edison hopes the increased coverage of the drills will help calm some fears as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety about radioactive leaks. 'We're hopeful the news stories this week will show our extensive planning efforts,' Alexander said."

Similar coverage appeared on the Orange County (CA) Register (4/12).

On its website, KABC-TV Los Angeles (4/12) reported, "As for the plant itself, emergency shutdown procedures were ran through, and San Onofre's two radioactive fuel rods were being secured. The California Emergency Management Agency, or Cal EMA, coordinated the tests."

On its website, KCBS-TV Los Angeles (4/12) added, "There has never been a radiation leak at the 42-year-old facility, but FEMA and the Nuclear Regulatory Commission require emergency testing every two years."

On its website, KFMB-TV San Diego (4/12) adds, "The exercise, which is done every two years, is the San Onofre's most extensive that is monitored by the Federal Emergency Management Agency, Gil Alexander of SCE said. The main difference this year, Tina Walker of the state's Emergency Management Agency said, was the amount of interest shown by the news media. She called that a positive change."

KGET-TV Bakersfield, California (4/12) added, "The exercise was planned long before Japan's Fukushima Daiichi nuclear complex was crippled by a magnitude nine earthquake and tsunami."

**San Onofre Owner To Seek \$64 Million For Seismic Study.** Reuters (4/13, Groom) Southern California Edison is looking for \$64 million from the California Public Utilities Commission for seismic studies near San Onofre station. SCE said in a statement that it would file a funding request with the commission on April 15.

**Capps, Blakeslee Testify On Diablo Canyon Plant.** The San Luis Obispo (CA) Tribune (4/13, Snead) reports, "Some of the nation's top nuclear experts and two Central Coast lawmakers testified at a Senate hearing Tuesday in Washington, D.C., about what can be learned from the triple tragedy of a powerful earthquake, tsunamis and nuclear meltdown in Japan." At "Diablo Canyon, each reactor has three diesel generators with seven days' worth of fuel and enough batteries for eight hours." The "plant also has gravity-fed pools that can supply additional cooling water." But, Sen. Blakeslee, and Rep. Lois Capps, "renewed their pleas to the NRC to stop license renewal of Diablo Canyon until detailed seismic studies are done, peer reviewed and incorporated into the renewal process."

According to a news release (4/12) from Rep. Lois Capps' (CA-23) office, Capps "testified before the Senate Environment and Public Works Committee and expressed her concerns about safety at the Diablo Canyon Nuclear Power Plant. Capps also renewed her call to the Nuclear Regulatory Commission to stay the relicensing process pending the completion and peer-review of advanced seismic studies and 3-D mapping." State Senator Sam Blakeslee (R-San Luis Obispo) also spoke to the committee, "offering his perspective

as a state elected official and scientist with a PhD in seismic studies."

**Board Of Supervisors Wants Seismic Study Independently Reviewed.** The San Luis Obispo Tribune (4/13, Cuddy, 34K) reports, "PG&E's weekend letter to nuclear regulators asking that relicensing of its Diablo Canyon nuclear power plant be delayed until advanced earthquake studies have been completed is a good 'half step' but does not go far enough, the Board of Supervisors said Tuesday." Supervisors advised PG&E "that the advanced studies the utility says it will undertake should be 'independently reviewed,'" meaning "independent of PG&E." The Supervisors also said they want "clarity about PG&E's intentions."

KSBY-TV San Luis Obispo, California (4/12, Chen) added, "San Luis Obispo County leaders say today PG&E should have gone a step further with its letter to the Nuclear Regulatory Commission yesterday. ... The County Board of Supervisors voted 5-0 today to ask PG&E to do just that until better seismic studies are done." KSBY-TV added the letter's ambiguous language is "making some uneasy." Board chairman Adam Hill said "I do think that it is an important step forward, though it's not necessarily as much as we would like to see."

**PG&E Asks NRC For Delay In Diablo Canyon Relicensing Review.** MarketWatch (4/12, Gelsi) reported that PG&E had asked the NRC to "delay final action on the renewal of its operating license for the Diablo Canyon nuclear-power plant, while it steps up efforts to study seismic data near the reactor. 'We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses,' the company said. 'We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so they may have added assurance of the plant's seismic integrity.'"

On its website, KABC-TV Los Angeles (4/12) added, "At a legislative hearing last month, company officials said the plant was safe and gave no hint that PG&E would agree to complete three-dimensional seismic studies before a renewal of the licenses. But in a statement Monday, PG&E Senior Vice President John Conway referred to the Japanese crisis and said, 'we recognize that many in the public have called for this research to be completed before the NRC renews the plants' licenses.'"

**Mock Emergency Drill Conducted At Three Mile Island.** The York (PA) Daily Record (4/13, Adkins, 56K) reports on the mock emergency drill Tuesday evening at Three Mile Island, during which alarms sound, and "plant operators, under the watchful eyes of federal regulators, move swiftly to man individual stations and flip through

manuals. A major emergency at Three Mile Island Unit 1 has just jumped in severity – a crisis that could ultimately force the governor to order residents who live within 10 miles of the plant to either evacuate or take shelter within their homes.” Emergency “responders from areas that surround Three Mile Island in Dauphin County took part in a dry run Tuesday that evaluated how officials would respond to a plant-borne radiological crisis.” NRC spokesman Neil Sheehan said the “team of six TMI control room operators started the drill” and NRC officials were also on hand to evaluate “how the control room operators responded to the rising mock crisis at the plant, said, a commission spokesman.”

On its website, WPMT-TV York, PA (4/12, Arbogast) reported, “The particular test, conducted every two years, is evaluated by The Department of Homeland Security’s Federal Emergency Management Agency or FEMA. Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions.”

WGAL-TV Harrisburg, PA (4/12, 11:06 p.m. ET, 77,788) reported that an emergency drill to test Three Mile Island’s operators was performed last night. The drill took place “in a simulation room at the TMI Training Center” and was “mandated by the Nuclear Regulatory Commission as a result of the partial meltdown at TMI in 1979.”

**State Senators Plan To Hold Hearings On Indian Point Safety.** On its website, Nyack (NY) News And Views (4/12, Weathers) reports, “State Senators David Carlucci, George Maziarz and Greg Ball will host a hearing on May 12 in Stony Point regarding the public’s worries about Indian Point’s nuclear reactors in light of the recent disaster involving the Fukushima Nuclear Power Plant in Japan.” The three senators plan to issue a formal report and recommendation based on the hearing results and the testimony heard. Said Carlucci, “The Indian Point nuclear power plant, which sits within two miles of two intersecting fault lines has the highest risk of an earthquake causing its reactors core damage in the United States.”

The Pearl River Patch (4/13, Demarest) reports, “State Sen. David Carlucci, D-New City, said the May 12 hearing will look at contingency plans for natural disasters and the reliability of the power grid.” Sen. Maziarz “said the massive earthquake and tsunami that hit Japan continue to raise concerns among New Yorkers about nuclear power plants and their ability to withstand damage from natural disasters.”

**Indian Point Opponents Gather For Forum.** The Yorktown Patch (4/12, Giegerich) reports, “Indian Point Safe Energy Coalition (IPSEC) hosted a community forum Monday in Greenburgh Town Hall to discuss the similarities between Indian Point and the Fukushima Daiichi Nuclear Power Station,” which has “released radiation causing mass evacuations of the land around the plant and concern over

the safety of food and water.” Expert panelists “invited to speak were doctors, officials, scientists and concerned citizens—but all had one thing in common: the desire to close Indian Point. ‘There is no such thing as safe exposure to radiation,’ said Dr. Andrew Kenter, president of the New York Chapter of Physicians for Social Responsibility.”

**Riverkeeper Coordinator Slams Indian Point.** The Pleasantville Patch (4/13, Pickett) reported, “Emily Griffin, outreach and merchandise coordinator for the Ossining-based Riverkeeper organization, spoke to a group at the Briarcliff Manor Public Library recently.” Said Griffin, “As evidenced by the recent earthquake and ensuing tsunami in Japan, no nuclear plant is safe. Indian Point sits on the convergence of two fault lines. Scientists from Columbia University suggest that an earthquake of 7.0 magnitude is ‘quite possible.’”

**More Commentary: Nuclear Power Faulted.** In a commentary for the Epoch Times (4/12, 1.4M) Evan Mantyk wrote, “There is no doubt in my mind that reducing our carbon footprint by cutting carbon emissions is a good thing to do.” While Mantyk said he has “written about the danger to our water supply presented by the gas industry’s use of hydraulic fracturing,” now, “probably worst of them all, the environmental crisis caused by nuclear energy is now vividly unfolding in Japan.” Mantyk added nuclear reactors “split atoms apart in uranium, which makes it extremely hot, heating water and creating steam power” and while coal turbines stop burning when they are turned off, “the splitting of atoms continues, essentially burning through the composition of matter itself and not stopping for thousands of years.”

**Missouri Senate Begins Debate On CWIP Nuclear Measure.** According to the Jefferson City (MO) News Tribune (4/12, Watson), “Senate leaders expect to begin debating” the bill that “would let a Missouri utility company charge its customers for the costs of seeking and winning a US Nuclear Regulatory Commission early site permit. Ameren Missouri and a statewide consortium of commercial, cooperative and municipal electric utilities support the idea.” Sen. Mike Kehoe said, “We’re looking forward to getting it on the floor and having a full debate on it.”

The St. Louis Business Journal (4/13, Volkmann, Subscription Publication) reports, “A new poll released Tuesday shows that 77 percent of Missouri voters think that energy companies — rather than consumers — should pay for the costs of developing a new nuclear power plant.” The poll was commissioned by the Fair Energy Rate Action Fund, “which represents some of Ameren’s biggest customers.”

The Fulton (MO) Sun (4/12, Freeze, 4K) reports, “What could have turned into a lengthy discussion about a proposed resolution was cut short by quick thinking at the Holts Summit Board of Aldermen meeting Monday.” The measure

"expressed support for the construction of a second nuclear plant in Callaway County, as well as support for legislation before the General Assembly that would allow a Missouri utility company to charge its customers for the costs of seeking and winning an early site permit, as well as funding for the Office of Public Counsel." But the board voted to "remove the section of language addressing the proposed legislation," and simply express support for the expansion of a second nuclear plant in Callaway County.

### **Millstone Would Still Be Profitable Under Malloy Tax Bill.**

The Norwich Bulletin (4/13) reports, "Millstone Nuclear Power Station would still be profitable if a \$33 million tax bill supported by Gov. Dannel P. Malloy becomes law, although it would double the plant's total tax bill, a Millstone spokesman said Tuesday." Dominion's Ken Holt "said it would become unprofitable if the \$335 million measure, contained in Senate Bill 1176, goes into effect." Referring to Senate Bill 1007, Holt said, "Is the number more palatable? ... Yes, it is. But we still object to it."

AP (4/13) reports, "State Sen. Andrea Stillman and Rep. Betsy Ritter have scheduled a news conference Wednesday to discuss the legislation." The bill "would tax generators of electricity to provide relief for ratepayers, finance alternative energy and raise \$340 million in revenue — including \$332 million from Millstone nuclear plants." Representatives from Dominion "will attend the news conference."

An article by the Waterford Patch (4/12, Petrone) yesterday reported on Monday' night's public meeting in Waterford Town Hall.

### **NRC Says UniStar Not Eligible To Build A New Calvert Cliffs Reactor.**

Power-Gen Worldwide (4/13) reports the NRC said last week "that UniStar Nuclear Energy is not eligible to build a third reactor at Calvert Cliffs because it is not a U.S.-owned company," however "it would continue to process the application." The company "said it believes it will have a US partner for the proposed project." PGW notes, "Federal law prohibits complete ownership or control of a US nuclear plant by a foreign entity."

### **Columnist Says Coal Is More Dangerous Than Nuclear Power.**

Holman W. Jenkins, Jr. writes in the Wall Street Journal (4/13, Jenkins, Jr., Subscription Publication, 2.02M) that in light of Japan's nuclear reactor disaster, countries around the globe are transitioning away from nuclear power to coal. Despite the recent nuclear concerns, Jenkins says that coal is overall more dangerous than nuclear power. He cites that coal plants emit more toxins, such as mercury, than nuclear plants.

### **Environmental Groups Mount Legal Challenge Against Licensing Of New Vogtle Reactors.**

The True Citizen (4/13, Kyzer) reports, "Citing concerns raised by the Fukushima nuclear disaster, several public interest groups launched a joint legal challenge against design approval for the reactors selected for Plant Vogtle's expansion." The groups are asking the NRC "to suspend its approval process, stating there are design problems that need to be resolved and lessons from Japan that need to be applied." The paper said officials of "the Shaw Group, which was contracted to build the Westinghouse reactors at Plant Vogtle, continue to be optimistic about nuclear power in the US," despite concerns by the AP1000 Oversight Group, an alliance of the environmental groups.

### **Budget Details Show Yucca Funding Has Been Zeroed Out.**

Under the headline "More Nails In Yucca Coffin," the Las Vegas Review-Journal (4/13, Tetreault, 178K) reports that according to the details of the budget deal reached Friday, which were released Tuesday, Senate Majority Leader Harry Reid's (D-NV) claims that the Yucca Mountain nuclear waste repository project was dead were confirmed. The details showed that civilian funding as well as defense nuclear waste disposal funding were zeroed out. In addition to the funding, Reid also killed a provision that would have blocked the Nuclear Regulatory Commission with proceeding with the shutdown of its portion of the Yucca project.

### **Pump In Use At SRS' MOX Plant Arrives In Tokyo.**

The Augusta (GA) Chronicle (4/13, Pavely) reports, "A 190,000-pound concrete pump formerly deployed at Savannah River Site arrived safely in Tokyo late Monday and was escorted to Chiba, Japan, where engineers were being trained to use the device at the tsunami-damaged Fukushima Dai-ichi nuclear plant." The pump "is the largest device of its kind in the world and was in use by Augusta-based Ashmore Concrete Contractors at the construction site of the National Nuclear Security Administration's mixed-oxide fuel plant in South Carolina." Kelly Bickle, a spokeswoman at Putzmeister, the pump's manufacturer, said it "was airlifted from Hartsfield-Jackson Atlanta International Airport aboard a mammoth Antonov cargo plane."

### **Newspaper Says Earthquake Risks At Y-12 Validate Need For UPF.**

The Knoxville (TN) News Sentinel (4/13) editorializes, "The vulnerability to an earthquake of the primary uranium processing center at the Y-12 nuclear weapons plant in Oak Ridge underscores the need for a new facility built to modern seismic standards." Citing National Nuclear Security Administration spokesman Steven Wyatt's recent statement that "a major earthquake

could result in significant structural damage and process failure" at the plant, the News Sentinel says that "in light of the massive earthquake off the coast of Japan that sent a tsunami crashing into a nuclear power plant, resulting in catastrophic damage, Wyatt's statement could be seen as a warning that a proposed \$6.5 billion uranium processing facility is needed."

## **Secret Service Agent Says International Cooperation Needed To Fight Cybercrime.**

Bloomberg News (4/13, Riddell) reports the US "should cooperate more with other countries on cross-border investigations of cybercrime to bolster national security and protect consumers from identity theft, witnesses told lawmakers during a Senate hearing today." While cybercriminals "operate in a world without borders, the law enforcement community does not, limiting the enforceable penalties on cybercrime," said Pablo Martinez, a deputy special agent in charge with the Secret Service's criminal investigation division." Martinez said "international cooperation was vital in investigating the network intrusion of Heartland Payment Systems Inc., the fifth-largest payments processor in the US, where 130 million credit card accounts were compromised two years ago."

## **IN THE BLOGS:**

**Blog: NRDC Physicist Assembles List Of Major Nuclear Incidents.** On its "Green" blog, the New York Times (4/13, Wald, 950K) says that Natural Resources Defense Council Physicist, Thomas B. Cochran, assembled a review of major events in chronological order, including: the Santa Susana Field Laboratory, where a partial core meltdown accident occurred from July 12 to 26, 1959; the National Reactor Testing Station (now Idaho National Laboratory), prompt criticality accident happened Jan. 3, 1961; Fermi Unit 1 Reactor where a partial fuel melt accident occurred Oct. 5, 1966;; Three Mile Island Unit 2 where a partial core melt accident occurred March 1979; Chernobyl Unit 4 in Ukraine, where a full-core melt accident happened April 26, 1986;; and the Fukushima Daiichi Units 1, 2 and 3, which experienced partial core meltdowns after earthquake on March 11, 2011.

## **INTERNATIONAL NUCLEAR NEWS:**

**After Strong Aftershocks, Japanese Focusing On Safety.** The Wall Street Journal (4/13, Obe, Sekiguchi,

Subscription Publication, 2.02M) reports that Japanese officials are redoubling their efforts to safeguard the doomed Daiichi plant from aftershock dangers. Severe aftershocks have rocked Japan over the past few weeks, further eroding the safety of the plant. An official with Japan's nuclear regulator, Hidehiko Nishiyama, admitted that Daiichi's reactors aren't fully protected against tsunamis. Monday's 6.6-magnitude aftershock knocked three of Daiichi's offline for roughly 50 minutes. Prime Minister Naoto Kan is ordering all of Japan's nuclear plants to identify their plans to stay online in the event of a large earthquake.

**Japanese Authorities Challenged On Failure To Disclose Radioactive Levels.** The New York Times (4/13, A5, Bradsher, Tabuchi, Pollack, Subscription Publication) reports, "Japanese officials struggled through the day on Tuesday to explain why it had taken them a month to disclose large-scale releases of radioactive material in mid-March at a crippled nuclear power plant, as the government and an electric utility disagreed on the extent of continuing problems there." Seiji Shiroya, "a commissioner of Japan's Nuclear Safety Commission...said that the government had delayed issuing data on the extent of the radiation releases because of concern that the margins of error had been large in initial computer models." But Shiroya went on to say, "Some foreigners fled the country even when there appeared to be little risk. ... If we immediately decided to label the situation as Level 7, we could have triggered a panicked reaction."

WTOC-TV Savannah, GA (4/12, 11:11 p.m. ET, 43,898) reported that the Japanese nuclear crisis has now gone from "a level five, on par with the Three Mile Island accident, to a seven" which was the same level "as the Chernobyl nuclear disaster." WTOC-TV adds that, according to Japan's Nuclear Regulatory Agency, "there was no deliberate attempt to delay the elevation of this crisis" and that they were waiting on "reliable data" which took a month to receive.

WMGT-TV Macon, GA (4/12, 11:27 p.m. ET, 767) added that, according to the IAEA, this disaster is "very different" from the disaster that took place in Chernobyl. However, the Tokyo Electric Company said that "if the leak isn't stopped, ultimately the radiation released could be more than Chernobyl."

**WHO Says Health Risks Unchanged For Those Outside Exclusion Zone.** AFP (4/13) reports, "The World Health Organisation said Tuesday that health risks outside the exclusion zone of the failed Fukushima Daiichi nuclear plant have not augmented, even though Japanese authorities upgraded the emergency." WHO spokesman Gregory Hartl said, "The risk assessment for health hasn't changed outside the 40 kilometres zone... outside the 40 kilometres zone we do not believe that the risk is greater today than it was yesterday." Reuters (4/13, Nebehay, Callus) also reports this.

**Daiichi Radiation Level Equals One-Tenth The Amount Released From Chernobyl.** Reuters (4/12, Lyn) reports that the latest data on Daiichi shows that the plant has released roughly one-tenth the radiation of Chernobyl. However, some experts cautioned that there will be long-term consequences for health. According to the Japanese Nuclear and Industrial Safety Association, Daiichi has released 370,000 and 630,000 terabecquerels. Chernobyl released roughly 5.2 million terabecquerels.

**Hitachi Submits Plan To Dismantle Crippled Japanese Reactors.** Reuters (4/13), citing the Nikkei business daily, reported that Hitachi Ltd. has filed a plan to dismantle the crisis-ridden reactors at the Fukushima Daiichi atomic power plant in Japan. Toshiba Corp has already submitted a plan last week to dismantle the reactors.

The Power-Gen Worldwide (4/12) reported that the "five-stage plan was submitted to Tokyo Electric Power Co, which operates the Fukushima plant." Notably, "Hitachi estimated it would take about 30 years to fully dismantle the reactor cores."

**Areva Sends Specialists To Help Handle Reactor Crisis In Japan.** Bloomberg News (4/13, Snyder) reports, "Areva SA, the biggest supplier of nuclear fuel and services, sent 20 nuclear specialists to help handle the reactor crisis at Japan's Fukushima Dai-Ichi plant, the chief executive of the company's US subsidiary said." Jacques Besnainou, who heads Areva Inc., said "Areva's team in Japan will propose how best to clean and dismantle the facility."

**Kan Urges Japanese To Remain Calm.** The AP (4/13) reports that after the Japanese government heightened the severity of the Daiichi disaster to match Chernobyl, Prime Minister Naoto Kan remarked, "Right now, the situation of the nuclear reactors at the Fukushima plant has been stabilizing step by step. The amount of radiation leaks is on the decline. But we are not at the stage yet where we can let our guards down." Furthermore Kan urged Japanese to avoid panic.

**Japan Mulling Options For TEPCO.** Reuters (4/13, Kubota, Takada, Subscription Publication) reports that Japan's government is considering a proposal that would split TEPCO into two entities. One entity would be government controlled, with a mission to administer claims arising from the Daiichi disaster. The other entity would remain a publicly-traded firm focused on power generation. A government official also said that Tokyo is considering nationalizing TEPCO.

**Kyushu Electric Company's New Plant Plan Delayed.** Japan Today (4/13) reports that Japan's Kyushu Electric Power Co "has frozen procedures to build a third reactor at its nuclear power plant in Kagoshima Prefecture in light of the country's quake-triggered nuclear disaster, a company official said Tuesday." The freeze delay's Kyushu's

1.59 million kilowatt plan that was expected to come online in 2019. "Following a request from Kagoshima Gov Yuichiro Ito, who had agreed to the project last year, Mamoru Dangami, vice president of the regional power supplier, notified the governor Monday that the firm will not apply for reclamation near the plant for the time being, according to the official." As the aftermath of the Daiichi disaster continues to unfold, Prime Minister Naoto Kan has indicated he's open to reevaluating Japan's energy policy.

### **In Move Away From Nuclear, German Government Set To Approve CCS Law.**

Bloomberg News (4/13, Czuczka, Comfort) reports, "German Chancellor Angela Merkel's Cabinet is set to discuss steps to let utilities pump greenhouse gases underground as the government bids to shift energy policy away from nuclear power." According to the report, "Ministers will decide on legislation to permit so-called carbon capture and storage, or CCS, when they meet in Berlin today for their regular weekly Cabinet meeting." The Chancellor's plan, "which implements a European Union law, would help her plug a potential gap in the energy mix serving Europe's largest economy caused by a retreat from nuclear after the disaster in Japan."

In a related story, the Dow Jones Newswires (4/13, Hinkel, Hromadko) reports that Germany currently does not have a law that allows the storage and transportation of carbon dioxide from power generation. The article notes that in order to comply with a European Commission directive, Germany's government must pass a CSS law by June 25.

**French Senators Say Germany's Nuclear Phase Out Harms Relations.** Reuters (4/13, Barkin, Subscription Publication) reports members of the French Senate's finance committee criticized Berlin's decision to eventually close German nuclear plants. While visiting Berlin, the senators said the move harms bilateral relations and should have been brought before the EU. After the Japanese disaster, German citizens have become more vocal in their opposition against nuclear plants.

In related news, the Wall Street Journal (4/13, Radowitz, 2.02M) reports that Merkel's decision to phase out nuclear power remains scant on details. Funding for alternatives hasn't been identified. However, some say renewable funding could come from the government selling off shares of Deutsche Telecom. Groups are likely to appear that oppose renewable projects existing in their neighborhoods.

### **Taipower Reconsidering Additional Plants.**

Bloomberg News (4/13, Yu) reports, Taiwan Power Co. also known as Taipower, "which operates the island's three atomic-power plants and is building a fourth, halted plans for additional reactors and will study its options after Japan's

nuclear accident from the March 11 earthquake." The company canceled a contract to bring two advisers to study the specifics of building two more reactors at its No. 4 plan. Additionally, the Taiwanese "government...has frozen a review of the state-run utility's application to extend the license of its No. 1 plant, which has been operating for 33 years."

### **Armenia's Metsamor Plant Among World's Most Dangerous, National Geographic Says.**

The National Geographic (4/13, Lavelle, Garthwaite) profiles Armenia's Metsamor nuclear plant. The plant remains "one of a mere handful of remaining nuclear reactors of its kind that were built without primary containment structures." The plant's proximity to fault lines make, combined with its design, make it one of the most dangerous in the world, according to National Geographic. The Armenian government faces renewed questions about the plant's safety "in the wake of Japan's quake-and-tsunami-Fukushima Daiichi crises."

**Indonesia Maintains Nuclear Plans.** The Guardian (UK) (4/13, Terzis, 286K) reports that the Japanese nuclear crisis has done little to curb Indonesia's appetite for nuclear energy. "Two weeks after Japan's nuclear crisis, the Indonesian government stated that it will continue to pursue an ambitious nuclear power programme of its own that will triple the country's electricity output by 2025." The country plans to build two nuclear plants by the end of 2022, with a total capacity of 18GW. "Supporters of Indonesia's nuclear bid are adamant that Bangka is far from active fault lines, thus minimising the potential for a Fukushima-style crisis." Officials say the plants will feature the better technology and safeguards than the Daiichi plant.

**Sharp: Pyongyang Unlikely To Abandon Nuclear Program.** As Secretary Clinton prepares to visit Seoul later this week, Reuters (4/13, Stewart) reports Admiral Walter Sharp, commander of US forces in South Korea, told lawmakers yesterday that North Korea is unlikely to cave to international pressure to abandon its nuclear program. Asked by Sen. John McCain if there is any scenario under which leader Kim Jong-il would give up his nuclear weapons program, Sharp replied, "To answer your question directly: No, I do not see that he will give up his nuclear capability. ... I think it is clear that Kim Jong-il believes he has to have it for regime survival."

**WPost: Obama Lacks Strategy Toward Iran.** The Washington Post (4/13, 572K) editorializes, "Several months ago, administration officials were speaking confidently of an Iran that, pinched by sanctions and hamstrung by problems in its nuclear work, seemed ready to begin talks.

Now the talks are off, the economic pressure is easing and the nuclear work once again could be gaining momentum." However, "the administration seems to have no clear alternative to its long-standing strategy of waiting for the regime to negotiate." Adds the Post, "Passivity is a dangerous option; while the world watches the Middle East, Iran's drive for a bomb relentlessly continues."

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# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

WEDNESDAY, APRIL 13, 2011 7:00 AM EDT

[WWW.BULLETINNEWS.COM/NRC](http://WWW.BULLETINNEWS.COM/NRC)

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## NRC NEWS:

### **Japan's Reactors Still "Not Stable," US Regulator Says (NYT)**

By Matthew L. Wald

New York Times, April 13, 2011

WASHINGTON — The condition of the damaged Fukushima Daiichi reactors in Japan is "static," but with improvised cooling efforts they are "not stable," the chairman of the Nuclear Regulatory Commission told a Senate committee on Tuesday.

"We don't see significant changes from day to day," the chairman, Gregory B. Jaczko, said, while adding that the risk of big additional releases gets smaller as each day passes.

Long-term regular cooling of the reactors has not been re-established, nor has a regular way of delivering water to the spent-fuel pools, he told the Senate Environment and Public Works Committee. And when an aftershock hit the site and cut some offshore power supplies, he said, some pumps failed and cooling stopped for 50 minutes.

The situation is "not stable" and will remain so until "that kind of situation would be handled in a predictable manner," he said.

Mr. Jaczko also offered a new theory about the cause of the explosions that destroyed the secondary containment structures of several of the reactors. The prevailing theory has been that hydrogen gas was created when the reactor cores overheated and filled with steam instead of water; the steam reacts with the metal, which turns into a powder and then gives off hydrogen.

The Tokyo Electric Power Company, which operates the nuclear plant, intended to vent the excess steam as well as the hydrogen outside of the plant, but experts have suggested that when operators tried this, the vents ruptured, allowing the hydrogen to enter the secondary containments.

But Mr. Jaczko said Tuesday that the explosions in the secondary containments might have been caused by hydrogen created in the spent-fuel pools within those containments.

If true, that would mean that the introduction of hardened vents at reactors at nuclear plants in the United States — cited as an improvement that would prevent such an explosion from happening — would not in fact make any difference.

That theory also raises the possibility that it may be safer to move some of the spent fuel out of the pools in the containment structures and into dry storage, an idea that is attracting some support in Congress. Spent nuclear fuel must remain in water for the first five years or so to cool but can then be stored in small steel-and-concrete silos with no moving parts.

The industry uses these "dry casks" only when its pools are full. And so far the regulatory commission has said that pool and cask storage are equally safe. Still, some industry executives would like to tap the Nuclear Waste Fund, federal money set aside for a permanent waste repository, to pay for cask storage, an idea that is also favored by some environmentalists.

Mr. Jaczko's statement on the possible source of the hydrogen is the third big reversal in commission statements on the nuclear crisis at Fukushima.

Commission officials have also seemed less certain after stating that the spent-fuel pool in the No. 4 reactor was empty or close to empty, a situation that was evidently the basis for recommending a 50-mile evacuation for Americans in the plant's vicinity. Commission experts also said that radiation readings suggested that core material had slipped out of the vessel of the No. 2 reactor and entered a drywell in the primary containment, only to retreat again on whether that was in fact the case.

Mr. Jaczko also signaled that the regulatory commission itself was shifting from an extreme alert mode to a more sustainable long-term effort to monitor Japan's crisis. Staffing in the commission's round-the-clock emergency center at its headquarters in Rockville, Md., has been reduced, he said, with many staff members returning to their regular duties but available for consultation when events warrant.

He drew praise from the committee's chairwoman, Senator Barbara Boxer, a California Democrat, but criticism as well. She is seeking an especially high level of scrutiny for two twin-reactor plants in her state, the only ones that the commission says are in zones of high seismic activity. Mr. Jaczko said that all reactors were being evaluated.

She countered by saying that those two plants, Diablo Canyon and San Onofre, were at the highest risk. Mr. Jaczko said they were not, explaining that they were designed with the earthquake risk in mind and that risks to American plants generally were small.

Ms. Boxer replied that the Japanese had said the same thing, at least until the March 11 accident. "It's eerie to me," she said. "I don't sense enough humility from all of us here."

Another witness, Charles G. Pardee, the chief operating officer of Exelon Generation, the largest nuclear operator in the United States, also testified that the nation's nuclear plants were designed for the worst natural disaster observed in their areas, plus a substantial margin.

Thomas B. Cochran, a physicist at the Natural Resources Defense Council, gave some credit to American operators. Worldwide, he said, reactors are "not sufficiently safe," but "the next nuclear power plant disaster is more likely to occur abroad than in the US"

But the industry will have to rethink its practices nonetheless, he said. "If the nuclear power industry is to have a long-term future, attention must be paid to existing operating reactors," Mr. Cochran said. He ticked off a long list of factors, including American reactors that share Fukushima's basic design, that would be grounds for phasing them out.

## US Commission: Japan's Nuclear Plants Not Stable (USAT)

By Oren Dorell

USA Today, April 13, 2011

More than a month after a massive earthquake and tsunami hit Japan, crippling four nuclear power reactors, the situation at the power plants is still unstable, according to Gregory Jaczko, chairman of the US Nuclear Regulatory Commission.

"The situation currently is static," Jaczko said Tuesday on Capitol Hill at a joint hearing of the Senate's committees on environment and public works and clean air and nuclear safety. "We don't see day-to-day changes, but the situation is not stable."

The primary focus of the commission is to help Japanese authorities continue to cool the nuclear reactors and spent-fuel pools at the Fukushima Dai-ichi nuclear plant, but problems persist, Jaczko said.

"Last night, they had an aftershock and had to remove people from the plant, and cooling was shut down for a period of time," he said. "We want to move to a situation where we don't lose cooling."

Without keeping that cooling in place, "you have the possibility of further degradation" to the nuclear reactor cores and spent fuel pools, he said.

While some leaks of radioactive water into the ocean have been stopped, "we've left open the possibility that there are other leaks," Jaczko said.

Japanese nuclear officials are still looking for more possible leaks, he said.

Senators asked Jaczko and Lisa Jackson, administrator of the Environmental Protection Agency, to discuss lessons learned from the Japanese disaster that may improve safety in the US nuclear industry.

Sen. Barbara Boxer, D-Calif., whose state has the two nuclear power plants on the most active seismic zones in the USA, questioned Jaczko whether their safety is certain, as a half million people live within 50 miles of one and 7.4 million people live the same distance from the other. She urged Jaczko to reconsider whether the plants are safe to operate in those earthquake zones.

"They (the two plants) are built to a certain level of earthquake," Boxer said. "You can't know exactly what's going to happen."

Jaczko responded: "Those plants are built to the highest specification in the country."

"They may not be high enough," Boxer said. "I don't think we're humble enough in the face of what Mother Nature can do. ...Look what happened in Japan, they were so proud of having the best nuclear power technology and now they can't even stop the thing from leaking radioactivity."

Sen. Lamar Alexander, R-Tenn., agreed that "we have a lot to learn" from what happened in Japan, for example, on safety of unspent fuel storage. Even so, he said, "I can't imagine a future for the United States that doesn't include nuclear power to produce electricity. It's only 20% of our electricity, but it's 70% of our clean electricity."

A "rough analysis" of the radiation exposure in Japan and projections of excess cancers that are likely there appear to be roughly 10 to 100 times greater than with the Three Mile Island nuclear disaster, said Tom Cochran, senior scientist at the nuclear program of the Natural Resources Defense Council, an environmental group.

"This is the second-worst civilian nuclear power accident in history, and about 100 times less than Chernobyl accident," Cochran said.

The Capitol Hill testimony came a day after Japan ranked its nuclear crisis at the highest possible severity on an international scale — the same level as the 1986 Chernobyl disaster. Still, Japan said Tuesday that radiation leaks are declining at its tsunami-crippled nuclear plant.

The higher rating is an open acknowledgement of what was widely understood already: The nuclear accident at the Fukushima Dai-ichi plant is the second-worst in history. It does not signal a worsening of the plant's status in recent days or any new health dangers.

Japanese nuclear regulators said the severity rating was raised from 5 to 7 on an international scale overseen by the U.N.'s nuclear watchdog, the International Atomic Energy Agency (IAEA), because of new assessments of the overall radiation leaks from the Fukushima Dai-ichi plant.

According to the Vienna-based IAEA, the new ranking signifies a major accident that includes widespread effects on the environment and people's health. The scale, designed by experts convened by the IAEA and other groups in 1989, is meant to help the public, the technical community and the media understand the public safety implications of nuclear events.

The upgraded status did not mean radiation from the plant was worsening, but rather reflected concern about long-term health risks as it continues to spew into the air, soil and seawater. Most radiation exposures around the region haven't been high enough yet to raise significant health concerns.

Workers are still trying to restore disabled cooling systems at the plant, and radioactive isotopes have been detected in tap water, fish and vegetables.

Japanese officials said the leaks from the Fukushima plant so far amount to a tenth of the radiation emitted from Chernobyl, but about 10 times the amount needed to reach the level-7 threshold. They acknowledged the emissions could eventually exceed Chernobyl's, but said the chance that will happen is very small. However, regulators have also acknowledged that a more severe nuclear accident is a distinct possibility until regular cooling systems are restored — a process likely to take months.

"Although the Fukushima accident is now at the equal level as Chernobyl, we should not consider the two incidents as the same," said Hiroshi Horiike, professor of nuclear engineering at Osaka University. "Fukushima is not a Chernobyl."

## Fukushima Crisis "Static" But Not Stable - US NRC (REU)

By Roberta Rampton

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## OVERNIGHT ENERGY: House Gets Moving On Offshore Drilling (HILL)

By Andrew Restuccia, Ben Geman And Alicia M. Cohn

The Hill, April 13, 2011

**State of Play:** A pair of House panels will delve into offshore drilling legislation Wednesday amid a warning from Interior Secretary Ken Salazar that GOP proposals reflect "amnesia" about last year's massive BP oil spill.

The House Natural Resources Committee is marking up a trio of bills that would demand faster permitting, set deadlines for near-term lease sales in the Gulf of Mexico and mandate a major expansion of coastal areas made available for development.

The Republicans have the numbers on the panel to move the bills, which Chairman Doc Hastings (R-Wash.) envisions on the floor as soon as next month.

But look for Democrats to force votes on various amendments. They likely won't have the numbers to pass but will ensure collisions on the panel that preview floor battles to come.

Rep. Frank Pallone Jr. (D-N.J.) tells E2 he's offering an amendment that would prevent sale of oil-and-gas leases off the Atlantic Coast — a policy in line with existing White House policy, which does not envision Atlantic Coast leasing in the Interior Department's 2012-2017 plan (the White House backed off its push for expanded coastal drilling after the BP oil spill).

While the markup unfolds, a panel of the House Energy and Commerce Committee will hear from various witnesses — including Alaska's senators — on GOP legislation (available here) that would speed up air permitting for drilling projects in Arctic waters already under lease off Alaska's northern coast.

The GOP bill would limit the reach of EPA permitting, set a six-month deadline for issuing permits and set new limits on challenges of permits. It's largely a response to Shell Oil's inability to secure final permits for drilling plans off Alaska, which is among the reasons the oil giant's exploratory drilling has been delayed there.

#### NEWS BITES:

NRC chairman: Crisis in Japan 'static,' but not 'stable'

Nuclear Regulatory Commission Chairman Gregory Jaczko said Tuesday that the nuclear crisis in Japan is "static," but not "stable."

Jaczko, testifying at a Senate Environment and Public Works Committee hearing, said the situation at the Fukushima Daiichi power plant — which lost power after a massive earthquake and tsunami hit northeast Japan last month — was not rapidly changing.

But he stressed that the plant is not yet stable, noting that it remains vulnerable to continuing aftershocks in the region.

Jaczko's comments come on the same day that Japanese officials raised the rating of the nuclear crisis to the highest level on the international scale. That's the same rating that the 1986 Chernobyl disaster received.

Jaczko took only two quick questions from reporters after Tuesday's hearings and did not expand on his comments.

Bingaman, Murkowski got 150 CES comments; staff will analyze them in May

Senate Energy and Natural Resources Committee Chairman Jeff Bingaman (D-N.M.) told reporters Tuesday that he has received 150 comments from a wide variety of groups on how to construct a federal standard requiring that the country get a certain portion of its electricity from low-carbon sources.

Bingaman, along with Sen. Lisa Murkowski (R-Alaska), released a whitepaper on the so-called "clean energy standard," or CES, last month. The senators also called on various groups to submit comments on the proposal by April 11.

Asked by reporters about the CES comments Tuesday, Bingaman said he hadn't read them yet. But he said his staff would begin taking a close look at them when the Senate returns from its upcoming two-week recess on May 1.

President Obama has outlined a framework for a CES that would mandate that 80 percent of the electricity come from low-carbon energy sources like wind, natural gas and nuclear by 2035.

The White House has charged Bingaman, who has raised questions in the past about including nuclear in such a standard, with fleshing out the proposal.

Sen. Kerry is 'exasperated, jaded and frustrated'

When it comes to energy and climate policy, Sen. John Kerry (D-Mass.), who played a leading role in efforts to pass climate legislation last year before the talks fell apart at the last minute, is "exasperated, jaded and frustrated."

"I guess after a while you get a little bit exasperated, jaded and frustrated by it all. Maybe all of you here are. I certainly am," Kerry said at an energy policy forum hosted by The New Republic Tuesday.

Kerry lamented the country's lack of progress on weaning itself off of its dependence on oil and addressing climate change.

"It really is quite stunning that the United States is like an ostrich, putting its head in the sand and waiting until things blow by and then you poke up and pray or hope or think that somehow it might have changed," he said.

And he accused Republicans of disregarding facts in favor of talking points.

"I don't know what's happened to the body politic of our country where facts seem to be so easily shuttered aside, disposed of, in favor of simple sloganeering, pure ideology and little bromides of politics that are offered up and offer no solution, but might get you through an election," he said.

Trent Lott to Obama: Time to 'step up' on energy security

Former Senate Majority Leader Trent Lott (R-Miss.) has blunt advice for President Obama when it comes to energy security: Get with it.

"The president needs to step up, get involved," Lott said Tuesday. Expect to hear the message repeated — Lott co-chairs the Bipartisan Policy Center's new energy project that formally launched Tuesday and will focus heavily on curbing US reliance on imported fuels.

Obama, in a series of recent appearances, has emphasized enhanced fuel efficiency and many other administration steps to bolster energy security. But Lott and the three other leaders of the new project say a greater focus at the White House and Capitol Hill is needed.

Former National Security Adviser James Jones — who stepped down from the role late last year — said the US still lacks a clear "path" on the matter and that energy needs a more prominent role in U.S. security policy.

Jones believes there should be an energy security coordination position at the National Security Council.

"There has to be someone, in addition to the president, who can step forward and harmonize" various branches of the government when it comes to energy policy, he said. Jones believes that the government currently lacks the "organization" to deal with serious energy threats.

Former Sen. Byron Dorgan (D-N.D.) and William Reilly — who led EPA under President George H.W. Bush and recently chaired the presidential oil spill commission — are the other leaders of the new project.

They released an "open letter" Tuesday that lays out their plans.

Bingaman's committee gets down to business

Bingaman's Senate Energy and Natural Resources Committee had a busy day Tuesday.

The panel approved three energy bills — on issues ranging from hydropower to appliance standards — and OK'd the nomination of Peter Lyons to be the assistant secretary for nuclear at the Department of Energy.

#### ON TAP WEDNESDAY:

Here are some of the notable energy-related events around town:

The Senate Environment and Public Works Committee will hold a hearing on "Domestic Renewable Fuels: From Ethanol to Advanced Biofuels." The hearing will include testimony from Agriculture Secretary Tom Vilsack, among others.

The Senate Appropriations Committee will hold a hearing on the Army Corps of Engineers fiscal 2012 budget request.

The House Science Committee will examine "Green Jobs and Red Tape: Assessing Federal Efforts to Encourage Employment." Witnesses will include officials from the American Enterprise Institute, the US Chamber of Commerce and the Heritage Foundation.

T. Boone Pickens will participate in a natural-gas vehicles event Tuesday.

Southern Co. CEO Thomas Fanning will discuss nuclear energy policy, among other things, at the US Chamber of Commerce.

IN CASE YOU MISSED IT ...

Here's a quick roundup of Tuesday's E2 stories:

-The agreement to fund the government through the end of the fiscal year cuts EPA's funding, delists wolves and blocks funding for Interior's 'wild lands' policy

-Democrats issued their latest call to tap the Strategic Petroleum Reserve

-An EPA official called a controversial study on natural-gas drilling an "important piece of information"

-A top Democrat said Republicans aren't giving EPA officials adequate notice of hearings

-Interior Secretary Ken Salazar said Republican drilling bills show "amnesia" about last year's Gulf oil spill

-EPA officially exempted milk from an oil-spill prevention regulation

-The Interior Department is weighing an expansion of offshore rules to contractors

## Nuke Crisis 'Static' But Not Stable: US (KYODON)

Kyodo News, April 13, 2011

The top US nuclear regulator said Monday he will not change a recommendation that US citizens stay at least 80 km away from the crippled Fukushima nuclear plant, even as he declared that the crisis remains "static."

Gregory Jaczko, chairman of the Nuclear Regulatory Commission, acknowledged in an interview that the month-old crisis has not yet stabilized. But he said conditions at the Fukushima No. 1 plant have not changed significantly for several days. \

"We describe the situation as static but not yet stable," Jaczko said. "It hasn't really changed too much in the last few days," he said, adding it will be weeks or even months before the plant is stabilized.

The March 11 earthquake and tsunami knocked out power at the Fukushima plant, and reactors have been overheating ever since.

Progress to stabilize the complex most days has been slow, or not at all, as new aftershocks and leaking radiation have repeatedly halted work. A new tremor Monday briefly cut electricity to the plant and halted work while technicians took cover, but the episode did not endanger operations, according to Japanese officials.

The Japanese government, meanwhile, added five communities Monday to a list of places people should leave to avoid long-term radiation exposure. A 19-km radius has been cleared around the plant already.

Jaczko said the most important job at the plant remains to keep water in the spent fuel pools to cool the highly radioactive fuel rods, which reduces the threat of a meltdown and a catastrophic release of radiation.

