

From: Hayden, Elizabeth
To: WebContractor Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 2:22:00 PM

Perfect. Thanks.

Beth

From: WebContractor Resource
Sent: Wednesday, April 13, 2011 2:20 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Beth,

This has been corrected. Please review and let me know of any further changes needed.

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 2:12 PM
To: WebContractor Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

No, the print should be bold like the **Blog** and **FAQs** and lined up to the margin like these two items. This is not a bullet under FAQ.

*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: Wednesday, April 13, 2011 2:04 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Beth,

Please review and approve for live posting. Note: We turn PowerPoint presentations into PDFs, so the PowerPoint icon was not added.

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

666/171

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 1:26 PM
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

OK. Attached is the scrubbed presentation. For the existing website, please put the link at the bottom of the box on the right (having equal status as FAQs and Blog) using this presentation with the PowerPoint icon (like in the subject line) in front of the words: Fukushima Presentation.

For the new website, please put this as the first item in the Related Information box on the bottom right.

Thanks!

Beth

From: WebContractor Resource
Sent: Wednesday, April 13, 2011 12:57 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Beth,

It's been removed from the live site, though it may take a few minutes for the servers to refresh and show the changes.

Thank you,
Michael

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Hold on this posting on the current website, too.

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

From: Hayden, Elizabeth
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Please shorten the title of the bullet to "Presentation on Fukushima." Also make this the title on the 1st page of the slides or use the attached revised presentation.

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Cc: WebWork Resource; Hardy, Sally
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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.

From: Hayden, Elizabeth
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 1:26:00 PM
Attachments: Fukushima Public Presentation ppt.pptx

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G G G G / 172

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United States Nuclear Regulatory Commission

Protecting People and the Environment

Presentation on Fukushima

Eric Leeds, Director

Office of Nuclear Reactor Regulation

April 2010



NRC Mission – What Do We Do?

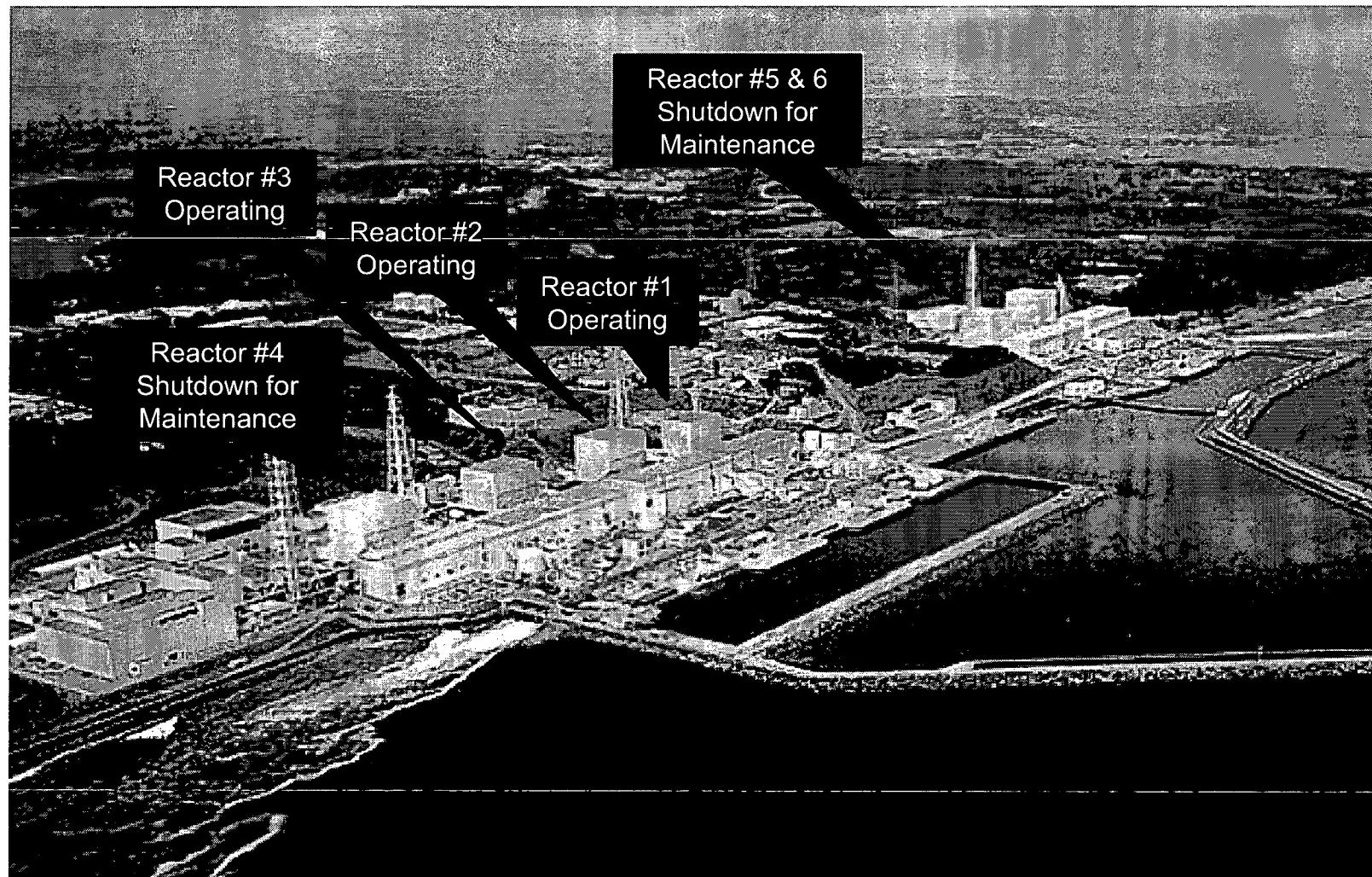
- The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to **protect public health and safety, promote the common defense and security, and protect the environment.**