Jaczko, who traveled to Japan last month, said the NRC has begun a two-pronged approach to review the safety of the 104 commercial US nuclear reactors in the aftermath of the Japanese crisis. A 90-day review should be completed in June, with another report expected by the end of the year.

"We want this to be a very systematic and methodical review and make sure we identify all the important issues, and that we work with a sense of urgency and speed to address those issues in the appropriate way," he said, adding that he expects the reviews to result in recommendations for significant regulatory changes.

"Fundamentally I expect that there will be some things we will want to change and need to change as a result of what comes out of this 90-day review and longer-term review, based on events in Japan," he said.

A task force made up of high-ranking NRC staff is conducting the two reviews, and the five-member commission will act quickly once the reports are released, Jaczko said.

On the 80-km evacuation zone for US citizens in Japan, Jaczko called his March 16 recommendation "prudent" and said it was based on projections for continued deterioration at the plant. The Japanese government had set the 20-km evacuation zone, and the US decision raised questions about US officials' confidence in Tokyo's risk assessments.

"I'm still very comfortable" with the decision, Jaczko said.

Asked whether he set up a double standard - one for nuclear plants in foreign countries and another for US plants, where a 16-km evacuation zone is the current standard - Jaczko denied this was the case.

"I wouldn't say that's a contradiction," he said, noting that the 16-km US evacuation zone refers to emergency planning prior to a nuclear disaster. If events warrant, a larger evacuation zone can be created.

"Ultimately, decisions about protective actions (in the event of a nuclear disaster) are made by state and local authorities," he said, not the NRC.

On another topic, Jaczko said he believes spent fuel can be stored safely either in pools or in dry cask storage. Democratic Sen. Dianne Feinstein sent Jaczko a letter Monday urging the NRC to establish regulations that would encourage plant operators to move more quickly to store spent fuel in dry casks, rather than in pools that must be kept cooled. Feinstein cited a 2006 study by the National Research Council that indicated dry cask storage systems have inherent safety advantages over spent fuel pools.

Jaczko disputed that, saying both methods are safe.

The United States has not had an accident involving spent fuel in decades, and spent fuel at commercial US reactors "continues to be safe and secure," even without a designated site to store nuclear waste, Jaczko said. The Obama administration has abandoned plans for a nuclear waste dump in Nevada, prompting sharp criticism from some lawmakers in both parties.

Jaczko declined to speculate whether the Japanese crisis would cause a slowdown in a planned expansion of new US nuclear reactors backed by President Barack Obama. Jaczko said the NRC has "a very robust system" to license reactors that takes into account a wide range of factors.

"Ultimately safety rests with the (plant operator)," he said. "It's our job to make sure they get there."

If the NRC considers plants unsafe, it will take corrective action, up to and including shutting down plants if necessary, Jaczko said. Three US nuclear power plants - in South Carolina, Kansas and Nebraska - need increased oversight from federal regulators because of safety problems or unplanned shutdowns. Jaczko said all 65 US nuclear plants in 31 states are operating safely.

Commander returns

kyodo

Adm. Patrick Walsh, commander of the Hawaii-based US Pacific Fleet, said Monday he will return to Hawaii soon after leading the US military's disaster-relief operations in the wake of the March 11 earthquake and tsunami that hit the Tohoku region.

Walsh also told reporters after meeting with Defense Minister Toshimi Kitazawa that he has informed the minister that relief efforts in Operation Tomodachi would be taken over by Lt. Gen. Burton Field, top commander of US forces in Japan.

At the outset of their meeting at the Defense Ministry, Kitazawa thanked Walsh for his leadership in the operation and told him he hopes to continue the relief efforts in cooperation with Field.

The US military began pulling out its main units for the operation from earlier this month and has completed its support operation at sea, but Walsh said cooperation in relief efforts will continue.

## **UPDATE 2-US Senators Probe Nuclear Future In Wake Of Japan (REU)**

By Roberta Rampton

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Fukushima Crisis 'Static' But Not Stable, US Nuclear Authorities Say (BUENOS)**

Buenos Aires Herald, April 13, 2011

Japan's nuclear crisis appears to be "static" but not yet stable as the damaged reactors still need to be cooled, the head of the US nuclear safety regulator said.

Japanese authorities continue to focus on ensuring they can keep reactors and spent fuel pools cooled at the damaged Fukushima Daiichi plant, said Gregory Jaczko, chairman of the Nuclear Regulatory Commission.

"The efforts continue to ... transition from static to stable to ensure long-term ultimate ability to cool the reactors and to provide cooling to the spent fuel pools," Jaczko told senators at an Environment and Public Works Committee hearing on Japan's nuclear crisis.

The US regulator is reviewing the crisis to see whether changes are needed to protect against an accident at any of the 104 operating nuclear plants in the United States.

## **Carper Subcommittee Takes Part In Nuke Safety Hearing (WDEL)**

By Frank Gerace

WDEL-Radio Delaware, April 13, 2011

Senator Carper's Subcommittee on Clean Air and Nuclear Safety took part in a hearing on Japan's nuclear crisis and what it means for the US nuclear industry.

Carper asked NRC Chairman Gregory Jaczko what his agency's learned from the disaster at the Fukushima plant.

Carper said he's looking forward to hearing the results of an NRC review of safety procedures at all US nuclear plants.

## **NRC Chairman: Reactor Situation In Japan Is Static But Not Stable (CNN)**

By Jim Barnett

CNN, April 13, 2011

Washington (CNN) -- The chairman of the Nuclear Regulatory Commission said Tuesday that the situation in the wake of the Japanese nuclear reactor crisis is static but not yet stable.

On the day that Japan bumped up the seriousness of its nuclear accident from a Level 5 to a Level 7 priority, on par with the Chernobyl disaster, a Senate committee heard from US environmental officials, scientists and NRC Chairman Gregory Jaczko.

"From the information we have, we believe the situation currently is static, namely we don't see significant changes on a day-to-day basis with the reactors," Jaczko told the Senate Committee on Environment and Public Works. "It is not yet, however, what we believe to be stable: namely that given additional events or other circumstances ... there would not be the potential for significant additional problems at the reactors."

Thus, Jaczko said, the focus is "on these efforts to transition from static to stable to ensure (the) long-term ... ability to cool the reactors and to provide cooling for the spent fuel pools."

California Sen. Barbara Boxer's state has a number of nuclear plants in areas with high seismic activity near millions of people. She pressed Jaczko for reassurances that enough is being done to protect people in the United States, especially California residents.

"We've got to move beyond talk and get to the serious question (of) what do we do, to do everything in our power to make it safe," Boxer said.

Boxer pointed out that officials once said it was "very unlikely" Japan would ever face the kind of crisis it finds itself in today.

Questions were raised at the hearing about how far to extend evacuation zones in the United States in the event of a nuclear incident. The NRC has recommended that Americans in Japan stay at least 50 miles away from the damaged reactors. The current standard in the United States is a 10-mile evacuation zone.

"As we've seen in Japan, nuclear events tend to develop over a long period of time," said Jaczko. "This is three weeks into this event, and we've had the time and the ability to make protective action recommendations, and to update and modify them as conditions of the plant changed. So that 10 miles is really based around the idea of what do you need to have prepared right away so that if you have an event that develops quickly, you can address that and have prestaged and prepared what to do," he said.

Boxer pointed out that two of the nuclear plants in California were built to withstand a certain level of earthquake, pointing out in Japan it was 7.5 but the devastating quake was much more powerful. She said nuclear regulatory officials are being too conservative.

"It's eerie to me, because I don't sense enough humility from all of us here. You know, as some great scientists once said, we think we have all the answers, but Mother Nature may not agree with us. So a lot of what you're saying is the same thing that they said," Boxer pointed out. "You can't know for sure what's going to happen," she said.

Lisa Jackson, administrator for the Environmental Protection Agency, reassured senators that air and water sampling for radiation contamination continue in the United States and that so far there is nothing to worry about.

"Let me be clear, EPA has not seen and does not expect to see radiation in our air or water reaching harmful levels in the United States," said Jackson. "All of the data that we have seen, which we continue to make public and available on our website, indicates that while radiation levels are slightly elevated in some places, they are significantly below problematic levels."

## **US To Examine Wider Nuclear Evacuation Zones, Jaczko Says (1) (BLOOM)**

By Simon Lomax

Bloomberg News, April 13, 2011

April 12 (Bloomberg) -- The US will study expanding the evacuation zones near power plants as part of the safety review triggered by Japan's reactor crisis, Nuclear Regulatory Commission Chairman Gregory Jaczko said.

The NRC, which requires plans for immediate evacuations within 10 miles of a reactor, can "go farther if necessary" should conditions worsen, Jaczko said today at a hearing of the Senate Environment and Public Works Committee. The agency will consider revising the minimum evacuation zone "as part of the review that we're doing," Jaczko said.

The safety of US nuclear reactors is being examined by lawmakers and regulators after a partial meltdown at Tokyo Electric Power Co.'s Fukushima Dai-Ichi plant in Japan. The plant was damaged by a 9-magnitude earthquake and tsunami that struck Japan March 11. Japanese officials today raised the severity level of the accident to 7, the highest rating, which matches the 1986 Chernobyl disaster.

Within a week of the earthquake and tsunami, the NRC told the Obama administration that US citizens in Japan should evacuate to at least 50 miles (80 kilometers) from the stricken nuclear plant. The NRC's recommendation prompted officials, including Democratic New York Governor Andrew Cuomo, to question the safety of plants near large cities.

In the case of Entergy Corp.'s Indian Point nuclear reactors, about 24 miles north of New York City, Cuomo said it isn't feasible to evacuate the 20 million people living within 50 miles of the plant. The NRC has said the Indian Point plant is safe.

50 Miles

Senator Frank Lautenberg, a New Jersey Democrat, said it may make sense for the NRC to extend the initial evacuation zone near nuclear plants to 50 miles.

"When all else fails, we have to be absolutely certain that the way to evacuate these areas is foolproof," Lautenberg said at the hearing.

In separate testimony at today's hearing, Environmental Protection Agency Administrator Lisa Jackson said water and milk are safe to drink in the US with "very low levels of radioactive material" from the Japan reactors.

"The levels detected are far below levels of concern," Jackson said.

The EPA sampled drinking water at several locations during the week of April 4 and found "an infant would have to consume over 200 gallons of this water at the highest detection level to receive a radiation dose equivalent to a day's worth of the natural background radiation exposure," Jackson said.

#### Milk Samples

Milk samples taken March 28 in Phoenix and Los Angeles had radiation levels "more than 1,500 times lower" than health thresholds set by the Food and Drug Administration, she said.

The NRC, which has said all 104 commercial US reactors can withstand natural disasters, is conducting a 90-day examination to determine if extra safeguards are needed after the Japan failures.

So far, the NRC's review "gives us confidence that the US plants continue to operate safely," Jaczko said in prepared testimony.

Senator James Inhofe, an Oklahoma Republican, criticized Jaczko for invoking "emergency authority" after the Japanese crisis, which transferred some functions of the NRC's five-member commission to the chairman.

"I'm not aware than an emergency exists at any US facility," Inhofe said at the hearing.

Jaczko said he acted within the chairman's authority and regularly briefed the commissioners on the agency's activities.

## Blog: The Ingenuity Of The Commons: Senators Accuse NRC Chair Of Unnecessarily Invoking Emergency Powers (FORBES)

By Jeff McMahon

Forbes, April 13, 2011

Senate Republicans today accused Nuclear Regulatory Commission Chairman Gregory Jaczko of invoking emergency powers without cause and taking authority away from other members of the NRC.

Jaczko disputed the claim.

In his opening remarks, Sen. James Inhofe (R-Okla.) said his staff had discovered that Jaczko evoked emergency powers on March 11, in the wake of the accident at the Fukushima-Daiichi nuclear power plant.

"The public is best served by a commission that serves collectively and collegially. I'm concerned that the public may currently be getting less than it deserves," he said. "I was surprised to learn from my staff that Chairman Jazcko has evoked emergency authority and transferred commission functions to himself in the wake of the earthquake in Japan."

Jaczko had not revealed that action during a phone call or a prior hearing, Inhofe said. Inhofe urged transparency and questioned whether Jaczko had overstepped his authority.

"At the moment I'm not aware of any emergency that exists at any US facility," he said.

Sen. John Barrasso (R-Wy) reinforced the accusation:

"The tsunami and earthquake occurred in Japan, not in the United States," he said. "Some people seem to want Americans to believe the emergency happened here, and that's not the case."

"As Sen. Inhofe pointed out the Nuclear Regulatory Commission chairman is acting under his emergency powers since the disaster first occurred."

The NRC went into "monitoring mode" on March 11, Jaczko replied—a status that allowed it to deploy a 24-hour assistance team to Japan.

"There's not so much an invoking of emergency authorities. That's an authority the chairman has. Most of the activities that I've engaged in as a part of this response have been in my normal supervisory responsibility over the staff of the agency and my communication responsibilities."

The senators asked Jaczko whether he was communicating with other members of the commission. Since March 11, he said, there have been 26 briefings of commissioners, 60 briefings of commissioners' staff, and 80 "agency products" provided to commission members.

Jaczko was appointed by President Obama in 2009. According to his official biography:

Immediately prior to assuming the post of Commissioner, Dr. Jaczko served as appropriations director for US Sen. Harry Reid and also served as the Senator's science policy advisor. He began his Washington, D.C., career as a congressional science fellow in the office of US Rep. Edward Markey. In addition, he has been an adjunct professor at Georgetown University teaching science and policy.

In other developments from this afternoon's meeting of the Senate Environment and Public Works Committee:

Sen. Tom Udall (D-New Mexico) said banks will ultimately decide whether new nuclear plants are built in the US, based on the viability of lending;

EPA Administrator Lisa P. Jackson assured senators that EPA's radiation monitoring system is adequate, accurate, that it has detected no harmful levels of radiation from the Japan incident, and that she doesn't expect harmful levels to reach the US

California legislators demanded a halt to any relicensing of two plants in that state pending state-of-the-art seismic-safety studies.

Democratic Sen. Barbara Boxer, US Rep Lois Capps, and Republican California State Senator Sam Blakeslee, who holds a PhD in geophysics, pressed for a halt to plant relicensing pending new seismic studies. All three have the Diablo Canyon Nuclear Power Plant, near San Luis Obispo, within their districts.

Pacific Gas & Electric Company, operator of the plant, recently withdrew its request for license renewal.

Boxer questioned EPA Administrator Jackson about her agency's ongoing monitoring of radioactive fallout in the US

"We know that low levels of radiation have been detected in the United States," Boxer said. "Experts say we're okay right now. I want to probe that, I want to make sure of that."

Jackson replied: "EPA has not seen and does not expect to see radiation in our air or water reaching harmful levels in the United States. While radiation levels are slightly elevated in some places, they are significantly below harmful levels."

Boxer reacted to reassurances from both administrators by saying she had once heard similar statements from the Japanese.

"It's eerie to me, because I don't sense enough humility from all of us here. As some great scientist once said, we think we have all the answers, but Mother Nature might not agree. A lot of what you're saying is the same thing they said in Japan."

## Inhofe Questions NRC Chairman's Emergency Actions (EEPM)

By Hannah Northey

E&ENews PM, April 13, 2011

The ranking Republican on the Senate Environment and Public Works Committee today quizzed the country's top nuclear regulator on why he invoked emergency authority after the March 11 earthquake and tsunami that sparked a nuclear crisis in Japan.

Nuclear Regulatory Commission Chairman Gregory Jaczko used emergency authority and transferred commission functions to himself in the wake of the Japanese events and failed to inform the committee, Sen. James Inhofe (R-Okla.) said at a joint hearing of the full committee and its subpanel on clean air and nuclear safety.

Inhofe said the law confers emergency authority on the chairman in the wake of an emergency at a particular facility or materials regulated by NRC. But Inhofe said at present he is not "aware that an emergency condition exists at any US facility."

Jaczko said he has been acting within his current authority, and NRC officials said Inhofe had sent a letter to the agency earlier expressing his concerns, although that letter has not yet been made public.

"There's not so much an invoking of emergency authority; that's an authority the chairman has," Jaczko said, adding that most of his activities have fallen within his normal advisory roles.

But Inhofe said the chairman had repeated opportunities to tell lawmakers he had invoked emergency authority and advised the chairman to maintain a collaborative relationship with Congress.

Jaczko pointed to myriad hearings and briefings he and the commission have held, saying, "I think there's been very good communication."

## US Begins To Reconsider Nuclear Risks In Light Of Japan Crisis (MCT)

By Renee Schoof, McClatchy Newspapers

McClatchy, April 13, 2011

WASHINGTON — As Japan struggles with radioactive contamination from one of the world's worst nuclear accidents, American nuclear experts are watching for clues on how to make US nuclear power plants more resistant to the forces of nature or hostile attacks.

US nuclear regulators continue to assure Americans that US plants are safe. They cite a stringent regulatory program, redundant security systems and improvements since the 1979 Three Mile Island accident and the 2001 terrorist attacks.

Yet the problems at Fukushima in the wake of last month's tsunami have reopened questions about the risks of US nuclear reactors, and especially the pools that store spent fuel. Nuclear-safety and environmental groups have called for an independent investigation and a moratorium on relicensing and approvals of new designs.

"The irrefutable bottom line is that we have utterly failed to properly manage the risk from irradiated fuel stored at our nation's nuclear power plants," said David Lochbaum of the Union of Concerned Scientists, a nuclear engineer who worked on three US nuclear plants that are similar to the one in Japan.

Spent-fuel pools don't have as much backup cooling as reactor cores do, and they aren't covered by the heavy concrete containment structures that surround core reactors, which protect the public from accidental releases of radioactivity, Lochbaum said last month in testimony to Congress.

The Obama administration says nuclear energy is clean and safe. Energy Secretary Steven Chu said he hoped that nuclear would be part of the energy mix until technological improvements allowed wind and solar power to displace gas and coal economically.

Germany responded to Japan's nuclear crisis by shutting down its seven oldest reactors for three months for safety checks. The US Nuclear Regulatory Commission and the industry say there's no need to do that here.

"The next generation will be a safer generation of plants, but I want to emphasize this generation of plants has an extremely high performance rating over the last 30 years or so, well over any industry I can think of, and the plants have been operated safely," said Stewart Minahan, the executive director of operations for the Nuclear Energy Institute, an industry group.

Minahan cited many safety improvements: better instruments to monitor the buildup of explosive hydrogen, improvements to containment buildings, the installation of diesel generators and, after 9/11, additional equipment to help keep reactors and spent fuel cool during power outages.

Some of those upgrades addressed problems that Japan experienced.

Japanese officials say hydrogen explosions damaged four reactor buildings, with severe damage at three of them. Power outages prevented cooling in the reactors and the spent-fuel pools. Officials say that while it's not fully known what happened inside the plant, it's likely that spent fuel was damaged and was the source of some of the radioactive material that was released.

"It is the case that the US undertook significant measures after 9/11 both to improve security and to enhance the capacity for US plants to cope with extreme events of all kinds. Those measures would have helped in dealing with an event like those at the Fukushima plants," Richard Meserve, a former NRC chairman who's now the chairman of an international nuclear safety group, said in an email.

The Japanese plant's design dated to the late 1960s, as do many in the US, but Minahan said US plants were upgraded routinely. Large components get replaced, and safety equipment is checked monthly.

"Our plants today are in better material condition than 10 or 20 years ago," he said.

Many US improvements were made after the Three Mile Island accident in 1979 near Harrisburg, Pa., when an equipment failure caused fuel to melt. Even then, the containment structure prevented uncontrolled releases of radioactive materials.

Robert Youngblood, a senior risk consultant at the Idaho National Laboratory, the Department of Energy's lead nuclear research and development facility, said it was too early to say what Fukushima might change.

"The information we have about what really happened over there is really sketchy," he said. "One thing you learn in risk analysis is details matter."

What's known is that the reactors and spent-fuel pools in Japan lost cooling water after a power outage.

Nuclear fuel is consumed in nuclear fission, which creates heat to boil water, which produces steam that powers turbines, producing electricity. The spent fuel is removed from the reactor and placed in a pool to cool.

Even spent fuel is highly radioactive and hot. It must be kept under about 20 feet of water for about five years.

After that time, the fuel can be stored in steel and concrete casks. In the US, however, plants tend to keep the pools as full of spent fuel as possible, moving it to dry casks only when more space is needed.

"Right now, we believe this material can be stored safely and securely either in pools or in dry casks," Nuclear Regulatory Commission Chairman Gregory Jaczko told Congress on March 30.

But in 2008, before he became the NRC chairman, Jaczko said in a speech that new regulations were needed that would require moving spent fuel to dry casks. The casks had "inherent safety benefits," he said.

The NRC says spent fuel can be stored safely in either pools or casks for 100 years, but that neither is a long-term solution. Highly radioactive waste will need to be stored in a deep repository until it becomes harmless through decay after hundreds of thousands of years.

The pools originally were intended as temporary storage, because plans called for fuel reprocessing. In 1977, however, the government stopped the reprocessing of power plant fuel because plutonium, its byproduct, can be used to make nuclear weapons. As spent fuel accumulated, the pools had to be packed more densely.

Spent fuel pools measure 40 by 60 feet and are 40 feet deep. Their walls are thick steel-reinforced concrete around stainless-steel liners. If cooling is lost, the metal tubes that contain the fuel pellets heat up and can rupture and release radioactive gases. At Fukushima and at US plants, the spent-fuel pools are outside the reactor-containment structures.

The NRC says the pools are designed to withstand the same level of natural disasters as the reactors.

After 9/11, investigators studied whether the pools could withstand attacks. A 2002 industry study, based on computer modeling, found that if a jet hit a pool, the concrete wall would be crushed and cracked but the stainless steel lining would keep the water in.

Fukushima, however, showed how little is known about anticipating and managing nuclear power's risks, Frances Beinecke, the president of Natural Resources Defense Council, an environmental group, said in a letter March 25 to President Barack Obama. She called for a new independent investigation into those risks.

A report published in the journal Science & Global Security in 2003 suggested that as much spent fuel as possible should be removed from the pools and put in dry casks to reduce the risk of fire and the release of radioactive materials.

As radioactive materials decay, they release particles that can damage the body and lead to cancer, particularly cesium-137 and iodine-131. In the 1986 nuclear accident at Chernobyl, releases of cesium-137 contaminated land. Some communities were abandoned permanently. Thousands of people who drank milk contaminated with radioactive iodine developed thyroid cancer.

A fire at a spent-fuel pool could release cesium-137. "The long-term land-contamination consequences of such an event could be significantly worse than those from Chernobyl," the 2003 report said.

The author of the 2003 report, Robert Alvarez, a former Department of Energy official who oversaw nuclear issues, said dry casks would provide safer storage until a permanent nuclear repository was built and loaded, a process that would take decades.

Germany shifted to dry-cask storage inside reinforced concrete buildings about 25 years ago because of dangers from terrorist attacks and accidental plane crashes, Alvarez said.

William Levis, the president of New Jersey's PSEG Power, which operates nuclear plants, said it was worth discussing how to handle waste fuel. The industry isn't reluctant to use dry casks, but it wants to limit how many times it must handle used fuel until there's a national plan for a repository, he told a congressional panel late last month.

The future of US nuclear power will depend on how the federal government and investors evaluate its costs and risks.

Chu said new designs had passive safety systems and were far safer. A North Carolina alliance of public interest groups, however, says that one of these designs, the Westinghouse AP1000, has flaws. The alliance filed a motion last Wednesday that calls on the NRC to suspend the approval process for it until lessons from Fukushima are learned.

Among other things, the groups cited an NRC engineer's report that says the concrete in the containment structure wouldn't be strong enough. It also cited a warning by some scientists that filters in the passive cooling system might clog, increasing the risk of a meltdown.

## 'No Justification' For Oyster Creek To Be Singled Out, NRC Says In Brief (LACEYPATCH)

By Patricia A. Miller

Lacey Patch, April 13, 2011

The Nuclear Regulatory Commission has asked a federal appellate court to deny a petition by a coalition of citizen groups to re-examine the relicensing of the Oyster Creek nuclear plant, in the wake of the nuclear mishaps in Japan.

"No safety, technical, or policy justification exists to single out particular reactors for different treatment, just because of their place in the licensing queue or status on judicial review," the NRC said in a brief filed recently.

The 3rd Circuit Court of Appeals in March directed NRC lawyers to provide more information about the "propriety" of re-licensing the Oyster Creek Nuclear Generating Station in the wake of the earthquake and tsunami in Japan.

The NRC relicensed the then-40-year-old plant on April 8, 2009, to operate for another 20 years, over the objections of a coalition of citizen groups that fought the plant's re-licensing. Oyster Creek is the oldest nuclear plant in the United States.

The NRC brief cites the agency's "Defense in Depth" redundant defenses against unanticipated events.

"We have severe accident management guidelines, revisions to the emergency operating procedures and processes for dealing with large fires and explosions, regardless of the cause," according to the brief.

"Every reactor in the United States is designed for natural events based upon its specific location, with multiple fission barriers and a wide range of safety and redundant factors," the brief states.

The NRC will carefully gather and analyze data from the Fukushima Daiichi nuclear plant in Japan to ensure safety at United States reactors as necessary to protect public health and safety in the United States, according to the brief.

"Our focus will always be on keeping plants and radioactive material in the country safe and secure," the brief states.

The NRC has been monitoring and analyzing events from the Japan plant and sent agency technical experts to Japan to provide support.

The citizens' coalition fought the plant's relicensing for several years includes the New Jersey Environmental Federation, The New Jersey chapter of the Sierra Club, the Nuclear Information and Resource Service, the New Jersey Public Interest Research Group and Grandmothers, Mothers and More for Energy Safety.

Coalition attorneys have until April 18 to respond to the NRC and Exelon submissions.

The Nuclear Information and Resource Service recently launched a campaign for the permanent shutdown of the 23 General Electric Mark I reactors currently operating in the United States, which includes Oyster Creek. The Jersey Shore Nuclear Watch, the New Jersey Sierra Club and Berkeley Township Mayor Jason J. Varano have also called for the plant's shutdown.

Exelon officials announced last Dec. 8 that Oyster Creek would close in 2019, 10 years before its latest license is due to expire.

Exelon President Chris Crane said then that "negative" economic conditions and changing environmental regulations were the reason for the earlier closure. The state Department of Environmental Protection has mandated that Exelon install cooling towers at the plant on Route 9 in Lacey Township as a condition of its draft water discharge permit.

## **Workers At Neb. Nuclear Plant Exposed To Radiation (AP)**

Associated Press, April 13, 2011

BROWNVILLE, Neb.

Federal inspectors are trying to find out why three maintenance workers were exposed to higher than expected radiation levels at Cooper Nuclear Station near Brownville in southeast Nebraska.

The Nuclear Regulatory Commission says the workers were exposed to unplanned radiation on April 3 at the power plant run by the Nebraska Public Power District. The utility told regulators it doesn't believe the radiation exposure exceeded the commission's limits.

NPPD officials didn't immediately respond to a message Monday.

Regulators say the workers didn't follow the proper procedure for removing a long tube contaminated with radioactive material from the reactor because the tube was taken out of the bottom of the reactor vessel instead of the top.

Once the tube was removed, radiation alarms went off, and the workers left the area.

## **NRC Team Inspects Cooper Plant (OMAHA)**

By Juan Perez Jr.

Omaha World-Herald, April 13, 2011

The US Nuclear Regulatory Commission began a special inspection of the Cooper Nuclear Station near Brownville, Neb., after three workers were exposed to high levels of radiation during an April 3 incident.

The NRC announced the inspection Monday. Officials said the investigation could continue for several days.

Mark Becker, spokesman for the Nebraska Public Power District, said bioassay samples from the affected workers confirmed that they were not exposed to radiation levels that exceed the nuclear commission's safety limits.

NPPD reported the incident to NRC officials, Becker said.

"We attempt to report these things as quickly as possible," he said.

Inspectors' concerns surround a 27-foot-long stainless steel rod known as a "shuttle tube" that is placed inside a nuclear plant's reactor vessel.

The flexible tube, about as wide as a human index finger, acts as a sheath to protect instruments and sensors that monitor conditions in the reactor.

NRC officials said the incident occurred when workers removed the tube — highly contaminated with radioactive material — through the bottom of the station's reactor vessel. Standard procedure is to remove such tubes through the top of the vessel, the NRC said.

The agency said a two-person NRC team traveled to the plant to spend several days examining the circumstances behind the incident, review the Nebraska Public Power District's response to the event and calculate how much radiation NPPD workers were exposed to.

For special inspections, a team of specialists with experience in a given problem are brought onto a site for an in-depth examination of the root cause surrounding an event. They also examine whether the event indicates a larger pattern of problems.

"We want to understand why normal work practices were not followed, resulting in unplanned radiation exposures to three workers," said Elmo Collins, an NRC official. "We want to look at the decision-making that contributed to this event."

Becker said the event triggered the radiation alarms on the personal measurement devices each worker wears, causing them set the tube down and leave the area. The entire plant was not evacuated, he said.

Becker said the exposed workers appeared to follow emergency procedures after those alarms sounded.

"They did the proper thing to leave the room," he said.

Removing the shuttle tube was part of a routine maintenance checklist completed every 18 months, when the plant is shut down for six to eight weeks to replace aging fuel rods. The plant is still inactive, Becker said.

Placed online in 1974, the Cooper Nuclear Station is Nebraska's largest single-unit electrical generator. It creates 810 megawatts of power — enough to keep the lights on in Lincoln and Grand Island during both cities' highest summer usage period. The power district owns the plant but shares part of the electricity it generates with other utilities.

"They've operated safely in the past," said Lara Uselding, spokeswoman for the NRC.

The nuclear commission could implement a variety of sanctions after the investigation, but the exact consequences won't be clear until the team completes its work. Investigators will report on their findings within 45 days of the inspection's conclusion.

Correction: In an earlier version of this story, the description of the workers' tests and the radiation alarms were incorrect.

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## State Tests Response With Mock Nuclear Accident (AP)

By Noaki Schwartz

Associated Press, April 13, 2011

Imagine waking up to discover that an explosion at the San Onofre Nuclear Generating Station had led to a fire, radioactive leak and evacuations in Southern California communities.

That's the scene government officials were asked to consider for a drill Tuesday involving a fake disaster at the California plant.

A month after Japan's devastating earthquake and tsunami, emergency responders and others were given the details at 8 a.m. after arriving at a cavernous Southern California Edison truck bay in Irvine that had been converted into an information center.

Such routine drills have attracted little attention in past years. But this one drew more than two dozen members of the media to watch the exercise.

"Even though this drill this week has been in the planning stages for six months or more, we think it's fortunate that the timing has occurred after the tragic events in Japan," said Gil Alexander, an Edison spokesman. "The question is are we ready? Do we know what to do?"

While the exercise was not prompted by events overseas, emergency officials say lessons from the disaster in Japan could come up in behind-the-scenes discussions on how to handle the staged scenario.

"It's an ongoing lesson learned," said Harry Sherwood, technological hazards branch chief with the Federal Emergency Management Agency. "Japan is one of the things we're going to be looking at."

The San Onofre plant along the coastline north of San Diego and the Diablo Canyon nuclear plant in San Luis Obispo County hold regular drills throughout the year to prepare for possible disasters.

Every other year, FEMA evaluates how well local and state officials handle the scenarios and disseminate information to the public.

The graded scenario typically involves three days of a worsening radiological incident at San Onofre or Diablo Canyon.

Tuesday's exercise involved officials from more than a dozen agencies, including California State Parks, California Highway Patrol and the California Emergency Management Agency, discussing and presenting the unfolding situation at mock press conferences.

Edison employees pretending to be reporters gathered at the information center while officials stood at a podium announcing and fielding questions about an explosion, fire and radioactive leak at a backup generating station at San Onofre.

At least one mock reporter asked if the worsening scenario was similar to the incident at the Fukushima Dai-ichi plant.

Officials periodically went behind a screen to another room where they would learn new details, communicate with their respective agencies, and write press releases before returning for another round of questions.

An estimated 700 officials participated, with about 200 people at the site and the rest at emergency operation centers elsewhere.

Wednesday's exercise has been rescheduled. On Thursday, officials are expected to do more drills related to the aftermath of the disaster scenario. FEMA officials are expected to share some initial impressions on Friday about how well local and state disaster response personnel did, and to release a complete evaluation in three months.

Edison also announced plans to file a funding request with the California Public Utilities Commission on Friday for seismic studies at San Onofre. The request for \$64 million would go toward studies of seismic and tsunami conditions that could affect the plant.

"Following the recent tragic natural disasters in Japan, we re-evaluated and enlarged the scope in order to further increase the scientific information we could obtain," said Pete Dietrich, chief nuclear officer at Edison.

## Scheduled Three-day Drill Begins At San Onofre Nuclear Plant (LAT)

By Tony Barboza

Los Angeles Times, April 12, 2011

The operators of the San Onofre nuclear power plant are starting a drill Tuesday to test the ability of the facility and local, state and federal agencies to respond to a radiological emergency.

The three-day exercise by Southern California Edison will simulate a radioactive release from the plant into surrounding communities, said Tina Walker, a spokeswoman for the California Emergency Management Agency.

Nuclear emergency sirens will sound during the drill, which will be overseen and evaluated by state and federal disaster officials, she said.

The simulation was long-scheduled and is required every two years at every commercial nuclear plant in the nation, officials said. But it has garnered more interest due to the Japanese nuclear crisis that followed last month's earthquake and tsunami.

"The message here is that nuclear power plants and the communities surrounding them spend a lot of time preparing and testing their emergency response plans," said Victor Dricks, a spokesman for the Nuclear Regulatory Commission.

State and federal officials have called for comprehensive reviews of California's two commercial nuclear power plants in response to the events in Japan.

Southern California Edison last month proposed a multimillion-dollar study that would use new technology to better assess seismic conditions near the northern San Diego County complex.

The Federal Emergency Management Agency will hold a public meeting Friday in San Juan Capistrano to review initial observations from this week's drill. The full evaluation will not be available for several months.

## San Onofre Undergoing Nuclear Safety Drill (SDUT)

By Onell R. Soto

San Diego (CA) Union-Tribune, April 12, 2011

Government officials are testing this week how they would respond to a radiation leak at the San Onofre Nuclear plant.

Tuesday and Thursday, state, federal and local officials will simulate the release of radioactivity from the plant.

Inside the plant, located in the northern reaches of San Diego County, workers are simulating how to shut the plant down and secure radioactive fuel, said Gil Alexander, a spokesman for Southern California Edison, which runs the plant.

"There are a total of about 200 of us associated with the plant that will drill," he said. "At least half of those are focused on the plant."

The others will be working on communicating what's happening inside with the outside world, including government officials, news media and the public.

That part of the drill is taking place at a cavernous Edison truck bay in Irvine.

Fake reporters gathered at the joint information center while officials stood at a podium announcing and fielding questions about an explosion, fire and radioactive leak at backup generating station at San Onofre.

Thursday, officials are expected to do more drills related to the aftermath of the disaster scenario, moving a week ahead in time and simulating how people would return to their homes.

The drill was planned by the California Emergency Management Agency months ago, long before the March 11 earthquake and tsunami that crippled Japan's Fukushima Daiichi nuclear complex.

There, a quake much larger than thought possible launched a tsunami that overran the oceanfront nuclear plant. In the weeks since, there have been explosions, meltdowns and radiation releases.

Japanese officials said that incident is now at the same level as the Chernobyl nuclear disaster 25 years ago.

Tuesday's exercise involves officials discussing and presenting the unfolding situation in mock press conferences. Officials say lessons from the disaster in Japan could come up in discussions on how to handle the unfolding mock scenario.

At San Onofre, federal officials are observing how community leaders react in the face of a potential catastrophe, said John Hamill, a spokesman with the Federal Emergency Management Agency.

They will rate how they work and look for places to improve.

FEMA and the US Nuclear Regulatory Commission will discuss what they find at a public meeting at 4 p.m. Friday at the Capistrano Unified School District Education Center, 33122 Valle Road, San Juan Capistrano.

In addition to plant workers and state and federal officials, the exercise will also include representatives of Los Angeles, Orange, Riverside, San Bernardino and San Diego counties, and the cities of Dana Point, San Clemente and San Juan Capistrano, and the Capistrano Unified School District.

## **Emergency Drill Today At San Onofre Nuclear Plant (LADB)**

Los Angeles Daily Breeze, April 13, 2011

Radiation experts and emergency workers will participate in a drill today to test responses to an emergency at the San Onofre Nuclear Generating Station, an exercise conducted every other year but has taken on added significance because of the disaster in Japan. The drill will be conducted in secret, but other officials will gather at a Joint Information Center, where they will simulate news conferences as they practice how to disseminate information in case of a disaster. Drills are conducted at the San Onofre plant a few times a year, but this biennial one is a much more extensive test that is monitored by the Federal Emergency Management Agency, Gil Alexander of Southern California Edison said. The main difference this year is the interest from the media, according Tina Walker of the California Emergency Management Agency. She said that is a positive change, because Southern California residents should know how to be prepared for an emergency. "One of the key steps is to know the resources in your local jurisdiction," Walker said. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt you'll be prepared for anything." Alexander said Edison hopes the increased coverage of the drills will help calm some fears as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety about radioactive leaks. "We're hopeful the news stories this week will show our extensive planning efforts," Alexander said. "We hope the reports on all of this will be reassuring to the public." The drill at San Onofre will simulate a radioactive leak that goes beyond the plant's boundaries and into the community, Alexander said. FEMA officials will hold a meeting at 4 p.m. Friday at the Capistrano Unified School District offices in San Juan Capistrano to give the public a "snapshot" view of how the drills went, John Hamill of FEMA said. In about three months, FEMA will issue its "report card" on the drill, Hamill said. The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting today, and concluding Thursday. Workers will test emergency shut-down procedures and practice securing radioactive fuel rods. San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **San Onofre Practices For Nuclear Blast, Leak (OCR)**

Orange County (CA) Register, April 12, 2011

Emergency officials from more than a dozen agencies took part in a disaster drill centered on the San Onofre nuclear plant Tuesday, giving a glimpse of what a real nuclear emergency might look like in Southern California.

In a large, hangar-like building in Irvine, owned by San Onofre operator Southern California Edison, questioners posing as reporters asked real emergency officials from Edison, the Orange County Sheriff's Department and other agencies about the extent of the emergency its effect on the public.

Placards throughout the building read, "This is a drill," and the officials at the podium punctuated their answers with the same phrase as television news cameras recorded the scene.

## **Emergency Drill At San Onofre Nuclear Power Plant (KABC)**

KABC-TV Los Angeles, CA, April 13, 2011

SAN ONOFRE STATE PARK, Calif. (KABC) – The emergency drill at the San Onofre nuclear power plant is taking on added significance in light of the nuclear crisis in Japan.

Experts are making sure safeguards are in place to protect the region from a possible radiation leak. San Onofre residents heard sirens sounding off as multiple agencies ran through an exercise that simulated a radiation scare.

"This is a drill," said a San Onofre employee. "There are no reports of injuries. We do not have any report of the release of radioactive material."

The simulation even included a mock press conference in Irvine, where officials demonstrated how they would instruct the public in a real-life radiation emergency.

As for the plant itself, emergency shutdown procedures were ran through, and San Onofre's two radioactive fuel rods were being secured.

The California Emergency Management Agency, or Cal EMA, coordinated the tests. Although the simulation is routine, it came at a time when the public was especially sensitive to radiation leaks. With problems mounting in Japan, Tuesday's event highlighted the importance of being prepared for the worst.

"And we have all types of emergency," said Tina Walker from Cal EMA. "Natural hurricanes, earthquakes, fires, floods. Certainly another concern because of recent global incidents, such as in Japan, now we have got an increased awareness about safety around and near nuclear power plants."

Several drills have led up to Tuesday's graded exercise. FEMA will ultimately determine how well everyone performed, and whether or not safeguards are working.

There has never been a leak at San Onofre, and Southern California Edison said it remains committed to keeping the public safe.

"This is not a onetime deal for us," said Steven Conroy from SoCal Edison. "We do multiple drills in the course of the year. This is in fact our third drill this year. We may do another one, that'll be determined possibly as a result of what takes place here today."

FEMA will reveal its evaluation at a public meeting in San Juan Capistrano later this week.

## **Emergency Tests Conducted At San Onofre Nuclear Power Plant (KCBS)**

KCBS-TV Los Angeles, April 13, 2011

IRVINE (CBS) — Officials conducted emergency drills at Southern California Edison's San Onofre nuclear power plant from 9 a.m. to 2 p.m. Tuesday.

Gil Alexander of Southern California Edison Weighs In On KNX 1070

There has never been a radiation leak at the 42-year-old facility, but FEMA and the Nuclear Regulatory Commission require emergency testing every two years.

More than 200 emergency management officials from across the state will be at the plant, as well as Southern California Edison's Joint Information Center in Irvine.

Workers will respond to a fake radioactive gas leak by testing emergency shutdown procedures and securing fuel rods.

Residents should not be alarmed when emergency sirens are intermittently sounded between the hours of 8 a.m. and 12 p.m.

Tuesday's drills come as Japan increases the threat level of the disaster at the Fukushima power plant from a 5 to a 7 – the highest level on the International Atomic Energy Agency's Scale. The Chernobyl disaster of 1986 was also a 7.

LOS ANGELES (CBS) — Several organizations are mobilizing to help connect donations to aid Japan after the country's largest earthquake on record caused a catastrophic tsunami.

The magnitude-8.9 quake struck 250 miles north-east of Tokyo at 2:46 p.m. local time, causing great human loss and extensive damage to infrastructure.

To make a donation to The Red Cross, visit [redcross.org](http://redcross.org) or text REDCROSS to 90999 to donate \$10 from your phone.

Operation USA appeals for donations of funds from the public. The organization also calls for bulk corporate donations of health care materials, which it will ship to the region from its base in the Port of Los Angeles. You can make donations online at [www.opusa.org](http://www.opusa.org), by phone at 1.800.678.7255 or, by check made out to Operation USA, 3617 Hayden Ave, Suite A, Culver City, CA 90232.

The Japan America Society of Southern California, with other Japanese and Japanese-American organizations in the region, established a relief fund. Checks made out to the 2011 Japan Relief Fund can be sent to the Japan America Society of Southern California, 345 S. Figueroa St., Suite M-1, Los Angeles, CA 90071-1004. Secure online credit card donations can also be made at [www.jas-socal.org](http://www.jas-socal.org).

Catholic Relief Services is also stepping up and taking donations. Sean Callahan, CRS executive vice president, said Friday, "We know from 2004 the devastating impact that these tsunamis can have."

CRS is working with a partner, Caritas Japan, to assess where to put resources. To donate by phone: 1-877-HELP-CRS. To make a donation on line, go to [www.crs.org](http://www.crs.org).

To write and mail a check:

Catholic Relief Services

P.O. Box 17090  
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## San Onofre Nuclear Plant Holds Mock Disaster Drill (KFMB)

KFMB-TV San Diego, April 13, 2011

SAN ONOFRE (CNS) - Workers at the San Onofre nuclear plant conducted drills Tuesday on shutting down the two reactors and securing the fuel rods as part of a biennial exercise that took on new significance in light of the disaster in Japan.

Southern California Edison, which operates the plant in San Clemente, also signaled its intent to ask the state Public Utilities Commission to fund some \$64 million in studies aimed at better preparing workers to a radiological accident.

"We have been planning the seismic and tsunami studies for several months," SCE's top nuclear officer, Pete Dietrich, said. "Following the recent tragic natural disasters in Japan, we re-evaluated and enlarged the scope in order to further increase the scientific information we could obtain."

The drill, which started Tuesday and continues through Thursday, is mostly secret. But public information officers and radiation experts set up at a site in Irvine, where they practiced getting out essential information. Public health officials from across Southern California also are participating.

The exercise, which is done every two years, is the San Onofre's most extensive that is monitored by the Federal Emergency Management Agency, Gil Alexander of SCE said.

The main difference this year, Tina Walker of the state's Emergency Management Agency said, was the amount of interest shown by the news media. She called that a positive change.

"One of the key steps is to know the resources in your local jurisdiction," Walker said. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt you'll be prepared for anything."

Alexander said SCE officials hoped that increased coverage of the drills would help calm fears, as the Japanese work to contain the disaster at the Fukushima Daiichi plant, which was ruined by the magnitude-9.0 earthquake and tsunami that struck March 11.

"We're hopeful the news stories this week will show our extensive planning efforts," Alexander said. "We hope the reports on all of this will be reassuring to the public."

On Friday at 4 p.m., FEMA officials will be at Capistrano Unified School District offices to give a "snapshot" view of how the exercise went, John Hamill of FEMA said. In about three months, FEMA will issue a San Onofre "report card," he said.

The state's Emergency Management Agency is coordinating the exercises. Together, the two reactors at San Onofre generate about 2.1 billion watts of electricity at full capacity. Both units have been overhauled in recent years.

## California Nuclear Power Plant To Test Emergency Response (KGTV)

KGTV-TV Bakersfield (CA), April 13, 2011

The nuclear disaster in Japan is bringing new attention to safety measures at US power plants. In southern California, radiation experts and emergency workers are preparing for a drill to test emergency response system at the San Onofre power plant.

The drill, which will simulate a radiation leak, will begin Tuesday and run through Thursday. It will start as a small emergency inside then it will escalate as radiation starts leaking into the atmosphere. The simulation will include 300 officials from several southern California counties.

"We've worked hard at it, we have a plan, we work the plan. I think we're ready to swing into action," said Gil Alexander with Southern California Edison. "We drill constantly, three or four times a year. we meet every month. we've done that since 1982."

The exercise was planned long before Japan's Fukushima Daiichi nuclear complex was crippled by a magnitude nine earthquake and tsunami.

## San Onofre Nuke Owner Seeks \$64 Mln For Seismic Study (REU)

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Boxer Says Nation Must Learn Nuclear Lessons (SLOT)**

By David Sneed

San Luis Obispo (CA) Tribune, April 13, 2011

The recent nuclear disaster in Japan has exposed two dangers facing reactors in the United States — the complete loss of electrical power and spent fuel pools that are too densely loaded.

Some of the nation's top nuclear experts and two Central Coast lawmakers testified at a Senate hearing Tuesday in Washington, D.C., about what can be learned from the triple tragedy of a powerful earthquake, tsunamis and nuclear meltdown in Japan.

Lawmakers also warned nuclear industry officials and regulators not to get complacent. The tragedy in Japan showed that multiple disasters can overwhelm safeguards at a nuclear power plant.

"We have just got to respond in a much different way," said Sen. Barbara Boxer, D-Calif. "We are not humble enough in the face of what Mother Nature can do."

Gregory Jaczko, chairman of the Nuclear Regulatory Commission, said most of the problems in Japan were caused by loss of electrical power when the plant was inundated by the tsunamis. Electricity is needed to keep pumps running that cool reactors as well as spent fuel pools.

At Diablo Canyon, each reactor has three diesel generators with seven days' worth of fuel and enough batteries for eight hours. The plant also has gravity-fed pools that can supply additional cooling water.

James Boyd, vice chairman of the California Energy Commission, said there have also been discussions about bringing in more batteries by helicopter, if needed.

Boyd and many others who testified Tuesday said spent fuel pools are a big worry. Like most plants, Diablo Canyon's pools are far more densely loaded with used fuel than originally designed.

More than 500 fuel assemblies have been transferred into dry casks at Diablo Canyon, but the two pools still contain some 1,000 assemblies. Dense packing is dangerous because the fuel rods are more likely to catch fire, releasing radiation, if water is lost from the pools.

At the hearing, state Sen. Sam Blakeslee, R-San Luis Obispo, and Rep. Lois Capps, D-Santa Barbara, renewed their pleas to the NRC to stop license renewal of Diablo Canyon until detailed seismic studies are done, peer reviewed and incorporated into the renewal process.

"Failure to do so is unwise and irresponsible," Capps said. "It will feed public uncertainty about the oversight and safety of nuclear energy. And it could cost taxpayers billions of dollars to once again belatedly address issues that should have been dealt with beforehand."

Blakeslee also said he is concerned that the NRC is not conducting any safety reviews specifically for Diablo Canyon and California's other nuclear plant, San Onofre, in the aftermath of the earthquakes in Japan. Diablo Canyon and San Onofre are the only two plants in the nation with very high earthquake risk.

Diablo Canyon's owner, PG&E, has asked the NRC to delay "the final processing" of the renewal application until the seismic studies are complete. However, in a separate letter to the NRC on Tuesday, the utility made it clear that it does not want any delay in the ongoing safety and environmental reviews of the renewal application.

## **Capps Testifies On Diablo (EDHAT)**

Santa Barbara (CA) Edhat, April 13, 2011

Today, Rep. Lois Capps (CA-23) testified before the Senate Environment and Public Works Committee and expressed her concerns about safety at the Diablo Canyon Nuclear Power Plant. Capps also renewed her call to the Nuclear Regulatory Commission to stay the relicensing process pending the completion and peer-review of advanced seismic studies and 3-D mapping. Capps' full statement is included. A photo is attached.

State Senator Sam Blakeslee (R-San Luis Obispo) also testified before the committee, offering his perspective as a state elected official and scientist with a PhD in seismic studies. Additionally, Capps and Blakeslee met in Capps' congressional office to further discuss concerns about the Diablo Canyon Nuclear Power Plant. A photo is attached.

"I enjoyed the opportunity to testify before the Senate Environment and Public Works Committee to share my concerns about safety at the Diablo Canyon Nuclear Power Plant and explain why the Nuclear Regulatory Commission should stay the license renewal process until the completion of independent, peer reviewed, advanced seismic studies of all faults in the area. Having worked to address public safety concerns connected to the operation of the Diablo Canyon Power Plant for over a decade, I think I was able to provide committee members with unique insight on the broader issue of nuclear safety. I also

enjoyed the chance to meet with State Senator Sam Blakeslee to further discuss our concerns about this issue and how we can continue working together to ensure the safety of the communities surrounding Diablo Canyon," said Capps.

Statement of US Representative Lois Capps

Committee on Environment and Public Works

"Review of the Nuclear Emergency in Japan and Implications for the US"

April 12, 2011

Chairwoman Boxer, Ranking Member Inhofe, and members of the Committee, thank you for holding this hearing and for the opportunity to present testimony.

I am here today because my congressional district includes the Diablo Canyon Nuclear Power Plant, which has become a central focus in the weeks following the Japanese tsunami and subsequent nuclear crisis.

Last month, I called on the NRC to stay the license renewal process for Diablo Canyon until further studies demonstrate the plant's design and operations can withstand an earthquake and other potential threats.

Yesterday, PG&E asked the NRC to delay its license renewal application while it completes those studies. So today, in light of PG&E's action, I am renewing my request to the NRC to halt the relicensing process.

I do not make this request lightly.

Last month, I again toured the Diablo Canyon Nuclear Power Plant. Following that visit I was convinced of two things.

First, the employees' commitment to getting it right. And, second, that we're not yet there. I am not alone in that assessment.

I am grateful to be joined today by my constituent, California State Senator Sam Blakeslee, who also represents Diablo Canyon and its surrounding communities. State Senator Blakeslee will testify himself today as both a state elected official and also as a scientist with a Ph.D. in seismic studies.

I am confident that our shared assessment of the situation will offer the committee valuable, on-the-ground insight into both the current and future landscape of nuclear power in California. The bottom line is this:

We do not have the answers we need to confidently move forward in extending the licensing agreement of Diablo Canyon.

We should not move forward until we have those answers.

And, because the reactors do not need to be relicensed for more than a dozen years, we have plenty of time to find those answers.

Madame Chair, what happened in Japan offered us an opportunity to question - and question again - whether we are ready, whether we can handle the unthinkable.

The NRC had already determined that it is non-credible that there could be multiple catastrophes, such as an earthquake and a meltdown at Diablo Canyon plant.

The NRC has maintained, "...the chance of such a bizarre concatenation of events occurring is extremely small. Not only is this conclusion well supported by the record evidence, it accords most eminently with common sense notions of statistical probability."

Yet, the unthinkable did happen in Japan - an earthquake, tsunami and a nuclear accident, all occurring in sequence. Clearly, a "bizarre concatenation of events" is not merely hypothetical. Madam Chair, let's be clear - we know seismic uncertainty exists at the site.

In the early 1970s, while the plant was originally under construction, scientists discovered the Hosgri offshore fault less than 3 miles away, forcing a major redesign and pushing the project billions of dollars over budget.

In 2008, scientists discovered yet another fault. The Shoreline Fault, which lies less than a mile from the plant.

The stakes were raised just last month when the NRC confirmed that Diablo Canyon was one of two nuclear power plants in the highest risk area for seismic activity in the entire country. Clearly, we need answers to major questions.

Can the plant, including the spent fuel pools, withstand an earthquake and nuclear accident at the same time?

How long would the plant be self-sustaining in the event of such damage?

And, is Diablo Canyon's evacuation plan during an incident workable?

Many of us on the Central Coast remain concerned that the NRC has not taken action to answer these questions or address these warnings.

So much so that the California Energy Commission has recommended - and our state Public Utilities Commission has directed - that independent, peer-reviewed, advanced seismic studies be performed PRIOR to applying for relicensing.

I agree with this assessment. That's why it is so important to halt the relicensing process. Let's take some time to get all the answers.

It's important to note that I'm not calling for Diablo Canyon to be shut down. I'm also not calling for PG&E to be denied an operating license.

What I am doing today is asking that the relicensing process be halted until updated state-of-the-art seismic studies and 3-D seismic mapping are completed and that they be considered as part of the relicensing process.

Failure to do so is unwise and irresponsible. It will feed public uncertainty about the oversight and safety of nuclear energy. And it could cost taxpayers billions of dollars to once again belatedly address issues that should have been dealt with beforehand.

That's why I am hopeful the NRC will work with all stakeholders to answer the seismic questions, which remain unstudied and unresolved, prior to the continuation of this process.

Once again, thank you for the opportunity to present testimony today.

## **PG&E's Letter On Diablo Relicensing Didn't Go Far Enough, Supervisors Say (SLOT)**

By Bob Cuddy

San Luis Obispo Tribune, April 13, 2011

PG&E's letter to regulators asking that relicensing of its Diablo Canyon nuclear power plant not be finalized until advanced earthquake studies have been completed is a good "half step," but does not go far enough, the Board of Supervisors said Tuesday.

The supervisors sent their own letter, this one to PG&E, reiterating their earlier support for a delay in the relicensing process, but adding that the advanced studies the utility says it will undertake should be "independently reviewed."

Such an examination, also called a peer review, would open the earthquake studies to scientists who are independent of PG&E.

Supervisors also said they want clarity about PG&E's intentions, expressed in the utility's Sunday letter to the Nuclear Regulatory Commission. In its letter to the NRC, PG&E asked that the agency "withhold issuance of PG&E's renewed operating licenses, if approved, until after this research is completed and the findings are submitted to the commission."

However, in a separate letter to the NRC on Tuesday, PG&E attorney David A. Repka wrote that the utility "is not requesting any delay in the schedule for this licensing hearing process."

The Board of Supervisors wants the entire relicensing process stopped until the studies are finished and reviewed.

The nearly 40-year-old Diablo Canyon plant was thrust into the headlines last month after the nuclear plant disaster in Japan. Japan now ranks its nuclear crisis at the highest possible severity on an international scale — the same level as the 1986 Chernobyl disaster.

In addition, a new earthquake fault has been found near Diablo Canyon, and its geological relationship to other faults is unknown, as are the number of other faults in the area.

Because of these nerve-rattling uncertainties, residents from throughout the county have expressed concern about the aging power plant. Supervisors have received hundreds of emails, letters and voice mails, and many speakers have stood up at recent meetings to question the safety of Diablo Canyon.

Some 16 residents spoke again Tuesday, supporting the board's position, and in some cases saying the plant should be shut down altogether.

Jane Swanson of the Mothers for Peace group added that the utility should explore safe ways to dispose of spent fuel.

The plant is a fixture in the county, a reality that supervisors acknowledge in their letter. "The company and its plant bring many critical and economic benefits to San Luis Obispo County," they note in their letter.

The nuclear power plant provides about 1,500 jobs; of those, 1,350 workers live in San Luis Obispo County.

The utility paid \$26.2 million in property taxes for the 2010-11 fiscal year.

Supervisors reiterated that halting the relicensing process would be a good way for the utility to restore public trust. That trust, speakers and elected officials have noted, has been battered in recent months by PG&E's handling of its SmartMeter program and a pipeline explosion in San Bruno.

PG&E has insisted that the plant can withstand a magnitude-7.5 earthquake.

"PG&E is the only utility in the country that employs a seismic department staffed with experts," the utility wrote to the NRC.

## **PG&E Says It Is Not Asking For Delay In Diablo Canyon Renewal Process (KSBY)**

KSBY-TV San Luis Obispo (CA), April 13, 2011

San Luis Obispo County leaders say today PG&E should have gone a step further with its letter to the Nuclear Regulatory Commission yesterday.

PG&E asked the Commission to delay granting a renewal license for Diablo, but a company lawyer clarified in a second letter today it is not asking for a delay in the renewal process.

The County Board of Supervisors voted 5-0 today to ask PG&E to do just that until better seismic studies are done.

They say PG&E's move is in the right direction, but Supervisor Bruce Gibson calls it only half a step.

PG&E said yesterday it is responding to the needs of community.

"By asking the NRC to hold off on the final processing of our license renewal application until the seismic studies are complete and then we've submitted those findings to the NRC for review, we've addressed this concern," said PG&E spokesperson Kory Raftery.

But the letter's ambiguous language is making some uneasy.

"I don't think it's an empty gesture," said board chairman Adam Hill. "I do think that it is an important step forward, though it's not necessarily as much as we would like to see."

Supervisors say they're looking out for the safety and wallets of taxpayers; the cost of relicensing and seismic studies are not absorbed by PG&E and are instead they're passed along to ratepayers.

"If we're paying essentially for the relicensing, then we should say, well, don't spend the money until this is done so we know we're not wasting money that you might have to spend later," Hill said.

Hill says the company applied for as much as to \$85 million dollars in relicensing efforts alone.

Another question the board raised is whether PG&E or independent seismologists will perform the studies.

## **PG&E Asks For Delay In Diablo Canyon Plant License (MRKTWTCH)**

MarketWatch, April 13, 2011

NEW YORK (MarketWatch) -- Pacific Gas & Electric Co. (NYSE:PCG) said late Monday it's asking the US Nuclear Regulatory Commission to delay final action on the renewal of its operating license for the Diablo Canyon nuclear-power plant, while it steps up efforts to study seismic data near the reactor. "We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses," the company said. "We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so they may have added assurance of the plant's seismic integrity."

## **PG&E Wants Nuclear Plant License Delay For Seismic Study (KABC)**

KABC-TV Los Angeles, CA, April 13, 2011

LOS ANGELES (KABC) -- It looks like there's going to be a delay in new extended operating permits for the Diablo Canyon nuclear power complex.

Pacific Gas and Electric Co. has asked federal regulators to wait until comprehensive seismic studies are completed before granting the new licenses.

There's been a public outcry over possible safety risks since an earthquake fault was discovered less than half a mile from the site near San Luis Obispo.

At a legislative hearing last month, company officials said the plant was safe and gave no hint that PG&E would agree to complete three-dimensional seismic studies before a renewal of the licenses.

But in a statement Monday, PG&E Senior Vice President John Conway referred to the Japanese crisis and said, "we recognize that many in the public have called for this research to be completed before the NRC renews the plants' licenses. We are being responsive to this concern."

The company wants the NRC to extend the life of the complex for 20 years after its permits expire in 2024 and 2025.

In a letter to the NRC dated Sunday, PG&E said it would be prudent to complete the studies prior to granting new licenses. The Associated Press contributed to this report.

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## **TMI Powers Through Emergency Drill (YDRPA)**

By Sean Adkins

York (PA) Daily Record, April 13, 2011

The men stand shoulder to shoulder, their eyes locked on a board of flashing red and white tiles.

Alarms sound from every corner of the room, but no one moves.

Slowly, the group begins to fracture as plant operators, under the watchful eyes of federal regulators, move swiftly to man individual stations and flip through manuals.

A major emergency at Three Mile Island Unit 1 has just jumped in severity -- a crisis that could ultimately force the governor to order residents who live within 10 miles of the plant to either evacuate or take shelter within their homes.

That is, if the crisis were real and not a graded drill takes place every other year.

Emergency responders from areas that surround Three Mile Island in Dauphin County took part in a dry run Tuesday that evaluated how officials would respond to a plant-borne radiological crisis.

The stage for the drill is an \$18 million simulator that resembles the real TMI Unit 1 control room, said Ralph DeSantis, a spokesman for plant.

On Tuesday evening, a team of six TMI control room operators started the drill that was expected to last late into the night.

The other men in the simulator were officials with Nuclear Regulatory Commission whose job it was evaluate how the control room operators responded to the rising mock crisis at the plant, said Neil Sheehan, a commission spokesman.

"We assess on-site response," he said. "We look to see if the plant's workers are communicating with off-site officials about the event. We look to see if the plant is classifying an event properly."

The drill scenario usually involves different challenges such as a tornado touching down in an electrical switch yard cutting off-site power to the plant, possibly coupled with the loss of another key system such as a pump that has been knocked out of service, Sheehan said.

"From our perspective, the scenario will put the responders through their paces and they will have to make decisions," he said. "They have to work through those challenges."

While the operators are not aware of the dire scenario in which they will face, the drill typically cycles through four stages of an emergency -- an unusual event, an alert, an on-site area emergency and a general emergency.

An unusual event refers to a process that has occurred within the plant that could potentially degrade the level of safety at the site.

"For example," Sheehan said, "if the plant has a fire on site that lasts more than 15 minutes are they classifying it as an unusual event?"

At the alert level, counties and municipalities typically activate their emergency-response centers as a way to react to an emergency at the plant.

During past drills, the conclusion of the exercise simulated a recommendation by the governor that all residents within a 10-mile radius of the plant evacuate the area.

"It's possible to not pass the evaluation," DeSantis said. "That would be a bad day. But, we don't expect that to happen." If you go

Federal officials will present preliminary findings of Tuesday's emergency preparedness exercise in a public meeting 11 a.m. Friday at the Hilton Garden Inn in Harrisburg. At the operations center

In the York County emergency operations center, television screens showed the latest updates on what was happening in the 10-mile radius.

At 5:59 p.m., for example, Conewago Township's local emergency operations center was fully staffed and operational. Other municipalities were reporting in similarly.

It remained quiet as emergency management officials, emergency responders and others worked during the drill.

Scanner traffic during the mock drill later indicated a more dire situation as Goldsboro evacuated, and a radiological release was reported.

These type of drills are critical, said Carl Lindquist, the county's public information officer.

"Every time you do a drill like this you learn new ways to approach particular problems -- the little details that you have to hammer out that you just can't prepare for in advance," he said. "And it's really that experience that will pay off in the event that there's some kind of incident at Three Mile Island."

## **Drill At Three Mile Island Tests State And Local Agencies (WPMTTV)**

By Sarah Arbogast, Staff Reporter

WPMT-TV Harrisburg (PA), April 13, 2011

Federal, state, and local emergency management leaders put their skills to the test Tuesday night. Hundreds participated in a preparedness drill at and around Three Mile Island Nuclear Power Plant.

"Every time you do a drill like this you learn new ways to approach particular problems, there are little details that you have to hammer out that you just can't prepare for in advance," said Carl Lindquist, York County Public Information Officer.

The particular test, conducted every two years, is evaluated by The Department of Homeland Security's Federal Emergency Management Agency or FEMA. Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions. The final report will be available to the public about 120 days after the exercise.

FEMA will present preliminary findings of the exercise in a public meeting at 11:00 AM on April 15, at the Hilton Garden Inn located at 3943 TecPort Drive, Harrisburg, PA, 17111.

## **State Senators Hold Hearings On Indian Point Nuclear Plant (NNV)**

Nyack (NY) News And Views, April 13, 2011

State Senators David Carlucci, George Maziarz and Greg Ball will host a hearing on May 12 in Stony Point regarding the public's worries about Indian Point's nuclear reactors in light of the recent disaster involving the Fukushima Nuclear Power Plant in Japan.

Based on the hearing results and the testimony heard, the three Senators will be issuing a formal report and recommendation.

"The Indian Point nuclear power plant, which sits within two miles of two intersecting fault lines has the highest risk of an earthquake causing its reactors core damage in the United States. To ensure the safety of the 20 million people who live within the 50-mile peak.injury zone, Senator Maziarz, Senator Ball and I will be holding a hearing focused on detailing plans and precautions in the event of a natural disaster," said Carlucci, who represents Rockland County and the Orange County towns of Warwick and Tuxedo.

Invited speakers will be experts in disaster preparedness, local officials, energy officials, business organizations, and experts in the environmental sciences.

Who: Senator David Carlucci, (D, SD-38) Chair of the Administrative Regulations Review Commission

Senator George Maziarz (R, SD-62), Chair of the Energy Committee

Senator Greg Ball (R, SD-40), Chair of Veterans, Homeland Security and Military Affairs

Members of the Energy Committee

When: May 12, 1-5 pm

Where: Stony Point Community Center (RHO)

5 Clubhouse Lane,

Stony Point, NY 10980

[View Map](#)

Follow the issues involving the Indian Point nuclear power plant on [Left of the Hudson](#).

UPDATE: The original version of this article had the hearing date on April 14. The date was later changed and we updated it here.

## **Rockland Hearing To Review Indian Point Safety Plans (PRP)**

By William Demarest

Pearl River Patch, April 13, 2011

Three state senators have set a hearing on the safety of New York's nuclear power plants, including Indian Point, in Rockland County.

State Sen. David Carlucci, D-New City, said the May 12 hearing will look at contingency plans for natural disasters and the reliability of the power grid. He said information from the hearing will be used for a report to be issued by him, state Sen. Greg Ball and State Sen. George Maziarz.

"The Indian Point nuclear power plant, which sits within two miles of two intersecting fault lines has the highest risk of an earthquake causing its reactors core damage in the United States," Carlucci said. "To ensure the safety of the 20 million people who live within the 50-mile peak injury zone, Senator Maziarz, Senator Ball and I will be holding a hearing focused on detailing plans and precautions in the event of a natural disaster."

Maziarz said the massive earthquake and tsunami that hit Japan continue to raise concerns among New Yorkers about nuclear power plants and their ability to withstand damage from natural disasters.

"In light of recent events in Japan, it is more important than ever that citizens receive accurate and balanced information in regard to the safety of our nuclear facilities." Maziarz said.

The lawmakers said they want the hearing to bring forward information from the operators of Indian Point, Entergy, along with state and local officials on how they would respond to an emergency situation.

"We will also examine how important the 2,000 megawatts of power generated at Indian Point are to the reliability of the electrical grid and what the impact would be on prices in the New York City area, if this power was to go offline for any reason," Maziarz said.

Ball said the Japan disaster and the damage done to nuclear power plants in that country have raised many questions locally about nuclear energy facilities.

"Indian Point is a huge employer and a huge producer of cheap energy," Ball said. "I've toured Indian Point and I believe they have solid internal security and safety mechanisms, that said, the recent disaster in Japan has raised serious questions of nuclear security as it pertains to disaster response and as chairman of the Senate Homeland Security Committee I am acutely focused on assessing our overall preparedness."

The May 12 hearing is set for 1 to 5 p.m. on Thursday at the Stony Point Community Center, also known as the RHO Building, 5 Clubhouse Lane, Stony Point.

In Rockland County, County Executive C. Scott Vanderhoef said he believes Indian Point should be closed because of the potential danger to the densely-populated area surrounding the plant in Buchanan.

Clarkstown town Supervisor Alex Gromack has proposed changes in governmental responsibility for nuclear power oversight and supports Gov. Cuomo's call for a new safety study of Indian Point.

In a letter to President Obama, Gromack said that as the nuclear disaster in Fukushima, Japan continues to unfold, "a major ongoing problem is lack of confidence as to accuracy and timeliness of information nuclear disaster, from both the nuclear industry and the government."

Gromack noted that, "During the Three Mile Island nuclear "event"....it was not until President Carter visited the plant himself that the true state of events was had and correct decisions were made.

Gromack wants a federal employee to be stationed at each of the nation's 104 nuclear plants, who would, in "an 'event' report directly to the Secretary of Energy and so that the President would have first hand information relayed by a cabinet member."

In letters to Members of Congress Eliot Engel and Nita Lowey, Gromack drew a comparison between the Indian Point Nuclear Plant and the nuclear plant at Shoreham in Suffolk County, which was closed because there was no way to evacuate the surrounding area.

Editor's Note: The hearing was originally set for Thursday, but has been changed to May 12 because of scheduling conflicts, according to Carlucci's office.

## **Indian Point Opponents: How Many Lives Is The Plant's Energy Worth? (YP)**

By Liz Giegerich

Yorktown Patch, April 13, 2011

Megumi Tanifuji flew from Japan to the United States just four days ago to take part in a Peace Walk to raise awareness about the dangers of nuclear energy.

"You never know what is going to happen," said the slight 31-year-old. "Everyone told us we would be okay—that the plant was safe. I want Americans to think whether they really want to risk the dangers of nuclear power plants."

Indian Point Safe Energy Coalition (IPSEC) hosted a community forum Monday in Greenburgh Town Hall to discuss the similarities between Indian Point and the Fukushima Daiichi Nuclear Power Station, which—after a devastating earthquake and tsunami in March—has released radiation causing mass evacuations of the land around the plant and concern over the safety of food and water.

Current plans require a 10-mile-radius evacuation around Indian Point if a meltdown were ever to occur; but some Westchester lawmakers are proposing the radius be increased to 50 miles.

"Six legislators have joined together to establish a 50-mile evacuation zone around Indian Point," said Joy Haber, legislative aide to Democrat MaryJane Shimsky. "Indian Point is the number-one public safety issue in the area."

Expert panelists invited to speak were doctors, officials, scientists and concerned citizens—but all had one thing in common: the desire to close Indian Point.

"There is no such thing as safe exposure to radiation," said Dr. Andrew Kenter, president of the New York Chapter of Physicians for Social Responsibility. "Doctors are asked to treat and fix people when they're broken; when we're unable to do that, we have to prevent those things from happening."

Former State Assemblyman Richard Brodsky said: "If there were to be a meltdown at Indian Point there would not be enough money in the world to save this community, this economy and the lives, health and safety of the people who live here."

John Armbruster has been studying earthquakes in the metropolitan area. "We are asking for a thorough, modern re-evaluation of the preparedness of Indian Point to the occurrence of earthquakes using up-to-date evaluation methods that were not available when Indian Point was originally licensed," he said.

Operating licenses for Indian Points' two units expire in 2013 and 2015. The state Department of Environmental Conservation declined last April to give Entergy—the plant's operating company—the water quality certification it needs for relicensing. But the federal Nuclear Regulatory Commission (NRC), whose approval is also required, recently said that no environmental impact exists to prevent the power plant from getting relicensed for another 20 years.

"You have to be suspicious of what you hear from the NRC," cautioned Mark Jacobs, co-founder of IPSEC. "Their job is both to promote and regulate nuclear energy. Obviously, both can't be done."

According to Marilyn Elie, co-founder of the Westchester Citizens Awareness Network, only five percent of energy in the Hudson Valley is generated from nuclear power from Indian Point.

"We know that Indian Point and Fukushima had different reactors and were on different ground," Elie said. "But what they share are regulators who feel they can predict and plan for everything. What we have to ask is how many lives is that five percent of energy worth?"

In the wake of the earthquake, tsunami and nuclear disaster in Japan, a group of peace walkers walked about 15 miles from Peekskill to Yorktown along Route 202 Monday. They plan to reach Yankee nuclear plant in Vermont by April 26, the 25th anniversary of the Chernobyl disaster.

They hoped to raise awareness of the dangers of nuclear energy call for eco-friendly alternatives. They suggest solar, geo, and hydro power electricity. They are also walking in solidarity with those affected by the disaster and in an effort to close Indian Point and the Vermont Yankee Nuclear Power Plant in Vermont.

## **Hudson River Clean Up, Indian Point Concerns Addressed By Riverkeeper Rep In Briarcliff (PPTCH)**

By Sharon Pickett

Pleasantville Patch, April 13, 2011

Emily Griffin, outreach and merchandise coordinator for the Ossining-based Riverkeeper organization, spoke to a group at the Briarcliff Manor Public Library recently.

Accompanying her was the exhibit "A Hudson River Journey: 1609-2109." This exhibit, containing original artwork, historic artifacts, maps and digital media, tells the history of stewardship inspired by the Hudson River, and the challenges and opportunities facing today's river stewards. It was produced by Riverkeeper in honor of the 400th anniversary of Henry Hudson's voyage to our shores.

The exhibit can be viewed on the upper floor of the library and will be on display until April 30.

According to Griffin, "Riverkeeper is New York's number one clean water advocate."

Riverkeeper began in 1966 as the Hudson River Fishermen's Association, an organization of commercial and recreational anglers who saw the degradation that was occurring in other regions of the river and were determined to prevent the same from happening here.

Said Griffin, "Riverkeeper has since morphed into a membership-based organization dedicated to protecting the integrity of the Hudson River and its tributaries, safeguarding the sources of drinking water for the lower Hudson Valley and New York City and developing alternatives to the Indian Point nuclear plant."

"Riverkeeper was instrumental in demanding that General Electric remove the highly toxic PCBs that the company dumped in the upper reaches of the river decades ago," she said. "G.E. has completed phase one of the cleanup and we'll be watching them very closely to make sure the ensuing cleanup proceeds on schedule."

"We have also engaged in a 'Swimmable River' campaign that monitors and reports on water quality. The public is allowed to view the results and make informed decisions about their contact with the river," added Griffin.

Another issue being closely watched by Riverkeeper is the process of Hydraulic Fracturing that is being used to extract natural gas from underground shale. The process involves injecting water, sand and potentially dangerous chemicals at an extremely high pressure to release the gas.

"In New York State, this gas rich shale—the Marcellus Shale—is located in the Catskill region in the Catskill/Delaware watershed, the source of drinking water for half of the state's population," said Griffin. "We feel that there are too many risks and too many unanswered questions associated with this method of gas drilling to allow it to occur here. We are blessed with the highest quality drinking water and to put that source in jeopardy would be foolish and dangerous."

Another issue of great concern to Riverkeeper is that of Indian Point.

"As evidenced by the recent earthquake and ensuing tsunami in Japan, no nuclear plant is safe. Indian Point sits on the convergence of two fault lines. Scientists from Columbia University suggest that an earthquake of 7.0 magnitude is 'quite possible.' Indian Point is built to withstand a quake of 6.1 magnitude," advised Griffin.

Even without an earthquake, she said, "There exists the danger of disposal of spent fuel, an inadequate evacuation plan and the serious damage being done to the river's rich ecosystem by the release of cooling water."

In closing, Griffin said, "But I am optimistic! The Hudson is cleaner than it has been in a century, people have started to understand and appreciate the natural treasure that flows here and we know that there are feasible alternatives to nuclear power."

## The Nor'easter: Nuclear Power's Environmental Mess (EPOCH)

### Nuclear Power's Environmental Mess

By Ben Chasteen

Epoch Times, April 13, 2011

**FAULTY LOCATION:** The Indian Point Nuclear Power Plant on the banks of the Hudson River in Buchanan, NY. The Indian Point station, comprised of two operating nuclear reactors, sits atop the Ramapo fault line. (Don Emmert/Getty Images )

There is no doubt in my mind that reducing our carbon footprint by cutting carbon emissions is a good thing to do. Carbon pollutes the air we breathe, giving people asthma and noticeably reducing the quality of life around areas of high emissions, like cities.

But, is our human civilization doomed to be destroyed by rising temperatures caused by our creation of this greenhouse gas? It seems unlikely, especially considering that greenhouse gas already naturally exists in far larger quantities on our planet.

Temperatures seem to be rising, but that may very well be a separate issue.

What is certain is that the doomsday rhetoric surrounding carbon emissions has become so disproportionately bloated that even more pressing environmental issues than air pollution have slipped off the radar.

I've written about the danger to our water supply presented by the gas industry's use of hydraulic fracturing, but now, probably worst of them all, the environmental crisis caused by nuclear energy is now vividly unfolding in Japan.

Nuclear energy is a mysterious thing to a lot of people. Politicians love it because it creates very little carbon emissions. Some even call it "clean energy" for that reason.

What is really going on inside nuclear power plants? Basically, they are tearing apart the fabric of material existence.

They split atoms apart in uranium, which makes it extremely hot, heating water and creating steam power that turns turbines similar to how burning coal does. The turning turbines supply the electricity that flows into the light bulb as you flick a switch. But, unlike coal that stops burning, the splitting of atoms continues, essentially burning through the composition of matter itself and not stopping for thousands of years.

Meanwhile everything that comes into contact with the rods gets radiation spread to it, which in turn spreads radiation and leads to massive stockpiles of completely unusable spent fuel and equipment.

In human beings, too much radiation leads to cancer and kills. The Radiation and Public Health Project published a study in 2009 showing the rates of thyroid cancer surrounding the Indian Point nuclear plant in New York to be 66 percent higher than the national average. A sharp spike occurred in the early 1970s when the plant opened. Airborne radioactive materials from nuclear plants is the only known major cause of the disease, according to the study.

The Indian Point nuclear plant is only about 30 miles from where I live and only about 40 miles from Manhattan. The United States Nuclear Regulatory Commission (NRC) has told people within 50 miles of the nuclear crisis in Fukushima, Japan, to evacuate the area.

Worse yet, studies have found that two different earthquake fault lines cross just north of Indian Point, leading the NRC to put it at the top of a list of US plants at "seismic risk." An earthquake in the New York City area may sound farfetched, but a leading scientist at Columbia University, Won-Young Kim, just said in February that the city is overdue for a large earthquake on a roughly 100-year cycle.

Even if the earthquake hits our children and not us, there is immediately no good place to put Indian Point's highly-radioactive spent fuel since its storage areas are already filled with spent fuel rods from the last 40 years of operation. The spent fuel is also leaking radioactive water into the ground and the Hudson River, according to Riverkeeper, a clean water advocate.

What does it all add up to? The "Three Mile Island" accident in Pennsylvania in 1979, the nuclear crisis at Chernobyl, Ukraine, in 1986, the Fukushima nuclear crisis in 2011; The pieces of a puzzle far more real and frightening than climate change seem to already be on the table. Unfortunately, they also seem to be far more ignored.[Evan.mantyk@epochtimes.com](mailto:Evan.mantyk@epochtimes.com)

## **Missouri Senate To Debate Nuclear Bill Today (JCNT)**

By Bob Watson

Jefferson City News Tribune, April 13, 2011

Senate leaders expect to begin debating today the bill that would let a Missouri utility company charge its customers for the costs of seeking and winning a US Nuclear Regulatory Commission early site permit.

Ameren Missouri and a statewide consortium of commercial, cooperative and municipal electric utilities support the idea.

Winning the permit would show that the Callaway Nuclear Plant site would be a suitable location for the construction of a second reactor, nearly 30 years after the first one began operating.

"We're looking forward to getting it on the floor and having a full debate on it," freshman Sen. Mike Kehoe, R-Jefferson City, said Monday evening. "We want to make sure that no kind of parliamentary procedures prohibit it from coming to a vote."

## **Poll: Utilities, Not Consumers Should Pay For Nuclear Plant (STLBIZ)**

By Kelsey Volkmann

St. Louis Business Journal, April 13, 2011

A new poll released Tuesday shows that 77 percent of Missouri voters think that energy companies — rather than consumers — should pay for the costs of developing a new nuclear power plant.

The Fair Energy Rate Action Fund, which represents some of Ameren's biggest customers, commissioned the poll. Missouri senators are expected to debate a bill this week about whether to allow Ameren and other utilities to pass on to customers the \$45 million cost of a site permit for a new nuclear plant in Callaway County.

According to the poll, 73 percent of Missouri voters agree that keeping electric bills low is more important than developing nuclear power.

Both the new FERA survey and one released last month by nuclear bill supporters show that Missourians overall support nuclear energy.

The Fair Energy Rate Action Fund represents several of Missouri's largest employers, including Anheuser-Busch, Ford Motor Co. and Noranda Aluminum. [kvolkmann@bizjournals.com](mailto:kvolkmann@bizjournals.com)

## **HS Aldermen Publicly Support 'expansion Of A Second Nuclear Plant In Callaway' (FULSUN)**

By Leah Freeze

Fulton (MO) Sun, April 13, 2011

What could have turned into a lengthy discussion about a proposed resolution was cut short by quick thinking at the Holts Summit Board of Aldermen meeting Monday.

The resolution expressed support for the construction of a second nuclear plant in Callaway County, as well as support for legislation before the General Assembly that would allow a Missouri utility company to charge its customers for the costs of seeking and winning an early site permit, as well as funding for the Office of Public Counsel.

The board voted to remove the section of language addressing the proposed legislation. The new resolution simply states the board publicly supports the expansion of a second nuclear plant in Callaway County.

"It sounds less political. It doesn't sound offensive in any sort of political way," said 1st Ward Alderman Thomas Durham.

The resolution passed unanimously.

In other business, Stephen Lin with Allstate Consultants, the city's consulting firm, was present to answer questions about the approved sewer bond issue.

Residents with septic systems have a little more than a year to save up for the costs of connecting to the main sewer system.

It will cost about \$875 to clean a septic system, filled in, connected to the main line and inspected for quality assurance, said sewer department superintendent Keith Edwards.

He'd like to include a step-by-step process for connecting to the main line in the city's next newsletter.

Alderwoman Pamela Murray reported the city's first planting for the ramp beautification project at Highway 54 and Center Street will begin at 9 a.m. Saturday.

Volunteers are still needed. All volunteers will be provided a picnic lunch at the Hibernia Park pavilion near City Hall after the planting.

## **Alternative Tax Proposal, While Lower, Would Still Double Millstone's Liability (NORBUL)**

Norwich Bulletin, April 13, 2011

Millstone Nuclear Power Station would still be profitable if a \$33 million tax bill supported by Gov. Dannel P. Malloy becomes law, although it would double the plant's total tax bill, a Millstone spokesman said Tuesday.

He said it would become unprofitable if the \$335 million measure, contained in Senate Bill 1176, goes into effect.

"Is the number more palatable?" Ken Holt said, referring to the amount resulting from the Malloy-backed Senate Bill 1007. "Yes, it is. But we still object to it."

Holt's statement came Tuesday afternoon, hours after he initially said the power plant would stop producing electricity if the \$33 million tax bill became law. Holt later said he "overstepped his bounds" with that comment.

"It's a tax on production, not on revenue or profit. No other state in the country has it. It's unfair and we object strongly to it," Holt said.

That quote was included in a story posted on The Bulletin's website Tuesday.

Holt's initial statement surprised the Malloy administration. Communications Director Colleen Flanagan said she "appreciated the clarification" made by Millstone.

"The governor believes his proposal is reasonable and consistent with the concept of shared sacrifice," she said.

Virginia-based Dominion is not considering decommissioning Millstone. The company is considering a temporary shutdown "until economic conditions improve," Holt said.

Dominion has no obstacles to shutting Millstone because of financial hardship, Nuclear Regulatory Commission spokeswoman Diane Screni said Tuesday. No applications need be filed if Dominion wishes to shut down for even a prolonged period.

That would trigger a spike in Connecticut electricity rates, already the second highest in the country, Dominion executives predict.

A shutdown could trigger worker layoffs or furloughs, the company has said. Estimates of workforce reductions haven't been given. Dominion employs 1,080 people at Millstone with another 350 working there for other firms.

"It's a certainty that we would need less people to operate safely if we were shut down," Holt said.

The General Assembly's Finance, Revenue and Bonding Committee may take up the tax bills next week. Dominion hasn't been asked to testify before that panel.

"I believe the proceedings are closed, but if we're asked, we'd be happy to speak to the committee," Holt said.

About 100 people crowded Waterford Town Hall on Monday to listen to a presentation from Dominion executives.

## 2 Conn. Lawmakers Question Electricity Tax (NECN)

New England Cable News, April 13, 2011

State Sen. Andrea Stillman and Rep. Betsy Ritter have scheduled a news conference Wednesday to discuss the legislation. It would tax generators of electricity to provide relief for ratepayers, finance alternative energy and raise \$340 million in revenue — including \$332 million from Millstone nuclear plants.

Representatives of Dominion Resources Inc., which owns Millstone, will attend the news conference. Dominion strongly opposes the tax, saying it will raise prices for consumers and that the tax is discriminatory because it is applied to only a few energy sources.

Supporters of the proposed tax say it is structured in a way that it cannot be passed on to consumers.

## Dominion: No Ifs, Ands Or Buts, We Will Shut Down (WATRFPCTC)

By Paul Petrone

Waterford (CT) Patch, April 13, 2011

There are two possible outcomes if Senate Bill 1176 is passed, Dominion Vice President of Government Affairs Dan Weekley said at a hearing in Waterford Town Hall on Monday night. Both increase electric rates dramatically, he said.

The first is that the \$335 million in new taxes will be passed on to ratepayers, thereby increasing rates, Weekley said. If that cannot be achieved, Millstone Power Station will be shut down, he said.

"I've been misquoted in the media suggesting this is a threat," he said. "This is not a threat, and we will not be shutting down. The state government will be shutting us down."

The announcement came at a hearing by Dominion to discuss both what the nuclear company has learned from the Japanese disaster and SB 1176. The event attracted around 100 members of the public, some strongly in favor of nuclear power and some strongly against.

Dominion is locked into contracts with companies years in the future for the cost of its energy. State legislators in favor of the bill have argued that since these costs are already fixed, Dominion will not be able to pass the additional taxes on to ratepayers.

If this new tax is imposed, Dominion will do everything it can to renegotiate these contracts and pass the new charge on, Weekley said. If that is not possible, Millstone will not produce any energy at all because it just isn't affordable, Weekley said.

All Millstone employees have been told of the potential shutdown, Weekley said. Half of the workforce could be laid off if that were to happen, J.W. "Bill" Sheehan, president of the State of Connecticut Nuclear Energy Advisory Council, said.

"I can't make it any simpler," Weekley said. "If Dominion cannot pass these rates on, the Millstone power facility can no longer operate."

If Millstone Power Station produced no energy, it will not pay any of the tax, since the tax is only on the energy it produces. Also, the company would likely argue that its property assessment should be reduced significantly, greatly reducing its property taxes, Town Assessor Michael Bekech said.

The tax adds a 2 cents per kilowatt hour on nuclear energy, costing Dominion an additional \$335 million per year. Millstone Power Station is the only nuclear power plant in Connecticut, so Dominion would be the only company paying the tax.

Governor Dannel Malloy has not commented either way on the bill, Weekley said. He has proposed his own \$32 million on Millstone, Weekley said.

#### Booed Off Stage

The event provided an opportunity for people against nuclear power to voice their displeasure with Millstone Power Station and Dominion. The protestors were not well-received by the rest of the crowd.

During the question and answer period after Dominion's presentation, Nancy Burton, president of the Connecticut Coalition Against Millstone, began a speech on the dangers of nuclear energy. She showed several posters of Japan's destroyed nuclear power plants, and made allegations that Millstone was casting radiation into Mystic and causing cancer.

Before she could finish her speech, the public began to grow restless. Many stood up and yelled at Burton, demanding she ask one question and let everybody else talk.

Later in the question and answer period, Burton stood up again to speak. Again she made allegations that Dominion was cutting corners and misinforming the public, and that the media was backing the power company.

This time, before she could finish her speech, boos rained down. She tried to talk over the jeers, but the public just booed louder until she eventually returned to her seat.

#### What Dominion Learned From Japan

The first part of the presentation was spent discussing what Dominion learned from the Japan tragedy. The power company found the root cause of the problems with the Japanese power plants and learned from them, Millstone Site Vice President Skip Jordan said.

The problem in Japan was that power died, so the reactors could no longer be cooled, Jordan said.

Water needs to be pumped into reactors to cool boiling water generators like the ones in Japan, Jordan said. These pumps need electricity to run.

When the earthquake came, it knocked out power to the power plants and the water pumps. The pumps ran off of diesel generators, but those failed in the ensuing tsunami, Jordan said.

Then, the pumps began to run off of batteries, he said. But eventually those batteries died, and the reactors began to heat up and create problems, Jordan said.

Only Millstone 1, which is decommissioned, is a boiling water generator. The other two reactors are pressurized water generators.

Still, there is danger if power were to be lost at the plant, Jordan said. To compensate, generators, batteries and lines from several different power generators are installed, Jordan said.

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## Unistar Ineligible To Build Third Nuclear Power Reactor (POWGENWLD)

Power-Gen Worldwide, April 13, 2011

The Nuclear Regulatory Commission said April 8 that UniStar Nuclear Energy is not eligible to build a third reactor at Calvert Cliffs because it is not a US-owned company. The NRC also said it would continue to process the application. UniStar said it believes it will have a US partner for the proposed project.