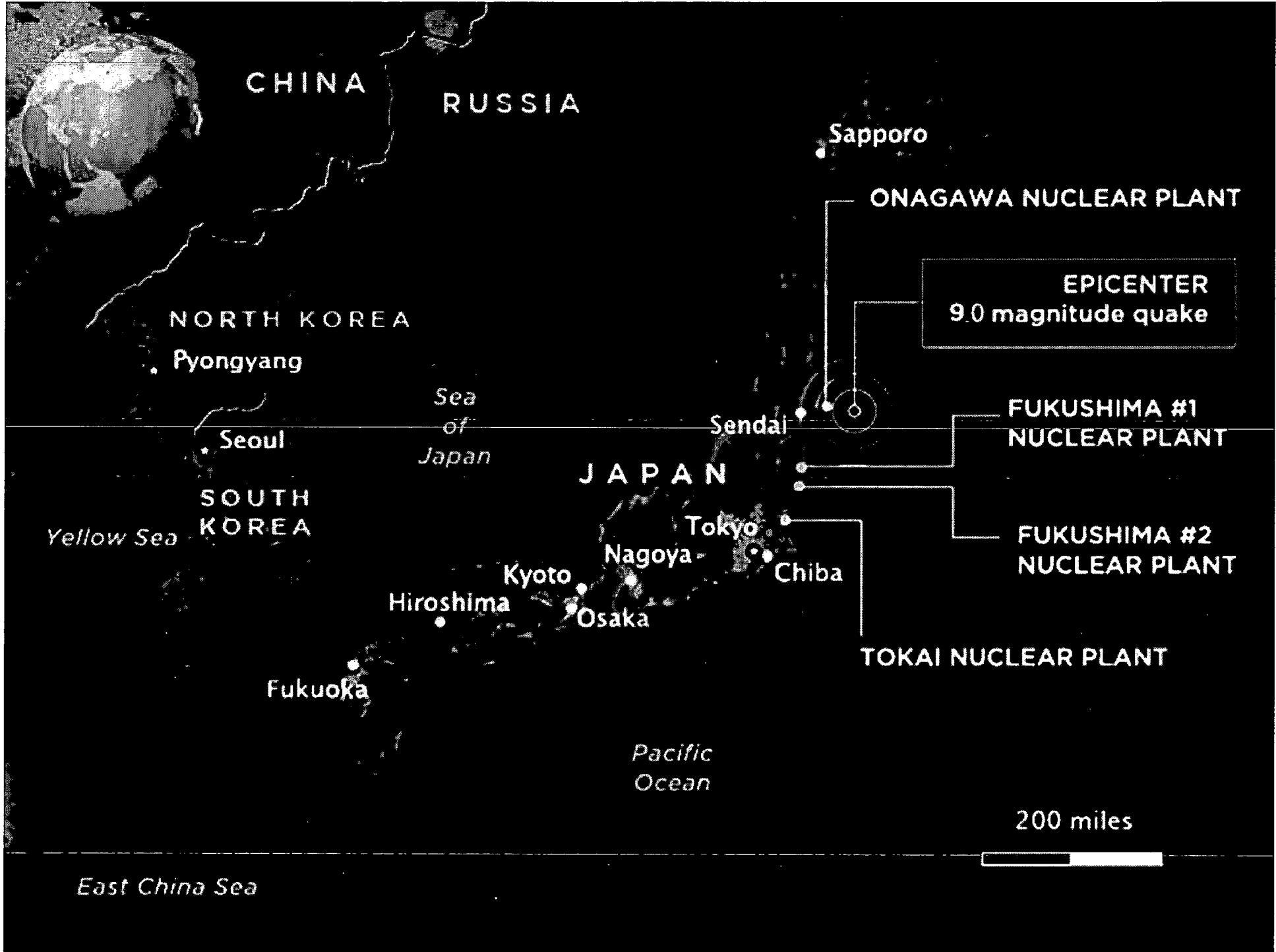


United States Nuclear Regulatory Commission

Protecting People and the Environment

Overview of Fukushima Daiichi Nuclear Power Station







Earthquake & tsunami sequence of events

Friday March 11th @ 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



United States Nuclear Regulatory Commission

Protecting People and the Environment

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

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.