In October 2010 Constellation Energy pulled out of negotiations for a \$7.5 billion federal loan guarantee to build a nuclear reactor at the site with its French partner Electricite de France (EDF).

Federal law prohibits complete ownership or control of a US nuclear plant by a foreign entity. UniStar is owned by French energy group EDF. The NRC said a license would not be issued until ownership requirements were met.

"While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application," an EDF spokesperson said. "This allows the project to continue moving forward as anticipated."

UniStar said it will continue to work with the NRC to resolve the governance issue. The company has not said when it might find a US partner.

## **Coal Is More Dangerous Than Nuclear (WSJ)**

**But don't tell that to Greens getting elected to office on post-Fukushima fear-mongering.**

By Holman W. Jenkins, Jr., Opinion

Wall Street Journal, April 13, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **More Nails In Yucca Coffin (LVSRJ)**

By Steve Tetreault

Las Vegas Review-Journal, April 13, 2011

Full-text stories from this source currently cannot be included in this document. You may, however, click the link above to access the story.

## **Locally Based Concrete Pump Arrives In Japan (AUGC)**

By Rob Pavey, Staff Writer

Augusta Chronicle, April 13, 2011

A 190,000-pound concrete pump formerly deployed at Savannah River Site arrived safely in Tokyo late Monday and was escorted to Chiba, Japan, where engineers were being trained to use the device at the tsunami-damaged Fukushima Dai-ichi nuclear plant.

The pump, made by Putzmeister, of Germany, is the largest device of its kind in the world and was in use by Augusta-based Ashmore Concrete Contractors at the construction site of the National Nuclear Security Administration's mixed-oxide fuel plant in South Carolina.

The pump was airlifted from Hartsfield-Jackson Atlanta International Airport aboard a mammoth Antonov cargo plane, which made refueling stops in Seattle; Anchorage, Alaska; and Magadan, Russia, before arriving in Tokyo, said Kelly Bickle, a spokeswoman at Putzmeister America's office in Wisconsin.

"It just arrived, late last night," she said. "Because it was such a heavy load, the plane had to refuel about every five hours."

A similar pump operated by Associated Concrete Pumping, of Sacramento, Calif., also was flown to Japan, and both were moved from the airport to Putzmeister's office in Chiba, where Tokyo Electric Power Co. workers are being trained to use them.

The pumps are used to pour concrete onto bridges and high-rises and can pump water. Several smaller Putzmeister pumps are already at Fukushima.

Company officials were unsure when the pumps would be moved to the damaged reactors.

Putzmeister has experience working on nuclear power plants in crisis and other disasters. After the Chernobyl disaster in 1986, Putzmeister sent 11 boom pumps to help place the concrete that halted the release of radiation.

Japanese officials plan to use the pumps to focus streams of cooling water, but they are capable of pouring concrete if such an option becomes necessary.

Both 70-meter Putzmeister pumps were on long-term leases to their operators, which -- at the company's request -- volunteered to relinquish them to help with the Japan crisis.

## **Editorial: Quake Risk Bolsters Need For Y-12 Project (KNOXNS)**

Knoxville News Sentinel (TN), April 13, 2011

The vulnerability to an earthquake of the primary uranium processing center at the Y-12 nuclear weapons plant in Oak Ridge underscores the need for a new facility built to modern seismic standards.

National Nuclear Security Administration spokesman Steven Wyatt recently told the News Sentinel that "a major earthquake could result in significant structural damage and process failure" at the plant's 9212 complex.

In light of the massive earthquake off the coast of Japan that sent a tsunami crashing into a nuclear power plant, resulting in catastrophic damage, Wyatt's statement could be seen as a warning that a proposed \$6.5 billion uranium processing facility is needed.

Recent technical reports haven't been released to the public, but a 1987 report identified more than 500 plausible scenarios for major earthquake damage at the 9212 complex that would lead to serious injury or death of personnel, loss of plant capability or a nuclear chain reaction. Twenty of the top 50 scenarios indicate serious injuries or deaths would occur.

Wyatt said Y-12's seismic analyses are based on an earthquake with a range of 0.006 to 0.30 on the Modified Mercalli Intensity Scale, which is roughly equal to between 5.0 and 6.0 on the Richter Scale. The Japan earthquake registered 9.0 on the Richter Scale.

The chance of an earthquake in East Tennessee even approaching the power of the Japan earthquake is unlikely, but the 1987 Y-12 report indicated parts of the sprawling 9212 complex would suffer damage during an earthquake of much lower strength.

The 9212 complex is a network of interconnected buildings, some dating back to the Manhattan Project during World War II and others added on throughout the Cold War. Work in the complex includes complex chemical processes for recycling highly enriched uranium used in nuclear weapons and shops for fabricating uranium metal.

The aging facility is "structurally unsound" and "unsuitable for protracted use" in the nuclear weapons production pipeline, according to a 2010 NNSA letter to Congress.

The US Department of Energy wants to replace 9212 with a state-of-the-art complex called the Uranium Processing Facility. The UPF carries a big price tag and wouldn't be fully operational until 2024 if construction begins next year.

Last week's near-shutdown of the federal government and looming battles over deficit spending and the nation's long-term debt put all federal expenditures at risk. The UPF project should not be one of those heading to the chopping block.

Y-12 is integral to the building and maintenance of the United States' nuclear weapons arsenal. The UPF is central to the plant's modernization plans, and the fragile condition of the 9212 complex should serve to move its construction higher on the national defense priority list.

Tennessee's congressional delegation must impress upon their colleagues the importance of the UPF to national security. A delay in the UPF construction timeline would extend the life of the vulnerable 9212 complex and increase the already considerable building costs. Despite the cost-cutting efforts in Washington, Congress should commit the necessary resources to build the UPF.

## Global Alliance Needed In Fighting Cybercrime, Lawmakers Told (BLOOM)

By Kelly Riddell

Bloomberg News, April 13, 2011

The US should cooperate more with other countries on cross-border investigations of cybercrime to bolster national security and protect consumers from identity theft, witnesses told lawmakers during a Senate hearing today.

"It is unlikely that we can adequately secure the US portion of cyberspace without international engagement," John Savage, a computer science professor at Brown University in Providence, Rhode Island, said in testimony before the Senate Committee of the Judiciary Subcommittee on Crime and Terrorism.

While cybercriminals operate in a world without borders, the law enforcement community does not, limiting the enforceable penalties on cybercrime, said Pablo Martinez, a deputy special agent in charge with the Secret Service's criminal investigation division.

International cooperation was vital in investigating the network intrusion of Heartland Payment Systems Inc., the fifth-largest payments processor in the US, where 130 million credit card accounts were compromised two years ago, Martinez said.

In January, top White House cybersecurity official Howard Schmidt said he planned a diplomatic effort to win more cooperation on cybercrime issues. Some governments actively engage in cybercrimes or turn a "blind eye" to the practice, similar to nations condoning money-laundering schemes in the 1980s, Schmidt said.

The US plans to urge more nations to sign a 10-year-old treaty called the Cybercrime Convention that calls for cooperation in probing crimes committed via the Internet and other computer networks, Schmidt said in January. These include crimes that deal with infringements of copyright, computer-related fraud, child pornography and violations of network security, according to the treaty website.

The treaty has been ratified by 30 countries, including the US and 29 European nations. Signatories including the United Kingdom, Canada and Turkey have yet to ratify the law, according to the treaty website. China and Russia are among nations that have yet to sign the treaty.

## **IN THE BLOGS:**

### **Keeping Score On Nuclear Accidents (NYT)**

By Matthew L. Wald

New York Times, April 13, 2011

Now that Japan has raised its assessment of the Fukushima accident to a 7 on the International Atomic Energy Agency's scale, equal to the 1986 accident at Chernobyl, it may be time to review past accidents. Thomas B. Cochran, a physicist at the Natural Resources Defense Council, just did that in preparing to testify on Tuesday afternoon before the Senate Environment and Public Works Committee.

Some of the incidents that he lists are technically not meltdowns but rather "core damage accidents." That term is used when an intact core holds in nearly all of the radioactive materials that are created by a reactor as it splits atoms of uranium and plutonium, leaving behind fragment atoms of materials like cesium, strontium and iodine, which seek to return to stability by giving off radiation. If the core melts, as it did at Fukushima, or explodes, as it did at Chernobyl, that radioactive material is released.

The seven-level scale for the seriousness of the accidents runs from "anomaly," something that would probably not be mentioned in a newspaper, to "incident," which might be, to an event with major off-site consequences for health and the environment, like Chernobyl or Fukushima. Some do not involve reactors: Japan, for example, experienced an accident in 1999 at a plant that processes plutonium fuel. The plutonium was stored in a liquid in a vessel that was too large, inadvertently creating a "critical mass," an amount capable of sustaining a chain reaction. The chain reaction created a shower of radiation and heat, blowing apart the critical mass, but as it cooled, it re-assembled. That rated a level 4.

In fact, the International Atomic Energy Agency pointed out a few hours after Japan announced the 7 rating on Tuesday, the 7 applies to reactors 1, 2 and 3 at Fukushima Daiichi. The accident at Unit 4 is not in the reactor but in the spent fuel pool and is still rated at 5.

Some of the events on this list predate the scale and do not appear to have been rated. They are listed by Mr. Cochran in chronological order.

#### **1. Sodium Reactor Experiment (SER)**

Location: Santa Susana Field Laboratory, California, United States

Reactor type: sodium-cooled graphite-moderated thermal power reactor

Power: 20 MWt; 6.5 MWe

History: initial criticality: April 25, 1957; first produced electricity in July 1957; operated two years, partial core meltdown accident from July 12 to 26, 1959, resulting in melting of as much as one-third of the fuel; shutdown July 26, 1959 (appears to have been operated for several days with its core partially melted); converted to HEU-Th fuel; second core operations began September 1960; permanently shutdown in February 1964.

#### **2. Stationary Low-Power Reactor No. 1 (SL-1)**

Location: National Reactor Testing Station (now Idaho National Laboratory), United States

Reactor type: experimental, gas-cooled, water-moderated

Power: 3.3 MWt; 300 kWt

History: initial criticality March 1961; prompt criticality accident Jan. 3, 1961; shut down May 1964

#### **3. Enrico Fermi Unit 1 Reactor**

Location: Newport, Lagoon Beach, Frenchtown Township, Monroe County, Mich., United States

Reactor Type: Liquid Metal Fast Breeder Reactor (LMFBR)

Power: 200 MWt; 65 MWe (gross); 61 MWe (net)

History: initial criticality Aug. 23, 1963; commercial operations began August 1966; partial fuel melt accident Oct. 5, 1966, two of the 105 fuel assemblies melted, but no contamination was recorded outside the containment vessel; closed November 1972

#### **4. Chapelcross Unit 2 Nuclear Power Plant**

Location: Annan, Dumfeshire, Scotland, United Kingdom

Reactor Type: gas-cooled, graphite moderated; Magnox

Power: originally 180 MWt, up-rated progressively to 265 MWt, originally 23 MWe (gross) progressively up-rated to 60 MWe (gross); 50 MWe (net)

History: start-up May 1959; while under evaluation for the commercial reactor program, experienced a partial blockage in a single fuel channel May 1967, contamination was limited to one region of the core; shut down June 29, 2004

5. Saint-Laurent A-1 Nuclear Power Plant

Location: St. Laurent-Nouan, Loir-et-Cher, Centre, France

Reactor Type: gas-cooled, graphite moderated

Power: 1570 MWt; 405 MWe (gross), 390 MWe (net)

History: grid connection March 14, 1969; commercial operation June 1969; 50 kg of uranium began to melt Oct. 17, 1969; permanently shut down May 27, 1992

6. Saint-Laurent A-2 Nuclear Power Plant

Location: St. Laurent-Nouan, Loir-et-Cher, France

Reactor Type: gas-cooled, graphite moderated

Power: 1690 MWt; 465 MWe (gross) [uprated to 530 MWe (gross)], 450 MWe (net)

History: started November 1970; grid connection Aug. 9, 1971; commercial operation November 1971; heat excursion causing some fuel melting March 13, 1980; permanently shut down May 27, 1992

7. Three Mile Island Unit 2 Nuclear Power Plant

Location: Londonderry Township; Dauphin County, Pa., United States

Reactor Type: Pressurized Water Reactor (PWR)

Power: 2,568 MWt, 808 MWe (gross); 776 MWe (net)

History: initial criticality December 1978; partial core melt accident March 1979; decommissioned 1979

8. Chernobyl Unit 4 Nuclear Power Plant

Location: Pripyat, Ukraine, Soviet Union (now Ukraine)

Reactor Type: RBMK-1000 (graphite-moderated water-cooled)

Power: 3,200 MWt; 1,000 MWe (gross); 925 MWe (net)

History: destroyed in full-core melt accident April 26, 1986

9. Greifswald Unit 5 (KGR-5) Nuclear Power Plant

Location: Lubmin, East Germany (now Germany)

Reactor Type: VVER-440, Model V-230, Pressurized Water Reactor (PWR)

Power: 1,375 MWt; 440 MWe (gross); 408 MWe (net)

History: grid connection April 24, 1989; commercial operation Nov. 1, 1989; near core melt with 10 fuel elements damaged Dec. 7, 1975; permanent shutdown Nov. 24, 1989

10. Fukushima Daiichi Unit 1 Nuclear Power Plant

Location: Ohkuma, Fukushima Prefecture, Japan

Reactor Type: Boiling Water Reactor (BWR), GE BWR/2, Mark 1 Containment

Power: 1,380 MWt; 450 MWe (gross); 439 MWe (net)

History: initial criticality Oct. 10, 1970; grid connection Nov. 17, 1970; commercial operation March 26, 1971; partial core meltdown after earthquake on March 11, 2011

11. Fukushima Daiichi Unit 2 Nuclear Power Plant

Location: Ohkuma, Fukushima Prefecture, Japan

Reactor Type: Boiling Water Reactor (BWR), TOS1 [GE BWR/4], Mark 1 Containment

Power: 2,381 MWt; 794 MWe (gross); 760 MWe (net)

History: initial criticality May 10, 1973; grid connection Dec. 24, 1973; commercial operation July 18, 1974; partial core meltdown after earthquake on March 11, 2011

12. Fukushima Daiichi Unit 3 Nuclear Power Plant

Location: Ohkuma, Fukushima Prefecture, Japan

Reactor Type: Boiling Water Reactor (BWR), TOS1 [GE BWR/4], Mark 1 Containment

Power: 2,381 MWt; 794 MWe (gross); 760 MWe (net)

History: initial criticality Jan. 28, 1978; grid connection Feb. 24, 1978; commercial operation Oct. 12, 1978; partial core meltdown after earthquake on March 11, 2011

## **INTERNATIONAL NUCLEAR NEWS:**

### **Japan Vows Emphasis On Caution (WSJ)**

**Aftershocks Underline Vulnerability of Plant; Prime Minister Defends Government's Handling of Crisis**

By Mitsuru Obe And Toko Sekiguchi

Wall Street Journal, April 13, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

### **Japanese Officials On Defensive As Nuclear Alert Level Rises (NYT)**

By Keith Bradsher, Hiroko Tabuchi And Andrew Pollack

New York Times, April 13, 2011

TOKYO — Japanese officials struggled through the day on Tuesday to explain why it had taken them a month to disclose large-scale releases of radioactive material in mid-March at a crippled nuclear power plant, as the government and an electric utility disagreed on the extent of continuing problems there.

The government announced Tuesday morning that it had raised its rating of the severity of the accident at the Fukushima Daiichi Nuclear Power Station to 7, the worst on an international scale, from 5. Officials said that the reactor had released one-tenth as much radioactive material as the Chernobyl accident in 1986, but still qualified as a 7 according to a complex formula devised by the International Atomic Energy Agency.

Japan's new assessment was based largely on computer models showing very heavy emissions of radioactive iodine and cesium from March 14 to 16, just after the earthquake and tsunami rendered the plant's emergency cooling system inoperative. The nearly monthlong delay in acknowledging the extent of these emissions is a fresh example of confused data and analysis from the Japanese, and put the authorities on the defensive about whether they have delayed or blocked the release of information to avoid alarming the public.

Seiji Shiroya, a commissioner of Japan's Nuclear Safety Commission, an independent government panel that oversees the country's nuclear industry, said that the government had delayed issuing data on the extent of the radiation releases because of concern that the margins of error had been large in initial computer models. But he also suggested a public policy reason for having kept quiet.

"Some foreigners fled the country even when there appeared to be little risk," he said. "If we immediately decided to label the situation as Level 7, we could have triggered a panicked reaction."

The Japanese media, which has a reputation for passivity but has become more aggressive in response to public unhappiness about the nuclear accident, questioned government leaders through the day about what the government knew about the accident and when it knew it.

Prime Minister Naoto Kan gave a nationally televised speech and press conference in the early evening to call for national rebuilding, but ended up defending his government's handling of information about the accident.

"What I can say for the information I obtained — of course the government is very large, so I don't have all the information — is that no information was ever suppressed or hidden after the accident," he said. "There are various ways of looking at this, and I know there are opinions saying that information could have been disclosed faster. However, as the head of the government, I never hid any information because it was inconvenient for us."

Junichi Matsumoto, a senior nuclear power executive from the plant's operator, the Tokyo Electric Power Company, fanned public fears about radiation when he said at a separate news conference on Tuesday morning that the radiation release from Daiichi could, in time, surpass levels seen in 1986.

"The radiation leak has not stopped completely, and our concern is that it could eventually exceed Chernobyl," Mr. Matsumoto said.

But Hidehiko Nishiyama, deputy director general of Japan's nuclear regulator, the Nuclear and Industrial Safety Agency, said in an interview on Tuesday evening that he did not know how the company had come up with its estimate. "I cannot understand their position," he said.

He speculated that Tokyo Electric was being "prudent and thinking about the worst-case scenario," adding, "I think they don't want to be seen as optimistic."

Mr. Nishiyama said that his agency did not expect another big escape of radiation from Daiichi, saying that "almost all" the material that is going to escape has already come out. He said that the rate of radiation release had peaked in the early days after the March 11 earthquake, and that the rate of radiation had dropped by 90 percent since then.

The peak release in emissions of radioactive particles took place following hydrogen explosions at three reactors, as technicians desperately tried to pump in seawater to keep the uranium fuel rods cool, and bled radioactive gas from the reactors in order to make room for the seawater.

Mr. Nishiyama took pains to say — and other nuclear experts agreed — that the Japanese accident posed fewer health risks than Chernobyl.

In the Soviet-era accident at Chernobyl, a burning graphite reactor pushed radioactive particles high into the atmosphere and downwind across Europe. The Japanese accident has mostly produced radioactive liquid runoff into the ocean and low-altitude radioactive particles that have frequently blown out into the ocean and fallen into the water as well.

The Nuclear Safety Commission ordered the use of a computer model called Speedi — short for System for Prediction of Environmental Emergency Dose Information — to calculate the amount of radiation released from the plant, said Mr. Shiroya, the commissioner on the safety agency, who is also the former director of the Research Reactor Institute at Kyoto University.

To use the model, scientists enter radiation measurements from various distances from a nuclear accident. The model produces an estimate of the radioactive material escaping at the source of the accident.

Speaking at a news conference, Mr. Shiroya said those calculations were complex, and it was only recently that researchers had been able to narrow down the amount to within an acceptable margin of error.

"At first, the calculations could have been off by digits," Mr. Shiroya said. "It was only when there was certainty that the margin of error was within two to three times that we made an announcement," he said, later adding, "I do not think that there was any delay."

Even so, some people involved in the energy industry have been hearing about the results of the Speedi calculations for days. A senior executive said in a telephone interview on April 4 that he had been told that the Speedi model suggested that radioactive materials escaping the Daiichi complex were much higher than Japanese officials had publicly acknowledged, and perhaps as high as half of the releases from Chernobyl.

Mr. Nishiyama and Mr. Shiroya said separately on Tuesday that that estimate had been wrong. But their two government agencies also released different figures for the level of emissions so far, and there appeared to be a degree of supposition embedded in the numbers.

Mr. Nishiyama's agency said that emissions totaled 370,000 terabecquerels; a terabecquerel is a trillion becquerels. The agency's figure is 20 percent of the former Soviet Union's official estimate of emissions from Chernobyl.

But most experts say that the true emissions from Chernobyl were 1.5 to 2.5 times as high as the Soviet Union acknowledged. Mr. Nishiyama's agency appears to have assumed that true emissions from Chernobyl were twice the official figure, and so calculated that the current nuclear accident had released 10 percent as much as Chernobyl.

Mr. Nishiyama's agency is part of the Ministry of Economy, Trade and Industry, which promotes the use of nuclear power. Mr. Shiroya's commission, which is independent from nuclear power operators and their equipment providers, issued an estimate that emissions totaled 630,000 terabecquerels.

Although Mr. Shiroya did not provide a comparison to Chernobyl, that works out to 34 percent of the official Soviet estimate of emissions and 17 percent of the unofficial higher estimate.

Mr. Shiroya also said there was a threefold margin for error involved. The outside estimates of total releases would range from as low as 6 percent to as high as 51 percent of the unofficial totals from Chernobyl.

## No Change In Health Risks At Japan Nuclear Plant: WHO (AFP)

AFP, April 13, 2011

GENEVA — The World Health Organisation said Tuesday that health risks outside the exclusion zone of the failed Fukushima Daiichi nuclear plant have not augmented, even though Japanese authorities upgraded the emergency.

"The risk assessment for health hasn't changed outside the 40 kilometres zone... outside the 40 kilometres zone we do not believe that the risk is greater today than it was yesterday," said Gregory Hartl, spokesman for the UN health agency.

Hartl also stressed that there is no one left in the exclusion zone, and that measures taken "appears to be enough" for the moment.

Japan upgraded its month-old nuclear emergency to a maximum seven on an international scale of atomic crises Tuesday, placing it on a par with the Chernobyl disaster a quarter-century ago.

The reassessment to a "major accident" with "widespread health and environmental effects" was based on the total radiation released, which officials said was one-tenth of the 1986 accident in the then Soviet Union.

## Japan Nuclear Accident Health Risk Still Small-WHO (REU)

By Stephanie Nebehay And Andrew Callus

Reuters, April 13, 2011

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## Cumulative Radiation From Japan Plant Sparks Health Worries (CHIT)

By Tan Ee Lyn

Reuters, April 12, 2011

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## UPDATE 1-Hitachi Submits Plan To Decommission Fukushima Reactors -Nikkei (REU)

Reuters, April 13, 2011

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## Hitachi Submits Plan To Decommission Japanese Nuclear Power Plant (POWGENWLD)

Power-Gen Worldwide, April 13, 2011

Hitachi Ltd submitted a proposal for the long-term decommissioning of six crippled nuclear reactors at the Fukushima Daiichi power plant, according to the Nikkei business daily newspaper.

The five-stage plan was submitted to Tokyo Electric Power Co, which operates the Fukushima plant, the paper said. There was no word on how long each stage is expected to last.

Hitachi estimated it would take about 30 years to fully dismantle the reactor cores and buildings that were damaged in March after an earthquake and tsunami hit the country.

Earlier, Toshiba Corp. submitted a plan to decommission the reactors.

## Areva Sends 20 Specialists To Help Tepco With Reactor Crisis (BLOOM)

By Jim Snyder

Bloomberg News, April 13, 2011

Areva SA, the biggest supplier of nuclear fuel and services, sent 20 nuclear specialists to help handle the reactor crisis at Japan's Fukushima Dai-Ichi plant, the chief executive of the company's US subsidiary said.

Jacques Besnainou, who heads Areva Inc., said Tokyo Electric Power Co. asked for the assistance. The workers, including five from the US, are providing advice on how to manage spent nuclear fuel and shut down the plant.

"It's a small team but very highly specialized to assess the damage and to see how we can most rapidly deploy services to help for decontamination," he said in an interview after a speech in Washington. The US unit is based in Bethesda, Maryland. The parent company is based in Paris.

Areva's team in Japan will propose how best to clean and dismantle the facility, Besnainou said. Nuclear scientists and engineers from France and Germany joined the Americans in Japan. Areva has an office in Japan with about 100 employees.

US officials have said three reactors at Fukushima have suffered partial meltdowns and spent fuel rods were exposed to air, resulting in the release of radiation.

Besnainou, who spoke at an event on US energy policy sponsored by Areva, The New Republic and EnergyNOW!, a weekly television news program, said the US should continue to support the nuclear industry.

"Nuclear power still makes sense today in Japan and around the world," he said.

Besnainou said he was "begging" for a US policy for spent nuclear fuel. The used uranium is now stored in pools or in dry casks on site. The Obama administration stopped a program to build a permanent waste repository at Yucca Mountain, Nevada.

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## Japan PM Urges No Panic After Government Raises Nuclear Crisis Severity To Chernobyl Level (WP/AP)

Associated Press, April 13, 2011

TOKYO — Japan's prime minister is urging the public not to panic after the government boosted the severity level of the crisis at a tsunami-damaged nuclear plant to the highest rating — on par with the 1986 Chernobyl disaster.

Prime Minister Naoto Kan urged people in a televised address to focus on recovering from the country's disasters.

Kan said: "Right now, the situation of the nuclear reactors at the Fukushima plant has been stabilizing step by step. The amount of radiation leaks is on the decline," he said. "But we are not at the stage yet where we can let our guards down."

Japanese regulators said they raised the rating from 5 to 7 — the highest level on an international scale — after new assessments of radiation leaks from the Fukushima Dai-ichi plant.

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## **Japan Mulls Spinning Off Part Of Nuclear Operator: Report (NYT/REU)**

By Yoko Kubota And Kazunori Takada

Reuters, April 13, 2011

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## **Kyushu Electric Shelves Plan To Build 3rd Nuclear Reactor In Kagoshima < Japan Today: Japan News And Discussion (JapanToday)**

Japan Today, April 13, 2011

Kyushu Electric Power Co has frozen procedures to build a third reactor at its nuclear power plant in Kagoshima Prefecture in light of the country's quake-triggered nuclear disaster, a company official said Tuesday. The freeze could delay Kyushu Electric's plan to start building one of the country's largest reactors with the output capacity of 1.59 million kilowatts in 2014 and start generating power with it in 2019 at the Sendai plant in the city of Satsumasendai.

Following a request from Kagoshima Gov Yuichiro Ito, who had agreed to the project last year, Mamoru Dangami, vice president of the regional power supplier, notified the governor Monday that the firm will not apply for reclamation near the plant for the time being, according to the official.

As the crisis involving Tokyo Electric Power Co's Fukushima Daiichi nuclear power plant festers, Prime Minister Naoto Kan has expressed his readiness to review the country's basic policy of building at least 14 nuclear reactors by 2030.

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## **Merkel Warms To Carbon Capture As Nuclear Policy Deadline Draws Nearer (BLOOM)**

By Tony Czuczka And Nicholas Comfort

Bloomberg News, April 13, 2011

German Chancellor Angela Merkel's Cabinet is set to discuss steps to let utilities pump greenhouse gases underground as the government bids to shift energy policy away from nuclear power.

Ministers will decide on legislation to permit so-called carbon capture and storage, or CCS, when they meet in Berlin today for their regular weekly Cabinet meeting. German utilities have pressed for laws that would allow carbon-dioxide emissions from coal-fired power stations to be stored underground since at least November 2009.

Merkel's plan, which implements a European Union law, would help her plug a potential gap in the energy mix serving Europe's largest economy caused by a retreat from nuclear after the disaster in Japan. It would also give the four main utilities — E.ON AG (EOAN), RWE AG (RWE), EnBW Energie Baden-Wuerttemberg AG (EBK) and Vattenfall AB — some planning certainty for conventional power- plant investment, after they said the reversal might endanger energy security.

"Those people who oppose nuclear power will have to support other technologies, and given solar panels and wind parks won't immediately suffice, carbon capture and storage will have to be developed," Michael Schaefer, a Frankfurt-based Equinet AG analyst, said in a March 29 interview.

CCS has moved up the agenda after Merkel announced a 90-day moratorium on March 14 on a planned extension of the running times of Germany's 17 nuclear plants, then ordered the seven oldest plants idled pending safety checks. RWE, Germany's second-biggest utility, filed a lawsuit on April 1 challenging the shutdown of its Biblis A nuclear plant under the moratorium.

The proposed legislation before Cabinet, which still needs parliamentary approval, sets federal rules for carbon-capture projects while allowing state governments to pass laws that bar carbon capture in their territory.

"This is great news for our state," Schleswig-Holstein Prime Minister Peter Harry Carstensen, whose regional government has been among the most vocal opponents of CCS, said yesterday in a statement. "There will be no storage of carbon dioxide in Schleswig-Holstein against our will."

Merkel, Economy Minister Rainer Bruederle and Environment Minister Norbert Roettgen are due to meet on April 15 with the prime ministers of Germany's 16 states to discuss the future energy mix. The coalition's plans include expanding offshore wind parks and building more gas plants to plug a gap in power generation that would follow a retreat from nuclear power.

RWE shelved the start of a planned lignite-fired plant near Cologne in November 2009 that would have stored its emissions underground, saying that Germany lacked the laws necessary to encourage carbon capture technology. Two months later, the Essen-based utility said that public opposition to storing carbon dioxide in Germany might force it to build a coal-fired plant with facilities to capture emissions outside the country.

Germany's Environment Ministry said in July that the government would pursue a "step-by-step" approach to developing CCS to address the concerns of citizens. Initially, only the testing and demonstration of storage sites would be permitted under a draft law, with the results evaluated in 2017, potentially allowing "wider implementation," it said then.

"In the past," the government "supported companies in their efforts to research carbon capture and storage but the technology was hampered by the question of receiving local planning permissions," said Matthias Heck, a Frankfurt-based Macquarie Research analyst.

Merkel's government last year agreed to extend the lifespan of nuclear reactors by an average of 12 years. In return, their utility owners agreed to pay fees to help develop renewable power.

Both Merkel's Christian Democrats and their Free Democratic Party coalition partners have indicated that the seven oldest reactors probably won't be returned to the grid after Merkel pledged to speed the transition to renewable energy, saying that her "view on nuclear energy has changed." The four nuclear utilities have since suspended some of the fee payments, the Financial Times Deutschland newspaper reported on April 11.

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## **German Government Set To Approve Carbon Capture Law Wednesday (DJNews)**

By Klaus Hinkel And Jan Hromadko

Dow Jones Newswires, April 13, 2011

FRANKFURT -(Dow Jones)- The German government has agreed on a bill that would in principle allow the underground storage of carbon dioxide to help make fossil-fueled power plants less harmful to the climate, a lawmaker of Chancellor Angela Merkel's ruling party told Dow Jones newsletter EnergyDaily late Tuesday.

However, the draft the federal cabinet is set to approve at a meeting Wednesday isn't the major achievement many had hoped for, as it grants German states extensive rights to block so-called Carbon Capture and Storage projects, known as CCS, said Ingbert Liebing of Merkel's Christian Democratic party.

Germany still doesn't have a law that allows the transport and storage of CO2 extracted in power generation after Schleswig-Holstein and Lower Saxony--states skeptical of CCS--had blocked earlier drafts.

Many of the most suitable locations for CCS sites are in these two states, but a lack of public acceptance of the technology--and the storage of CO2 in particular--had repeatedly derailed the law.

Liebing, who represents an electoral district in Schleswig-Holstein, said the new draft would allow German states to block CCS sites if they were found to infringe on the interests of the tourism industry, environmental aspects, or " general public interests".

CCS is considered crucial to increasing the environmental friendliness of coal-fired power plants, which generate the bulk of Europe's electricity. The European Union wants 12 demonstration plants built by 2020 and plans to support selected projects financially.

Germany has to pass a CCS law by June 25 to comply with a directive of the European Commission.

## **French MPs Say German Nuclear Shift Could Hurt Ties (NYT/REU)**

By Noah Barkin

Reuters, April 13, 2011

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## **German Nuclear Energy Exit Generates Hot Air (WSJ)**

By Bernd Radowitz

Wall Street Journal, April 13, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Taiwan Halts Plans To Build Atomic Reactors After Japan Crisis (BLOOM)**

By Yu

Bloomberg News, April 13, 2011

Taiwan Power Co., which operates the island's three atomic-power plants and is building a fourth, halted plans for additional reactors and will study its options after Japan's nuclear accident from the March 11 earthquake.

Since then the utility known as Taipower canceled a tender to hire advisers on adding two more reactors to its No. 4 nuclear plant under construction, Chief Engineer Roger Lee said yesterday. The government also has frozen a review of the state-run utility's application to extend the license of its No. 1 plant, which has been operating for 33 years, Lee said.

"Taipower would rather take more time and spend more money so the public won't worry," Lee said in an interview in the capital Taipei. The company is studying how to strengthen the stations' ability to withstand earthquakes and tsunamis, he said.

Taiwan and Japan lie on the Pacific Ring of Fire, a zone prone to earthquakes. Taipower's three plants, like the stricken 40-year-old Fukushima Dai-Ichi station north of Tokyo, are near the ocean. They provide about 20 percent of the island's power and are as close as five kilometers (3 miles) from an active quake fault line, according to Lee.

Reactors in quake-prone areas need to be redesigned to make them more resistant, an investment that would reduce their original cost advantage, said George Hsu, a professor in the department of applied economics at National Chung Hsing University in central Taiwan.

"It's a matter of benefit and cost," Hsu said by phone today. "You have to pay a cost to give up nuclear power, and consider whether the cost is bearable."

Taiwan's No. 2 plant is 22 kilometers from Taipei and No. 3 is in a national park and six kilometers from the southern seaside town of Hengchun, site of several beach resorts.

The utility had considered adding as many as 10 reactors on the existing sites to reduce reliance on coal and gas, Taipower Vice President Hsu Hwai-chiung has said.

Taiwan imports about 99 percent of its energy needs. The island started commercial operations at its first reactor in 1978, after the global energy crisis. By 1985, the island had erected six reactors on three sites.

"With nuclear power being such a reliable and sustainable power source, we have to take risks" with the potential for earthquakes and tsunamis to affect Taiwan, Lee said.

The generators provided 24 percent of Taiwan's electricity in February, compared with 3 percent from burning oil, 23 percent from gas, and 41 percent from coal, according to the company's website.

The utility runs reactors 93 percent of the time, compared with one seventh for solar panels and one third for wind turbines, Lee said.

"It isn't easy to replace nuclear power with renewables," he said. Taipower may increase natural gas generators to make up for the stalled plans to expand reactors, he said.

President Ma Ying-jeou, who took office in May 2008, has pledged to cut emissions to 2000 levels by 2025. Officials, including former Premier Liu Chao-shiuan, have called nuclear power an option to help reduce carbon.

Taipower applied to authorities almost two years ago to extend the life of its No. 1 nuclear power plant, which is allowed to operate for 40 years, according to Lee.

"Now the expansion plan is suspended," he said. Taipower may take measures, including enhancing their foundations and erecting higher water gates to strengthen safety at the plants after the March 11 tremor in Japan, he said.

The magnitude-9 quake off Japan's northeast coast and the subsequent tsunami led to what Japanese Prime Minister Naoto Kan called the country's worst crisis since World War II.

The total amount of radiation released from the crisis at Tokyo Electric Power Co.'s Fukushima plant may eventually exceed that of the Chernobyl disaster, a Tepco official said yesterday.

The 1986 disaster at the Chernobyl power plant in Ukraine spewed debris as high as 9 kilometers into the air and released radiation 200 times the volume of the combined bombings of Hiroshima and Nagasaki in 1945, according to a 2006 report commissioned by Europe's Green Party.

Taipower's expansion in nuclear power has stalled since the 1980s. The start of its No. 4 nuclear station, first proposed in 1980, has been delayed five times to late next year because of concerns over safety and rising costs.

The company may push this back further as the government orders stricter inspections before allowing fuel to be loaded, Lee said last month, after the Fukushima accidents. Construction was 93 percent completed as of end of February.

After the March 11 temblor, Taiwan issued a tsunami warning for its northern coast, where Taipower's No. 1, 2 and 4 nuclear stations are located. The plants weren't damaged by the waves.

The No. 4 station's advanced boiling water reactors, designed by General Electric Co. (GE), have been installed, Lee said. Taipower is laying cables and inspecting instruments at the site, he said. Changing the reactor design isn't necessary as they are "already the most advanced," Lee said. The company doesn't have a new starting date for the station.

Taiwan sits on faults, or geological fractures, between the Philippine Sea and Eurasian Continental tectonic plates. Quakes are more likely there as the plates push together, spurring concern the area may be unsafe for nuclear plants.

In September 1999, a temblor centered 150 kilometers south-southwest of Taipei killed about 2,500 people.

In December 2006, Taipower halted its No. 3 nuclear power station for inspection, after a magnitude 7.1 earthquake struck near southern Taiwan, killing at least two people. The station faces potential tsunamis from the Manila Trench in the South China Sea, Lee said.

Taipower has avoided fatal incidents at its nuclear power plants and is taking steps, such as designing standard response procedures for multiple disasters, to prevent crises similar to that in Fukushima, he said. Each of the Taipower stations has three more spare generators than the Dai-Ichi complex, he said.

"If there's something we haven't done enough, we'll improve," Lee said.

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## Is Armenia's Nuclear Plant The World's Most Dangerous? (NATGEO)

By Marianne Lavelle, Josie Garthwaite

National Geographic, April 13, 2011

This story is part of a special series that explores energy issues. For more, visit [The Great Energy Challenge](#).

In the shadow of Mount Ararat, the beloved and sorrowful national symbol of Armenia, stands a 31-year-old nuclear plant that is no less an emblem of the country's resolve and its woe.

(Related: Armenia Guide)

The Metsamor power station is one of a mere handful of remaining nuclear reactors of its kind that were built without primary containment structures. All five of these first-generation water-moderated Soviet units are past or near their original retirement ages, but one salient fact sets Armenia's reactor apart from the four in Russia.

Metsamor lies on some of Earth's most earthquake-prone terrain.

In the wake of Japan's quake-and-tsunami-triggered Fukushima Daiichi crisis, Armenia's government faces renewed questions from those who say the fateful combination of design and location make Metsamor among the most dangerous nuclear plants in the world.

Seven years ago, the European Union's envoy was quoted as calling the facility "a danger to the entire region," but Armenia later turned down the EU's offer of a 200 million euro (\$289 million) loan to finance Metsamor's shutdown. The United States government, which has called the plant "aging and dangerous," underwrote a study that urged construction of a new one.

Plans to replace Metsamor after 2016—with a new nuclear plant at the same location—are under way. But until then, Armenia has little choice but to keep Metsamor's turbines turning. As Armenians learned in the bone-chilling cold and dark days when the plant was closed down for several years, Metsamor provides more than 40 percent of power for a nation that is isolated from its neighbors and closed off from other sources of energy.

"People compare the potential risk with the potential shortage of electricity that might arise if the plant were closed," says Ara Tadevosyan, director of Mediamax, a major Armenian news agency. "Having had this negative experience, people prefer to live with it, and believe that it will not be damaged in an earthquake."

A Need for Nuclear

The 3 million people of landlocked Armenia are unique in their energy dependence on one aging nuclear power reactor. Regional conflicts that broke out in the dissolution of the Soviet Union left the smallest of its former republics at odds with its neighbors.

Azerbaijan to the east and Turkey to the west closed their borders with Armenia, cutting off most routes for oil and natural gas. The blockade, which remains in place to this day, heaped a new economic wound onto an old scar. After the massacre of more than one million Armenians during World War I and subsequent conflict with Turkey, the Soviets ceded the western part of the historic Armenian homeland to Turkey. The snow-capped peak of Mount Ararat, still revered in Armenia as the resting place of Noah's Ark, emblazoned on trinkets and storefronts throughout the land, is now in Turkey.

(Related: "Tough Situations in Difficult Countries")

The Metsamor Nuclear Power Plant is just 10 miles (16 kilometers) from the Turkish border—in an area that includes the fertile agricultural region of the Aras River valley. It's only 20 miles (36 kilometers) from the capital of Yerevan, home to one-third of the nation's population. And it is in the midst of a strong seismic zone that stretches in a broad swath from Turkey to the Arabian Sea near India.

On December 10, 1988, a 6.8-magnitude earthquake struck, killing 25,000 people and leaving 500,000 homeless. Some 60 miles (100 kilometers) from the epicenter, Metsamor, then with two operating reactors, survived the tremor without damage, according to Armenian officials and the International Atomic Energy Agency (IAEA). Because the devastating earthquake heightened concerns about the seismic hazard to the facility, the Soviet government shut the nuclear plant down.

Tadevosyan said that public attitudes toward Metsamor have been strongly shaped by the nation's experience living without it during the six-and-a-half years that followed.

"There were severe power shortages during the winter months," he recalled in a telephone interview from Yerevan. "We had a situation where you had one hour of power a day, and sometimes no power at all for a week. You can imagine—it was as cold in the apartment as it was in the street."

A pipeline to import Russian natural gas through neighboring Georgia in the north was built in 1993, but it was regularly interrupted by "sabotage and separatist strife in that country," as the World Bank noted in a 2006 report.

In 1995, the government of then-independent Armenia decided to restart the younger of the two reactors. Richard Wilson, nuclear physics professor emeritus at Harvard University, was part of a delegation of outside experts in Armenia at the time. He recalls that the Russians who came from the airport to help reopen the reactor were cheered from the side of the road upon their arrival.

When the unit restarted, "It became a source of energy and a source of hope for Armenia," explained Tadevosyan. "It was a symbol that dark times are over: 'We have electricity.' And it is still seen as such today."

Fortifying an Old War Horse

Armenian officials say modifications made to the reactor over the past 15 years have made it safer. Before Metsamor was reopened, Armenia airlifted more than 500 tons of equipment to the site (most of it from Russia), for upgrades, according to the Nuclear Energy Institute, an industry group in the United States.

In the years since the restart, the IAEA says close to 1,400 safety improvements have been made. Those included "seismic-resistant" storage batteries, reinforcement of the reactor building, electrical cabinets and cooling towers. The United States provided equipment for a seismic-resistant, spray-pond cooling system. Fire safety was viewed as a critical deficiency at the plant, so extensive upgrades were made, including 140 new fire doors.

The result, officials say, is a reactor that is much safer than the original unit that went into service at the site on January 10, 1980. When construction began in 1969, Metsamor was a VVER 440, Model 230, an example of one of the earliest pressurized-water nuclear plant designs, developed by the Soviets between 1956 and 1970. It was not the same design as Chernobyl, which used solid graphite instead of water to moderate—or slow down—the fission reaction. (The graphite fire contributed to the world's worst nuclear disaster, and 11 of these early graphite-moderated reactors continue to operate in Russia.)

(Related: "How is Japan's Nuclear Disaster Different?")

The VVER 440, in contrast, used water both to moderate and to cool the fuel, as in Western designs. (Its initials, in Russian, stand for "water-water-power-reactor.")

In fact, the VVER system, with multiple cooling loops, was seen as "more forgiving" than Western plants, according to archived documents from the International Nuclear Safety Program, a former US Department of Energy program aimed at aiding in safety improvements at Soviet plants. VVER 440 units would be able to stand a power loss for a longer period of time than Western plants because of the large coolant volume.

After Japan's nuclear crisis erupted, the head of the Armenian State Committee on Nuclear Safety Regulation, Ashot Martirosian, pointed to Metsamor's cooling system as one reason Armenians should rest assured. "Such an emergency situation cannot arise here," he told Radio Free Europe.

(Related: "Japan Battles to Avert Nuclear Disaster" and "Pictures—A Rare Look Inside Fukushima Daiichi")

Nuclear engineering expert Robert Kalantari, whose Framingham, Massachusetts, firm, Engineering Planning and Management, consults for US and Canadian regulatory authorities, says Metsamor is like any other nuclear plant in operation worldwide. Although its safety features are different, all have to be able to be shut down safely during a so-called "design basis accident," the kind of accident anticipated in its design. He said he is confident that Metsamor could operate safely in such an accident, and that it could cope even with accidents beyond its design basis.

"Metsamor is no less safe than any other reactor in operation throughout the world," Kalantari said. "Armenia as an independent country cannot survive without [Metsamor], which is a functioning, safe, and reliable source of energy for the country."

But the VVER 440s share one characteristic with Chernobyl that has been a continuing concern to many who live nearby: They have no containment structure.

Instead, VVER 440s rely on an "accident localization system," designed to handle small ruptures. In the event of a large rupture, the system would vent directly to the atmosphere. "They cannot cope with large primary circuit breaks," the NEI's 1997 Source Book on Soviet nuclear plants concluded. "As with most Soviet-designed plants, electricity production by the VVER-440 Model V230s came at the expense of safety."

Antonia Wenisch of the Austrian Institute of Applied Ecology in Vienna, calls Metsamor "among the most dangerous" nuclear plants still in operation. A rupture "would almost certainly immediately and massively fail the confinement," she said in an email. "From that point, there is an open reactor building, a core with no water in it, and accident progression with no mitigation at all."

Despite the upgrades to the plant, she said, "the overall safety has not improved sufficiently." She points to Armenia's own most recent report for the international convention on nuclear safety, which estimates the risk of "core damage frequency" to be nearly two incidents every 10,000 years. She said that number should be less than one. The average risk at US nuclear power plants is 2 such incidents every 50,000 years, according to a report by the US Electric Power Research Institute.

Over the past decade, the European Union, living in close proximity to the old Soviet plants, used leverage where it could to get some of them shuttered. Four VVER 440 units in Bulgaria and two in Slovakia were closed as a condition of those countries joining the European Union.

But four of the units remain in operation in Russia—two in the northern city of Murmansk, on the Kola Peninsula near the Barents Sea, and two at Novovoronezh, in the Voronezh region in the west (the area of last summer's devastating Russian forest fires). Metsamor is the only VVER 440, Model 230, operating outside of Russia.

(Related: "Wildfire Pictures—Russia Burns, Moscow Chokes")

Since it failed to persuade Armenia to close the plant, the EU has focused on providing aid for improving its safety, spending more than 59 million euros (\$85 million) on such projects as well as for renewable energy, and regional energy cooperation efforts.

Armenia has made efforts to obtain other sources of fuel, such as a natural gas pipeline from its southern neighbor Iran, which opened in 2007. But the amount of fuel to be imported remains in question. The conduit poses potential competition to Russia, a country on which Armenia remains highly reliant, for everything from nuclear fuel to grain. A US Agency for International Development (USAID)-funded study concluded that a new nuclear plant was Armenia's lowest-cost energy option.

#### Plans for the Future

Armenia intends to break ground on a \$5 billion reactor project next year—a larger, and more advanced Russian VVER 1000. The government is going forward with a conference late this month to seek help from potential investors and engineering contractors. The planned reactor would have a containment vessel, but it would be located in the same seismic area as the current Metsamor plant.

Hakob Sanasaryan, a chemist who is chairman of the Greens Union of Armenia, says that although he believes the Metsamor reactor's old design makes it less safe than newer plants, it is the location that is his greatest concern.

Speaking by telephone through an interpreter, he said his group opposes the plan to build a new plant at a place of such high seismic hazard, within Armenia's prime agricultural region, and so close to the country's most populous city. If the government were to reconsider that project in the wake of Japan's crisis, Sanasaryan said, it would be "the only good thing that might possibly come out of these tragic events."

Sanasaryan would like to see Armenia further develop its hydroelectric resources, or more thermal energy from geothermal sources or natural gas. He also has great hope for the country's solar energy potential. "We have existing infrastructure," he says. "If it were exploited better, it could satisfy Armenia's energy needs."

But another Armenian environmentalist, Karine Danielyan, president of Armenia's Association for Sustainable Human Development, laments that there has been insufficient effort over the past 15 years to create a renewable energy base. Danielyan, a former Armenian environment minister, wrote in an email that she is keenly aware of the harm that resulted from the energy shortages during Metsamor's closure. In addition to increased mortality due to the cold, deforestation accelerated rapidly as citizens scavenged for wood to heat their homes. The sharp increase of water flow to ramp up hydroelectricity caused severe stress to the nation's largest lake, Lake Sevan, where efforts at ecological restoration are a continuing battle.

Although she calls herself "an opponent of nuclear power engineering," Danielyan said she was compelled to join the call to improve safety at Metsamor and restart the plant in 1995. Now, she says, the country faces the need to construct another nuclear plant. "Unfortunately, now Armenia has not another alternative," she says.

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## Fukushima Crisis Fails To Dampen Indonesia's Nuclear Ambitions (GUARD)

By Gillian Terzis

The Guardian (UK), April 13, 2011

The city of Jakarta at night. Only 65% of Indonesians have access to electricity. Photograph: Getty  
Japan has raised the level of its nuclear crisis to the same as Chernobyl 25 years ago.

Yet the reverberations of the crises at Fukushima have scarcely cast a ripple in Indonesia's political quarters. Two weeks after Japan's nuclear crisis, the Indonesian government stated that it will continue to pursue an ambitious nuclear power programme of its own that will triple the country's electricity output by 2025.

The most significant proposal is the planned construction of two nuclear power plants comprised of four nuclear reactors by 2022. The two plants would have a cumulative capacity of 18GW. The majority of officials have settled on a preferred location - Bangka - which sits between the islands of Sumatra and Borneo. Supporters of Indonesia's nuclear bid are adamant that Bangka is far from active fault lines, thus minimising the potential for a Fukushima-style crisis. They emphasise that the technology used by Indonesia will be much more advanced than the 40-year-old reactors in Fukushima.

Last week, Sri Setiawati , a deputy to the minister for technology and research, gave her assurances that out of the 10 Asean nations, Indonesia "is the most ready to build a nuclear power plant". Ferhat Aziz, a spokesman from the country's national nuclear agency, BATAN , says that Indonesia has the requisite expertise to go nuclear, with "many experts who have been prepared [for a nuclear plant] for decades" and numerous tests conducted at three research reactors in Bandung, Central Java and Banten.

But a significant proportion of the Indonesia public, it seems, isn't as convinced. Plans to build a nuclear power plant in Muria in Central Java – nestled next to an inactive volcano – were eventually sidelined after vociferous protests by the local community. There has also been strident resistance from NGOs and environmentalist groups such as Greenpeace, who have consistently voiced their concerns over Indonesia's geological vulnerability - such as its ill-fated position atop the "ring of fire" - in addition to Indonesia's history of inefficiently coordinated responses to disaster. While Japan has demonstrated its extraordinary capacity for order and efficiency in a crisis, Indonesia's capacity to mobilise resources in an emergency is usually cuckolded by a well-entrenched preference for bureaucratic buck-passing.

Then there's the pervasive culture of corruption in Indonesia. Nothing less than utmost stringency is required where nuclear power is concerned, but opponents fear a penchant for cutting corners could eclipse safety concerns. These fears are felt among some members of the country's National Energy Council (NEC), the advisory body that maps out power infrastructure in Indonesia, which has led to some members calling for the exploration of geothermal sources, hydroelectricity and biofuels before resorting to nuclear power.

To its credit, the Indonesian government has recognised – with increasing urgency – the need for reform. The depletion of fossil fuels and ever-increasing oil prices means that initiatives promoting renewable energy are a necessity. Currently, ensuring a stable power supply is of foremost importance: only 65% of Indonesians have access to electricity; the government aims to increase this figure to 91% by 2019. Furthermore, blackouts in the nation's overburdened capital, Jakarta, occur with chronic frequency.

This is compounded by the hucksterism of Indonesia's coal producers, who would prefer to export their product for a higher selling price to foreign markets instead of selling locally for a lower price to the state-owned electricity utility, PLN. At the heart of the problem is that the government continues to undervalue the price of electricity, which has subsequent ramifications for

incentives for firms to invest in electricity infrastructure. It's a quandary that plagues many emerging economies: how does the government determine a price that ensures affordability of electricity to consumers while encouraging much-needed investment in the industry?

It's not surprising, then, that advocates of nuclear power have found support in the Indonesian government, which is well aware that the only way electricity output can be stabilised and increased is if the country is self-sufficient in energy production; that is, it is no longer dependent on fossil fuels.

Certainly, Indonesia is not the only developing nation with designs on developing nuclear power plants - although after Fukushima, it is certainly part of a select club. While the Philippines, Malaysia and China have temporarily halted their nuclear power plans, Vietnam - also bedeviled by the cumulative forces of increasing prosperity and unsustainable urban growth rates - is also to build a nuclear power plant. Both countries have been offered financial support from Russia to pursue nuclear power projects: Vietnam has already signed a deal with Russia to have a nuclear power plant ready by 2020. Indonesia has been more coy about committing to anything on paper, but will receive roughly \$1.5m from Russia per year to jointly finance renewable energy initiatives.

However, it is just as likely that all the talk of nuclear power in Indonesia will be simply that - talk. A cursory glance at Indonesia's chequered history of infrastructure projects suggests that significant movement on big capital and time-intensive proposals tends to be hamstrung by characteristically protracted decision-making processes. Indonesia is already on track to miss a target set by the government to have nuclear power online between 2015 and 2019. One member of the NEC, Herman Agustiwan, said that with a population of 240 million, nuclear option is a necessity for Indonesia as it has to "consider [its] energy supply in the long-term ...[we] have no choice". He may be right - but either way, one just hopes Indonesia's plans for a sustainable energy future aren't paralysed by governmental indecision.

• Gillian Terzis is a freelance journalist based in Jakarta

## **North Korea Won't Give Up Nuke Capability: US General (REU)**

Reuters, April 13, 2011

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## **How Will Mr. Obama Respond To Iran's Nuclear Progress? (WP)**

Washington Post, April 13, 2011

MANY EXPERTS believe the ongoing upheaval in the Middle East will be the most important foreign policy test of Barack Obama's presidency. Yet this president did not come into office at an easy time — and the critical challenges that predated the Arab revolutions have not disappeared. Strong reminders of that came this week in two news stories reported by The Post: Pakistan's demand that drone attacks against al-Qaeda and Taliban militants in its frontier territories be scaled back; and Iran's claim of fresh progress in its nuclear program.

The reports from Iran are particularly disturbing because its Islamic regime has been a short-term beneficiary of the revolution in Egypt and unrest in the Persian Gulf emirate of Bahrain. Deposed Egyptian strongman Hosni Mubarak was a determined enemy of Iran, and Bahrain's crackdown on popular protests threatens to touch off the Shiite uprising, there and in eastern Saudi Arabia, that Iran has long wished for. As important, the region's turmoil has pushed up oil prices, making it easier for Iran to endure the economic sanctions painstakingly orchestrated by the Obama administration.

The revolution in Egypt began days after the regime of Ali Khamenei bluntly rejected the latest attempt by a six-nation coalition to begin negotiations on the nuclear program. Since then there has been no sign of diplomatic activity, but Iran has been busy expanding its nuclear capacity. In recent days officials announced that tests of a new generation of centrifuges for enriching uranium had been successful, and that a Russian-built nuclear reactor would begin operations early next month.

The progress on centrifuges is significant because Iran until now has relied on slow and inefficient centrifuges, many of which appear to have been damaged by software sabotage. The more advanced machines, The Post's Joby Warrick reported, could work at least six times faster. Iran has already enriched more than 3,600 kilograms of uranium to a low level, enough for two nuclear bombs with further processing. The faster centrifuges mean that were Iran to embark on a "break-out" strategy — a race to complete a bomb — it could do so far more quickly, if it manages to install a significant number of the new machines.

Several months ago, administration officials were speaking confidently of an Iran that, pinched by sanctions and hamstrung by problems in its nuclear work, seemed ready to begin talks. Now the talks are off, the economic pressure is easing and the nuclear work once again could be gaining momentum. Yet the administration seems to have no clear alternative to its long-standing strategy of waiting for the regime to negotiate.

The better course, which we among others have urged since the opposition Green Movement was born nearly two years ago, is to bet on a renewed popular uprising in Iran. President Obama recently made a gesture in that direction with a video address to Iranians that denounced government repression and said young Iranians had the “power to forge a country that is responsive to your aspirations.” But there is much more the administration could do, such as finding ways to support Iranian unions and student movements, stepping up broadcasting and accelerating funding for technology that can undermine Internet censorship. Passivity is a dangerous option; while the world watches the Middle East, Iran’s drive for a bomb relentlessly continues.



# NUCLEAR REGULATORY COMMISSION NEWS CLIPS

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## **NRC NEWS:**

### **Japan's Reactors Still "Not Stable," US Regulator Says (NYT)**

By Matthew L. Wald

New York Times, April 13, 2011

WASHINGTON — The condition of the damaged Fukushima Daiichi reactors in Japan is “static,” but with improvised cooling efforts they are “not stable,” the chairman of the Nuclear Regulatory Commission told a Senate committee on Tuesday.

“We don’t see significant changes from day to day,” the chairman, Gregory B. Jaczko, said, while adding that the risk of big additional releases gets smaller as each day passes.

Long-term regular cooling of the reactors has not been re-established, nor has a regular way of delivering water to the spent-fuel pools, he told the Senate Environment and Public Works Committee. And when an aftershock hit the site and cut some offshore power supplies, he said, some pumps failed and cooling stopped for 50 minutes.

The situation is “not stable” and will remain so until “that kind of situation would be handled in a predictable manner,” he said.

Mr. Jaczko also offered a new theory about the cause of the explosions that destroyed the secondary containment structures of several of the reactors. The prevailing theory has been that hydrogen gas was created when the reactor cores overheated and filled with steam instead of water; the steam reacts with the metal, which turns into a powder and then gives off hydrogen.

The Tokyo Electric Power Company, which operates the nuclear plant, intended to vent the excess steam as well as the hydrogen outside of the plant, but experts have suggested that when operators tried this, the vents ruptured, allowing the hydrogen to enter the secondary containments.

But Mr. Jaczko said Tuesday that the explosions in the secondary containments might have been caused by hydrogen created in the spent-fuel pools within those containments.

If true, that would mean that the introduction of hardened vents at reactors at nuclear plants in the United States — cited as an improvement that would prevent such an explosion from happening — would not in fact make any difference.

That theory also raises the possibility that it may be safer to move some of the spent fuel out of the pools in the containment structures and into dry storage, an idea that is attracting some support in Congress. Spent nuclear fuel must remain in water for the first five years or so to cool but can then be stored in small steel-and-concrete silos with no moving parts.

The industry uses these "dry casks" only when its pools are full. And so far the regulatory commission has said that pool and cask storage are equally safe. Still, some industry executives would like to tap the Nuclear Waste Fund, federal money set aside for a permanent waste repository, to pay for cask storage, an idea that is also favored by some environmentalists.

Mr. Jaczko's statement on the possible source of the hydrogen is the third big reversal in commission statements on the nuclear crisis at Fukushima.

Commission officials have also seemed less certain after stating that the spent-fuel pool in the No. 4 reactor was empty or close to empty, a situation that was evidently the basis for recommending a 50-mile evacuation for Americans in the plant's vicinity. Commission experts also said that radiation readings suggested that core material had slipped out of the vessel of the No. 2 reactor and entered a drywell in the primary containment, only to retreat again on whether that was in fact the case.

Mr. Jaczko also signaled that the regulatory commission itself was shifting from an extreme alert mode to a more sustainable long-term effort to monitor Japan's crisis. Staffing in the commission's round-the-clock emergency center at its headquarters in Rockville, Md., has been reduced, he said, with many staff members returning to their regular duties but available for consultation when events warrant.

He drew praise from the committee's chairwoman, Senator Barbara Boxer, a California Democrat, but criticism as well. She is seeking an especially high level of scrutiny for two twin-reactor plants in her state, the only ones that the commission says are in zones of high seismic activity. Mr. Jaczko said that all reactors were being evaluated.

She countered by saying that those two plants, Diablo Canyon and San Onofre, were at the highest risk. Mr. Jaczko said they were not, explaining that they were designed with the earthquake risk in mind and that risks to American plants generally were small.

Ms. Boxer replied that the Japanese had said the same thing, at least until the March 11 accident. "It's eerie to me," she said. "I don't sense enough humility from all of us here."

Another witness, Charles G. Pardee, the chief operating officer of Exelon Generation, the largest nuclear operator in the United States, also testified that the nation's nuclear plants were designed for the worst natural disaster observed in their areas, plus a substantial margin.

Thomas B. Cochran, a physicist at the Natural Resources Defense Council, gave some credit to American operators. Worldwide, he said, reactors are "not sufficiently safe," but "the next nuclear power plant disaster is more likely to occur abroad than in the US"

But the industry will have to rethink its practices nonetheless, he said. "If the nuclear power industry is to have a long-term future, attention must be paid to existing operating reactors," Mr. Cochran said. He ticked off a long list of factors, including American reactors that share Fukushima's basic design, that would be grounds for phasing them out.

## US Commission: Japan's Nuclear Plants Not Stable (USAT)

By Oren Dorell

USA Today, April 13, 2011

More than a month after a massive earthquake and tsunami hit Japan, crippling four nuclear power reactors, the situation at the power plants is still unstable, according to Gregory Jaczko, chairman of the US Nuclear Regulatory Commission.

"The situation currently is static," Jaczko said Tuesday on Capitol Hill at a joint hearing of the Senate's committees on environment and public works and clean air and nuclear safety. "We don't see day-to-day changes, but the situation is not stable."

The primary focus of the commission is to help Japanese authorities continue to cool the nuclear reactors and spent-fuel pools at the Fukushima Dai-ichi nuclear plant, but problems persist, Jaczko said.

"Last night, they had an aftershock and had to remove people from the plant, and cooling was shut down for a period of time," he said. "We want to move to a situation where we don't lose cooling."

Without keeping that cooling in place, "you have the possibility of further degradation" to the nuclear reactor cores and spent fuel pools, he said.

While some leaks of radioactive water into the ocean have been stopped, "we've left open the possibility that there are other leaks," Jaczko said.

Japanese nuclear officials are still looking for more possible leaks, he said.

Senators asked Jaczko and Lisa Jackson, administrator of the Environmental Protection Agency, to discuss lessons learned from the Japanese disaster that may improve safety in the US nuclear industry.

Sen. Barbara Boxer, D-Calif., whose state has the two nuclear power plants on the most active seismic zones in the USA, questioned Jaczko whether their safety is certain, as a half million people live within 50 miles of one and 7.4 million people live

the same distance from the other. She urged Jaczko to reconsider whether the plants are safe to operate in those earthquake zones.

"They (the two plants) are built to a certain level of earthquake," Boxer said. "You can't know exactly what's going to happen."

Jaczko responded: "Those plants are built to the highest specification in the country."

"They may not be high enough," Boxer said. "I don't think we're humble enough in the face of what Mother Nature can do. ... Look what happened in Japan, they were so proud of having the best nuclear power technology and now they can't even stop the thing from leaking radioactivity."

Sen. Lamar Alexander, R-Tenn., agreed that "we have a lot to learn" from what happened in Japan, for example, on safety of unspent fuel storage. Even so, he said, "I can't imagine a future for the United States that doesn't include nuclear power to produce electricity. It's only 20% of our electricity, but it's 70% of our clean electricity."

A "rough analysis" of the radiation exposure in Japan and projections of excess cancers that are likely there appear to be roughly 10 to 100 times greater than with the Three Mile Island nuclear disaster, said Tom Cochran, senior scientist at the nuclear program of the Natural Resources Defense Council, an environmental group.

"This is the second-worst civilian nuclear power accident in history, and about 100 times less than Chernobyl accident," Cochran said.

The Capitol Hill testimony came a day after Japan ranked its nuclear crisis at the highest possible severity on an international scale — the same level as the 1986 Chernobyl disaster. Still, Japan said Tuesday that radiation leaks are declining at its tsunami-crippled nuclear plant.

The higher rating is an open acknowledgement of what was widely understood already: The nuclear accident at the Fukushima Dai-ichi plant is the second-worst in history. It does not signal a worsening of the plant's status in recent days or any new health dangers.

Japanese nuclear regulators said the severity rating was raised from 5 to 7 on an international scale overseen by the U.N.'s nuclear watchdog, the International Atomic Energy Agency (IAEA), because of new assessments of the overall radiation leaks from the Fukushima Dai-ichi plant.

According to the Vienna-based IAEA, the new ranking signifies a major accident that includes widespread effects on the environment and people's health. The scale, designed by experts convened by the IAEA and other groups in 1989, is meant to help the public, the technical community and the media understand the public safety implications of nuclear events.

The upgraded status did not mean radiation from the plant was worsening, but rather reflected concern about long-term health risks as it continues to spew into the air, soil and seawater. Most radiation exposures around the region haven't been high enough yet to raise significant health concerns.

Workers are still trying to restore disabled cooling systems at the plant, and radioactive isotopes have been detected in tap water, fish and vegetables.

Japanese officials said the leaks from the Fukushima plant so far amount to a tenth of the radiation emitted from Chernobyl, but about 10 times the amount needed to reach the level-7 threshold. They acknowledged the emissions could eventually exceed Chernobyl's, but said the chance that will happen is very small. However, regulators have also acknowledged that a more severe nuclear accident is a distinct possibility until regular cooling systems are restored — a process likely to take months.

"Although the Fukushima accident is now at the equal level as Chernobyl, we should not consider the two incidents as the same," said Hiroshi Horiike, professor of nuclear engineering at Osaka University. "Fukushima is not a Chernobyl."

## Fukushima Crisis "Static" But Not Stable - US NRC (REU)

By Roberta Rampton

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## OVERNIGHT ENERGY: House Gets Moving On Offshore Drilling (HILL)

By Andrew Restuccia, Ben Geman And Alicia M. Cohn

The Hill, April 13, 2011

State of Play: A pair of House panels will delve into offshore drilling legislation Wednesday amid a warning from Interior Secretary Ken Salazar that GOP proposals reflect "amnesia" about last year's massive BP oil spill.

The House Natural Resources Committee is marking up a trio of bills that would demand faster permitting, set deadlines for near-term lease sales in the Gulf of Mexico and mandate a major expansion of coastal areas made available for development.

The Republicans have the numbers on the panel to move the bills, which Chairman Doc Hastings (R-Wash.) envisions on the floor as soon as next month.

But look for Democrats to force votes on various amendments. They likely won't have the numbers to pass but will ensure collisions on the panel that preview floor battles to come.

Rep. Frank Pallone Jr. (D-N.J.) tells E2 he's offering an amendment that would prevent sale of oil-and-gas leases off the Atlantic Coast — a policy in line with existing White House policy, which does not envision Atlantic Coast leasing in the Interior Department's 2012-2017 plan (the White House backed off its push for expanded coastal drilling after the BP oil spill).

While the markup unfolds, a panel of the House Energy and Commerce Committee will hear from various witnesses — including Alaska's senators — on GOP legislation (available here) that would speed up air permitting for drilling projects in Arctic waters already under lease off Alaska's northern coast.

The GOP bill would limit the reach of EPA permitting, set a six-month deadline for issuing permits and set new limits on challenges of permits. It's largely a response to Shell Oil's inability to secure final permits for drilling plans off Alaska, which is among the reasons the oil giant's exploratory drilling has been delayed there.

#### NEWS BITES:

NRC chairman: Crisis in Japan 'static,' but not 'stable'

Nuclear Regulatory Commission Chairman Gregory Jaczko said Tuesday that the nuclear crisis in Japan is "static," but not "stable."

Jaczko, testifying at a Senate Environment and Public Works Committee hearing, said the situation at the Fukushima Daiichi power plant — which lost power after a massive earthquake and tsunami hit northeast Japan last month — was not rapidly changing.

But he stressed that the plant is not yet stable, noting that it remains vulnerable to continuing aftershocks in the region.

Jaczko's comments come on the same day that Japanese officials raised the rating of the nuclear crisis to the highest level on the international scale. That's the same rating that the 1986 Chernobyl disaster received.

Jaczko took only two quick questions from reporters after Tuesday's hearings and did not expand on his comments.

Bingaman, Murkowski got 150 CES comments; staff will analyze them in May

Senate Energy and Natural Resources Committee Chairman Jeff Bingaman (D-N.M.) told reporters Tuesday that he has received 150 comments from a wide variety of groups on how to construct a federal standard requiring that the country get a certain portion of its electricity from low-carbon sources.

Bingaman, along with Sen. Lisa Murkowski (R-Alaska), released a whitepaper on the so-called "clean energy standard," or CES, last month. The senators also called on various groups to submit comments on the proposal by April 11.

Asked by reporters about the CES comments Tuesday, Bingaman said he hadn't read them yet. But he said his staff would begin taking a close look at them when the Senate returns from its upcoming two-week recess on May 1.

President Obama has outlined a framework for a CES that would mandate that 80 percent of the electricity come from low-carbon energy sources like wind, natural gas and nuclear by 2035.

The White House has charged Bingaman, who has raised questions in the past about including nuclear in such a standard, with fleshing out the proposal.

Sen. Kerry is 'exasperated, jaded and frustrated'

When it comes to energy and climate policy, Sen. John Kerry (D-Mass.), who played a leading role in efforts to pass climate legislation last year before the talks fell apart at the last minute, is "exasperated, jaded and frustrated."

"I guess after a while you get a little bit exasperated, jaded and frustrated by it all. Maybe all of you here are. I certainly am," Kerry said at an energy policy forum hosted by The New Republic Tuesday.

Kerry lamented the country's lack of progress on weaning itself off of its dependence on oil and addressing climate change.

"It really is quite stunning that the United States is like an ostrich, putting its head in the sand and waiting until things blow by and then you poke up and pray or hope or think that somehow it might have changed," he said.

And he accused Republicans of disregarding facts in favor of talking points.

"I don't know what's happened to the body politic of our country where facts seem to be so easily shuttled aside, disposed of, in favor of simple sloganeering, pure ideology and little bromides of politics that are offered up and offer no solution, but might get you through an election," he said.

Trent Lott to Obama: Time to 'step up' on energy security

Former Senate Majority Leader Trent Lott (R-Miss.) has blunt advice for President Obama when it comes to energy security: Get with it.

"The president needs to step up, get involved," Lott said Tuesday. Expect to hear the message repeated — Lott co-chairs the Bipartisan Policy Center's new energy project that formally launched Tuesday and will focus heavily on curbing US reliance on imported fuels.

Obama, in a series of recent appearances, has emphasized enhanced fuel efficiency and many other administration steps to bolster energy security. But Lott and the three other leaders of the new project say a greater focus at the White House and Capitol Hill is needed.

Former National Security Adviser James Jones — who stepped down from the role late last year — said the US still lacks a clear "path" on the matter and that energy needs a more prominent role in U.S. security policy.

Jones believes there should be an energy security coordination position at the National Security Council.

"There has to be someone, in addition to the president, who can step forward and harmonize" various branches of the government when it comes to energy policy, he said. Jones believes that the government currently lacks the "organization" to deal with serious energy threats.

Former Sen. Byron Dorgan (D-N.D.) and William Reilly — who led EPA under President George H.W. Bush and recently chaired the presidential oil spill commission — are the other leaders of the new project.

They released an "open letter" Tuesday that lays out their plans.

Bingaman's committee gets down to business

Bingaman's Senate Energy and Natural Resources Committee had a busy day Tuesday.

The panel approved three energy bills — on issues ranging from hydropower to appliance standards — and OK'd the nomination of Peter Lyons to be the assistant secretary for nuclear at the Department of Energy.

#### ON TAP WEDNESDAY:

Here are some of the notable energy-related events around town:

The Senate Environment and Public Works Committee will hold a hearing on "Domestic Renewable Fuels: From Ethanol to Advanced Biofuels." The hearing will include testimony from Agriculture Secretary Tom Vilsack, among others.

The Senate Appropriations Committee will hold a hearing on the Army Corps of Engineers fiscal 2012 budget request.

The House Science Committee will examine "Green Jobs and Red Tape: Assessing Federal Efforts to Encourage Employment." Witnesses will include officials from the American Enterprise Institute, the US Chamber of Commerce and the Heritage Foundation.

T. Boone Pickens will participate in a natural-gas vehicles event Tuesday.

Southern Co. CEO Thomas Fanning will discuss nuclear energy policy, among other things, at the US Chamber of Commerce.

#### IN CASE YOU MISSED IT ...

Here's a quick roundup of Tuesday's E2 stories:

-The agreement to fund the government through the end of the fiscal year cuts EPA's funding, delists wolves and blocks funding for Interior's 'wild lands' policy

-Democrats issued their latest call to tap the Strategic Petroleum Reserve

-An EPA official called a controversial study on natural-gas drilling an "important piece of information"

-A top Democrat said Republicans aren't giving EPA officials adequate notice of hearings

-Interior Secretary Ken Salazar said Republican drilling bills show "amnesia" about last year's Gulf oil spill

-EPA officially exempted milk from an oil-spill prevention regulation

-The Interior Department is weighing an expansion of offshore rules to contractors

## Nuke Crisis 'Static' But Not Stable: US (KYODON)

Kyodo News, April 13, 2011

The top US nuclear regulator said Monday he will not change a recommendation that US citizens stay at least 80 km away from the crippled Fukushima nuclear plant, even as he declared that the crisis remains "static."

Gregory Jaczko, chairman of the Nuclear Regulatory Commission, acknowledged in an interview that the month-old crisis has not yet stabilized. But he said conditions at the Fukushima No. 1 plant have not changed significantly for several days. \

"We describe the situation as static but not yet stable," Jaczko said. "It hasn't really changed too much in the last few days," he said, adding it will be weeks or even months before the plant is stabilized.

The March 11 earthquake and tsunami knocked out power at the Fukushima plant, and reactors have been overheating ever since.

Progress to stabilize the complex most days has been slow, or not at all, as new aftershocks and leaking radiation have repeatedly halted work. A new tremor Monday briefly cut electricity to the plant and halted work while technicians took cover, but the episode did not endanger operations, according to Japanese officials.

The Japanese government, meanwhile, added five communities Monday to a list of places people should leave to avoid long-term radiation exposure. A 19-km radius has been cleared around the plant already.

Jaczko said the most important job at the plant remains to keep water in the spent fuel pools to cool the highly radioactive fuel rods, which reduces the threat of a meltdown and a catastrophic release of radiation.

Jaczko, who traveled to Japan last month, said the NRC has begun a two-pronged approach to review the safety of the 104 commercial US nuclear reactors in the aftermath of the Japanese crisis. A 90-day review should be completed in June, with another report expected by the end of the year.

"We want this to be a very systematic and methodical review and make sure we identify all the important issues, and that we work with a sense of urgency and speed to address those issues in the appropriate way," he said, adding that he expects the reviews to result in recommendations for significant regulatory changes.

"Fundamentally I expect that there will be some things we will want to change and need to change as a result of what comes out of this 90-day review and longer-term review, based on events in Japan," he said.

A task force made up of high-ranking NRC staff is conducting the two reviews, and the five-member commission will act quickly once the reports are released, Jaczko said.

On the 80-km evacuation zone for US citizens in Japan, Jaczko called his March 16 recommendation "prudent" and said it was based on projections for continued deterioration at the plant. The Japanese government had set the 20-km evacuation zone, and the US decision raised questions about US officials' confidence in Tokyo's risk assessments.

"I'm still very comfortable" with the decision, Jaczko said.

Asked whether he set up a double standard - one for nuclear plants in foreign countries and another for US plants, where a 16-km evacuation zone is the current standard - Jaczko denied this was the case.

"I wouldn't say that's a contradiction," he said, noting that the 16-km US evacuation zone refers to emergency planning prior to a nuclear disaster. If events warrant, a larger evacuation zone can be created.

"Ultimately, decisions about protective actions (in the event of a nuclear disaster) are made by state and local authorities," he said, not the NRC.

On another topic, Jaczko said he believes spent fuel can be stored safely either in pools or in dry cask storage. Democratic Sen. Dianne Feinstein sent Jaczko a letter Monday urging the NRC to establish regulations that would encourage plant operators to move more quickly to store spent fuel in dry casks, rather than in pools that must be kept cooled. Feinstein cited a 2006 study by the National Research Council that indicated dry cask storage systems have inherent safety advantages over spent fuel pools.

Jaczko disputed that, saying both methods are safe.

The United States has not had an accident involving spent fuel in decades, and spent fuel at commercial US reactors "continues to be safe and secure," even without a designated site to store nuclear waste, Jaczko said. The Obama administration has abandoned plans for a nuclear waste dump in Nevada, prompting sharp criticism from some lawmakers in both parties.

Jaczko declined to speculate whether the Japanese crisis would cause a slowdown in a planned expansion of new US nuclear reactors backed by President Barack Obama. Jaczko said the NRC has "a very robust system" to license reactors that takes into account a wide range of factors.

"Ultimately safety rests with the (plant operator)," he said. "It's our job to make sure they get there."

If the NRC considers plants unsafe, it will take corrective action, up to and including shutting down plants if necessary, Jaczko said. Three US nuclear power plants - in South Carolina, Kansas and Nebraska - need increased oversight from federal regulators because of safety problems or unplanned shutdowns. Jaczko said all 65 US nuclear plants in 31 states are operating safely.

Commander returns

kyodo

Adm. Patrick Walsh, commander of the Hawaii-based US Pacific Fleet, said Monday he will return to Hawaii soon after leading the US military's disaster-relief operations in the wake of the March 11 earthquake and tsunami that hit the Tohoku region.

Walsh also told reporters after meeting with Defense Minister Toshimi Kitazawa that he has informed the minister that relief efforts in Operation Tomodachi would be taken over by Lt. Gen. Burton Field, top commander of US forces in Japan.

At the outset of their meeting at the Defense Ministry, Kitazawa thanked Walsh for his leadership in the operation and told him he hopes to continue the relief efforts in cooperation with Field.

The US military began pulling out its main units for the operation from earlier this month and has completed its support operation at sea, but Walsh said cooperation in relief efforts will continue.

## **UPDATE 2-US Senators Probe Nuclear Future In Wake Of Japan (REU)**

By Roberta Rampton

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Fukushima Crisis 'Static' But Not Stable, US Nuclear Authorities Say (BUENOS)**

Buenos Aires Herald, April 13, 2011

Japan's nuclear crisis appears to be "static" but not yet stable as the damaged reactors still need to be cooled, the head of the US nuclear safety regulator said.

Japanese authorities continue to focus on ensuring they can keep reactors and spent fuel pools cooled at the damaged Fukushima Daiichi plant, said Gregory Jaczko, chairman of the Nuclear Regulatory Commission.

"The efforts continue to ... transition from static to stable to ensure long-term ultimate ability to cool the reactors and to provide cooling to the spent fuel pools," Jaczko told senators at an Environment and Public Works Committee hearing on Japan's nuclear crisis.

The US regulator is reviewing the crisis to see whether changes are needed to protect against an accident at any of the 104 operating nuclear plants in the United States.

## **Carper Subcommittee Takes Part In Nuke Safety Hearing (WDEL)**

By Frank Gerace

WDEL-Radio Delaware, April 13, 2011

Senator Carper's Subcommittee on Clean Air and Nuclear Safety took part in a hearing on Japan's nuclear crisis and what it means for the US nuclear industry.

Carper asked NRC Chairman Gregory Jaczko what his agency's learned from the disaster at the Fukushima plant.

Carper said he's looking forward to hearing the results of an NRC review of safety procedures at all US nuclear plants.

## **NRC Chairman: Reactor Situation In Japan Is Static But Not Stable (CNN)**

By Jim Barnett

CNN, April 13, 2011

Washington (CNN) – The chairman of the Nuclear Regulatory Commission said Tuesday that the situation in the wake of the Japanese nuclear reactor crisis is static but not yet stable.

On the day that Japan bumped up the seriousness of its nuclear accident from a Level 5 to a Level 7 priority, on par with the Chernobyl disaster, a Senate committee heard from US environmental officials, scientists and NRC Chairman Gregory Jaczko.

"From the information we have, we believe the situation currently is static, namely we don't see significant changes on a day-to-day basis with the reactors," Jaczko told the Senate Committee on Environment and Public Works. "It is not yet, however, what we believe to be stable: namely that given additional events or other circumstances ... there would not be the potential for significant additional problems at the reactors."

Thus, Jaczko said, the focus is "on these efforts to transition from static to stable to ensure (the) long-term ... ability to cool the reactors and to provide cooling for the spent fuel pools."

California Sen. Barbara Boxer's state has a number of nuclear plants in areas with high seismic activity near millions of people. She pressed Jaczko for reassurances that enough is being done to protect people in the United States, especially California residents.

"We've got to move beyond talk and get to the serious question (of) what do we do, to do everything in our power to make it safe," Boxer said.

Boxer pointed out that officials once said it was "very unlikely" Japan would ever face the kind of crisis it finds itself in today.

Questions were raised at the hearing about how far to extend evacuation zones in the United States in the event of a nuclear incident. The NRC has recommended that Americans in Japan stay at least 50 miles away from the damaged reactors. The current standard in the United States is a 10-mile evacuation zone.

"As we've seen in Japan, nuclear events tend to develop over a long period of time," said Jaczko. "This is three weeks into this event, and we've had the time and the ability to make protective action recommendations, and to update and modify them as conditions of the plant changed. So that 10 miles is really based around the idea of what do you need to have prepared right away so that if you have an event that develops quickly, you can address that and have prestaged and prepared what to do," he said.

Boxer pointed out that two of the nuclear plants in California were built to withstand a certain level of earthquake, pointing out in Japan it was 7.5 but the devastating quake was much more powerful. She said nuclear regulatory officials are being too conservative.

"It's eerie to me, because I don't sense enough humility from all of us here. You know, as some great scientists once said, we think we have all the answers, but Mother Nature may not agree with us. So a lot of what you're saying is the same thing that they said," Boxer pointed out. "You can't know for sure what's going to happen," she said.

Lisa Jackson, administrator for the Environmental Protection Agency, reassured senators that air and water sampling for radiation contamination continue in the United States and that so far there is nothing to worry about.

"Let me be clear, EPA has not seen and does not expect to see radiation in our air or water reaching harmful levels in the United States," said Jackson. "All of the data that we have seen, which we continue to make public and available on our website, indicates that while radiation levels are slightly elevated in some places, they are significantly below problematic levels."

## **US To Examine Wider Nuclear Evacuation Zones, Jaczko Says (1) (BLOOM)**

By Simon Lomax

Bloomberg News, April 13, 2011

April 12 (Bloomberg) – The US will study expanding the evacuation zones near power plants as part of the safety review triggered by Japan's reactor crisis, Nuclear Regulatory Commission Chairman Gregory Jaczko said.

The NRC, which requires plans for immediate evacuations within 10 miles of a reactor, can "go farther if necessary" should conditions worsen, Jaczko said today at a hearing of the Senate Environment and Public Works Committee. The agency will consider revising the minimum evacuation zone "as part of the review that we're doing," Jaczko said.

The safety of US nuclear reactors is being examined by lawmakers and regulators after a partial meltdown at Tokyo Electric Power Co.'s Fukushima Dai-Ichi plant in Japan. The plant was damaged by a 9-magnitude earthquake and tsunami that struck Japan March 11. Japanese officials today raised the severity level of the accident to 7, the highest rating, which matches the 1986 Chernobyl disaster.

Within a week of the earthquake and tsunami, the NRC told the Obama administration that US citizens in Japan should evacuate to at least 50 miles (80 kilometers) from the stricken nuclear plant. The NRC's recommendation prompted officials, including Democratic New York Governor Andrew Cuomo, to question the safety of plants near large cities.

In the case of Entergy Corp.'s Indian Point nuclear reactors, about 24 miles north of New York City, Cuomo said it isn't feasible to evacuate the 20 million people living within 50 miles of the plant. The NRC has said the Indian Point plant is safe.

50 Miles

Senator Frank Lautenberg, a New Jersey Democrat, said it may make sense for the NRC to extend the initial evacuation zone near nuclear plants to 50 miles.

"When all else fails, we have to be absolutely certain that the way to evacuate these areas is foolproof," Lautenberg said at the hearing.

In separate testimony at today's hearing, Environmental Protection Agency Administrator Lisa Jackson said water and milk are safe to drink in the US with "very low levels of radioactive material" from the Japan reactors.

"The levels detected are far below levels of concern," Jackson said.

The EPA sampled drinking water at several locations during the week of April 4 and found "an infant would have to consume over 200 gallons of this water at the highest detection level to receive a radiation dose equivalent to a day's worth of the natural background radiation exposure," Jackson said.

Milk Samples

Milk samples taken March 28 in Phoenix and Los Angeles had radiation levels "more than 1,500 times lower" than health thresholds set by the Food and Drug Administration, she said.

The NRC, which has said all 104 commercial US reactors can withstand natural disasters, is conducting a 90-day examination to determine if extra safeguards are needed after the Japan failures.

So far, the NRC's review "gives us confidence that the US plants continue to operate safely," Jaczko said in prepared testimony.

Senator James Inhofe, an Oklahoma Republican, criticized Jaczko for invoking "emergency authority" after the Japanese crisis, which transferred some functions of the NRC's five-member commission to the chairman.

"I'm not aware than an emergency exists at any US facility," Inhofe said at the hearing.

Jaczko said he acted within the chairman's authority and regularly briefed the commissioners on the agency's activities.

## **Blog: The Ingenuity Of The Commons: Senators Accuse NRC Chair Of Unnecessarily Invoking Emergency Powers (FORBES)**

By Jeff McMahon

Forbes, April 13, 2011

Senate Republicans today accused Nuclear Regulatory Commission Chairman Gregory Jaczko of invoking emergency powers without cause and taking authority away from other members of the NRC.

Jaczko disputed the claim.

In his opening remarks, Sen. James Inhofe (R-Okla.) said his staff had discovered that Jaczko evoked emergency powers on March 11, in the wake of the accident at the Fukushima-Daichi nuclear power plant.

"The public is best served by a commission that serves collectively and collegially. I'm concerned that the public may currently be getting less than it deserves," he said. "I was surprised to learn from my staff that Chairman Jazcko has evoked emergency authority and transferred commission functions to himself in the wake of the earthquake in Japan."

Jaczko had not revealed that action during a phone call or a prior hearing, Inhofe said. Inhofe urged transparency and questioned whether Jaczko had overstepped his authority.

"At the moment I'm not aware of any emergency that exists at any US facility," he said.

Sen. John Barrasso (R-Wy) reinforced the accusation:

"The tsunami and earthquake occurred in Japan, not in the United States," he said. "Some people seem to want Americans to believe the emergency happened here, and that's not the case."

"As Sen. Inhofe pointed out the Nuclear Regulatory Commission chairman is acting under his emergency powers since the disaster first occurred."

The NRC went into "monitoring mode" on March 11, Jaczko replied—a status that allowed it to deploy a 24-hour assistance team to Japan.

"There's not so much an invoking of emergency authorities. That's an authority the chairman has. Most of the activities that I've engaged in as a part of this response have been in my normal supervisory responsibility over the staff of the agency and my communication responsibilities."

The senators asked Jaczko whether he was communicating with other members of the commission. Since March 11, he said, there have been 26 briefings of commissioners, 60 briefings of commissioners' staff, and 80 "agency products" provided to commission members.

Jaczko was appointed by President Obama in 2009. According to his official biography:

Immediately prior to assuming the post of Commissioner, Dr. Jaczko served as appropriations director for US Sen. Harry Reid and also served as the Senator's science policy advisor. He began his Washington, D.C., career as a congressional science fellow in the office of US Rep. Edward Markey. In addition, he has been an adjunct professor at Georgetown University teaching science and policy.

In other developments from this afternoon's meeting of the Senate Environment and Public Works Committee:

Sen. Tom Udall (D-New Mexico) said banks will ultimately decide whether new nuclear plants are built in the US, based on the viability of lending;

EPA Administrator Lisa P. Jackson assured senators that EPA's radiation monitoring system is adequate, accurate, that it has detected no harmful levels of radiation from the Japan incident, and that she doesn't expect harmful levels to reach the US

California legislators demanded a halt to any relicensing of two plants in that state pending state-of-the-art seismic-safety studies.

Democratic Sen. Barbara Boxer, US Rep Lois Capps, and Republican California State Senator Sam Blakeslee, who holds a PhD in geophysics, pressed for a halt to plant relicensing pending new seismic studies. All three have the Diablo Canyon Nuclear Power Plant, near San Luis Obispo, within their districts.

Pacific Gas & Electric Company, operator of the plant, recently withdrew its request for license renewal. Boxer questioned EPA Administrator Jackson about her agency's ongoing monitoring of radioactive fallout in the US "We know that low levels of radiation have been detected in the United States," Boxer said. "Experts say we're okay right now. I want to probe that, I want to make sure of that."

Jackson replied: "EPA has not seen and does not expect to see radiation in our air or water reaching harmful levels in the United States. While radiation levels are slightly elevated in some places, they are significantly below harmful levels."

Boxer reacted to reassurances from both administrators by saying she had once heard similar statements from the Japanese.