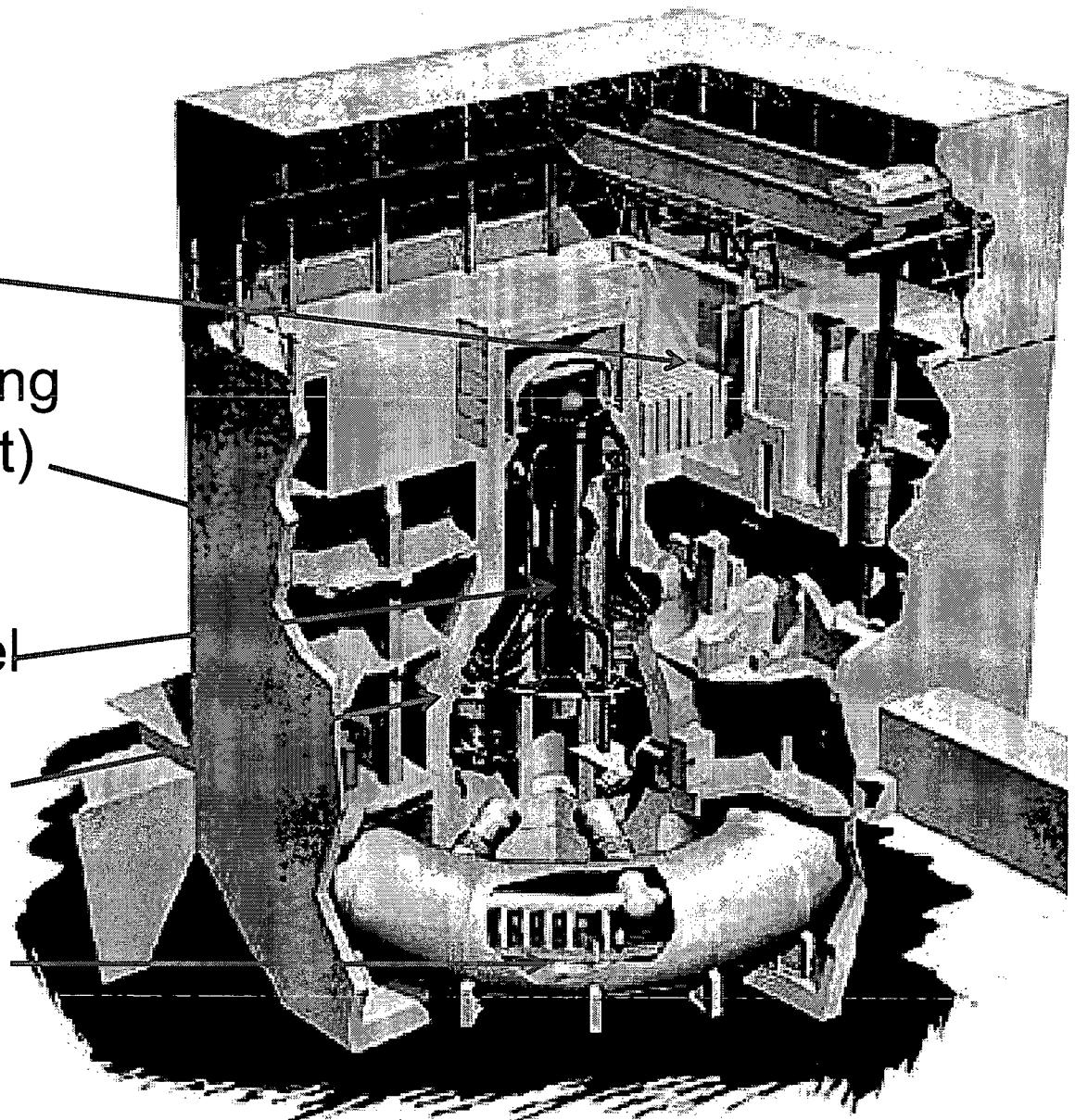


United States Nuclear Regulatory Commission

Protecting People and the Environment

BWR Mark I

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



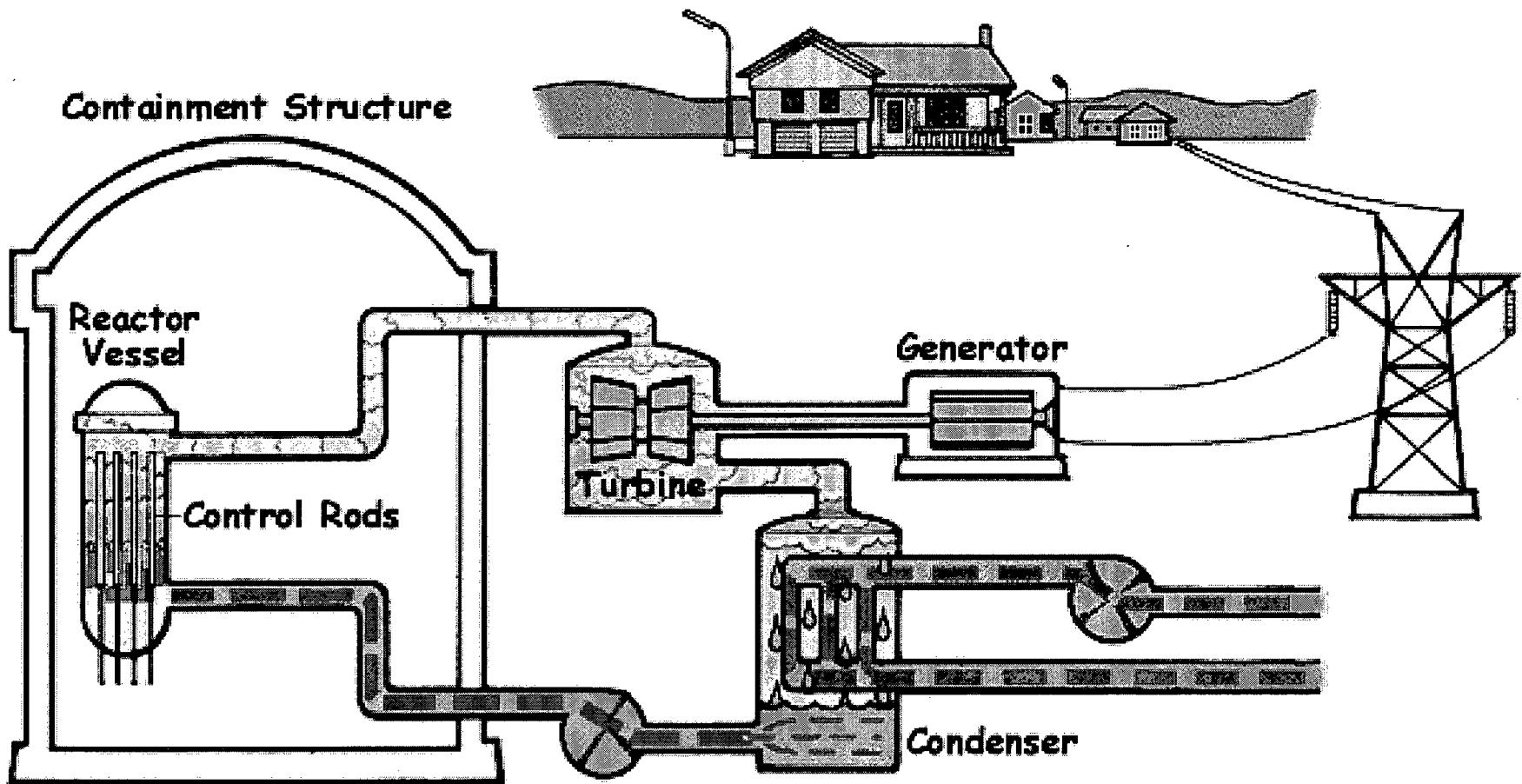


United States Nuclear Regulatory Commission

Protecting People and the Environment

- ▶ 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: WebContractor Resource
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Date: Wednesday, April 13, 2011 2:11:00 PM

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*Beth Hayden
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G G G G / 17 3

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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.

From: [Hayden, Elizabeth](#)
To: [Hardy, Sally](#)
Cc: [WebContractor Resource](#); [WebWork Resource](#)
Subject: Japan Page
Date: Wednesday, April 13, 2011 9:48:00 AM
Importance: High

OK.

Please remove "2012" from the link on Chairman's April 12 testimony. My fault.

*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: Wednesday, April 13, 2011 9:16 AM
To: Hayden, Elizabeth
Subject: Re: Marty's Testimony

In a meeting now will call you as soon as I get out

Sent from NRC Blackberry
Sally Hardy

From: Hayden, Elizabeth
To: Hardy, Sally
Sent: Wed Apr 13 09:13:20 2011
Subject: RE: Marty's Testimony

Please call me 301-415-8202.

*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: Wednesday, April 13, 2011 8:16 AM
To: WebWork Resource; Belmore, Nancy
Cc: Hayden, Elizabeth
Subject: RE: Marty's Testimony

(2) G G G / 174

My mistake this was already added under the 4/6 date. If there is anything else you need let us know. But I believe all is good now.

Sally

From: WebWork Resource
Sent: Wednesday, April 13, 2011 8:14 AM
To: Belmore, Nancy
Cc: Hayden, Elizabeth
Subject: RE: Marty's Testimony

Nancy

Marty's testimony is posted on the Japan page on the public web site. I'm coming in at the end of this email so I'm trying to figure out what the issue is? Are you wanting Marty's testimony post on the Congressional Testimony page as well? It currently is not there? Let us know and we can add this for you at:

<http://webwork.nrc.gov:300/reading-rm/doc-collections/congress-docs/congress-testimony/2011/>

Thanks
Sally

From: Belmore, Nancy
Sent: Wednesday, April 13, 2011 8:07 AM
To: Hayden, Elizabeth
Cc: Hardy, Sally; WebContractor Resource; WebWork Resource
Subject: RE: Marty's Testimony

This is posted – is this still an issue?

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

From: Hayden, Elizabeth
Sent: Tuesday, April 12, 2011 5:16 PM
To: Belmore, Nancy; WebContractor Resource; WebWork Resource
Cc: Hardy, Sally
Subject: RE: Marty's Testimony

No it isn't. Get the web folks to find out why it isn't listed.

*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
Sent: Wednesday, April 06, 2011 10:41 AM
To: Hayden, Elizabeth
Subject: RE: Marty's Testimony

Posted at: <http://webwork.nrc.gov:300/reading-rm/doc-collections/congress-docs/congress-testimony/2011/>

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

From: Hayden, Elizabeth
Sent: Wednesday, April 06, 2011 8:42 AM
To: Belmore, Nancy
Subject: RE: Marty's Testimony

Thanks, could you e-mail me when it's 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: Belmore, Nancy
Sent: Wednesday, April 06, 2011 8:22 AM
To: Hayden, Elizabeth
Subject: RE: Marty's Testimony

I just sent to ADAMS for immediate processing – as soon as they let me know it's an AOR I'll post.

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

From: Hayden, Elizabeth
Sent: Wednesday, April 06, 2011 8:19 AM

To: Belmore, Nancy
Subject: Marty's Testimony

When will Marty's testimony from this morning's hearing be available on the web? I just want to link to it from the Japan page.

*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: Hayden, Elizabeth
To: Oesterle, Eric
Cc: Clark, Theresa
Subject: FW: SNF Talking Points and Qs.docx
Date: Wednesday, April 13, 2011 9:36:00 AM
Attachments: SNF Talking Points and Qs.docx

Will these Q&A be added to the document (under spent fuel) we discussed this morning before it is put in ADAMS and you forward me the file for posting to the web?

Beth

From: McIntyre, David
Sent: Wednesday, April 13, 2011 8:02 AM
To: Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; Burnell, Scott; Couret, Ivonne; Screni, Diane; Janbergs, Holly; Sheehan, Neil; Clark, Theresa; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Chandrathil, Prema; Uselding, Lara; Dricks, Victor
Subject: SNF Talking Points and Qs.docx

All – the attached talking points and Q&As on spent fuel pools and casks have been blessed (finally) by NMSS, NRR and NSIR. Many thanks to Theresa for helping with these.

Dave

6666/175

OPA Talking Points and Qs&As

Spent Fuel Pools and Storage

[Revision 2, April 12, 2011]

Talking Points:

1. All U.S. nuclear power plants store spent nuclear fuel in “spent fuel pools.” These pools are robust constructions made of reinforced concrete several feet thick, with steel liners. The water is typically about 40 feet deep, and serves both to shield the radiation and cool the rods.
2. As the pools near capacity, utilities move some of the older spent fuel into “dry cask” storage. Fuel is typically cooled at least 5 years in the pool before transfer to cask. NRC has authorized transfer as early as 3 years; the industry norm is about 10 years.
3. The NRC believes spent fuel pools and dry casks both provide adequate protection of the public health and safety and the environment. Therefore there is no pressing safety or security reason to mandate earlier transfer of fuel from pool to cask. (*Note: We do not say they are “equally” safe. We say they are both safe.*)
4. After the September 11, 2001, terrorist attacks, the NRC issued orders to plant operators requiring several measures aimed at mitigating the effects of a large fire, explosion, or accident that damages a spent fuel pool. These were meant to deal with the aftermath of a terrorist attack or plane crash; however, they would also be effective in responding to natural phenomena such as tornadoes, earthquakes or tsunami. These mitigating measures include:
 - a. Controlling the configuration of fuel assemblies in the pool to enhance the ability to keep the fuel cool and recover from damage to the pool.
 - b. Establishing emergency spent fuel cooling capability.
 - c. Staging emergency response equipment nearby so it can be deployed quickly
5. According to the Congressional Research Service (using NEI data), there were 62,683 metric tons of commercial spent fuel accumulated in the United States as of the end of 2009.
 - a. Of that total, 48,818 metric tons – or about 78 percent – were in pools.
 - b. 13,856 metric tons – or about 22 percent – were stored in dry casks.

- c. The total increases by 2,000 to 2,400 tons annually.

Questions and Answers – General

Q1: What is spent nuclear fuel?

A1: “Spent nuclear fuel” refers to fuel elements that have been used at commercial nuclear reactors, but that are no longer capable of economically sustaining a nuclear reaction. Periodically, about one-third of the nuclear fuel in an operating reactor needs to be unloaded and replaced with fresh fuel.

Q2: Why is spent fuel hot?

A2: Spent fuel generates what is called “residual heat” because of radioactive decay of the elements inside the fuel. After the fission reaction is stopped and the reactor is shut down, the products left over from the fuel’s time in the reactor are still radioactive and emit heat as they decay into more stable elements. Although the heat production drops rapidly at first, heat is still generated many years after shutdown. Therefore, the NRC sets requirements on the handling and storage of this fuel to ensure protection of the public and the environment.

Questions and Answers – Spent Fuel Inventories

Q3: Why doesn’t the NRC have up-to-date figures on how much spent fuel is stored at U.S. nuclear plants? Doesn’t the regulator have a clue about how much of this stuff is out there?

A3: The NRC and Department of Energy (NNSA) operate the Nuclear Material Management and Safeguards System (NMMSS), a database that tracks Special Nuclear Material (enriched uranium and plutonium). This database does not distinguish between fresh and irradiated material, and the information is withheld from the public for security reasons. That’s why figures on spent fuel inventory come from the industry.

Q4: How much fuel is currently in dry cask storage?

A4: As of November 2010, there were 63 “independent spent fuel storage installations” (or ISFSIs) licensed to operate at 57 sites in 33 states. These locations are shown on a map on the NRC website at: <http://www.nrc.gov/waste/spent-fuel-storage/locations.pdf>. Over 1400 casks are stored in these independent facilities.

Q5: How much fuel is stored at decommissioned reactors? Is it in pools or casks?

A5: There are currently 10 decommissioned nuclear power reactors at 9 sites with no other nuclear operations. According to a 2008 Department of Energy report to Congress, approximately 2800 metric tons of spent fuel is stored at these nine sites. As of the writing of

that report, seven of the sites had independent spent fuel storage installations, or ISFSIs. Two additional sites had approximately 1000 metric tons of spent fuel remaining in pool storage.

Questions and Answers – ISFSIs

Q6: What is dry cask storage?

A6: Dry cask storage allows spent fuel that has already been cooled in the spent fuel pool for several years to be surrounded by inert gas inside a container called a cask. The casks are typically steel cylinders that are either welded or bolted closed. The steel cylinder provides containment of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public.

Q7: What is an “ISFSI”?

A7: An independent spent fuel storage installation, or ISFSI, is a facility that is designed and constructed for the interim storage of spent nuclear fuel. These facilities are licensed separately from a nuclear power plant and are considered independent even though they may be located on the site of another NRC-licensed facility.

Q8: What kind of license is required for an ISFSI?

A8: NRC authorizes storage of spent nuclear fuel at an ISFSI in two ways: site-specific or general license. For site-specific applications, the NRC reviews the safety, environmental, physical security and financial aspects of the licensee and proposed ISFSI and, if we conclude it can operate safely, we issue a license valid. This license contains requirements on topics such as leak testing and monitoring and specifies the quantity and type of material the licensee is authorized to store at the site. A general license authorizes storage of spent fuel in casks previously approved by the NRC at a site already licensed to possess fuel for or operate a nuclear power plant. Licensees must show the NRC that it is safe to store spent fuel in dry casks at their site, including analysis of earthquake intensity and tornado missiles. Licensees also review their programs (such as security or emergency planning) and make any changes needed to incorporate an ISFSI at their site. Of the currently licensed ISFSIs, 48 are operating under general licenses and 15 have specific licenses.

Questions and Answers – Dry Cask Safety

Q9: How do you know the dry casks are safe? Does the NRC inspect these facilities, or just the reactor and spent fuel pool?