"It's eerie to me, because I don't sense enough humility from all of us here. As some great scientist once said, we think we have all the answers, but Mother Nature might not agree. A lot of what you're saying is the same thing they said in Japan."

## Inhofe Questions NRC Chairman's Emergency Actions (EEPM)

By Hannah Northey

E&ENews PM, April 13, 2011

The ranking Republican on the Senate Environment and Public Works Committee today quizzed the country's top nuclear regulator on why he invoked emergency authority after the March 11 earthquake and tsunami that sparked a nuclear crisis in Japan.

Nuclear Regulatory Commission Chairman Gregory Jaczko used emergency authority and transferred commission functions to himself in the wake of the Japanese events and failed to inform the committee, Sen. James Inhofe (R-Okla.) said at a joint hearing of the full committee and its subpanel on clean air and nuclear safety.

Inhofe said the law confers emergency authority on the chairman in the wake of an emergency at a particular facility or materials regulated by NRC. But Inhofe said at present he is not "aware that an emergency condition exists at any US facility."

Jaczko said he has been acting within his current authority, and NRC officials said Inhofe had sent a letter to the agency earlier expressing his concerns, although that letter has not yet been made public.

"There's not so much an invoking of emergency authority; that's an authority the chairman has," Jaczko said, adding that most of his activities have fallen within his normal advisory roles.

But Inhofe said the chairman had repeated opportunities to tell lawmakers he had invoked emergency authority and advised the chairman to maintain a collaborative relationship with Congress.

Jaczko pointed to myriad hearings and briefings he and the commission have held, saying, "I think there's been very good communication."

## US Begins To Reconsider Nuclear Risks In Light Of Japan Crisis (MCT)

By Renee Schoof, McClatchy Newspapers

McClatchy, April 13, 2011

WASHINGTON — As Japan struggles with radioactive contamination from one of the world's worst nuclear accidents, American nuclear experts are watching for clues on how to make US nuclear power plants more resistant to the forces of nature or hostile attacks.

US nuclear regulators continue to assure Americans that US plants are safe. They cite a stringent regulatory program, redundant security systems and improvements since the 1979 Three Mile Island accident and the 2001 terrorist attacks.

Yet the problems at Fukushima in the wake of last month's tsunami have reopened questions about the risks of US nuclear reactors, and especially the pools that store spent fuel. Nuclear-safety and environmental groups have called for an independent investigation and a moratorium on relicensing and approvals of new designs.

"The irrefutable bottom line is that we have utterly failed to properly manage the risk from irradiated fuel stored at our nation's nuclear power plants," said David Lochbaum of the Union of Concerned Scientists, a nuclear engineer who worked on three US nuclear plants that are similar to the one in Japan.

Spent-fuel pools don't have as much backup cooling as reactor cores do, and they aren't covered by the heavy concrete containment structures that surround core reactors, which protect the public from accidental releases of radioactivity, Lochbaum said last month in testimony to Congress.

The Obama administration says nuclear energy is clean and safe. Energy Secretary Steven Chu said he hoped that nuclear would be part of the energy mix until technological improvements allowed wind and solar power to displace gas and coal economically.

Germany responded to Japan's nuclear crisis by shutting down its seven oldest reactors for three months for safety checks. The US Nuclear Regulatory Commission and the industry say there's no need to do that here.

"The next generation will be a safer generation of plants, but I want to emphasize this generation of plants has an extremely high performance rating over the last 30 years or so, well over any industry I can think of, and the plants have been operated safely," said Stewart Minahan, the executive director of operations for the Nuclear Energy Institute, an industry group.

Minahan cited many safety improvements: better instruments to monitor the buildup of explosive hydrogen, improvements to containment buildings, the installation of diesel generators and, after 9/11, additional equipment to help keep reactors and spent fuel cool during power outages.

Some of those upgrades addressed problems that Japan experienced.

Japanese officials say hydrogen explosions damaged four reactor buildings, with severe damage at three of them. Power outages prevented cooling in the reactors and the spent-fuel pools. Officials say that while it's not fully known what happened inside the plant, it's likely that spent fuel was damaged and was the source of some of the radioactive material that was released.

"It is the case that the US undertook significant measures after 9/11 both to improve security and to enhance the capacity for US plants to cope with extreme events of all kinds. Those measures would have helped in dealing with an event like those at the Fukushima plants," Richard Meserve, a former NRC chairman who's now the chairman of an international nuclear safety group, said in an email.

The Japanese plant's design dated to the late 1960s, as do many in the US, but Minahan said US plants were upgraded routinely. Large components get replaced, and safety equipment is checked monthly.

"Our plants today are in better material condition than 10 or 20 years ago," he said.

Many US improvements were made after the Three Mile Island accident in 1979 near Harrisburg, Pa., when an equipment failure caused fuel to melt. Even then, the containment structure prevented uncontrolled releases of radioactive materials.

Robert Youngblood, a senior risk consultant at the Idaho National Laboratory, the Department of Energy's lead nuclear research and development facility, said it was too early to say what Fukushima might change.

"The information we have about what really happened over there is really sketchy," he said. "One thing you learn in risk analysis is details matter."

What's known is that the reactors and spent-fuel pools in Japan lost cooling water after a power outage.

Nuclear fuel is consumed in nuclear fission, which creates heat to boil water, which produces steam that powers turbines, producing electricity. The spent fuel is removed from the reactor and placed in a pool to cool.

Even spent fuel is highly radioactive and hot. It must be kept under about 20 feet of water for about five years.

After that time, the fuel can be stored in steel and concrete casks. In the US, however, plants tend to keep the pools as full of spent fuel as possible, moving it to dry casks only when more space is needed.

"Right now, we believe this material can be stored safely and securely either in pools or in dry casks," Nuclear Regulatory Commission Chairman Gregory Jaczko told Congress on March 30.

But in 2008, before he became the NRC chairman, Jaczko said in a speech that new regulations were needed that would require moving spent fuel to dry casks. The casks had "inherent safety benefits," he said.

The NRC says spent fuel can be stored safely in either pools or casks for 100 years, but that neither is a long-term solution. Highly radioactive waste will need to be stored in a deep repository until it becomes harmless through decay after hundreds of thousands of years.

The pools originally were intended as temporary storage, because plans called for fuel reprocessing. In 1977, however, the government stopped the reprocessing of power plant fuel because plutonium, its byproduct, can be used to make nuclear weapons. As spent fuel accumulated, the pools had to be packed more densely.

Spent fuel pools measure 40 by 60 feet and are 40 feet deep. Their walls are thick steel-reinforced concrete around stainless-steel liners. If cooling is lost, the metal tubes that contain the fuel pellets heat up and can rupture and release radioactive gases. At Fukushima and at US plants, the spent-fuel pools are outside the reactor-containment structures.

The NRC says the pools are designed to withstand the same level of natural disasters as the reactors.

After 9/11, investigators studied whether the pools could withstand attacks. A 2002 industry study, based on computer modeling, found that if a jet hit a pool, the concrete wall would be crushed and cracked but the stainless steel lining would keep the water in.

Fukushima, however, showed how little is known about anticipating and managing nuclear power's risks, Frances Beinecke, the president of Natural Resources Defense Council, an environmental group, said in a letter March 25 to President Barack Obama. She called for a new independent investigation into those risks.

A report published in the journal Science & Global Security in 2003 suggested that as much spent fuel as possible should be removed from the pools and put in dry casks to reduce the risk of fire and the release of radioactive materials.

As radioactive materials decay, they release particles that can damage the body and lead to cancer, particularly cesium-137 and iodine-131. In the 1986 nuclear accident at Chernobyl, releases of cesium-137 contaminated land. Some communities were abandoned permanently. Thousands of people who drank milk contaminated with radioactive iodine developed thyroid cancer.

A fire at a spent-fuel pool could release cesium-137. "The long-term land-contamination consequences of such an event could be significantly worse than those from Chernobyl," the 2003 report said.

The author of the 2003 report, Robert Alvarez, a former Department of Energy official who oversaw nuclear issues, said dry casks would provide safer storage until a permanent nuclear repository was built and loaded, a process that would take decades.

Germany shifted to dry-cask storage inside reinforced concrete buildings about 25 years ago because of dangers from terrorist attacks and accidental plane crashes, Alvarez said.

William Levis, the president of New Jersey's PSEG Power, which operates nuclear plants, said it was worth discussing how to handle waste fuel. The industry isn't reluctant to use dry casks, but it wants to limit how many times it must handle used fuel until there's a national plan for a repository, he told a congressional panel late last month.

The future of US nuclear power will depend on how the federal government and investors evaluate its costs and risks.

Chu said new designs had passive safety systems and were far safer. A North Carolina alliance of public interest groups, however, says that one of these designs, the Westinghouse AP1000, has flaws. The alliance filed a motion last Wednesday that calls on the NRC to suspend the approval process for it until lessons from Fukushima are learned.

Among other things, the groups cited an NRC engineer's report that says the concrete in the containment structure wouldn't be strong enough. It also cited a warning by some scientists that filters in the passive cooling system might clog, increasing the risk of a meltdown.

## 'No Justification' For Oyster Creek To Be Singled Out, NRC Says In Brief (LACEYPATCH)

By Patricia A. Miller

Lacey Patch, April 13, 2011

The Nuclear Regulatory Commission has asked a federal appellate court to deny a petition by a coalition of citizen groups to re-examine the relicensing of the Oyster Creek nuclear plant, in the wake of the nuclear mishaps in Japan.

"No safety, technical, or policy justification exists to single out particular reactors for different treatment, just because of their place in the licensing queue or status on judicial review," the NRC said in a brief filed recently.

The 3rd Circuit Court of Appeals in March directed NRC lawyers to provide more information about the "propriety" of re-licensing the Oyster Creek Nuclear Generating Station in the wake of the earthquake and tsunami in Japan.

The NRC relicensed the then-40-year-old plant on April 8, 2009, to operate for another 20 years, over the objections of a coalition of citizen groups that fought the plant's re-licensing. Oyster Creek is the oldest nuclear plant in the United States.

The NRC brief cites the agency's "Defense in Depth" redundant defenses against unanticipated events.

"We have severe accident management guidelines, revisions to the emergency operating procedures and processes for dealing with large fires and explosions, regardless of the cause," according to the brief.

"Every reactor in the United States is designed for natural events based upon its specific location, with multiple fission barriers and a wide range of safety and redundant factors," the brief states.

The NRC will carefully gather and analyze data from the Fukushima Daiichi nuclear plant in Japan to ensure safety at United States reactors as necessary to protect public health and safety in the United States, according to the brief.

"Our focus will always be on keeping plants and radioactive material in the country safe and secure," the brief states.

The NRC has been monitoring and analyzing events from the Japan plant and sent agency technical experts to Japan to provide support.

The citizens' coalition fought the plant's relicensing for several years includes the New Jersey Environmental Federation, The New Jersey chapter of the Sierra Club, the Nuclear Information and Resource Service, the New Jersey Public Interest Research Group and Grandmothers, Mothers and More for Energy Safety.

Coalition attorneys have until April 18 to respond to the NRC and Exelon submissions.

The Nuclear Information and Resource Service recently launched a campaign for the permanent shutdown of the 23 General Electric Mark I reactors currently operating in the United States, which includes Oyster Creek. The Jersey Shore Nuclear Watch, the New Jersey Sierra Club and Berkeley Township Mayor Jason J. Varano have also called for the plant's shutdown.

Exelon officials announced last Dec. 8 that Oyster Creek would close in 2019, 10 years before its latest license is due to expire.

Exelon President Chris Crane said then that "negative" economic conditions and changing environmental regulations were the reason for the earlier closure. The state Department of Environmental Protection has mandated that Exelon install cooling towers at the plant on Route 9 in Lacey Township as a condition of its draft water discharge permit.

## Workers At Neb. Nuclear Plant Exposed To Radiation (AP)

Associated Press, April 13, 2011

BROWNVILLE, Neb.

Federal inspectors are trying to find out why three maintenance workers were exposed to higher than expected radiation levels at Cooper Nuclear Station near Brownville in southeast Nebraska.

The Nuclear Regulatory Commission says the workers were exposed to unplanned radiation on April 3 at the power plant run by the Nebraska Public Power District. The utility told regulators it doesn't believe the radiation exposure exceeded the commission's limits.

NPPD officials didn't immediately respond to a message Monday.

Regulators say the workers didn't follow the proper procedure for removing a long tube contaminated with radioactive material from the reactor because the tube was taken out of the bottom of the reactor vessel instead of the top.

Once the tube was removed, radiation alarms went off, and the workers left the area.

## NRC Team Inspects Cooper Plant (OMAHA)

By Juan Perez Jr.

Omaha World-Herald, April 13, 2011

The US Nuclear Regulatory Commission began a special inspection of the Cooper Nuclear Station near Brownville, Neb., after three workers were exposed to high levels of radiation during an April 3 incident.

The NRC announced the inspection Monday. Officials said the investigation could continue for several days.

Mark Becker, spokesman for the Nebraska Public Power District, said bioassay samples from the affected workers confirmed that they were not exposed to radiation levels that exceed the nuclear commission's safety limits.

NPPD reported the incident to NRC officials, Becker said.

"We attempt to report these things as quickly as possible," he said.

Inspectors' concerns surround a 27-foot-long stainless steel rod known as a "shuttle tube" that is placed inside a nuclear plant's reactor vessel.

The flexible tube, about as wide as a human index finger, acts as a sheath to protect instruments and sensors that monitor conditions in the reactor.

NRC officials said the incident occurred when workers removed the tube — highly contaminated with radioactive material — through the bottom of the station's reactor vessel. Standard procedure is to remove such tubes through the top of the vessel, the NRC said.

The agency said a two-person NRC team traveled to the plant to spend several days examining the circumstances behind the incident, review the Nebraska Public Power District's response to the event and calculate how much radiation NPPD workers were exposed to.

For special inspections, a team of specialists with experience in a given problem are brought onto a site for an in-depth examination of the root cause surrounding an event. They also examine whether the event indicates a larger pattern of problems.

"We want to understand why normal work practices were not followed, resulting in unplanned radiation exposures to three workers," said Elmo Collins, an NRC official. "We want to look at the decision-making that contributed to this event."

Becker said the event triggered the radiation alarms on the personal measurement devices each worker wears, causing them set the tube down and leave the area. The entire plant was not evacuated, he said.

Becker said the exposed workers appeared to follow emergency procedures after those alarms sounded.

"They did the proper thing to leave the room," he said.

Removing the shuttle tube was part of a routine maintenance checklist completed every 18 months, when the plant is shut down for six to eight weeks to replace aging fuel rods. The plant is still inactive, Becker said.

Placed online in 1974, the Cooper Nuclear Station is Nebraska's largest single-unit electrical generator. It creates 810 megawatts of power — enough to keep the lights on in Lincoln and Grand Island during both cities' highest summer usage period. The power district owns the plant but shares part of the electricity it generates with other utilities.

"They've operated safely in the past," said Lara Uselding, spokeswoman for the NRC.

The nuclear commission could implement a variety of sanctions after the investigation, but the exact consequences won't be clear until the team completes its work. Investigators will report on their findings within 45 days of the inspection's conclusion.

Correction: In an earlier version of this story, the description of the workers' tests and the radiation alarms were incorrect.

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## State Tests Response With Mock Nuclear Accident (AP)

By Noaki Schwartz

Associated Press, April 13, 2011

Imagine waking up to discover that an explosion at the San Onofre Nuclear Generating Station had led to a fire, radioactive leak and evacuations in Southern California communities.

That's the scene government officials were asked to consider for a drill Tuesday involving a fake disaster at the California plant.

A month after Japan's devastating earthquake and tsunami, emergency responders and others were given the details at 8 a.m. after arriving at a cavernous Southern California Edison truck bay in Irvine that had been converted into an information center.

Such routine drills have attracted little attention in past years. But this one drew more than two dozen members of the media to watch the exercise.

"Even though this drill this week has been in the planning stages for six months or more, we think it's fortunate that the timing has occurred after the tragic events in Japan," said Gil Alexander, an Edison spokesman. "The question is are we ready? Do we know what to do?"

While the exercise was not prompted by events overseas, emergency officials say lessons from the disaster in Japan could come up in behind-the-scenes discussions on how to handle the staged scenario.

"It's an ongoing lesson learned," said Harry Sherwood, technological hazards branch chief with the Federal Emergency Management Agency. "Japan is one of the things we're going to be looking at."

The San Onofre plant along the coastline north of San Diego and the Diablo Canyon nuclear plant in San Luis Obispo County hold regular drills throughout the year to prepare for possible disasters.

Every other year, FEMA evaluates how well local and state officials handle the scenarios and disseminate information to the public.

The graded scenario typically involves three days of a worsening radiological incident at San Onofre or Diablo Canyon.

Tuesday's exercise involved officials from more than a dozen agencies, including California State Parks, California Highway Patrol and the California Emergency Management Agency, discussing and presenting the unfolding situation at mock press conferences.

Edison employees pretending to be reporters gathered at the information center while officials stood at a podium announcing and fielding questions about an explosion, fire and radioactive leak at a backup generating station at San Onofre.

At least one mock reporter asked if the worsening scenario was similar to the incident at the Fukushima Dai-ichi plant.

Officials periodically went behind a screen to another room where they would learn new details, communicate with their respective agencies, and write press releases before returning for another round of questions.

An estimated 700 officials participated, with about 200 people at the site and the rest at emergency operation centers elsewhere.

Wednesday's exercise has been rescheduled. On Thursday, officials are expected to do more drills related to the aftermath of the disaster scenario. FEMA officials are expected to share some initial impressions on Friday about how well local and state disaster response personnel did, and to release a complete evaluation in three months.

Edison also announced plans to file a funding request with the California Public Utilities Commission on Friday for seismic studies at San Onofre. The request for \$64 million would go toward studies of seismic and tsunami conditions that could affect the plant.

"Following the recent tragic natural disasters in Japan, we re-evaluated and enlarged the scope in order to further increase the scientific information we could obtain," said Pete Dietrich, chief nuclear officer at Edison.

## **Scheduled Three-day Drill Begins At San Onofre Nuclear Plant (LAT)**

By Tony Barboza

Los Angeles Times, April 12, 2011

The operators of the San Onofre nuclear power plant are starting a drill Tuesday to test the ability of the facility and local, state and federal agencies to respond to a radiological emergency.

The three-day exercise by Southern California Edison will simulate a radioactive release from the plant into surrounding communities, said Tina Walker, a spokeswoman for the California Emergency Management Agency.

Nuclear emergency sirens will sound during the drill, which will be overseen and evaluated by state and federal disaster officials, she said.

The simulation was long-scheduled and is required every two years at every commercial nuclear plant in the nation, officials said. But it has garnered more interest due to the Japanese nuclear crisis that followed last month's earthquake and tsunami.

"The message here is that nuclear power plants and the communities surrounding them spend a lot of time preparing and testing their emergency response plans," said Victor Dricks, a spokesman for the Nuclear Regulatory Commission.

State and federal officials have called for comprehensive reviews of California's two commercial nuclear power plants in response to the events in Japan.

Southern California Edison last month proposed a multimillion-dollar study that would use new technology to better assess seismic conditions near the northern San Diego County complex.

The Federal Emergency Management Agency will hold a public meeting Friday in San Juan Capistrano to review initial observations from this week's drill. The full evaluation will not be available for several months.

## **San Onofre Undergoing Nuclear Safety Drill (SDUT)**

By Onell R. Soto

San Diego (CA) Union-Tribune, April 12, 2011

Government officials are testing this week how they would respond to a radiation leak at the San Onofre Nuclear plant.

Tuesday and Thursday, state, federal and local officials will simulate the release of radioactivity from the plant.

Inside the plant, located in the northern reaches of San Diego County, workers are simulating how to shut the plant down and secure radioactive fuel, said Gil Alexander, a spokesman for Southern California Edison, which runs the plant.

"There are a total of about 200 of us associated with the plant that will drill," he said. "At least half of those are focused on the plant."

The others will be working on communicating what's happening inside with the outside world, including government officials, news media and the public.

That part of the drill is taking place at a cavernous Edison truck bay in Irvine.

Fake reporters gathered at the joint information center while officials stood at a podium announcing and fielding questions about an explosion, fire and radioactive leak at backup generating station at San Onofre.

Thursday, officials are expected to do more drills related to the aftermath of the disaster scenario, moving a week ahead in time and simulating how people would return to their homes.

The drill was planned by the California Emergency Management Agency months ago, long before the March 11 earthquake and tsunami that crippled Japan's Fukushima Daiichi nuclear complex.

There, a quake much larger than thought possible launched a tsunami that overran the oceanfront nuclear plant. In the weeks since, there have been explosions, meltdowns and radiation releases.

Japanese officials said that incident is now at the same level as the Chernobyl nuclear disaster 25 years ago.

Tuesday's exercise involves officials discussing and presenting the unfolding situation in mock press conferences. Officials say lessons from the disaster in Japan could come up in discussions on how to handle the unfolding mock scenario.

At San Onofre, federal officials are observing how community leaders react in the face of a potential catastrophe, said John Hamill, a spokesman with the Federal Emergency Management Agency.

They will rate how they work and look for places to improve.

FEMA and the US Nuclear Regulatory Commission will discuss what they find at a public meeting at 4 p.m. Friday at the Capistrano Unified School District Education Center, 33122 Valle Road, San Juan Capistrano.

In addition to plant workers and state and federal officials, the exercise will also include representatives of Los Angeles, Orange, Riverside, San Bernardino and San Diego counties, and the cities of Dana Point, San Clemente and San Juan Capistrano, and the Capistrano Unified School District.

## **Emergency Drill Today At San Onofre Nuclear Plant (LADB)**

Los Angeles Daily Breeze, April 13, 2011

Radiation experts and emergency workers will participate in a drill today to test responses to an emergency at the San Onofre Nuclear Generating Station, an exercise conducted every other year but has taken on added significance because of the disaster in Japan. The drill will be conducted in secret, but other officials will gather at a Joint Information Center, where they will simulate news conferences as they practice how to disseminate information in case of a disaster. Drills are conducted at the San Onofre plant a few times a year, but this biennial one is a much more extensive test that is monitored by the Federal Emergency Management Agency, Gil Alexander of Southern California Edison said. The main difference this year is the interest from the media, according Tina Walker of the California Emergency Management Agency. She said that is a positive change, because Southern California residents should know how to be prepared for an emergency. "One of the key steps is to know the resources in your local jurisdiction," Walker said. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt you'll be prepared for anything." Alexander said Edison hopes the increased coverage of the drills will help calm some fears as the earthquake-crippled Fukushima reactor in Japan continues to stoke anxiety about radioactive leaks. "We're hopeful the news stories this week will show our extensive planning efforts," Alexander said. "We hope the reports on all of this will be reassuring to the public." The drill at San Onofre will simulate a radioactive leak that goes beyond the plant's boundaries and into the community, Alexander said. FEMA officials will hold a meeting at 4 p.m. Friday at the Capistrano Unified School District offices in San Juan Capistrano to give the public a "snapshot" view of how the drills went, John Hamill of FEMA said. In about three months, FEMA will issue its "report card" on the drill, Hamill said. The California Emergency Management Agency will coordinate the test at the two nuclear reactors starting today, and concluding Thursday. Workers will test emergency shut-down procedures and practice securing radioactive fuel rods. San Onofre's two reactors generate 2.1 billion watts of electricity when operating at full capacity. Both units were returned to 99 percent operations this year, after extensive rebuilding projects.

Emergency and public health workers from Los Angeles, Orange, Riverside and San Diego counties will participate in the drill.

## **San Onofre Practices For Nuclear Blast, Leak (OCR)**

Orange County (CA) Register, April 12, 2011

Emergency officials from more than a dozen agencies took part in a disaster drill centered on the San Onofre nuclear plant Tuesday, giving a glimpse of what a real nuclear emergency might look like in Southern California.

In a large, hangar-like building in Irvine, owned by San Onofre operator Southern California Edison, questioners posing as reporters asked real emergency officials from Edison, the Orange County Sheriff's Department and other agencies about the extent of the emergency its effect on the public.

Placards throughout the building read, "This is a drill," and the officials at the podium punctuated their answers with the same phrase as television news cameras recorded the scene.

## **Emergency Drill At San Onofre Nuclear Power Plant (KABC)**

KABC-TV Los Angeles, CA, April 13, 2011

SAN ONOFRE STATE PARK, Calif. (KABC) -- The emergency drill at the San Onofre nuclear power plant is taking on added significance in light of the nuclear crisis in Japan.

Experts are making sure safeguards are in place to protect the region from a possible radiation leak. San Onofre residents heard sirens sounding off as multiple agencies ran through an exercise that simulated a radiation scare.

"This is a drill," said a San Onofre employee. "There are no reports of injuries. We do not have any report of the release of radioactive material."

The simulation even included a mock press conference in Irvine, where officials demonstrated how they would instruct the public in a real-life radiation emergency.

As for the plant itself, emergency shutdown procedures were ran through, and San Onofre's two radioactive fuel rods were being secured.

The California Emergency Management Agency, or Cal EMA, coordinated the tests. Although the simulation is routine, it came at a time when the public was especially sensitive to radiation leaks. With problems mounting in Japan, Tuesday's event highlighted the importance of being prepared for the worst.

"And we have all types of emergency," said Tina Walker from Cal EMA. "Natural hurricanes, earthquakes, fires, floods. Certainly another concern because of recent global incidents, such as in Japan, now we have got an increased awareness about safety around and near nuclear power plants."

Several drills have led up to Tuesday's graded exercise. FEMA will ultimately determine how well everyone performed, and whether or not safeguards are working.

There has never been a leak at San Onofre, and Southern California Edison said it remains committed to keeping the public safe.

"This is not a onetime deal for us," said Steven Conroy from SoCal Edison. "We do multiple drills in the course of the year. This is in fact our third drill this year. We may do another one, that'll be determined possibly as a result of what takes place here today."

FEMA will reveal its evaluation at a public meeting in San Juan Capistrano later this week.

## **Emergency Tests Conducted At San Onofre Nuclear Power Plant (KCBS)**

KCBS-TV Los Angeles, April 13, 2011

IRVINE (CBS) — Officials conducted emergency drills at Southern California Edison's San Onofre nuclear power plant from 9 a.m. to 2 p.m. Tuesday.

Gil Alexander of Southern California Edison Weighs In On KNX 1070

There has never been a radiation leak at the 42-year-old facility, but FEMA and the Nuclear Regulatory Commission require emergency testing every two years.

More than 200 emergency management officials from across the state will be at the plant, as well as Southern California Edison's Joint Information Center in Irvine.

Workers will respond to a fake radioactive gas leak by testing emergency shutdown procedures and securing fuel rods.

Residents should not be alarmed when emergency sirens are intermittently sounded between the hours of 8 a.m. and 12 p.m.

Tuesday's drills come as Japan increases the threat level of the disaster at the Fukushima power plant from a 5 to a 7 – the highest level on the International Atomic Energy Agency's Scale. The Chernobyl disaster of 1986 was also a 7.

LOS ANGELES (CBS) — Several organizations are mobilizing to help connect donations to aid Japan after the country's largest earthquake on record caused a catastrophic tsunami.

The magnitude-8.9 quake struck 250 miles north-east of Tokyo at 2:46 p.m. local time, causing great human loss and extensive damage to infrastructure.

To make a donation to The Red Cross, visit [redcross.org](http://redcross.org) or text REDCROSS to 90999 to donate \$10 from your phone.

Operation USA appeals for donations of funds from the public. The organization also calls for bulk corporate donations of health care materials, which it will ship to the region from its base in the Port of Los Angeles. You can make donations online at [www.opusa.org](http://www.opusa.org), by phone at 1.800.678.7255 or, by check made out to Operation USA, 3617 Hayden Ave, Suite A, Culver City, CA 90232.

The Japan America Society of Southern California, with other Japanese and Japanese-American organizations in the region, established a relief fund. Checks made out to the 2011 Japan Relief Fund can be sent to the Japan America Society of Southern California, 345 S. Figueroa St., Suite M-1, Los Angeles, CA 90071-1004. Secure online credit card donations can also be made at [www.jas-socal.org](http://www.jas-socal.org).

Catholic Relief Services is also stepping up and taking donations. Sean Callahan, CRS executive vice president, said Friday, "We know from 2004 the devastating impact that these tsunamis can have."

CRS is working with a partner, Caritas Japan, to assess where to put resources. To donate by phone: 1-877-HELP-CRS. To make a donation on line, go to [www.crs.org](http://www.crs.org).

To write and mail a check:

Catholic Relief Services

P.O. Box 17090

Baltimore, Maryland 21203-7090

Memo portion of check: Japanese Tsunami » PHOTOS: Disaster In Japan

» More Local Quake Coverage

## **San Onofre Nuclear Plant Holds Mock Disaster Drill (KFMB)**

KFMB-TV San Diego, April 13, 2011

**SAN ONOFRE (CNS)** - Workers at the San Onofre nuclear plant conducted drills Tuesday on shutting down the two reactors and securing the fuel rods as part of a biennial exercise that took on new significance in light of the disaster in Japan.

Southern California Edison, which operates the plant in San Clemente, also signaled its intent to ask the state Public Utilities Commission to fund some \$64 million in studies aimed at better preparing workers to a radiological accident.

"We have been planning the seismic and tsunami studies for several months," SCE's top nuclear officer, Pete Dietrich, said. "Following the recent tragic natural disasters in Japan, we re-evaluated and enlarged the scope in order to further increase the scientific information we could obtain."

The drill, which started Tuesday and continues through Thursday, is mostly secret. But public information officers and radiation experts set up at a site in Irvine, where they practiced getting out essential information. Public health officials from across Southern California also are participating.

The exercise, which is done every two years, is the San Onofre's most extensive that is monitored by the Federal Emergency Management Agency, Gil Alexander of SCE said.

The main difference this year, Tina Walker of the state's Emergency Management Agency said, was the amount of interest shown by the news media. She called that a positive change.

"One of the key steps is to know the resources in your local jurisdiction," Walker said. "The best way someone can protect themselves and their family is to know your local resources. Speak to your local officials on emergency planning and once you get that information under your belt you'll be prepared for anything."

Alexander said SCE officials hoped that increased coverage of the drills would help calm fears, as the Japanese work to contain the disaster at the Fukushima Daiichi plant, which was ruined by the magnitude-9.0 earthquake and tsunami that struck March 11.

"We're hopeful the news stories this week will show our extensive planning efforts," Alexander said. "We hope the reports on all of this will be reassuring to the public."

On Friday at 4 p.m., FEMA officials will be at Capistrano Unified School District offices to give a "snapshot" view of how the exercise went, John Hamill of FEMA said. In about three months, FEMA will issue a San Onofre "report card," he said.

The state's Emergency Management Agency is coordinating the exercises. Together, the two reactors at San Onofre generate about 2.1 billion watts of electricity at full capacity. Both units have been overhauled in recent years.

## **California Nuclear Power Plant To Test Emergency Response (KGET)**

KGET-TV Bakersfield (CA), April 13, 2011

The nuclear disaster in Japan is bringing new attention to safety measures at US power plants. In southern California, radiation experts and emergency workers are preparing for a drill to test emergency response system at the San Onofre power plant.

The drill, which will simulate a radiation leak, will begin Tuesday and run through Thursday. It will start as a small emergency inside then it will escalate as radiation starts leaking into the atmosphere. The simulation will include 300 officials from several southern California counties.

"We've worked hard at it, we have a plan, we work the plan. I think we're ready to swing into action," said Gil Alexander with Southern California Edison. "We drill constantly, three or four times a year. we meet every month. we've done that since 1982."

The exercise was planned long before Japan's Fukushima Daiichi nuclear complex was crippled by a magnitude nine earthquake and tsunami.

## **San Onofre Nuke Owner Seeks \$64 Mln For Seismic Study (REU)**

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Boxer Says Nation Must Learn Nuclear Lessons (SLOT)**

By David Sneed

San Luis Obispo (CA) Tribune, April 13, 2011

The recent nuclear disaster in Japan has exposed two dangers facing reactors in the United States — the complete loss of electrical power and spent fuel pools that are too densely loaded.

Some of the nation's top nuclear experts and two Central Coast lawmakers testified at a Senate hearing Tuesday in Washington, D.C., about what can be learned from the triple tragedy of a powerful earthquake, tsunamis and nuclear meltdown in Japan.

Lawmakers also warned nuclear industry officials and regulators not to get complacent. The tragedy in Japan showed that multiple disasters can overwhelm safeguards at a nuclear power plant.

"We have just got to respond in a much different way," said Sen. Barbara Boxer, D-Calif. "We are not humble enough in the face of what Mother Nature can do."

Gregory Jaczko, chairman of the Nuclear Regulatory Commission, said most of the problems in Japan were caused by loss of electrical power when the plant was inundated by the tsunamis. Electricity is needed to keep pumps running that cool reactors as well as spent fuel pools.

At Diablo Canyon, each reactor has three diesel generators with seven days' worth of fuel and enough batteries for eight hours. The plant also has gravity-fed pools that can supply additional cooling water.

James Boyd, vice chairman of the California Energy Commission, said there have also been discussions about bringing in more batteries by helicopter, if needed.

Boyd and many others who testified Tuesday said spent fuel pools are a big worry. Like most plants, Diablo Canyon's pools are far more densely loaded with used fuel than originally designed.

More than 500 fuel assemblies have been transferred into dry casks at Diablo Canyon, but the two pools still contain some 1,000 assemblies. Dense packing is dangerous because the fuel rods are more likely to catch fire, releasing radiation, if water is lost from the pools.

At the hearing, state Sen. Sam Blakeslee, R-San Luis Obispo, and Rep. Lois Capps, D-Santa Barbara, renewed their pleas to the NRC to stop license renewal of Diablo Canyon until detailed seismic studies are done, peer reviewed and incorporated into the renewal process.

"Failure to do so is unwise and irresponsible," Capps said. "It will feed public uncertainty about the oversight and safety of nuclear energy. And it could cost taxpayers billions of dollars to once again belatedly address issues that should have been dealt with beforehand."

Blakeslee also said he is concerned that the NRC is not conducting any safety reviews specifically for Diablo Canyon and California's other nuclear plant, San Onofre, in the aftermath of the earthquakes in Japan. Diablo Canyon and San Onofre are the only two plants in the nation with very high earthquake risk.

Diablo Canyon's owner, PG&E, has asked the NRC to delay "the final processing" of the renewal application until the seismic studies are complete. However, in a separate letter to the NRC on Tuesday, the utility made it clear that it does not want any delay in the ongoing safety and environmental reviews of the renewal application.

## Capps Testifies On Diablo (EDHAT)

Santa Barbara (CA) Edhat, April 13, 2011

Today, Rep. Lois Capps (CA-23) testified before the Senate Environment and Public Works Committee and expressed her concerns about safety at the Diablo Canyon Nuclear Power Plant. Capps also renewed her call to the Nuclear Regulatory Commission to stay the relicensing process pending the completion and peer-review of advanced seismic studies and 3-D mapping. Capps' full statement is included. A photo is attached.

State Senator Sam Blakeslee (R-San Luis Obispo) also testified before the committee, offering his perspective as a state elected official and scientist with a PhD in seismic studies. Additionally, Capps and Blakeslee met in Capps' congressional office to further discuss concerns about the Diablo Canyon Nuclear Power Plant. A photo is attached.

"I enjoyed the opportunity to testify before the Senate Environment and Public Works Committee to share my concerns about safety at the Diablo Canyon Nuclear Power Plant and explain why the Nuclear Regulatory Commission should stay the license renewal process until the completion of independent, peer reviewed, advanced seismic studies of all faults in the area. Having worked to address public safety concerns connected to the operation of the Diablo Canyon Power Plant for over a decade, I think I was able to provide committee members with unique insight on the broader issue of nuclear safety. I also enjoyed the chance to meet with State Senator Sam Blakeslee to further discuss our concerns about this issue and how we can continue working together to ensure the safety of the communities surrounding Diablo Canyon," said Capps.

Statement of US Representative Lois Capps  
Committee on Environment and Public Works

"Review of the Nuclear Emergency in Japan and Implications for the US"

April 12, 2011

Chairwoman Boxer, Ranking Member Inhofe, and members of the Committee, thank you for holding this hearing and for the opportunity to present testimony.

I am here today because my congressional district includes the Diablo Canyon Nuclear Power Plant, which has become a central focus in the weeks following the Japanese tsunami and subsequent nuclear crisis.

Last month, I called on the NRC to stay the license renewal process for Diablo Canyon until further studies demonstrate the plant's design and operations can withstand an earthquake and other potential threats.

Yesterday, PG&E asked the NRC to delay its license renewal application while it completes those studies. So today, in light of PG&E's action, I am renewing my request to the NRC to halt the relicensing process.

I do not make this request lightly.

Last month, I again toured the Diablo Canyon Nuclear Power Plant. Following that visit I was convinced of two things:

First, the employees' commitment to getting it right. And, second, that we're not yet there. I am not alone in that assessment.

I am grateful to be joined today by my constituent, California State Senator Sam Blakeslee, who also represents Diablo Canyon and its surrounding communities. State Senator Blakeslee will testify himself today as both a state elected official and also as a scientist with a Ph.D. in seismic studies.

I am confident that our shared assessment of the situation will offer the committee valuable, on-the-ground insight into both the current and future landscape of nuclear power in California. The bottom line is this:

We do not have the answers we need to confidently move forward in extending the licensing agreement of Diablo Canyon.

We should not move forward until we have those answers.

And, because the reactors do not need to be relicensed for more than a dozen years, we have plenty of time to find those answers.

Madame Chair, what happened in Japan offered us an opportunity to question - and question again - whether we are ready, whether we can handle the unthinkable.

The NRC had already determined that it is non-credible that there could be multiple catastrophes, such as an earthquake and a meltdown at Diablo Canyon plant.

The NRC has maintained, "...the chance of such a bizarre concatenation of events occurring is extremely small. Not only is this conclusion well supported by the record evidence, it accords most eminently with common sense notions of statistical probability."

Yet, the unthinkable did happen in Japan - an earthquake, tsunami and a nuclear accident, all occurring in sequence. Clearly, a "bizarre concatenation of events" is not merely hypothetical. Madam Chair, let's be clear - we know seismic uncertainty exists at the site.

In the early 1970s, while the plant was originally under construction, scientists discovered the Hosgri offshore fault less than 3 miles away, forcing a major redesign and pushing the project billions of dollars over budget.

In 2008, scientists discovered yet another fault. The Shoreline Fault, which lies less than a mile from the plant.

The stakes were raised just last month when the NRC confirmed that Diablo Canyon was one of two nuclear power plants in the highest risk area for seismic activity in the entire country. Clearly, we need answers to major questions.

Can the plant, including the spent fuel pools, withstand an earthquake and nuclear accident at the same time?

How long would the plant be self-sustaining in the event of such damage?

And, is Diablo Canyon's evacuation plan during an incident workable?

Many of us on the Central Coast remain concerned that the NRC has not taken action to answer these questions or address these warnings.

So much so that the California Energy Commission has recommended - and our state Public Utilities Commission has directed - that independent, peer-reviewed, advanced seismic studies be performed PRIOR to applying for relicensing.

I agree with this assessment. That's why it is so important to halt the relicensing process. Let's take some time to get all the answers.

It's important to note that I'm not calling for Diablo Canyon to be shut down. I'm also not calling for PG&E to be denied an operating license.

What I am doing today is asking that the relicensing process be halted until updated state-of-the-art seismic studies and 3-D seismic mapping are completed and that they be considered as part of the relicensing process.

Failure to do so is unwise and irresponsible. It will feed public uncertainty about the oversight and safety of nuclear energy. And it could cost taxpayers billions of dollars to once again belatedly address issues that should have been dealt with beforehand.

That's why I am hopeful the NRC will work with all stakeholders to answer the seismic questions, which remain unstudied and unresolved, prior to the continuation of this process.

Once again, thank you for the opportunity to present testimony today.

## **PG&E's Letter On Diablo Relicensing Didn't Go Far Enough, Supervisors Say (SLOT)**

By Bob Cuddy

San Luis Obispo Tribune, April 13, 2011

PG&E's letter to regulators asking that relicensing of its Diablo Canyon nuclear power plant not be finalized until advanced earthquake studies have been completed is a good "half step," but does not go far enough, the Board of Supervisors said Tuesday.

The supervisors sent their own letter, this one to PG&E, reiterating their earlier support for a delay in the relicensing process, but adding that the advanced studies the utility says it will undertake should be "independently reviewed."

Such an examination, also called a peer review, would open the earthquake studies to scientists who are independent of PG&E.

Supervisors also said they want clarity about PG&E's intentions, expressed in the utility's Sunday letter to the Nuclear Regulatory Commission. In its letter to the NRC, PG&E asked that the agency "withhold issuance of PG&E's renewed operating licenses, if approved, until after this research is completed and the findings are submitted to the commission."

However, in a separate letter to the NRC on Tuesday, PG&E attorney David A. Repka wrote that the utility "is not requesting any delay in the schedule for this licensing hearing process."

The Board of Supervisors wants the entire relicensing process stopped until the studies are finished and reviewed.

The nearly 40-year-old Diablo Canyon plant was thrust into the headlines last month after the nuclear plant disaster in Japan. Japan now ranks its nuclear crisis at the highest possible severity on an international scale — the same level as the 1986 Chernobyl disaster.

In addition, a new earthquake fault has been found near Diablo Canyon, and its geological relationship to other faults is unknown, as are the number of other faults in the area.

Because of these nerve-rattling uncertainties, residents from throughout the county have expressed concern about the aging power plant. Supervisors have received hundreds of emails, letters and voice mails, and many speakers have stood up at recent meetings to question the safety of Diablo Canyon.

Some 16 residents spoke again Tuesday, supporting the board's position, and in some cases saying the plant should be shut down altogether.

Jane Swanson of the Mothers for Peace group added that the utility should explore safe ways to dispose of spent fuel.

The plant is a fixture in the county, a reality that supervisors acknowledge in their letter. "The company and its plant bring many critical and economic benefits to San Luis Obispo County," they note in their letter.

The nuclear power plant provides about 1,500 jobs; of those, 1,350 workers live in San Luis Obispo County.

The utility paid \$26.2 million in property taxes for the 2010-11 fiscal year.

Supervisors reiterated that halting the relicensing process would be a good way for the utility to restore public trust. That trust, speakers and elected officials have noted, has been battered in recent months by PG&E's handling of its SmartMeter program and a pipeline explosion in San Bruno.

PG&E has insisted that the plant can withstand a magnitude-7.5 earthquake.

"PG&E is the only utility in the country that employs a seismic department staffed with experts," the utility wrote to the NRC.

## **PG&E Says It Is Not Asking For Delay In Diablo Canyon Renewal Process (KSBY)**

KSBY-TV San Luis Obispo (CA), April 13, 2011

San Luis Obispo County leaders say today PG&E should have gone a step further with its letter to the Nuclear Regulatory Commission yesterday.

PG&E asked the Commission to delay granting a renewal license for Diablo, but a company lawyer clarified in a second letter today it is not asking for a delay in the renewal process.

The County Board of Supervisors voted 5-0 today to ask PG&E to do just that until better seismic studies are done.

They say PG&E's move is in the right direction, but Supervisor Bruce Gibson calls it only half a step.

PG&E said yesterday it is responding to the needs of community.

"By asking the NRC to hold off on the final processing of our license renewal application until the seismic studies are complete and then we've submitted those findings to the NRC for review, we've addressed this concern," said PG&E spokesperson Kory Raftery.

But the letter's ambiguous language is making some uneasy.

"I don't think it's an empty gesture," said board chairman Adam Hill. "I do think that it is an important step forward, though it's not necessarily as much as we would like to see."

Supervisors say they're looking out for the safety and wallets of taxpayers; the cost of relicensing and seismic studies are not absorbed by PG&E and are instead they're passed along to ratepayers.

"If we're paying essentially for the relicensing, then we should say, well, don't spend the money until this is done so we know we're not wasting money that you might have to spend later," Hill said.

Hill says the company applied for as much as to \$85 million dollars in relicensing efforts alone.

Another question the board raised is whether PG&E or independent seismologists will perform the studies.

## **PG&E Asks For Delay In Diablo Canyon Plant License (MRKTWTCH)**

MarketWatch, April 13, 2011

NEW YORK (MarketWatch) -- Pacific Gas & Electric Co. (NYSE:PCG) said late Monday it's asking the US Nuclear Regulatory Commission to delay final action on the renewal of its operating license for the Diablo Canyon nuclear-power plant, while it steps up efforts to study seismic data near the reactor. "We recognize that many in the public have called for this research to be completed before the NRC renews the plant's licenses," the company said. "We are being responsive to this concern by seeking to expeditiously complete the 3-D seismic studies and provide those findings to the commission and other interested parties so they may have added assurance of the plant's seismic integrity."

## **PG&E Wants Nuclear Plant License Delay For Seismic Study (KABC)**

KABC-TV Los Angeles, CA, April 13, 2011

LOS ANGELES (KABC) – It looks like there's going to be a delay in new extended operating permits for the Diablo Canyon nuclear power complex.

Pacific Gas and Electric Co. has asked federal regulators to wait until comprehensive seismic studies are completed before granting the new licenses.

There's been a public outcry over possible safety risks since an earthquake fault was discovered less than half a mile from the site near San Luis Obispo.

At a legislative hearing last month, company officials said the plant was safe and gave no hint that PG&E would agree to complete three-dimensional seismic studies before a renewal of the licenses.

But in a statement Monday, PG&E Senior Vice President John Conway referred to the Japanese crisis and said, "we recognize that many in the public have called for this research to be completed before the NRC renews the plants' licenses. We are being responsive to this concern."

The company wants the NRC to extend the life of the complex for 20 years after its permits expire in 2024 and 2025.

In a letter to the NRC dated Sunday, PG&E said it would be prudent to complete the studies prior to granting new licenses. The Associated Press contributed to this report.

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## **TMI Powers Through Emergency Drill (YDRPA)**

By Sean Adkins

York (PA) Daily Record, April 13, 2011

The men stand shoulder to shoulder, their eyes locked on a board of flashing red and white tiles.

Alarms sound from every corner of the room, but no one moves.

Slowly, the group begins to fracture as plant operators, under the watchful eyes of federal regulators, move swiftly to man individual stations and flip through manuals.

A major emergency at Three Mile Island Unit 1 has just jumped in severity – a crisis that could ultimately force the governor to order residents who live within 10 miles of the plant to either evacuate or take shelter within their homes.

That is, if the crisis were real and not a graded drill takes place every other year.

Emergency responders from areas that surround Three Mile Island in Dauphin County took part in a dry run Tuesday that evaluated how officials would respond to a plant-borne radiological crisis.

The stage for the drill is an \$18 million simulator that resembles the real TMI Unit 1 control room, said Ralph DeSantis, a spokesman for plant.

On Tuesday evening, a team of six TMI control room operators started the drill that was expected to last late into the night.

The other men in the simulator were officials with Nuclear Regulatory Commission whose job it was evaluate how the control room operators responded to the rising mock crisis at the plant, said Neil Sheehan, a commission spokesman.

"We assess on-site response," he said. "We look to see if the plant's workers are communicating with off-site officials about the event. We look to see if the plant is classifying an event properly."

The drill scenario usually involves different challenges such as a tornado touching down in an electrical switch yard cutting off-site power to the plant, possibly coupled with the loss of another key system such as a pump that has been knocked out of service, Sheehan said.

"From our perspective, the scenario will put the responders through their paces and they will have to make decisions," he said. "They have to work through those challenges."

While the operators are not aware of the dire scenario in which they will face, the drill typically cycles through four stages of an emergency -- an unusual event, an alert, an on-site area emergency and a general emergency.

An unusual event refers to a process that has occurred within the plant that could potentially degrade the level of safety at the site.

"For example," Sheehan said, "if the plant has a fire on site that lasts more than 15 minutes are they classifying it as an unusual event?"

At the alert level, counties and municipalities typically activate their emergency-response centers as a way to react to an emergency at the plant.

During past drills, the conclusion of the exercise simulated a recommendation by the governor that all residents within a 10-mile radius of the plant evacuate the area.

"It's possible to not pass the evaluation," DeSantis said. "That would be a bad day. But, we don't expect that to happen." If you go

Federal officials will present preliminary findings of Tuesday's emergency preparedness exercise in a public meeting 11 a.m. Friday at the Hilton Garden Inn in Harrisburg. At the operations center

In the York County emergency operations center, television screens showed the latest updates on what was happening in the 10-mile radius.

At 5:59 p.m., for example, Conewago Township's local emergency operations center was fully staffed and operational. Other municipalities were reporting similarly.

It remained quiet as emergency management officials, emergency responders and others worked during the drill.

Scanner traffic during the mock drill later indicated a more dire situation as Goldsboro evacuated, and a radiological release was reported.

These type of drills are critical, said Carl Lindquist, the county's public information officer.

"Every time you do a drill like this you learn new ways to approach particular problems -- the little details that you have to hammer out that you just can't prepare for in advance," he said. "And it's really that experience that will pay off in the event that there's some kind of incident at Three Mile Island."

## Drill At Three Mile Island Tests State And Local Agencies (WPMTTV)

By Sarah Arbogast, Staff Reporter

WPMT-TV Harrisburg (PA), April 13, 2011

Federal, state, and local emergency management leaders put their skills to the test Tuesday night. Hundreds participated in a preparedness drill at and around Three Mile Island Nuclear Power Plant.

"Every time you do a drill like this you learn new ways to approach particular problems, there are little details that you have to hammer out that you just can't prepare for in advance," said Carl Lindquist, York County Public Information Officer.

The particular test, conducted every two years, is evaluated by The Department of Homeland Security's Federal Emergency Management Agency or FEMA. Within 90 days, FEMA will send its evaluation to the Nuclear Regulatory Commission for use in licensing decisions. The final report will be available to the public about 120 days after the exercise.

FEMA will present preliminary findings of the exercise in a public meeting at 11:00 AM on April 15, at the Hilton Garden Inn located at 3943 TecPort Drive, Harrisburg, PA, 17111.

## State Senators Hold Hearings On Indian Point Nuclear Plant (NNV)

Nyack (NY) News And Views, April 13, 2011

State Senators David Carlucci, George Maziarz and Greg Ball will host a hearing on May 12 in Stony Point regarding the public's worries about Indian Point's nuclear reactors in light of the recent disaster involving the Fukushima Nuclear Power Plant in Japan.

Based on the hearing results and the testimony heard, the three Senators will be issuing a formal report and recommendation.

"The Indian Point nuclear power plant, which sits within two miles of two intersecting fault lines has the highest risk of an earthquake causing its reactors core damage in the United States. To ensure the safety of the 20 million people who live within the 50-mile peak injury zone, Senator Maziarz, Senator Ball and I will be holding a hearing focused on detailing plans and precautions in the event of a natural disaster," said Carlucci, who represents Rockland County and the Orange County towns of Warwick and Tuxedo.

Invited speakers will be experts in disaster preparedness, local officials, energy officials, business organizations, and experts in the environmental sciences.

Who: Senator David Carlucci, (D, SD-38) Chair of the Administrative Regulations Review Commission

Senator George Maziarz (R, SD-62), Chair of the Energy Committee

Senator Greg Ball (R, SD-40), Chair of Veterans, Homeland Security and Military Affairs

Members of the Energy Committee

When: May 12, 1-5 pm

Where: Stony Point Community Center (RHO)

5 Clubhouse Lane,

Stony Point, NY 10980

[View Map](#)

Follow the issues involving the Indian Point nuclear power plant on [Left of the Hudson](#).

UPDATE: The original version of this article had the hearing date on April 14. The date was later changed and we updated it here.

## **Rockland Hearing To Review Indian Point Safety Plans (PRP)**

By William Demarest

Pearl River Patch, April 13, 2011

Three state senators have set a hearing on the safety of New York's nuclear power plants, including Indian Point, in Rockland County.

State Sen. David Carlucci, D-New City, said the May 12 hearing will look at contingency plans for natural disasters and the reliability of the power grid. He said information from the hearing will be used for a report to be issued by him, state Sen. Greg Ball and State Sen. George Maziarz.

"The Indian Point nuclear power plant, which sits within two miles of two intersecting fault lines has the highest risk of an earthquake causing its reactors core damage in the United States," Carlucci said. "To ensure the safety of the 20 million people who live within the 50-mile peak injury zone, Senator Maziarz, Senator Ball and I will be holding a hearing focused on detailing plans and precautions in the event of a natural disaster."

Maziarz said the massive earthquake and tsunami that hit Japan continue to raise concerns among New Yorkers about nuclear power plants and their ability to withstand damage from natural disasters.

"In light of recent events in Japan, it is more important than ever that citizens receive accurate and balanced information in regard to the safety of our nuclear facilities," Maziarz said.

The lawmakers said they want the hearing to bring forward information from the operators of Indian Point, Entergy, along with state and local officials on how they would respond to an emergency situation.

"We will also examine how important the 2,000 megawatts of power generated at Indian Point are to the reliability of the electrical grid and what the impact would be on prices in the New York City area, if this power was to go offline for any reason," Maziarz said.

Ball said the Japan disaster and the damage done to nuclear power plants in that country have raised many questions locally about nuclear energy facilities.

"Indian Point is a huge employer and a huge producer of cheap energy," Ball said. "I've toured Indian Point and I believe they have solid internal security and safety mechanisms, that said, the recent disaster in Japan has raised serious questions of nuclear security as it pertains to disaster response and as chairman of the Senate Homeland Security Committee I am acutely focused on assessing our overall preparedness."

The May 12 hearing is set for 1 to 5 p.m. on Thursday at the Stony Point Community Center, also known as the RHO Building, 5 Clubhouse Lane, Stony Point.

In Rockland County, County Executive C. Scott Vanderhoef said he believes Indian Point should be closed because of the potential danger to the densely-populated area surrounding the plant in Buchanan.

Clarkstown town Supervisor Alex Gromack has proposed changes in governmental responsibility for nuclear power oversight and supports Gov. Cuomo's call for a new safety study of Indian Point.

In a letter to President Obama, Gromack said that as the nuclear disaster in Fukushima, Japan continues to unfold, "a major ongoing problem is lack of confidence as to accuracy and timeliness of information nuclear disaster, from both the nuclear industry and the government."

Gromack noted that, "During the Three Mile Island nuclear "event"....it was not until President Carter visited the plant himself that the true state of events was had and correct decisions were made.

Gromack wants a federal employee to be stationed at each of the nation's 104 nuclear plants, who would, in "an 'event' report directly to the Secretary of Energy and so that the President would have first hand information relayed by a cabinet member."

In letters to Members of Congress Eliot Engel and Nita Lowey, Gromack drew a comparison between the Indian Point Nuclear Plant and the nuclear plant at Shoreham in Suffolk County, which was closed because there was no way to evacuate the surrounding area.

Editor's Note: The hearing was originally set for Thursday, but has been changed to May 12 because of scheduling conflicts, according to Carlucci's office.

## **Indian Point Opponents: How Many Lives Is The Plant's Energy Worth? (YP)**

By Liz Giegerich

Yorktown Patch, April 13, 2011

Megumi Tanifugi flew from Japan to the United States just four days ago to take part in a Peace Walk to raise awareness about the dangers of nuclear energy.

"You never know what is going to happen," said the slight 31-year-old. "Everyone told us we would be okay—that the plant was safe. I want Americans to think whether they really want to risk the dangers of nuclear power plants."

Indian Point Safe Energy Coalition (IPSEC) hosted a community forum Monday in Greenburgh Town Hall to discuss the similarities between Indian Point and the Fukushima Daiichi Nuclear Power Station, which—after a devastating earthquake and tsunami in March—has released radiation causing mass evacuations of the land around the plant and concern over the safety of food and water.

Current plans require a 10-mile-radius evacuation around Indian Point if a meltdown were ever to occur; but some Westchester lawmakers are proposing the radius be increased to 50 miles.

"Six legislators have joined together to establish a 50-mile evacuation zone around Indian Point," said Joy Haber, legislative aide to Democrat MaryJane Shimsky. "Indian Point is the number-one public safety issue in the area."

Expert panelists invited to speak were doctors, officials, scientists and concerned citizens—but all had one thing in common: the desire to close Indian Point.

"There is no such thing as safe exposure to radiation," said Dr. Andrew Kenter, president of the New York Chapter of Physicians for Social Responsibility. "Doctors are asked to treat and fix people when they're broken; when we're unable to do that, we have to prevent those things from happening."

Former State Assemblyman Richard Brodsky said: "If there were to be a meltdown at Indian Point there would not be enough money in the world to save this community, this economy and the lives, health and safety of the people who live here."

John Armbruster has been studying earthquakes in the metropolitan area. "We are asking for a thorough, modern re-evaluation of the preparedness of Indian Point to the occurrence of earthquakes using up-to-date evaluation methods that were not available when Indian Point was originally licensed," he said.

Operating licenses for Indian Points' two units expire in 2013 and 2015. The state Department of Environmental Conservation declined last April to give Entergy—the plant's operating company—the water quality certification it needs for relicensing. But the federal Nuclear Regulatory Commission (NRC), whose approval is also required, recently said that no environmental impact exists to prevent the power plant from getting relicensed for another 20 years.

"You have to be suspicious of what you hear from the NRC," cautioned Mark Jacobs, co-founder of IPSEC. "Their job is both to promote and regulate nuclear energy. Obviously, both can't be done."

According to Marilyn Elie, co-founder of the Westchester Citizens Awareness Network, only five percent of energy in the Hudson Valley is generated from nuclear power from Indian Point.

"We know that Indian Point and Fukushima had different reactors and were on different ground," Elie said. "But what they share are regulators who feel they can predict and plan for everything. What we have to ask is how many lives is that five percent of energy worth?"

In the wake of the earthquake, tsunami and nuclear disaster in Japan, a group of peace walkers walked about 15 miles from Peekskill to Yorktown along Route 202 Monday. They plan to reach Yankee nuclear plant in Vermont by April 26, the 25th anniversary of the Chernobyl disaster.

They hoped to raise awareness of the dangers of nuclear energy call for eco-friendly alternatives. They suggest solar, geo, and hydro power electricity. They are also walking in solidarity with those affected by the disaster and in an effort to close Indian Point and the Vermont Yankee Nuclear Power Plant in Vermont.

## Hudson River Clean Up, Indian Point Concerns Addressed By Riverkeeper Rep In Briarcliff (PPTCH)

By Sharon Pickett

Pleasantville Patch, April 13, 2011

Emily Griffin, outreach and merchandise coordinator for the Ossining-based Riverkeeper organization, spoke to a group at the Briarcliff Manor Public Library recently.

Accompanying her was the exhibit "A Hudson River Journey: 1609-2109." This exhibit, containing original artwork, historic artifacts, maps and digital media, tells the history of stewardship inspired by the Hudson River, and the challenges and opportunities facing today's river stewards. It was produced by Riverkeeper in honor of the 400th anniversary of Henry Hudson's voyage to our shores.

The exhibit can be viewed on the upper floor of the library and will be on display until April 30.

According to Griffin, "Riverkeeper is New York's number one clean water advocate."

Riverkeeper began in 1966 as the Hudson River Fishermen's Association, an organization of commercial and recreational anglers who saw the degradation that was occurring in other regions of the river and were determined to prevent the same from happening here.

Said Griffin, "Riverkeeper has since morphed into a membership-based organization dedicated to protecting the integrity of the Hudson River and its tributaries, safeguarding the sources of drinking water for the lower Hudson Valley and New York City and developing alternatives to the Indian Point nuclear plant."

"Riverkeeper was instrumental in demanding that General Electric remove the highly toxic PCBs that the company dumped in the upper reaches of the river decades ago," she said. "G.E. has completed phase one of the cleanup and we'll be watching them very closely to make sure the ensuing cleanup proceeds on schedule."

"We have also engaged in a 'Swimmable River' campaign that monitors and reports on water quality. The public is allowed to view the results and make informed decisions about their contact with the river," added Griffin.

Another issue being closely watched by Riverkeeper is the process of Hydraulic Fracturing that is being used to extract natural gas from underground shale. The process involves injecting water, sand and potentially dangerous chemicals at an extremely high pressure to release the gas.

"In New York State, this gas rich shale—the Marcellus Shale—is located in the Catskill region in the Catskill/Delaware watershed, the source of drinking water for half of the state's population," said Griffin. "We feel that there are too many risks and too many unanswered questions associated with this method of gas drilling to allow it to occur here. We are blessed with the highest quality drinking water and to put that source in jeopardy would be foolish and dangerous."

Another issue of great concern to Riverkeeper is that of Indian Point.

"As evidenced by the recent earthquake and ensuing tsunami in Japan, no nuclear plant is safe. Indian Point sits on the convergence of two fault lines. Scientists from Columbia University suggest that an earthquake of 7.0 magnitude is 'quite possible.' Indian Point is built to withstand a quake of 6.1 magnitude," advised Griffin.

Even without an earthquake, she said, "There exists the danger of disposal of spent fuel, an inadequate evacuation plan and the serious damage being done to the river's rich ecosystem by the release of cooling water."

In closing, Griffin said, "But I am optimistic! The Hudson is cleaner than it has been in a century, people have started to understand and appreciate the natural treasure that flows here and we know that there are feasible alternatives to nuclear power."

## The Nor'easter: Nuclear Power's Environmental Mess (EPOCH)

### Nuclear Power's Environmental Mess

By Ben Chasteen

Epoch Times, April 13, 2011

**FAULTY LOCATION:** The Indian Point Nuclear Power Plant on the banks of the Hudson River in Buchanan, NY. The Indian Point station, comprised of two operating nuclear reactors, sits atop the Ramapo fault line. (Don Emmert/Getty Images )

There is no doubt in my mind that reducing our carbon footprint by cutting carbon emissions is a good thing to do. Carbon pollutes the air we breathe, giving people asthma and noticeably reducing the quality of life around areas of high emissions, like cities.

But, is our human civilization doomed to be destroyed by rising temperatures caused by our creation of this greenhouse gas? It seems unlikely, especially considering that greenhouse gas already naturally exists in far larger quantities on our planet.

Temperatures seem to be rising, but that may very well be a separate issue.

What is certain is that the doomsday rhetoric surrounding carbon emissions has become so disproportionately bloated that even more pressing environmental issues than air pollution have slipped off the radar.

I've written about the danger to our water supply presented by the gas industry's use of hydraulic fracturing, but now, probably worst of them all, the environmental crisis caused by nuclear energy is now vividly unfolding in Japan.

Nuclear energy is a mysterious thing to a lot of people. Politicians love it because it creates very little carbon emissions. Some even call it "clean energy" for that reason.

What is really going on inside nuclear power plants? Basically, they are tearing apart the fabric of material existence.

They split atoms apart in uranium, which makes it extremely hot, heating water and creating steam power that turns turbines similar to how burning coal does. The turning turbines supply the electricity that flows into the light bulb as you flick a switch. But, unlike coal that stops burning, the splitting of atoms continues, essentially burning through the composition of matter itself and not stopping for thousands of years.

Meanwhile everything that comes into contact with the rods gets radiation spread to it, which in turn spreads radiation and leads to massive stockpiles of completely unusable spent fuel and equipment.

In human beings, too much radiation leads to cancer and kills. The Radiation and Public Health Project published a study in 2009 showing the rates of thyroid cancer surrounding the Indian Point nuclear plant in New York to be 66 percent higher than the national average. A sharp spike occurred in the early 1970s when the plant opened. Airborne radioactive materials from nuclear plants is the only known major cause of the disease, according to the study.

The Indian Point nuclear plant is only about 30 miles from where I live and only about 40 miles from Manhattan. The United States Nuclear Regulatory Commission (NRC) has told people within 50 miles of the nuclear crisis in Fukushima, Japan, to evacuate the area.

Worse yet, studies have found that two different earthquake fault lines cross just north of Indian Point, leading the NRC to put it at the top of a list of US plants at "seismic risk." An earthquake in the New York City area may sound farfetched, but a leading scientist at Columbia University, Won-Young Kim, just said in February that the city is overdue for a large earthquake on a roughly 100-year cycle.

Even if the earthquake hits our children and not us, there is immediately no good place to put Indian Point's highly-radioactive spent fuel since its storage areas are already filled with spent fuel rods from the last 40 years of operation. The spent fuel is also leaking radioactive water into the ground and the Hudson River, according to Riverkeeper, a clean water advocate.

What does it all add up to? The "Three Mile Island" accident in Pennsylvania in 1979, the nuclear crisis at Chernobyl, Ukraine, in 1986, the Fukushima nuclear crisis in 2011; The pieces of a puzzle far more real and frightening than climate change seem to already be on the table. Unfortunately, they also seem to be far more ignored.[Evan.mantyk@epochtimes.com](mailto:Evan.mantyk@epochtimes.com)

## Missouri Senate To Debate Nuclear Bill Today (JCNT)

By Bob Watson

Jefferson City News Tribune, April 13, 2011

Senate leaders expect to begin debating today the bill that would let a Missouri utility company charge its customers for the costs of seeking and winning a US Nuclear Regulatory Commission early site permit.

Ameren Missouri and a statewide consortium of commercial, cooperative and municipal electric utilities support the idea.

Winning the permit would show that the Callaway Nuclear Plant site would be a suitable location for the construction of a second reactor, nearly 30 years after the first one began operating.

"We're looking forward to getting it on the floor and having a full debate on it," freshman Sen. Mike Kehoe, R-Jefferson City, said Monday evening. "We want to make sure that no kind of parliamentary procedures prohibit it from coming to a vote."

## Poll: Utilities, Not Consumers Should Pay For Nuclear Plant (STLBIZ)

By Kelsey Volkman

St. Louis Business Journal, April 13, 2011

A new poll released Tuesday shows that 77 percent of Missouri voters think that energy companies — rather than consumers — should pay for the costs of developing a new nuclear power plant.

The Fair Energy Rate Action Fund, which represents some of Ameren's biggest customers, commissioned the poll. Missouri senators are expected to debate a bill this week about whether to allow Ameren and other utilities to pass on to customers the \$45 million cost of a site permit for a new nuclear plant in Callaway County.

According to the poll, 73 percent of Missouri voters agree that keeping electric bills low is more important than developing nuclear power.

Both the new FERA survey and one released last month by nuclear bill supporters show that Missourians overall support nuclear energy.

The Fair Energy Rate Action Fund represents several of Missouri's largest employers, including Anheuser-Busch, Ford Motor Co. and Noranda Aluminum. [kvolkmann@bizjournals.com](mailto:kvolkmann@bizjournals.com)

## HS Aldermen Publicly Support 'expansion Of A Second Nuclear Plant In Callaway' (FULSUN)

By Leah Freeze

Fulton (MO) Sun, April 13, 2011

What could have turned into a lengthy discussion about a proposed resolution was cut short by quick thinking at the Holts Summit Board of Aldermen meeting Monday.

The resolution expressed support for the construction of a second nuclear plant in Callaway County, as well as support for legislation before the General Assembly that would allow a Missouri utility company to charge its customers for the costs of seeking and winning an early site permit, as well as funding for the Office of Public Counsel.

The board voted to remove the section of language addressing the proposed legislation. The new resolution simply states the board publicly supports the expansion of a second nuclear plant in Callaway County.

"It sounds less political. It doesn't sound offensive in any sort of political way," said 1st Ward Alderman Thomas Durham.

The resolution passed unanimously.

In other business, Stephen Lin with Allstate Consultants, the city's consulting firm, was present to answer questions about the approved sewer bond issue.

Residents with septic systems have a little more than a year to save up for the costs of connecting to the main sewer system.

It will cost about \$875 to clean a septic system, filled in, connected to the main line and inspected for quality assurance, said sewer department superintendent Keith Edwards.

He'd like to include a step-by-step process for connecting to the main line in the city's next newsletter.

Alderwoman Pamela Murray reported the city's first planting for the ramp beautification project at Highway 54 and Center Street will begin at 9 a.m. Saturday.

Volunteers are still needed. All volunteers will be provided a picnic lunch at the Hibernia Park pavilion near City Hall after the planting.

## Alternative Tax Proposal, While Lower, Would Still Double Millstone's Liability (NORBUL)

Norwich Bulletin, April 13, 2011

Millstone Nuclear Power Station would still be profitable if a \$33 million tax bill supported by Gov. Dannel P. Malloy becomes law, although it would double the plant's total tax bill, a Millstone spokesman said Tuesday.

He said it would become unprofitable if the \$335 million measure, contained in Senate Bill 1176, goes into effect.

"Is the number more palatable?" Ken Holt said, referring to the amount resulting from the Malloy-backed Senate Bill 1007. "Yes, it is. But we still object to it."

Holt's statement came Tuesday afternoon, hours after he initially said the power plant would stop producing electricity if the \$33 million tax bill became law. Holt later said he "overstepped his bounds" with that comment.

"It's a tax on production, not on revenue or profit. No other state in the country has it. It's unfair and we object strongly to it," Holt said.

That quote was included in a story posted on The Bulletin's website Tuesday.

Holt's initial statement surprised the Malloy administration. Communications Director Colleen Flanagan said she "appreciated the clarification" made by Millstone.

"The governor believes his proposal is reasonable and consistent with the concept of shared sacrifice," she said.

Virginia-based Dominion is not considering decommissioning Millstone. The company is considering a temporary shutdown "until economic conditions improve," Holt said.

Dominion has no obstacles to shutting Millstone because of financial hardship, Nuclear Regulatory Commission spokeswoman Diane Screni said Tuesday. No applications need be filed if Dominion wishes to shut down for even a prolonged period.

That would trigger a spike in Connecticut electricity rates, already the second highest in the country, Dominion executives predict.

A shutdown could trigger worker layoffs or furloughs, the company has said. Estimates of workforce reductions haven't been given. Dominion employs 1,080 people at Millstone with another 350 working there for other firms.

"It's a certainty that we would need less people to operate safely if we were shut down," Holt said.

The General Assembly's Finance, Revenue and Bonding Committee may take up the tax bills next week. Dominion hasn't been asked to testify before that panel.

"I believe the proceedings are closed, but if we're asked, we'd be happy to speak to the committee," Holt said.

About 100 people crowded Waterford Town Hall on Monday to listen to a presentation from Dominion executives.

## 2 Conn. Lawmakers Question Electricity Tax (NECN)

New England Cable News, April 13, 2011

State Sen. Andrea Stillman and Rep. Betsy Ritter have scheduled a news conference Wednesday to discuss the legislation. It would tax generators of electricity to provide relief for ratepayers, finance alternative energy and raise \$340 million in revenue — including \$332 million from Millstone nuclear plants.

Representatives of Dominion Resources Inc., which owns Millstone, will attend the news conference. Dominion strongly opposes the tax, saying it will raise prices for consumers and that the tax is discriminatory because it is applied to only a few energy sources.

Supporters of the proposed tax say it is structured in a way that it cannot be passed on to consumers.

## Dominion: No Ifs, Ands Or Buts, We Will Shut Down (WATRFPTC)

By Paul Petrone

Waterford (CT) Patch, April 13, 2011

There are two possible outcomes if Senate Bill 1176 is passed, Dominion Vice President of Government Affairs Dan Weekley said at a hearing in Waterford Town Hall on Monday night. Both increase electric rates dramatically, he said.

The first is that the \$335 million in new taxes will be passed on to ratepayers, thereby increasing rates, Weekley said. If that cannot be achieved, Millstone Power Station will be shut down, he said.

"I've been misquoted in the media suggesting this is a threat," he said. "This is not a threat, and we will not be shutting down. The state government will be shutting us down."

The announcement came at a hearing by Dominion to discuss both what the nuclear company has learned from the Japanese disaster and SB 1176. The event attracted around 100 members of the public, some strongly in favor of nuclear power and some strongly against.

Dominion is locked into contracts with companies years in the future for the cost of its energy. State legislators in favor of the bill have argued that since these costs are already fixed, Dominion will not be able to pass the additional taxes on to ratepayers.

If this new tax is imposed, Dominion will do everything it can to renegotiate these contracts and pass the new charge on, Weekley said. If that is not possible, Millstone will not produce any energy at all because it just isn't affordable, Weekley said.

All Millstone employees have been told of the potential shutdown, Weekley said. Half of the workforce could be laid off if that were to happen, J.W. "Bill" Sheehan, president of the State of Connecticut Nuclear Energy Advisory Council, said.

"I can't make it any simpler," Weekley said. "If Dominion cannot pass these rates on, the Millstone power facility can no longer operate."

If Millstone Power Station produced no energy, it will not pay any of the tax, since the tax is only on the energy it produces. Also, the company would likely argue that its property assessment should be reduced significantly, greatly reducing its property taxes, Town Assessor Michael Bekech said.

The tax adds a 2 cents per kilowatt hour on nuclear energy, costing Dominion an additional \$335 million per year. Millstone Power Station is the only nuclear power plant in Connecticut, so Dominion would be the only company paying the tax.

Governor Dannel Malloy has not commented either way on the bill, Weekley said. He has proposed his own \$32 million on Millstone, Weekley said.

#### Booed Off Stage

The event provided an opportunity for people against nuclear power to voice their displeasure with Millstone Power Station and Dominion. The protestors were not well-received by the rest of the crowd.

During the question and answer period after Dominion's presentation, Nancy Burton, president of the Connecticut Coalition Against Millstone, began a speech on the dangers of nuclear energy. She showed several posters of Japan's destroyed nuclear power plants, and made allegations that Millstone was casting radiation into Mystic and causing cancer.

Before she could finish her speech, the public began to grow restless. Many stood up and yelled at Burton, demanding she ask one question and let everybody else talk.

Later in the question and answer period, Burton stood up again to speak. Again she made allegations that Dominion was cutting corners and misinforming the public, and that the media was backing the power company.

This time, before she could finish her speech, boos rained down. She tried to talk over the jeers, but the public just booed louder until she eventually returned to her seat.

#### What Dominion Learned From Japan

The first part of the presentation was spent discussing what Dominion learned from the Japan tragedy. The power company found the root cause of the problems with the Japanese power plants and learned from them, Millstone Site Vice President Skip Jordan said.

The problem in Japan was that power died, so the reactors could no longer be cooled, Jordan said.

Water needs to be pumped into reactors to cool boiling water generators like the ones in Japan, Jordan said. These pumps need electricity to run.

When the earthquake came, it knocked out power to the power plants and the water pumps. The pumps ran off of diesel generators, but those failed in the ensuing tsunami, Jordan said.

Then, the pumps began to run off of batteries, he said. But eventually those batteries died, and the reactors began to heat up and create problems, Jordan said.

Only Millstone 1, which is decommissioned, is a boiling water generator. The other two reactors are pressurized water generators.

Still, there is danger if power were to be lost at the plant, Jordan said. To compensate, generators, batteries and lines from several different power generators are installed, Jordan said.

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## Unistar Ineligible To Build Third Nuclear Power Reactor (POWGENWLD)

Power-Gen Worldwide, April 13, 2011

The Nuclear Regulatory Commission said April 8 that UniStar Nuclear Energy is not eligible to build a third reactor at Calvert Cliffs because it is not a US-owned company. The NRC also said it would continue to process the application. UniStar said it believes it will have a US partner for the proposed project.

In October 2010 Constellation Energy pulled out of negotiations for a \$7.5 billion federal loan guarantee to build a nuclear reactor at the site with its French partner Electricite de France (EDF).

Federal law prohibits complete ownership or control of a US nuclear plant by a foreign entity. UniStar is owned by French energy group EDF. The NRC said a license would not be issued until ownership requirements were met.

"While EDF and UniStar disagree with the Nuclear Regulatory Commission's conclusion regarding UniStar's present governance structure, we are pleased that the NRC will continue to review all other aspects of our pending application," an EDF spokesperson said. "This allows the project to continue moving forward as anticipated."

UniStar said it will continue to work with the NRC to resolve the governance issue. The company has not said when it might find a US partner.

## **Coal Is More Dangerous Than Nuclear (WSJ)**

**But don't tell that to Greens getting elected to office on post-Fukushima fear-mongering.**

By Holman W. Jenkins, Jr., Opinion

Wall Street Journal, April 13, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **More Nails In Yucca Coffin (LVSRJ)**

By Steve Tetreault

Las Vegas Review-Journal, April 13, 2011

Full-text stories from this source currently cannot be included in this document. You may, however, click the link above to access the story.

## **Locally Based Concrete Pump Arrives In Japan (AUGC)**

By Rob Pavey, Staff Writer

Augusta Chronicle, April 13, 2011

A 190,000-pound concrete pump formerly deployed at Savannah River Site arrived safely in Tokyo late Monday and was escorted to Chiba, Japan, where engineers were being trained to use the device at the tsunami-damaged Fukushima Daiichi nuclear plant.

The pump, made by Putzmeister, of Germany, is the largest device of its kind in the world and was in use by Augusta-based Ashmore Concrete Contractors at the construction site of the National Nuclear Security Administration's mixed-oxide fuel plant in South Carolina.

The pump was airlifted from Hartsfield-Jackson Atlanta International Airport aboard a mammoth Antonov cargo plane, which made refueling stops in Seattle; Anchorage, Alaska; and Magadan, Russia, before arriving in Tokyo, said Kelly Blickle, a spokeswoman at Putzmeister America's office in Wisconsin.

"It just arrived, late last night," she said. "Because it was such a heavy load, the plane had to refuel about every five hours."

A similar pump operated by Associated Concrete Pumping, of Sacramento, Calif., also was flown to Japan, and both were moved from the airport to Putzmeister's office in Chiba, where Tokyo Electric Power Co. workers are being trained to use them.

The pumps are used to pour concrete onto bridges and high-rises and can pump water. Several smaller Putzmeister pumps are already at Fukushima.

Company officials were unsure when the pumps would be moved to the damaged reactors.

Putzmeister has experience working on nuclear power plants in crisis and other disasters. After the Chernobyl disaster in 1986, Putzmeister sent 11 boom pumps to help place the concrete that halted the release of radiation.

Japanese officials plan to use the pumps to focus streams of cooling water, but they are capable of pouring concrete if such an option becomes necessary.

Both 70-meter Putzmeister pumps were on long-term leases to their operators, which -- at the company's request -- volunteered to relinquish them to help with the Japan crisis.

## **Editorial: Quake Risk Bolsters Need For Y-12 Project (KNOXNS)**

Knoxville News Sentinel (TN), April 13, 2011

The vulnerability to an earthquake of the primary uranium processing center at the Y-12 nuclear weapons plant in Oak Ridge underscores the need for a new facility built to modern seismic standards.

National Nuclear Security Administration spokesman Steven Wyatt recently told the News Sentinel that "a major earthquake could result in significant structural damage and process failure" at the plant's 9212 complex.

In light of the massive earthquake off the coast of Japan that sent a tsunami crashing into a nuclear power plant, resulting in catastrophic damage, Wyatt's statement could be seen as a warning that a proposed \$6.5 billion uranium processing facility is needed.

Recent technical reports haven't been released to the public, but a 1987 report identified more than 500 plausible scenarios for major earthquake damage at the 9212 complex that would lead to serious injury or death of personnel, loss of plant capability or a nuclear chain reaction. Twenty of the top 50 scenarios indicate serious injuries or deaths would occur.

Wyatt said Y-12's seismic analyses are based on an earthquake with a range of 0.006 to 0.30 on the Modified Mercalli Intensity Scale, which is roughly equal to between 5.0 and 6.0 on the Richter Scale. The Japan earthquake registered 9.0 on the Richter Scale.

The chance of an earthquake in East Tennessee even approaching the power of the Japan earthquake is unlikely, but the 1987 Y-12 report indicated parts of the sprawling 9212 complex would suffer damage during an earthquake of much lower strength.

The 9212 complex is a network of interconnected buildings, some dating back to the Manhattan Project during World War II and others added on throughout the Cold War. Work in the complex includes complex chemical processes for recycling highly enriched uranium used in nuclear weapons and shops for fabricating uranium metal.

The aging facility is "structurally unsound" and "unsuitable for protracted use" in the nuclear weapons production pipeline, according to a 2010 NNSA letter to Congress.

The US Department of Energy wants to replace 9212 with a state-of-the-art complex called the Uranium Processing Facility. The UPF carries a big price tag and wouldn't be fully operational until 2024 if construction begins next year.

Last week's near-shutdown of the federal government and looming battles over deficit spending and the nation's long-term debt put all federal expenditures at risk. The UPF project should not be one of those heading to the chopping block.

Y-12 is integral to the building and maintenance of the United States' nuclear weapons arsenal. The UPF is central to the plant's modernization plans, and the fragile condition of the 9212 complex should serve to move its construction higher on the national defense priority list.

Tennessee's congressional delegation must impress upon their colleagues the importance of the UPF to national security. A delay in the UPF construction timeline would extend the life of the vulnerable 9212 complex and increase the already considerable building costs. Despite the cost-cutting efforts in Washington, Congress should commit the necessary resources to build the UPF.

## **Global Alliance Needed In Fighting Cybercrime, Lawmakers Told (BLOOM)**

By Kelly Riddell

Bloomberg News, April 13, 2011

The US should cooperate more with other countries on cross-border investigations of cybercrime to bolster national security and protect consumers from identity theft, witnesses told lawmakers during a Senate hearing today.

"It is unlikely that we can adequately secure the US portion of cyberspace without international engagement," John Savage, a computer science professor at Brown University in Providence, Rhode Island, said in testimony before the Senate Committee of the Judiciary Subcommittee on Crime and Terrorism.

While cybercriminals operate in a world without borders, the law enforcement community does not, limiting the enforceable penalties on cybercrime, said Pablo Martinez, a deputy special agent in charge with the Secret Service's criminal investigation division.

International cooperation was vital in investigating the network intrusion of Heartland Payment Systems Inc., the fifth-largest payments processor in the US, where 130 million credit card accounts were compromised two years ago, Martinez said.

In January, top White House cybersecurity official Howard Schmidt said he planned a diplomatic effort to win more cooperation on cybercrime issues. Some governments actively engage in cybercrimes or turn a "blind eye" to the practice, similar to nations condoning money-laundering schemes in the 1980s, Schmidt said.

The US plans to urge more nations to sign a 10-year-old treaty called the Cybercrime Convention that calls for cooperation in probing crimes committed via the Internet and other computer networks, Schmidt said in January. These include crimes that deal with infringements of copyright, computer-related fraud, child pornography and violations of network security, according to the treaty website.

The treaty has been ratified by 30 countries, including the US and 29 European nations. Signatories including the United Kingdom, Canada and Turkey have yet to ratify the law, according to the treaty website. China and Russia are among nations that have yet to sign the treaty.

## **IN THE BLOGS:**

### **Keeping Score On Nuclear Accidents (NYT)**

By Matthew L. Wald

New York Times, April 13, 2011

Now that Japan has raised its assessment of the Fukushima accident to a 7 on the International Atomic Energy Agency's scale, equal to the 1986 accident at Chernobyl, it may be time to review past accidents. Thomas B. Cochran, a physicist at the

Natural Resources Defense Council, just did that in preparing to testify on Tuesday afternoon before the Senate Environment and Public Works Committee.

Some of the incidents that he lists are technically not meltdowns but rather "core damage accidents." That term is used when an intact core holds in nearly all of the radioactive materials that are created by a reactor as it splits atoms of uranium and plutonium, leaving behind fragment atoms of materials like cesium, strontium and iodine, which seek to return to stability by giving off radiation. If the core melts, as it did at Fukushima; or explodes, as it did at Chernobyl, that radioactive material is released.

The seven-level scale for the seriousness of the accidents runs from "anomaly," something that would probably not be mentioned in a newspaper, to "incident," which might be, to an event with major off-site consequences for health and the environment, like Chernobyl or Fukushima. Some do not involve reactors: Japan, for example, experienced an accident in 1999 at a plant that processes plutonium fuel. The plutonium was stored in a liquid in a vessel that was too large, inadvertently creating a "critical mass," an amount capable of sustaining a chain reaction. The chain reaction created a shower of radiation and heat, blowing apart the critical mass, but as it cooled, it re-assembled. That rated a level 4.

In fact, the International Atomic Energy Agency pointed out a few hours after Japan announced the 7 rating on Tuesday, the 7 applies to reactors 1, 2 and 3 at Fukushima Daiichi. The accident at Unit 4 is not in the reactor but in the spent fuel pool and is still rated at 5.

Some of the events on this list predate the scale and do not appear to have been rated. They are listed by Mr. Cochran in chronological order.

1. Sodium Reactor Experiment (SER)

Location: Santa Susana Field Laboratory, California, United States

Reactor type: sodium-cooled graphite-moderated thermal power reactor

Power: 20 MWt; 6.5 MWe

History: initial criticality: April 25, 1957; first produced electricity in July 1957; operated two years, partial core meltdown accident from July 12 to 26, 1959, resulting in melting of as much as one-third of the fuel; shutdown July 26, 1959 (appears to have been operated for several days with its core partially melted); converted to HEU-Th fuel; second core operations began September 1960; permanently shutdown in February 1964.

2. Stationary Low-Power Reactor No. 1 (SL-1)

Location: National Reactor Testing Station (now Idaho National Laboratory), United States

Reactor type: experimental, gas-cooled, water-moderated

Power: 3.3 MWt; 300 kWe

History: initial criticality March 1961; prompt criticality accident Jan. 3, 1961; shut down May 1964

3. Enrico Fermi Unit 1 Reactor

Location: Newport, Lagoona Beach, Frenchtown Township, Monroe County, Mich., United States

Reactor Type: Liquid Metal Fast Breeder Reactor (LMFBR)

Power: 200 MWt; 65 MWe (gross); 61 MWe (net)

History: initial criticality Aug. 23, 1963; commercial operations began August 1966; partial fuel melt accident Oct. 5, 1966, two of the 105 fuel assemblies melted, but no contamination was recorded outside the containment vessel; closed November 1972

4. Chapelcross Unit 2 Nuclear Power Plant

Location: Annan, Dumfeshire, Scotland, United Kingdom

Reactor Type: gas-cooled, graphite moderated; Magnox

Power: originally 180 MWt, up-rated progressively to 265 MWt, originally 23 MWe (gross) progressively up-rated to 60 MWe (gross); 50 MWe (net)

History: start-up May 1959; while under evaluation for the commercial reactor program, experienced a partial blockage in a single fuel channel May 1967, contamination was limited to one region of the core; shut down June 29, 2004

5. Saint-Laurent A-1 Nuclear Power Plant

Location: St. Laurent-Nouan, Loir-et-Cher, Centre, France

Reactor Type: gas-cooled, graphite moderated

Power: 1570 MWt; 405 MWe (gross), 390 MWe (net)

History: grid connection March 14, 1969; commercial operation June 1969; 50 kg of uranium began to melt Oct. 17, 1969; permanently shut down May 27, 1992

6. Saint-Laurent A-2 Nuclear Power Plant

Location: St. Laurent-Nouan, Loir-et-Cher, France

Reactor Type: gas-cooled, graphite moderated  
Power: 1690 MWt; 465 MWe (gross) [uprated to 530 MWe (gross)], 450 MWe (net)  
History: started November 1970; grid connection Aug. 9, 1971; commercial operation November 1971; heat excursion causing some fuel melting March 13, 1980; permanently shut down May 27, 1992

7. Three Mile Island Unit 2 Nuclear Power Plant  
Location: Londonderry Township; Dauphin County, Pa., United States  
Reactor Type: Pressurized Water Reactor (PWR)  
Power: 2,568 MWt, 808 MWe (gross); 776 MWe (net)  
History: initial criticality December 1978; partial core melt accident March 1979; decommissioned 1979

8. Chernobyl Unit 4 Nuclear Power Plant  
Location: Pripyat, Ukraine, Soviet Union (now Ukraine)  
Reactor Type: RBMK-1000 (graphite-moderated water-cooled)  
Power: 3,200 MWt; 1,000 MWe (gross); 925 MWe (net)  
History: destroyed in full-core melt accident April 26, 1986

9. Greifswald Unit 5 (KGR-5) Nuclear Power Plant  
Location: Lubmin, East Germany (now Germany)  
Reactor Type: VVER-440, Model V-230, Pressurized Water Reactor (PWR)  
Power: 1,375 MWt; 440 MWe (gross); 408 MWe (net)  
History: grid connection April 24, 1989; commercial operation Nov. 1, 1989; near core melt with 10 fuel elements damaged Dec. 7, 1975; permanent shutdown Nov. 24, 1989

10. Fukushima Daiichi Unit 1 Nuclear Power Plant  
Location: Ohkuma, Fukushima Prefecture, Japan  
Reactor Type: Boiling Water Reactor (BWR), GE BWR/2, Mark 1 Containment  
Power: 1,380 MWt; 450 MWe (gross); 439 MWe (net)  
History: initial criticality Oct. 10, 1970; grid connection Nov. 17, 1970; commercial operation March 26, 1971; partial core meltdown after earthquake on March 11, 2011

11. Fukushima Daiichi Unit 2 Nuclear Power Plant  
Location: Ohkuma, Fukushima Prefecture, Japan  
Reactor Type: Boiling Water Reactor (BWR), TOS1 [GE BWR/4], Mark 1 Containment  
Power: 2,381 MWt; 794 MWe (gross); 760 MWe (net)  
History: initial criticality May 10, 1973; grid connection Dec. 24, 1973; commercial operation July 18, 1974; partial core meltdown after earthquake on March 11, 2011

12. Fukushima Daiichi Unit 3 Nuclear Power Plant  
Location: Ohkuma, Fukushima Prefecture, Japan  
Reactor Type: Boiling Water Reactor (BWR), TOS1 [GE BWR/4], Mark 1 Containment  
Power: 2,381 MWt; 794 MWe (gross); 760 MWe (net)  
History: initial criticality Jan. 28, 1978; grid connection Feb. 24, 1978; commercial operation Oct. 12, 1978; partial core meltdown after earthquake on March 11, 2011

## **INTERNATIONAL NUCLEAR NEWS:**

### **Japan Vows Emphasis On Caution (WSJ)**

**Aftershocks Underline Vulnerability of Plant; Prime Minister Defends Government's Handling of Crisis**

By Mitsuru Obe And Toko Sekiguchi

Wall Street Journal, April 13, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

### **Japanese Officials On Defensive As Nuclear Alert Level Rises (NYT)**

By Keith Bradsher, Hiroko Tabuchi And Andrew Pollack

New York Times, April 13, 2011

TOKYO — Japanese officials struggled through the day on Tuesday to explain why it had taken them a month to disclose large-scale releases of radioactive material in mid-March at a crippled nuclear power plant, as the government and an electric utility disagreed on the extent of continuing problems there.