A9: The NRC is responsible for inspection of dry cask storage. Before casks are loaded, inspectors with specific knowledge of ISFSI operations assess the adequacy of a “dry run” by the

licensee; they then observe all initial cask loadings. The on-site resident inspectors or region-based inspectors may observe later cask loadings, and the regional offices also perform periodic inspections of routine ISFSI operations.

Q10: What keeps fuel cool in dry casks?

A10: Fuel is often moved to dry cask storage after several years in spent fuel pools, so the residual heat given off by the fuel has significantly decreased. These casks are typically thick, leak-tight steel containers inside a robust steel or concrete overpack. The fuel is cooled by natural airflow around the cask.

Questions and Answers – Spent Fuel Pool Safety

Q11: What do you look at when you license a fuel storage facility? How do I know it can withstand a natural disaster?

A11: The NRC's requirements for both wet and dry storage can be found in Title 10 of the Code of Federal Regulations (10 CFR), including the general design criteria in Appendix A to Part 50 and the spent-fuel storage requirements in Part 72. The staff uses these rules to determine that the fuel will remain safe under anticipated operating and accident conditions. There are requirements on topics such as radiation shielding, heat removal, and criticality. In addition, the staff reviews fuel storage designs for protection against:

- natural phenomena, such as seismic events, tornados, and flooding
- dynamic effects, such as flying debris or drops from fuel handling equipment and drops of fuel storage and handling equipment
- hazards to the storage site from nearby activities

Q12: How do you know the fuel pools are safe? Does the NRC inspect these facilities, or just the reactor itself?

A12: NRC inspectors are responsible for verifying that spent fuel pools and related operations are consistent with a plant's license. For example, our staff inspects spent fuel pool operations during each refueling outage. We also performed specialized inspections to verify that new spent fuel cooling capabilities and operating practices were being implemented properly.

Q13: What would happen to a spent fuel pool during an earthquake? How can I be sure the pool wouldn't be damaged?

A13: All spent fuel pools are designed to seismic standards consistent with other important safety-related structures on the site. The pool and its supporting systems are located within structures that protect against natural phenomena and flying debris. The pools' thick walls and floors provide structural integrity and further protection of the fuel from natural phenomena and debris. In addition, the deep water above the stored fuel (typically more than 20 feet above the top of the spent fuel rods) would absorb the energy of debris that could fall into the pool. Finally,

the racks that support the fuel are designed to keep the fuel in its designed configuration after a seismic event.

Q14: Can spent fuel pools leak?

A14: Spent fuel pools lined with stainless steel are designed to protect against a substantial loss of the water that cools the fuel. Pipes typically enter the pool above the level of the stored fuel, so that the fuel would stay covered even if there were a problem with one of the pipes. The only exceptions are small leakage-detection lines and, at two pressurized water reactor (PWR) sites, robust fuel transfer tubes that enter the spent fuel pool directly. The liner normally prevents water from being lost through the leak detection lines, and isolation valves or plugs are available if the liner experiences a large leak or tear.

Q15: How would you know about a leak in such a large pool of water?

A15: The spent fuel pools associated with all but one operating reactor have liner leakage collection to allow detection of very small leaks. In addition, the spent fuel pool and fuel storage area have diverse instruments to alert operators to possible large losses of water, which could be indicated by low water level, high water temperature, or high radiation levels.

Q16: How can operators get water back in the pool if there is a leak or a failure?

A16: All plants have systems available to replace water that could evaporate or leak from a spent fuel pool. Most plants have at least one system designed to be available following a design basis earthquake. In addition, the industry's experience indicates that systems not specifically designed to meet seismic criteria are likely to survive a design basis earthquake and be available to replenish water to the spent fuel pools. Furthermore, plant operators can use emergency and accident procedures that identify temporary systems to provide water to the spent fuel pool if normal systems are unavailable. In some cases, operators would need to connect hoses or install short pipes between systems. The fuel is unlikely to become uncovered rapidly because of the large water volume in the pool, the robust design of the pool structure, and the limited paths for loss of water from the pool.

Q17: Do U.S. nuclear power plants store their fuel above grade? Why is this considered safe?

A17: For boiling water reactor (BWR) Mark I and II designs, the spent fuel pool structures are located in the reactor building at an elevation several stories above the ground (about 50 to 60 feet above ground for the Mark I reactors). The spent fuel pools at other operating reactors in the U.S. are typically located with the bottom of the pool at or below plant grade level. Regardless of the location of the pool, its robust construction provides the potential for the structure to withstand events well beyond those considered in the original design. In addition, there are multiple means of restoring water to the spent fuel pools in the unlikely event that any is lost.

Q18: How are spent fuel pools kept cool? What happens if the cooling system fails?

A18: The spent fuel pool is cooled by an attached cooling system. The system keeps fuel temperatures low enough that, even if cooling were lost, operators would have substantial time to recover cooling before boiling could occur in the spent fuel pool. Licensees also have backup ways to cool the spent fuel pool, using temporary equipment that would be available even after fires, explosions, or other unlikely events that could damage large portions of the facility and prevent operation of normal cooling systems. Operators have been trained to use this backup equipment, and it has been evaluated to provide adequate cooling even if the pool structure loses its water-tight integrity.

Q19: What keeps spent fuel from re-starting a nuclear chain reaction in the pool?

A19: Spent fuel pools are designed with appropriate space between fuel assemblies and neutron-absorbing plates attached to the storage rack between each fuel assembly. Under normal conditions, these design features mean that there is substantial margin to prevent criticality (i.e., a condition where nuclear fission would become self-sustaining). Calculations demonstrate that some margin to criticality is maintained for a variety of abnormal conditions, including fuel handling accidents involving a dropped fuel assembly.

Questions and Answers – Waste Confidence & Future Plans

Q20: How long is spent fuel allowed to be stored in a pool or cask?

A20: NRC regulations do not specify a maximum time for storing spent fuel in pool or cask. The agency's "waste confidence decision" expresses the Commission's confidence that the fuel can be stored safely in either pool or cask for at least 60 years beyond the licensed life of any reactor without significant environmental effects. At current licensing terms (40 years of initial reactor operation plus 20 of extended operation), that would amount to at least 120 years of safe storage.

However, it is important to note that this does not mean NRC "allows" or "permits" storage for that period. Dry casks are licensed or certified for 20 years, with possible renewals of up to 40 years. This shorter licensing term means the casks are reviewed and inspected, and the NRC ensures the licensee has an adequate aging management program to maintain the facility.

Q21: The most recent waste confidence findings say that fuel can be stored safely for 60 years beyond the reactor's licensed life. Does this mean fuel will be unsafe starting in 2059 [60 years after Dresden 1's original license ended]? What if the spent fuel pool runs out of room even before the end of a reactor license? What is the NRC going to do about this?