The government announced Tuesday morning that it had raised its rating of the severity of the accident at the Fukushima Daiichi Nuclear Power Station to 7, the worst on an international scale, from 5. Officials said that the reactor had released one-tenth as much radioactive material as the Chernobyl accident in 1986, but still qualified as a 7 according to a complex formula devised by the International Atomic Energy Agency.

Japan's new assessment was based largely on computer models showing very heavy emissions of radioactive iodine and cesium from March 14 to 16, just after the earthquake and tsunami rendered the plant's emergency cooling system inoperative. The nearly monthlong delay in acknowledging the extent of these emissions is a fresh example of confused data and analysis from the Japanese, and put the authorities on the defensive about whether they have delayed or blocked the release of information to avoid alarming the public.

Seiji Shiroya, a commissioner of Japan's Nuclear Safety Commission, an independent government panel that oversees the country's nuclear industry, said that the government had delayed issuing data on the extent of the radiation releases because of concern that the margins of error had been large in initial computer models. But he also suggested a public policy reason for having kept quiet.

"Some foreigners fled the country even when there appeared to be little risk," he said. "If we immediately decided to label the situation as Level 7, we could have triggered a panicked reaction."

The Japanese media, which has a reputation for passivity but has become more aggressive in response to public unhappiness about the nuclear accident, questioned government leaders through the day about what the government knew about the accident and when it knew it.

Prime Minister Naoto Kan gave a nationally televised speech and press conference in the early evening to call for national rebuilding, but ended up defending his government's handling of information about the accident.

"What I can say for the information I obtained — of course the government is very large, so I don't have all the information — is that no information was ever suppressed or hidden after the accident," he said. "There are various ways of looking at this, and I know there are opinions saying that information could have been disclosed faster. However, as the head of the government, I never hid any information because it was inconvenient for us."

Junichi Matsumoto, a senior nuclear power executive from the plant's operator, the Tokyo Electric Power Company, fanned public fears about radiation when he said at a separate news conference on Tuesday morning that the radiation release from Daiichi could, in time, surpass levels seen in 1986.

"The radiation leak has not stopped completely, and our concern is that it could eventually exceed Chernobyl," Mr. Matsumoto said.

But Hidehiko Nishiyama, deputy director general of Japan's nuclear regulator, the Nuclear and Industrial Safety Agency, said in an interview on Tuesday evening that he did not know how the company had come up with its estimate. "I cannot understand their position," he said.

He speculated that Tokyo Electric was being "prudent and thinking about the worst-case scenario," adding, "I think they don't want to be seen as optimistic."

Mr. Nishiyama said that his agency did not expect another big escape of radiation from Daiichi, saying that "almost all" the material that is going to escape has already come out. He said that the rate of radiation release had peaked in the early days after the March 11 earthquake, and that the rate of radiation had dropped by 90 percent since then.

The peak release in emissions of radioactive particles took place following hydrogen explosions at three reactors, as technicians desperately tried to pump in seawater to keep the uranium fuel rods cool, and bled radioactive gas from the reactors in order to make room for the seawater.

Mr. Nishiyama took pains to say — and other nuclear experts agreed — that the Japanese accident posed fewer health risks than Chernobyl.

In the Soviet-era accident at Chernobyl, a burning graphite reactor pushed radioactive particles high into the atmosphere and downwind across Europe. The Japanese accident has mostly produced radioactive liquid runoff into the ocean and low-altitude radioactive particles that have frequently blown out into the ocean and fallen into the water as well.

The Nuclear Safety Commission ordered the use of a computer model called Speedi — short for System for Prediction of Environmental Emergency Dose Information — to calculate the amount of radiation released from the plant, said Mr. Shiroya, the commissioner on the safety agency, who is also the former director of the Research Reactor Institute at Kyoto University.

To use the model, scientists enter radiation measurements from various distances from a nuclear accident. The model produces an estimate of the radioactive material escaping at the source of the accident.

Speaking at a news conference, Mr. Shiroya said those calculations were complex, and it was only recently that researchers had been able to narrow down the amount to within an acceptable margin of error.

"At first, the calculations could have been off by digits," Mr. Shiroya said. "It was only when there was certainty that the margin of error was within two to three times that we made an announcement," he said, later adding, "I do not think that there was any delay."

Even so, some people involved in the energy industry have been hearing about the results of the Speedi calculations for days. A senior executive said in a telephone interview on April 4 that he had been told that the Speedi model suggested that radioactive materials escaping the Daiichi complex were much higher than Japanese officials had publicly acknowledged, and perhaps as high as half of the releases from Chernobyl.

Mr. Nishiyama and Mr. Shiroya said separately on Tuesday that that estimate had been wrong. But their two government agencies also released different figures for the level of emissions so far, and there appeared to be a degree of supposition embedded in the numbers.

Mr. Nishiyama's agency said that emissions totaled 370,000 terabecquerels; a terabecquerel is a trillion becquerels. The agency's figure is 20 percent of the former Soviet Union's official estimate of emissions from Chernobyl.

But most experts say that the true emissions from Chernobyl were 1.5 to 2.5 times as high as the Soviet Union acknowledged. Mr. Nishiyama's agency appears to have assumed that true emissions from Chernobyl were twice the official figure, and so calculated that the current nuclear accident had released 10 percent as much as Chernobyl.

Mr. Nishiyama's agency is part of the Ministry of Economy, Trade and Industry, which promotes the use of nuclear power. Mr. Shiroya's commission, which is independent from nuclear power operators and their equipment providers, issued an estimate that emissions totaled 630,000 terabecquerels.

Although Mr. Shiroya did not provide a comparison to Chernobyl, that works out to 34 percent of the official Soviet estimate of emissions and 17 percent of the unofficial higher estimate.

Mr. Shiroya also said there was a threefold margin for error involved. The outside estimates of total releases would range from as low as 6 percent to as high as 51 percent of the unofficial totals from Chernobyl.

## No Change In Health Risks At Japan Nuclear Plant: WHO (AFP)

AFP, April 13, 2011

GENEVA — The World Health Organisation said Tuesday that health risks outside the exclusion zone of the failed Fukushima Daiichi nuclear plant have not augmented, even though Japanese authorities upgraded the emergency.

"The risk assessment for health hasn't changed outside the 40 kilometres zone... outside the 40 kilometres zone we do not believe that the risk is greater today than it was yesterday," said Gregory Hartl, spokesman for the UN health agency.

Hartl also stressed that there is no one left in the exclusion zone, and that measures taken "appears to be enough" for the moment.

Japan upgraded its month-old nuclear emergency to a maximum seven on an international scale of atomic crises Tuesday, placing it on a par with the Chernobyl disaster a quarter-century ago.

The reassessment to a "major accident" with "widespread health and environmental effects" was based on the total radiation released, which officials said was one-tenth of the 1986 accident in the then Soviet Union.

## Japan Nuclear Accident Health Risk Still Small-WHO (REU)

By Stephanie Nebehay And Andrew Callus

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## Cumulative Radiation From Japan Plant Sparks Health Worries (CHIT)

By Tan Ee Lyn

Reuters, April 12, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## UPDATE 1-Hitachi Submits Plan To Decommission Fukushima Reactors -Nikkei (REU)

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **Hitachi Submits Plan To Decommission Japanese Nuclear Power Plant (POWGENWLD)**

Power-Gen Worldwide, April 13, 2011

Hitachi Ltd submitted a proposal for the long-term decommissioning of six crippled nuclear reactors at the Fukushima Daiichi power plant, according to the Nikkei business daily newspaper.

The five-stage plan was submitted to Tokyo Electric Power Co, which operates the Fukushima plant, the paper said. There was no word on how long each stage is expected to last.

Hitachi estimated it would take about 30 years to fully dismantle the reactor cores and buildings that were damaged in March after an earthquake and tsunami hit the country.

Earlier, Toshiba Corp. submitted a plan to decommission the reactors.

## **Areva Sends 20 Specialists To Help Tepco With Reactor Crisis (BLOOM)**

By Jim Snyder

Bloomberg News, April 13, 2011

Areva SA, the biggest supplier of nuclear fuel and services, sent 20 nuclear specialists to help handle the reactor crisis at Japan's Fukushima Dai-Ichi plant, the chief executive of the company's US subsidiary said.

Jacques Besnainou, who heads Areva Inc., said Tokyo Electric Power Co. asked for the assistance. The workers, including five from the US, are providing advice on how to manage spent nuclear fuel and shut down the plant.

"It's a small team but very highly specialized to assess the damage and to see how we can most rapidly deploy services to help for decontamination," he said in an interview after a speech in Washington. The US unit is based in Bethesda, Maryland. The parent company is based in Paris.

Areva's team in Japan will propose how best to clean and dismantle the facility, Besnainou said. Nuclear scientists and engineers from France and Germany joined the Americans in Japan. Areva has an office in Japan with about 100 employees.

US officials have said three reactors at Fukushima have suffered partial meltdowns and spent fuel rods were exposed to air, resulting in the release of radiation.

Besnainou, who spoke at an event on US energy policy sponsored by Areva, The New Republic and EnergyNOW!, a weekly television news program, said the US should continue to support the nuclear industry.

"Nuclear power still makes sense today in Japan and around the world," he said.

Besnainou said he was "begging" for a US policy for spent nuclear fuel. The used uranium is now stored in pools or in dry casks on site. The Obama administration stopped a program to build a permanent waste repository at Yucca Mountain, Nevada.

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## **Japan PM Urges No Panic After Government Raises Nuclear Crisis Severity To Chernobyl Level (WP/AP)**

Associated Press, April 13, 2011

TOKYO — Japan's prime minister is urging the public not to panic after the government boosted the severity level of the crisis at a tsunami-damaged nuclear plant to the highest rating — on par with the 1986 Chernobyl disaster.

Prime Minister Naoto Kan urged people in a televised address to focus on recovering from the country's disasters.

Kan said: "Right now, the situation of the nuclear reactors at the Fukushima plant has been stabilizing step by step. The amount of radiation leaks is on the decline," he said. "But we are not at the stage yet where we can let our guards down."

Japanese regulators said they raised the rating from 5 to 7 — the highest level on an international scale — after new assessments of radiation leaks from the Fukushima Dai-ichi plant.

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## **Japan Mulls Spinning Off Part Of Nuclear Operator: Report (NYT/REU)**

By Yoko Kubota And Kazunori Takada

Reuters, April 13, 2011

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## Kyushu Electric Shelves Plan To Build 3rd Nuclear Reactor In Kagoshima < Japan Today: Japan News And Discussion (JapanToday)

Japan Today, April 13, 2011

Kyushu Electric Power Co has frozen procedures to build a third reactor at its nuclear power plant in Kagoshima Prefecture in light of the country's quake-triggered nuclear disaster, a company official said Tuesday. The freeze could delay Kyushu Electric's plan to start building one of the country's largest reactors with the output capacity of 1.59 million kilowatts in 2014 and start generating power with it in 2019 at the Sendai plant in the city of Satsumasendai.

Following a request from Kagoshima Gov Yuichiro Ito, who had agreed to the project last year, Mamoru Dangami, vice president of the regional power supplier, notified the governor Monday that the firm will not apply for reclamation near the plant for the time being, according to the official.

As the crisis involving Tokyo Electric Power Co's Fukushima Daiichi nuclear power plant festers, Prime Minister Naoto Kan has expressed his readiness to review the country's basic policy of building at least 14 nuclear reactors by 2030.

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## Merkel Warms To Carbon Capture As Nuclear Policy Deadline Draws Nearer (BLOOM)

By Tony Czuczka And Nicholas Comfort

Bloomberg News, April 13, 2011

German Chancellor Angela Merkel's Cabinet is set to discuss steps to let utilities pump greenhouse gases underground as the government bids to shift energy policy away from nuclear power.

Ministers will decide on legislation to permit so-called carbon capture and storage, or CCS, when they meet in Berlin today for their regular weekly Cabinet meeting. German utilities have pressed for laws that would allow carbon-dioxide emissions from coal-fired power stations to be stored underground since at least November 2009.

Merkel's plan, which implements a European Union law, would help her plug a potential gap in the energy mix serving Europe's largest economy caused by a retreat from nuclear after the disaster in Japan. It would also give the four main utilities -- E.ON AG (EOAN), RWE AG (RWE), EnBW Energie Baden-Wuerttemberg AG (EBK) and Vattenfall AB -- some planning certainty for conventional power- plant investment, after they said the reversal might endanger energy security.

"Those people who oppose nuclear power will have to support other technologies, and given solar panels and wind parks won't immediately suffice, carbon capture and storage will have to be developed," Michael Schaefer, a Frankfurt-based Equinet AG analyst, said in a March 29 interview.

CCS has moved up the agenda after Merkel announced a 90-day moratorium on March 14 on a planned extension of the running times of Germany's 17 nuclear plants, then ordered the seven oldest plants idled pending safety checks. RWE, Germany's second-biggest utility, filed a lawsuit on April 1 challenging the shutdown of its Biblis A nuclear plant under the moratorium.

The proposed legislation before Cabinet, which still needs parliamentary approval, sets federal rules for carbon-capture projects while allowing state governments to pass laws that bar carbon capture in their territory.

"This is great news for our state," Schleswig-Holstein Prime Minister Peter Harry Carstensen, whose regional government has been among the most vocal opponents of CCS, said yesterday in a statement. "There will be no storage of carbon dioxide in Schleswig-Holstein against our will."

Merkel, Economy Minister Rainer Bruederle and Environment Minister Norbert Roettgen are due to meet on April 15 with the prime ministers of Germany's 16 states to discuss the future energy mix. The coalition's plans include expanding offshore wind parks and building more gas plants to plug a gap in power generation that would follow a retreat from nuclear power.

RWE shelved the start of a planned lignite-fired plant near Cologne in November 2009 that would have stored its emissions underground, saying that Germany lacked the laws necessary to encourage carbon capture technology. Two months later, the Essen-based utility said that public opposition to storing carbon dioxide in Germany might force it to build a coal-fired plant with facilities to capture emissions outside the country.

Germany's Environment Ministry said in July that the government would pursue a "step-by-step" approach to developing CCS to address the concerns of citizens. Initially, only the testing and demonstration of storage sites would be permitted under a draft law, with the results evaluated in 2017, potentially allowing "wider implementation," it said then.

"In the past," the government "supported companies in their efforts to research carbon capture and storage but the technology was hampered by the question of receiving local planning permissions," said Matthias Heck, a Frankfurt-based Macquarie Research analyst.

Merkel's government last year agreed to extend the lifespan of nuclear reactors by an average of 12 years. In return, their utility owners agreed to pay fees to help develop renewable power.

Both Merkel's Christian Democrats and their Free Democratic Party coalition partners have indicated that the seven oldest reactors probably won't be returned to the grid after Merkel pledged to speed the transition to renewable energy, saying that her "view on nuclear energy has changed." The four nuclear utilities have since suspended some of the fee payments, the Financial Times Deutschland newspaper reported on April 11.

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## **German Government Set To Approve Carbon Capture Law Wednesday (DJNews)**

By Klaus Hinkel And Jan Hromadko

Dow Jones Newswires, April 13, 2011

FRANKFURT -(Dow Jones)- The German government has agreed on a bill that would in principle allow the underground storage of carbon dioxide to help make fossil-fueled power plants less harmful to the climate, a lawmaker of Chancellor Angela Merkel's ruling party told Dow Jones newsletter EnergyDaily late Tuesday.

However, the draft the federal cabinet is set to approve at a meeting Wednesday isn't the major achievement many had hoped for, as it grants German states extensive rights to block so-called Carbon Capture and Storage projects, known as CCS, said Ingbert Liebing of Merkel's Christian Democratic party.

Germany still doesn't have a law that allows the transport and storage of CO2 extracted in power generation after Schleswig-Holstein and Lower Saxony--states skeptical of CCS--had blocked earlier drafts.

Many of the most suitable locations for CCS sites are in these two states, but a lack of public acceptance of the technology--and the storage of CO2 in particular--had repeatedly derailed the law.

Liebing, who represents an electoral district in Schleswig-Holstein, said the new draft would allow German states to block CCS sites if they were found to infringe on the interests of the tourism industry, environmental aspects, or " general public interests".

CCS is considered crucial to increasing the environmental friendliness of coal-fired power plants, which generate the bulk of Europe's electricity. The European Union wants 12 demonstration plants built by 2020 and plans to support selected projects financially.

Germany has to pass a CCS law by June 25 to comply with a directive of the European Commission.

## **French MPs Say German Nuclear Shift Could Hurt Ties (NYT/REU)**

By Noah Barkin

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## **German Nuclear Energy Exit Generates Hot Air (WSJ)**

By Bernd Radowitz

Wall Street Journal, April 13, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

## **Taiwan Halts Plans To Build Atomic Reactors After Japan Crisis (BLOOM)**

By Yu

Bloomberg News, April 13, 2011

Taiwan Power Co., which operates the island's three atomic-power plants and is building a fourth, halted plans for additional reactors and will study its options after Japan's nuclear accident from the March 11 earthquake.

Since then the utility known as Taipower canceled a tender to hire advisers on adding two more reactors to its No. 4 nuclear plant under construction, Chief Engineer Roger Lee said yesterday. The government also has frozen a review of the state-run utility's application to extend the license of its No. 1 plant, which has been operating for 33 years, Lee said.

"Taipower would rather take more time and spend more money so the public won't worry," Lee said in an interview in the capital Taipei. The company is studying how to strengthen the stations' ability to withstand earthquakes and tsunamis, he said.

Taiwan and Japan lie on the Pacific Ring of Fire, a zone prone to earthquakes. Taipower's three plants, like the stricken 40-year-old Fukushima Dai-Ichi station north of Tokyo, are near the ocean. They provide about 20 percent of the island's power and are as close as five kilometers (3 miles) from an active quake fault line, according to Lee.

Reactors in quake-prone areas need to be redesigned to make them more resistant, an investment that would reduce their original cost advantage, said George Hsu, a professor in the department of applied economics at National Chung Hsing University in central Taiwan.

"It's a matter of benefit and cost," Hsu said by phone today. "You have to pay a cost to give up nuclear power, and consider whether the cost is bearable."

Taiwan's No. 2 plant is 22 kilometers from Taipei and No. 3 is in a national park and six kilometers from the southern seaside town of Hengchun, site of several beach resorts.

The utility had considered adding as many as 10 reactors on the existing sites to reduce reliance on coal and gas, Taipower Vice President Hsu Hwai-chiung has said.

Taiwan imports about 99 percent of its energy needs. The island started commercial operations at its first reactor in 1978, after the global energy crisis. By 1985, the island had erected six reactors on three sites.

"With nuclear power being such a reliable and sustainable power source, we have to take risks" with the potential for earthquakes and tsunamis to affect Taiwan, Lee said.

The generators provided 24 percent of Taiwan's electricity in February, compared with 3 percent from burning oil, 23 percent from gas, and 41 percent from coal, according to the company's website.

The utility runs reactors 93 percent of the time, compared with one seventh for solar panels and one third for wind turbines, Lee said.

"It isn't easy to replace nuclear power with renewables," he said. Taipower may increase natural gas generators to make up for the stalled plans to expand reactors, he said.

President Ma Ying-jeou, who took office in May 2008, has pledged to cut emissions to 2000 levels by 2025. Officials, including former Premier Liu Chao-shiuan, have called nuclear power an option to help reduce carbon.

Taipower applied to authorities almost two years ago to extend the life of its No. 1 nuclear power plant, which is allowed to operate for 40 years, according to Lee.

"Now the expansion plan is suspended," he said. Taipower may take measures, including enhancing their foundations and erecting higher water gates to strengthen safety at the plants after the March 11 temblor in Japan, he said.

The magnitude-9 quake off Japan's northeast coast and the subsequent tsunami led to what Japanese Prime Minister Naoto Kan called the country's worst crisis since World War II.

The total amount of radiation released from the crisis at Tokyo Electric Power Co.'s Fukushima plant may eventually exceed that of the Chernobyl disaster, a Tepco official said yesterday.

The 1986 disaster at the Chernobyl power plant in Ukraine spewed debris as high as 9 kilometers into the air and released radiation 200 times the volume of the combined bombings of Hiroshima and Nagasaki in 1945, according to a 2006 report commissioned by Europe's Green Party.

Taipower's expansion in nuclear power has stalled since the 1980s. The start of its No. 4 nuclear station, first proposed in 1980, has been delayed five times to late next year because of concerns over safety and rising costs.

The company may push this back further as the government orders stricter inspections before allowing fuel to be loaded, Lee said last month, after the Fukushima accidents. Construction was 93 percent completed as of end of February.

After the March 11 temblor, Taiwan issued a tsunami warning for its northern coast, where Taipower's No. 1, 2 and 4 nuclear stations are located. The plants weren't damaged by the waves.

The No. 4 station's advanced boiling water reactors, designed by General Electric Co. (GE), have been installed, Lee said. Taipower is laying cables and inspecting instruments at the site, he said. Changing the reactor design isn't necessary as they are "already the most advanced," Lee said. The company doesn't have a new starting date for the station.

Taiwan sits on faults, or geological fractures, between the Philippine Sea and Eurasian Continental tectonic plates. Quakes are more likely there as the plates push together, spurring concern the area may be unsafe for nuclear plants.

In September 1999, a temblor centered 150 kilometers south-southwest of Taipei killed about 2,500 people.

In December 2006, Taipower halted its No. 3 nuclear power station for inspection, after a magnitude 7.1 earthquake struck near southern Taiwan, killing at least two people. The station faces potential tsunamis from the Manila Trench in the South China Sea, Lee said.

Taipower has avoided fatal incidents at its nuclear power plants and is taking steps, such as designing standard response procedures for multiple disasters, to prevent crises similar to that in Fukushima, he said. Each of the Taipower stations has three more spare generators than the Dai-Ichi complex, he said.

"If there's something we haven't done enough, we'll improve," Lee said.

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## Is Armenia's Nuclear Plant The World's Most Dangerous? (NATGEO)

By Marianne Lavelle, Josie Garthwaite

National Geographic, April 13, 2011

This story is part of a special series that explores energy issues. For more, visit [The Great Energy Challenge](#).

In the shadow of Mount Ararat, the beloved and sorrowful national symbol of Armenia, stands a 31-year-old nuclear plant that is no less an emblem of the country's resolve and its woe.

(Related: Armenia Guide)

The Metsamor power station is one of a mere handful of remaining nuclear reactors of its kind that were built without primary containment structures. All five of these first-generation water-moderated Soviet units are past or near their original retirement ages, but one salient fact sets Armenia's reactor apart from the four in Russia.

Metsamor lies on some of Earth's most earthquake-prone terrain.

In the wake of Japan's quake-and-tsunami-triggered Fukushima Daiichi crisis, Armenia's government faces renewed questions from those who say the fateful combination of design and location make Metsamor among the most dangerous nuclear plants in the world.

Seven years ago, the European Union's envoy was quoted as calling the facility "a danger to the entire region," but Armenia later turned down the EU's offer of a 200 million euro (\$289 million) loan to finance Metsamor's shutdown. The United States government, which has called the plant "aging and dangerous," underwrote a study that urged construction of a new one.

Plans to replace Metsamor after 2016—with a new nuclear plant at the same location—are under way. But until then, Armenia has little choice but to keep Metsamor's turbines turning. As Armenians learned in the bone-chilling cold and dark days when the plant was closed down for several years, Metsamor provides more than 40 percent of power for a nation that is isolated from its neighbors and closed off from other sources of energy.

"People compare the potential risk with the potential shortage of electricity that might arise if the plant were closed," says Ara Tadevosyan, director of Mediamax, a major Armenian news agency. "Having had this negative experience, people prefer to live with it, and believe that it will not be damaged in an earthquake."

A Need for Nuclear

The 3 million people of landlocked Armenia are unique in their energy dependence on one aging nuclear power reactor. Regional conflicts that broke out in the dissolution of the Soviet Union left the smallest of its former republics at odds with its neighbors.

Azerbaijan to the east and Turkey to the west closed their borders with Armenia, cutting off most routes for oil and natural gas. The blockade, which remains in place to this day, heaped a new economic wound onto an old scar. After the massacre of more than one million Armenians during World War I and subsequent conflict with Turkey, the Soviets ceded the western part of the historic Armenian homeland to Turkey. The snow-capped peak of Mount Ararat, still revered in Armenia as the resting place of Noah's Ark, emblazoned on trinkets and storefronts throughout the land, is now in Turkey.

(Related: "Tough Situations in Difficult Countries")

The Metsamor Nuclear Power Plant is just 10 miles (16 kilometers) from the Turkish border—in an area that includes the fertile agricultural region of the Aras River valley. It's only 20 miles (36 kilometers) from the capital of Yerevan, home to one-third of the nation's population. And it is in the midst of a strong seismic zone that stretches in a broad swath from Turkey to the Arabian Sea near India.

On December 10, 1988, a 6.8-magnitude earthquake struck, killing 25,000 people and leaving 500,000 homeless. Some 60 miles (100 kilometers) from the epicenter, Metsamor, then with two operating reactors, survived the tremor without damage, according to Armenian officials and the International Atomic Energy Agency (IAEA). Because the devastating earthquake heightened concerns about the seismic hazard to the facility, the Soviet government shut the nuclear plant down.

Tadevosyan said that public attitudes toward Metsamor have been strongly shaped by the nation's experience living without it during the six-and-a-half years that followed.

"There were severe power shortages during the winter months," he recalled in a telephone interview from Yerevan. "We had a situation where you had one hour of power a day, and sometimes no power at all for a week. You can imagine—it was as cold in the apartment as it was in the street."

A pipeline to import Russian natural gas through neighboring Georgia in the north was built in 1993, but it was regularly interrupted by "sabotage and separatist strife in that country," as the World Bank noted in a 2006 report.

In 1995, the government of then-independent Armenia decided to restart the younger of the two reactors. Richard Wilson, nuclear physics professor emeritus at Harvard University, was part of a delegation of outside experts in Armenia at the time. He recalls that the Russians who came from the airport to help reopen the reactor were cheered from the side of the road upon their arrival.

When the unit restarted, "It became a source of energy and a source of hope for Armenia," explained Tadevosyan. "It was a symbol that dark times are over: 'We have electricity.' And it is still seen as such today."

#### Fortifying an Old War Horse

Armenian officials say modifications made to the reactor over the past 15 years have made it safer. Before Metsamor was reopened, Armenia airlifted more than 500 tons of equipment to the site (most of it from Russia), for upgrades, according to the Nuclear Energy Institute, an industry group in the United States.

In the years since the restart, the IAEA says close to 1,400 safety improvements have been made. Those included "seismic-resistant" storage batteries, reinforcement of the reactor building, electrical cabinets and cooling towers. The United States provided equipment for a seismic-resistant, spray-pond cooling system. Fire safety was viewed as a critical deficiency at the plant, so extensive upgrades were made, including 140 new fire doors.

The result, officials say, is a reactor that is much safer than the original unit that went into service at the site on January 10, 1980. When construction began in 1969, Metsamor was a VVER 440, Model 230, an example of one of the earliest pressurized-water nuclear plant designs, developed by the Soviets between 1956 and 1970. It was not the same design as Chernobyl, which used solid graphite instead of water to moderate—or slow down—the fission reaction. (The graphite fire contributed to the world's worst nuclear disaster, and 11 of these early graphite-moderated reactors continue to operate in Russia.)

(Related: "How is Japan's Nuclear Disaster Different?")

The VVER 440, in contrast, used water both to moderate and to cool the fuel, as in Western designs. (Its initials, in Russian, stand for "water-water-power-reactor.")

In fact, the VVER system, with multiple cooling loops, was seen as "more forgiving" than Western plants, according to archived documents from the International Nuclear Safety Program, a former US Department of Energy program aimed at aiding in safety improvements at Soviet plants. VVER 440 units would be able to stand a power loss for a longer period of time than Western plants because of the large coolant volume.

After Japan's nuclear crisis erupted, the head of the Armenian State Committee on Nuclear Safety Regulation, Ashot Martirosian, pointed to Metsamor's cooling system as one reason Armenians should rest assured. "Such an emergency situation cannot arise here," he told Radio Free Europe.

(Related: "Japan Battles to Avert Nuclear Disaster" and "Pictures—A Rare Look Inside Fukushima Daiichi")

Nuclear engineering expert Robert Kalantari, whose Framingham, Massachusetts, firm, Engineering Planning and Management, consults for US and Canadian regulatory authorities, says Metsamor is like any other nuclear plant in operation worldwide. Although its safety features are different, all have to be able to be shut down safely during a so-called "design basis accident," the kind of accident anticipated in its design. He said he is confident that Metsamor could operate safely in such an accident, and that it could cope even with accidents beyond its design basis.

"Metsamor is no less safe than any other reactor in operation throughout the world," Kalantari said. "Armenia as an independent country cannot survive without [Metsamor], which is a functioning, safe, and reliable source of energy for the country."

But the VVER 440s share one characteristic with Chernobyl that has been a continuing concern to many who live nearby: They have no containment structure.

Instead, VVER 440s rely on an "accident localization system," designed to handle small ruptures. In the event of a large rupture, the system would vent directly to the atmosphere. "They cannot cope with large primary circuit breaks," the NEI's 1997 Source Book on Soviet nuclear plants concluded. "As with most Soviet-designed plants, electricity production by the VVER-440 Model V230s came at the expense of safety."

Antonia Wenisch of the Austrian Institute of Applied Ecology in Vienna, calls Metsamor "among the most dangerous" nuclear plants still in operation. A rupture "would almost certainly immediately and massively fail the confinement," she said in an email. "From that point, there is an open reactor building, a core with no water in it, and accident progression with no mitigation at all."

Despite the upgrades to the plant, she said, "the overall safety has not improved sufficiently." She points to Armenia's own most recent report for the international convention on nuclear safety, which estimates the risk of "core damage frequency" to be nearly two incidents every 10,000 years. She said that number should be less than one. The average risk at US nuclear power plants is 2 such incidents every 50,000 years, according to a report by the US Electric Power Research Institute.

Over the past decade, the European Union, living in close proximity to the old Soviet plants, used leverage where it could to get some of them shuttered. Four VVER 440 units in Bulgaria and two in Slovakia were closed as a condition of those countries joining the European Union.

But four of the units remain in operation in Russia—two in the northern city of Murmansk, on the Kola Peninsula near the Barents Sea, and two at Novovoronezh, in the Voronezh region in the west (the area of last summer's devastating Russian forest fires). Metsamor is the only VVER 440, Model 230, operating outside of Russia.

(Related: "Wildfire Pictures—Russia Burns, Moscow Chokes")

Since it failed to persuade Armenia to close the plant, the EU has focused on providing aid for improving its safety, spending more than 59 million euros (\$85 million) on such projects as well as for renewable energy, and regional energy cooperation efforts.

Armenia has made efforts to obtain other sources of fuel, such as a natural gas pipeline from its southern neighbor Iran, which opened in 2007. But the amount of fuel to be imported remains in question. The conduit poses potential competition to Russia, a country on which Armenia remains highly reliant, for everything from nuclear fuel to grain. A US Agency for International Development (USAID)-funded study concluded that a new nuclear plant was Armenia's lowest-cost energy option.

#### Plans for the Future

Armenia intends to break ground on a \$5 billion reactor project next year—a larger, and more advanced Russian VVER 1000. The government is going forward with a conference late this month to seek help from potential investors and engineering contractors. The planned reactor would have a containment vessel, but it would be located in the same seismic area as the current Metsamor plant.

Hakob Sanasaryan, a chemist who is chairman of the Greens Union of Armenia, says that although he believes the Metsamor reactor's old design makes it less safe than newer plants, it is the location that is his greatest concern.

Speaking by telephone through an interpreter, he said his group opposes the plan to build a new plant at a place of such high seismic hazard, within Armenia's prime agricultural region, and so close to the country's most populous city. If the government were to reconsider that project in the wake of Japan's crisis, Sanasaryan said, it would be "the only good thing that might possibly come out of these tragic events."

Sanasaryan would like to see Armenia further develop its hydroelectric resources, or more thermal energy from geothermal sources or natural gas. He also has great hope for the country's solar energy potential. "We have existing infrastructure," he says. "If it were exploited better, it could satisfy Armenia's energy needs."

But another Armenian environmentalist, Karine Danielyan, president of Armenia's Association for Sustainable Human Development, laments that there has been insufficient effort over the past 15 years to create a renewable energy base. Danielyan, a former Armenian environment minister, wrote in an email that she is keenly aware of the harm that resulted from the energy shortages during Metsamor's closure. In addition to increased mortality due to the cold, deforestation accelerated rapidly as citizens scavenged for wood to heat their homes. The sharp increase of water flow to ramp up hydroelectricity caused severe stress to the nation's largest lake, Lake Sevan, where efforts at ecological restoration are a continuing battle.

Although she calls herself "an opponent of nuclear power engineering," Danielyan said she was compelled to join the call to improve safety at Metsamor and restart the plant in 1995. Now, she says, the country faces the need to construct another nuclear plant. "Unfortunately, now Armenia has not another alternative," she says.

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## Fukushima Crisis Fails To Dampen Indonesia's Nuclear Ambitions (GUARD)

By Gillian Terzis

The Guardian (UK), April 13, 2011

The city of Jakarta at night. Only 65% of Indonesians have access to electricity. Photograph: Getty  
Japan has raised the level of its nuclear crisis to the same as Chernobyl 25 years ago.

Yet the reverberations of the crises at Fukushima have scarcely cast a ripple in Indonesia's political quarters. Two weeks after Japan's nuclear crisis, the Indonesian government stated that it will continue to pursue an ambitious nuclear power programme of its own that will triple the country's electricity output by 2025.

The most significant proposal is the planned construction of two nuclear power plants comprised of four nuclear reactors by 2022. The two plants would have a cumulative capacity of 18GW. The majority of officials have settled on a preferred location - Bangka - which sits between the islands of Sumatra and Borneo. Supporters of Indonesia's nuclear bid are adamant that Bangka is far from active fault lines, thus minimising the potential for a Fukushima-style crisis. They emphasise that the technology used by Indonesia will be much more advanced than the 40-year-old reactors in Fukushima.

Last week, Sri Setiawati , a deputy to the minister for technology and research, gave her assurances that out of the 10 Asean nations, Indonesia "is the most ready to build a nuclear power plant". Ferhat Aziz, a spokesman from the country's national nuclear agency, BATAN , says that Indonesia has the requisite expertise to go nuclear, with "many experts who have been prepared [for a nuclear plant] for decades" and numerous tests conducted at three research reactors in Bandung, Central Java and Banten.

But a significant proportion of the Indonesia public, it seems, isn't as convinced. Plans to build a nuclear power plant in Muria in Central Java – nestled next to an inactive volcano – were eventually sidelined after vociferous protests by the local community. There has also been strident resistance from NGOs and environmentalist groups such as Greenpeace, who have consistently voiced their concerns over Indonesia's geological vulnerability - such as its ill-fated position atop the "ring of fire" - in addition to Indonesia's history of inefficiently coordinated responses to disaster. While Japan has demonstrated its extraordinary capacity for order and efficiency in a crisis, Indonesia's capacity to mobilise resources in an emergency is usually cuckolded by a well-entrenched preference for bureaucratic buck-passing.

Then there's the pervasive culture of corruption in Indonesia. Nothing less than utmost stringency is required where nuclear power is concerned, but opponents fear a penchant for cutting corners could eclipse safety concerns. These fears are felt among some members of the country's National Energy Council (NEC), the advisory body that maps out power infrastructure in Indonesia, which has led to some members calling for the exploration of geothermal sources, hydroelectricity and biofuels before resorting to nuclear power.

To its credit, the Indonesian government has recognised – with increasing urgency – the need for reform. The depletion of fossil fuels and ever-increasing oil prices means that initiatives promoting renewable energy are a necessity. Currently, ensuring a stable power supply is of foremost importance: only 65% of Indonesians have access to electricity; the government aims to increase this figure to 91% by 2019. Furthermore, blackouts in the nation's overburdened capital, Jakarta, occur with chronic frequency.

This is compounded by the hucksterism of Indonesia's coal producers, who would prefer to export their product for a higher selling price to foreign markets instead of selling locally for a lower price to the state-owned electricity utility, PLN. At the heart of the problem is that the government continues to undervalue the price of electricity, which has subsequent ramifications for incentives for firms to invest in electricity infrastructure. It's a quandary that plagues many emerging economies: how does the government determine a price that ensures affordability of electricity to consumers while encouraging much-needed investment in the industry?

It's not surprising, then, that advocates of nuclear power have found support in the Indonesian government, which is well aware that the only way electricity output can be stabilised and increased is if the country is self-sufficient in energy production; that is, it is no longer dependent on fossil fuels.

Certainly, Indonesia is not the only developing nation with designs on developing nuclear power plants - although after Fukushima, it is certainly part of a select club. While the Philippines, Malaysia and China have temporarily halted their nuclear power plans, Vietnam - also bedeviled by the cumulative forces of increasing prosperity and unsustainable urban growth rates - is also to build a nuclear power plant. Both countries have been offered financial support from Russia to pursue nuclear power projects: Vietnam has already signed a deal with Russia to have a nuclear power plant ready by 2020. Indonesia has been more coy about committing to anything on paper, but will receive roughly \$1.5m from Russia per year to jointly finance renewable energy initiatives.

However, it is just as likely that all the talk of nuclear power in Indonesia will be simply that - talk. A cursory glance at Indonesia's chequered history of infrastructure projects suggests that significant movement on big capital and time-intensive proposals tends to be hamstrung by characteristically protracted decision-making processes. Indonesia is already on track to miss a target set by the government to have nuclear power online between 2015 and 2019. One member of the NEC, Herman Agustiwan, said that with a population of 240 million, nuclear option is a necessity for Indonesia as it has to "consider [its] energy

supply in the long-term ...[we] have no choice". He may be right - but either way, one just hopes Indonesia's plans for a sustainable energy future aren't paralysed by governmental indecision.

- Gillian Terzis is a freelance journalist based in Jakarta

## North Korea Won't Give Up Nuke Capability: US General (REU)

Reuters, April 13, 2011

Full-text stories from Reuters currently cannot be included in this document. You may, however, click the link above to access the story.

## How Will Mr. Obama Respond To Iran's Nuclear Progress? (WP)

Washington Post, April 13, 2011

MANY EXPERTS believe the ongoing upheaval in the Middle East will be the most important foreign policy test of Barack Obama's presidency. Yet this president did not come into office at an easy time — and the critical challenges that predated the Arab revolutions have not disappeared. Strong reminders of that came this week in two news stories reported by The Post: Pakistan's demand that drone attacks against al-Qaeda and Taliban militants in its frontier territories be scaled back; and Iran's claim of fresh progress in its nuclear program.

The reports from Iran are particularly disturbing because its Islamic regime has been a short-term beneficiary of the revolution in Egypt and unrest in the Persian Gulf emirate of Bahrain. Deposed Egyptian strongman Hosni Mubarak was a determined enemy of Iran, and Bahrain's crackdown on popular protests threatens to touch off the Shiite uprising, there and in eastern Saudi Arabia, that Iran has long wished for. As important, the region's turmoil has pushed up oil prices, making it easier for Iran to endure the economic sanctions painstakingly orchestrated by the Obama administration.

The revolution in Egypt began days after the regime of Ali Khamenei bluntly rejected the latest attempt by a six-nation coalition to begin negotiations on the nuclear program. Since then there has been no sign of diplomatic activity, but Iran has been busy expanding its nuclear capacity. In recent days officials announced that tests of a new generation of centrifuges for enriching uranium had been successful, and that a Russian-built nuclear reactor would begin operations early next month.

The progress on centrifuges is significant because Iran until now has relied on slow and inefficient centrifuges, many of which appear to have been damaged by software sabotage. The more advanced machines, The Post's Joby Warrick reported, could work at least six times faster. Iran has already enriched more than 3,600 kilograms of uranium to a low level, enough for two nuclear bombs with further processing. The faster centrifuges mean that were Iran to embark on a "break-out" strategy — a race to complete a bomb — it could do so far more quickly, if it manages to install a significant number of the new machines.

Several months ago, administration officials were speaking confidently of an Iran that, pinched by sanctions and hamstrung by problems in its nuclear work, seemed ready to begin talks. Now the talks are off, the economic pressure is easing and the nuclear work once again could be gaining momentum. Yet the administration seems to have no clear alternative to its long-standing strategy of waiting for the regime to negotiate.

The better course, which we among others have urged since the opposition Green Movement was born nearly two years ago, is to bet on a renewed popular uprising in Iran. President Obama recently made a gesture in that direction with a video address to Iranians that denounced government repression and said young Iranians had the "power to forge a country that is responsive to your aspirations." But there is much more the administration could do, such as finding ways to support Iranian unions and student movements, stepping up broadcasting and accelerating funding for technology that can undermine Internet censorship. Passivity is a dangerous option; while the world watches the Middle East, Iran's drive for a bomb relentlessly continues.

**From:** Reiter, Stuart  
**To:** Johnson, Susan  
**Cc:** Goldberg, Francine; Hayden, Elizabeth; Landau, Mindy; Corbett, James; Shields, James; Schaeffer, James; Hoffman, Megan  
**Subject:** NRC Open Government Plan One Year Assessment Daily Note final.docx  
**Date:** Wednesday, April 13, 2011 4:22:38 PM  
**Attachments:** NRC Open Government Plan One Year Assessment Daily Note final.docx

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Hi Susan,

Appreciate your help in having this moved forward as a Daily Note. I'll be out of the Office tomorrow, back in Friday A.M. But, if there are any questions, Fran may be able to help.

Thanks Stu

PS. Sorry I was not able to give you a heads up on this request.

6666/170

On April 13<sup>th</sup>, 2011, NRC posted its self assessment of first year achievements of its Open Government program ( [www.nrc.gov/open](http://www.nrc.gov/open) ). NRC noted that the state of health of its Open Government program is very good. The assessment highlighted the recognition received upon publication of its plan by open government advocacy groups, establishing the Open Government Advisory Group for oversight and program steering, deployment of the NRC external blog, which played a key role in informing the public of our response to the Japanese event and providing staff access to YouTube and Twitter to improve information access. In addition, the assessment notes that first year goals set for the publication of high value datasets (a key element of the open government initiative), were exceeded, with 21 high-value datasets published, significantly more than the 11 identified in the plan. The agency ranked 11<sup>th</sup> out of 32 Federal agencies with regard to transparency based on the American Customer Satisfaction Index (ACSI) surveys of Federal Web sites, and received MeriTalk's 2010 Merit Award in recognition of the agency's collaboration and transparency efforts in relation to Knowledge Management. The ACSI survey also demonstrated positive results from the release of the unified public Web search in December 2010, with the site search satisfaction score improving from 68 before the new search to 73 at the end of March 2011.