A21: The NRC staff is currently developing an extended storage and transportation (EST) regulatory program. One aspect of this program is a safety and environmental analysis to support long-term (up to 300 years) storage and handling of spent fuel, as well as associated updates to the "waste confidence" rulemaking. This analysis will include an Environmental Impact Statement (EIS) on the environmental impacts of extended storage of fuel. The 300-year

timeframe is appropriate for characterizing and predicting aging effects and aging management issues for EST. The staff plans to consider a variety of cask technologies, storage scenarios, handling activities, site characteristics, and aging phenomena—a complex assessment that relies on multiple supporting technical analyses. Any revisions to the waste confidence rulemaking, however, would not be an “approval” for waste to be stored longer than before—we do that through the licensing and certification of ISFSIs and casks. More information on the staff’s plan can be found in SECY-11-0029.

Q22: Does the waste confidence decision mean that a particular cask is safe?

A22: Not specifically. When the NRC issues of certificates and licenses for specific dry cask storage systems, the staff makes a determination that the designs provide reasonable assurance that the waste will be stored safely for the term of the license or certificate. The Commission’s Waste Confidence Decision is a generic action where the Commission found reasonable assurance that the waste from the nation’s nuclear facilities can be stored safely and with minimal environmental impacts until a repository becomes available.

Q23: The waste-confidence revision seems like a long-term effort. What is the NRC doing to improve safety of spent fuel storage now?

A23: The NRC staff is currently reviewing its processes to identify near-term ways to improve efficiency and effectiveness in licensing, inspection, and enforcement. We expect to identify enhancements to the certification and licensing of storage casks, to the integration of inspection and licensing, and to our internal procedures and guidance. More information on the staff’s plans can be found in COMSECY-10-0007.

Q24: The NRC is reviewing applications for new nuclear power plants. What is the environmental impact of all that extra fuel?

A24: Continued use and potential growth of nuclear power is expected to increase the amount of waste in storage. This increased amount of spent fuel affects the environmental impacts to be assessed by the NRC staff, such as the need for larger storage capacities. In the staff’s plan to develop an environmental impact statement for longer-term spent fuel storage, a preliminary scoping assumption is that nuclear power grows at a “medium” rate (as defined by the Department of Energy), in which nuclear power continues to supply about 20 percent of U.S. electricity production.

Questions and Answers – Security

Q25: What about security? How do you know terrorists won’t use all of this waste against us?

A25: For spent fuel, as with reactors, the NRC sets security requirements and licensees are responsible for providing the protection. We constantly remain aware of the capabilities of potential adversaries and threats to facilities, material, and activities, and we focus on physically protecting and controlling spent fuel to prevent sabotage, theft, and diversion. Some key features

of these protection programs include intrusion detection, assessment of alarms, response to intrusions, and offsite assistance when necessary. Over the last 20 years, there have been no radiation releases that have affected the public. There have also been no known or suspected attempts to sabotage spent fuel casks or storage facilities. The NRC responded to the terrorist attacks on September 11, 2001, by promptly requiring security enhancements for spent fuel storage, both in spent fuel pools and dry casks.

G:\Crisis Communication\Japan Quake and Tsunami\SNF Talking Points and Qs.docx

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: Wednesday, April 13, 2011 2:57:19 PM

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Sent: Tuesday, April 12, 2011 4:59 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
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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)"

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

Thoughts?

-Margie

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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.

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

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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

From: Hayden, Elizabeth
To: Screni, Diane
Subject: RE: SNF Talking Points and Qs.docx
Date: Wednesday, April 13, 2011 9:52:00 AM

But we evidently allowed 3 years in one case. What is 5 years based on?

*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: Screni, Diane
Sent: Wednesday, April 13, 2011 9:44 AM
To: Hayden, Elizabeth; McIntyre, David; Brenner, Eliot; Harrington, Holly; Burnell, Scott; Couret, Ivonne; Janbergs, Holly; Sheehan, Neil; Clark, Theresa; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Chandrathil, Prema; Uselding, Lara; Dricks, Victor
Subject: RE: SNF Talking Points and Qs.docx

Beth,

The individual certificates of compliance specify how long fuel must cool before being moved into the various casks.... Those all say 5 years.

DIANE SCRENCI
SR. PUBLIC AFFAIRS OFFICER
USNRC, RI
610/337-5330

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 9:33 AM
To: McIntyre, David; Brenner, Eliot; Harrington, Holly; Burnell, Scott; Couret, Ivonne; Screni, Diane; Janbergs, Holly; Sheehan, Neil; Clark, Theresa; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Chandrathil, Prema; Uselding, Lara; Dricks, Victor
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Dave,
Should we consider putting these on the public website under Japan FAQs and on the Spent Fuel page?

Also, am I correct in understanding that there are no regulations identifying a required minimum amount of time for spent fuel to be cooled in pools before it can be transferred to dry casks? What would preclude a licensee from taking the spent fuel from the reactor and putting it in a dry cask right away? What is the safety requirement?

Beth

From: McIntyre, David

GAGG/ 177

Sent: Wednesday, April 13, 2011 8:02 AM

To: Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; Burnell, Scott; Couret, Ivonne; Screni, Diane; Janbergs, Holly; Sheehan, Neil; Clark, Theresa; Hannah, Roger; Ledford, Joey; Mitlyng, Viktoria; Chandrathil, Prema; Uselding, Lara; Dricks, Victor

Subject: SNF Talking Points and Qs.docx

All – the attached talking points and Q&As on spent fuel pools and casks have been blessed (finally) by NMSS, NRR and NSIR. Many thanks to Theresa for helping with these.

Dave

From: [Hayden, Elizabeth](#)
To: [McIntyre, David](#)
Subject: RE: SNF Talking Points and Qs.docx
Date: Wednesday, April 13, 2011 10:59:00 AM

Thanks. Now I understand the whole picture.

*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*

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To: Hayden, Elizabeth; Brenner, Eliot; Harrington, Holly; Burnell, Scott; Couré, Ivonne; Screni, Diane; Janbergs, Holly; Sheehan, Neil; Clark, Theresa; Hannah, Roger; Ledford, Joey; Mithyng, Viktoria; Chandrathil, Prema; Uselding, Lara; Dricks, Victor
Subject: RE: SNF Talking Points and Qs.docx

The regulations @ 72.2(a)(1) actually state: "... for storage of power reactor spent fuel aged for at least one year ..." The real limitation is the heat load. The attached includes decay graphs of typical SNF assemblies – you'll see it starts out very hot, then drops precipitously for the first 5 years before leveling out. That's where the 5 years comes from. The individual cask designs are certified to contain a certain heat load. Therefore, the older the fuel, the more assemblies can be fit in a cask, and thus the more economical. Hotter fuel = fewer assemblies per cask, ergo more expensive. If the goal is to create space in the pool, either to reduce density or make room for new fuel, you would want to move older fuel, because you can fit more assemblies per cask, opening more spaces on the racks in the pool.

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To: McIntyre, David; Brenner, Eliot; Harrington, Holly; Burnell, Scott; Couré, Ivonne; Screni, Diane; Janbergs, Holly; Sheehan, Neil; Clark, Theresa; Hannah, Roger; Ledford, Joey; Mithyng, Viktoria; Chandrathil, Prema; Uselding, Lara; Dricks, Victor
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Gruber/178

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To: Leong, Edwin; Goldberg, Francine
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events
Date: Wednesday, April 13, 2011 3:38:04 PM

Edwin,

I'm assuming that your request that KG submit an ADAMS enhancement request to provide canned query capability also covers the second action item, "Add an 'exemptions' canned search on Facility Finder pages".

Thanks!

-Margie

From: Leong, Edwin
Sent: Saturday, April 09, 2011 9:07 AM
To: Goldberg, Francine; Janney, Margie
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events

All,

For the last action item, I have already engaged KG to submit an ADAMS enhancement request to provide canned query capability. I have a follow up discussion with his project team next week and will give you an update on this proposed feature.

Edwin

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
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61666/179

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Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events
Date: Wednesday, April 13, 2011 3:48:34 PM

Great. Thanks

From: Janney, Margie
Sent: Wednesday, April 13, 2011 2:57 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
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666/180

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margie.janney@nrc.gov

From: Hayden, Elizabeth
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: FW: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 12:06:00 PM
Attachments: [NRR Presentation on Fukushima- April 2011 ppt.pptx](#)

Hold off on this request. NRR wants to post a different version.

Beth

From: Hayden, Elizabeth
Sent: Tuesday, April 12, 2011 4:44 PM
To: WebContractor Resource
Subject: RE: 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 1st 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*

From: WebContractor Resource
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

6666/181

bullets under “**FAQ**” so there’s not so much space.



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?

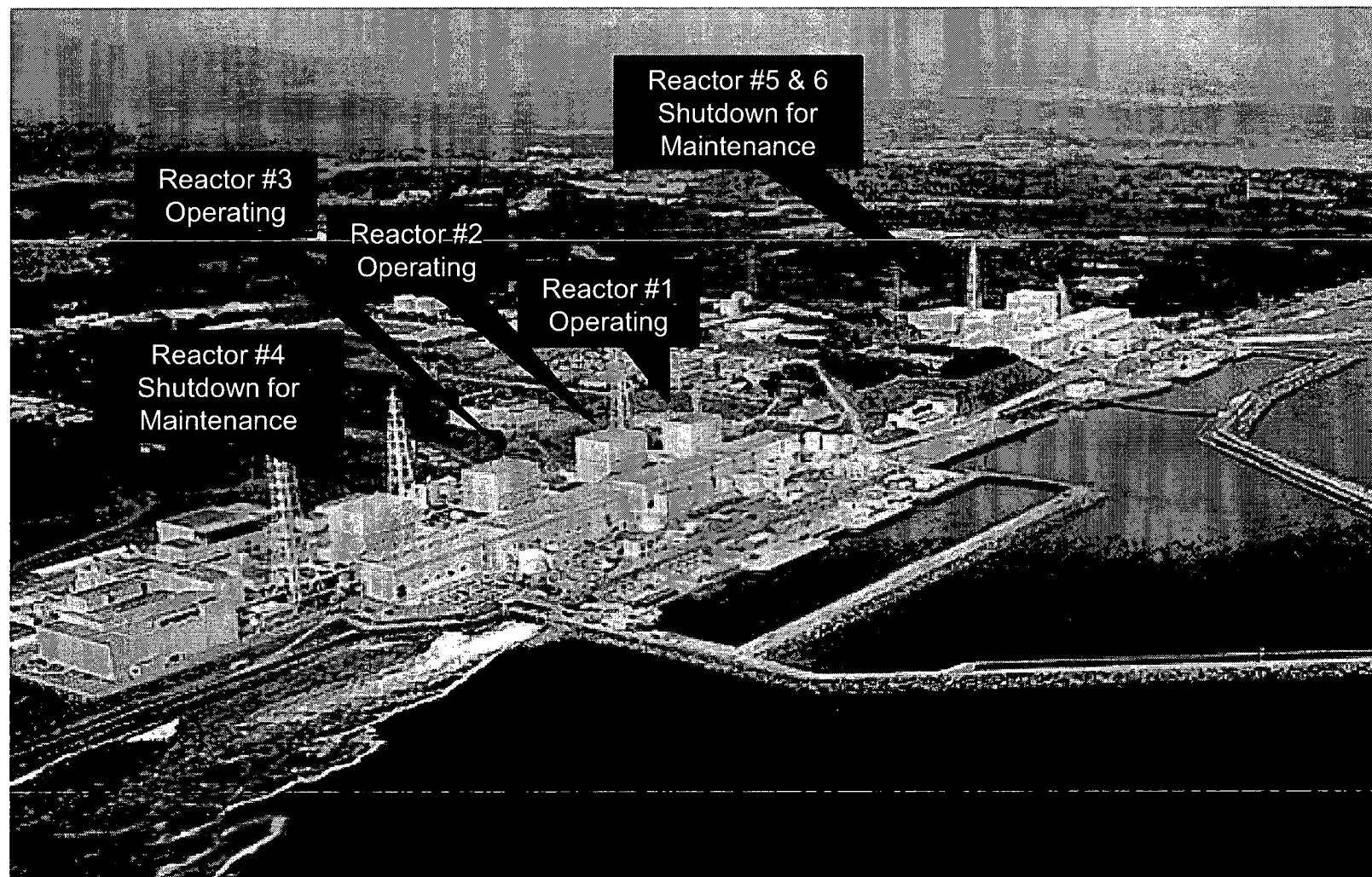
- The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to **protect public health and safety, promote the common defense and security, and protect the environment.**

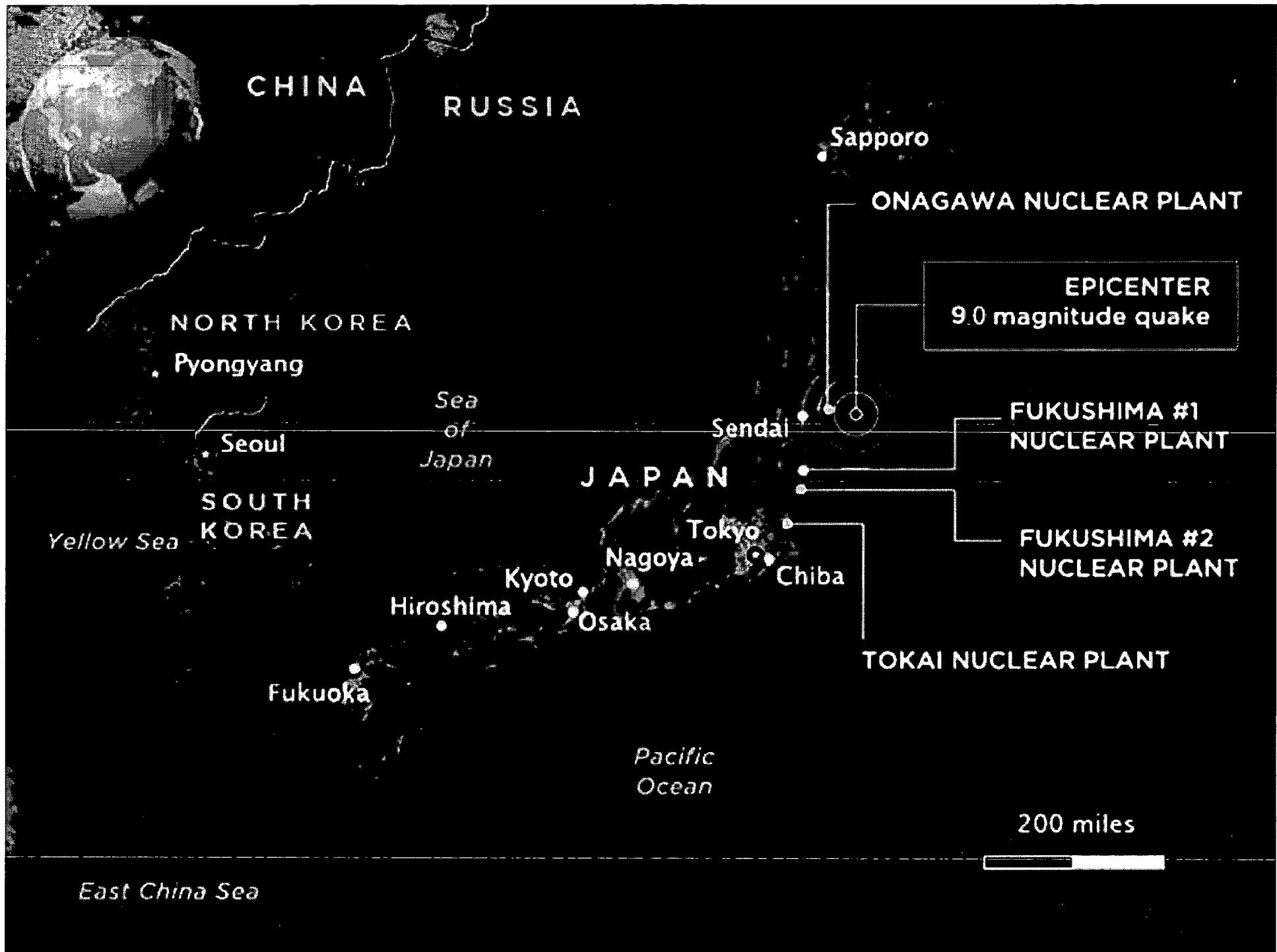


United States Nuclear Regulatory Commission

Protecting People and the Environment

Overview of Fukushima Daiichi Nuclear Power Station







United States Nuclear Regulatory Commission

Protecting People and the Environment

Earthquake & tsunami sequence of events

Friday March 11th @ 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



United States Nuclear Regulatory Commission

Protecting People and the Environment

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



United States Nuclear Regulatory Commission

Protecting People and the Environment

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

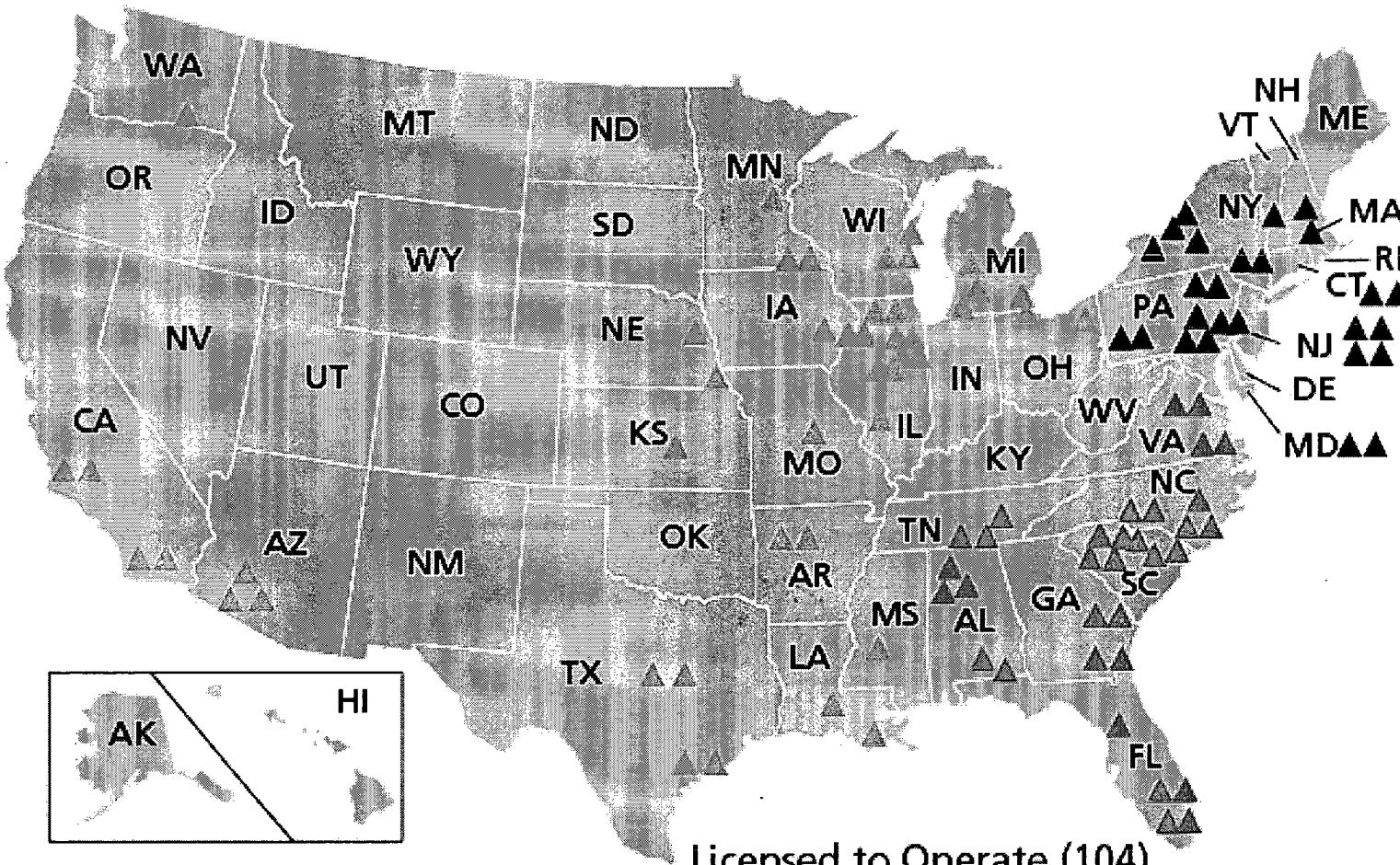
- Based on Near Term Review and Additional Insights from Fukushima Event
- Identify Potential Technical and Policy Issues
 - Research Activities
 - Generic Issues
 - Reactor Oversight Process
 - Regulatory Framework
 - Interagency Emergency Preparedness



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
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 - Decision to evacuate conservative, better to err on conservative
- Precautionary evacuation occurred days before fuel melt.

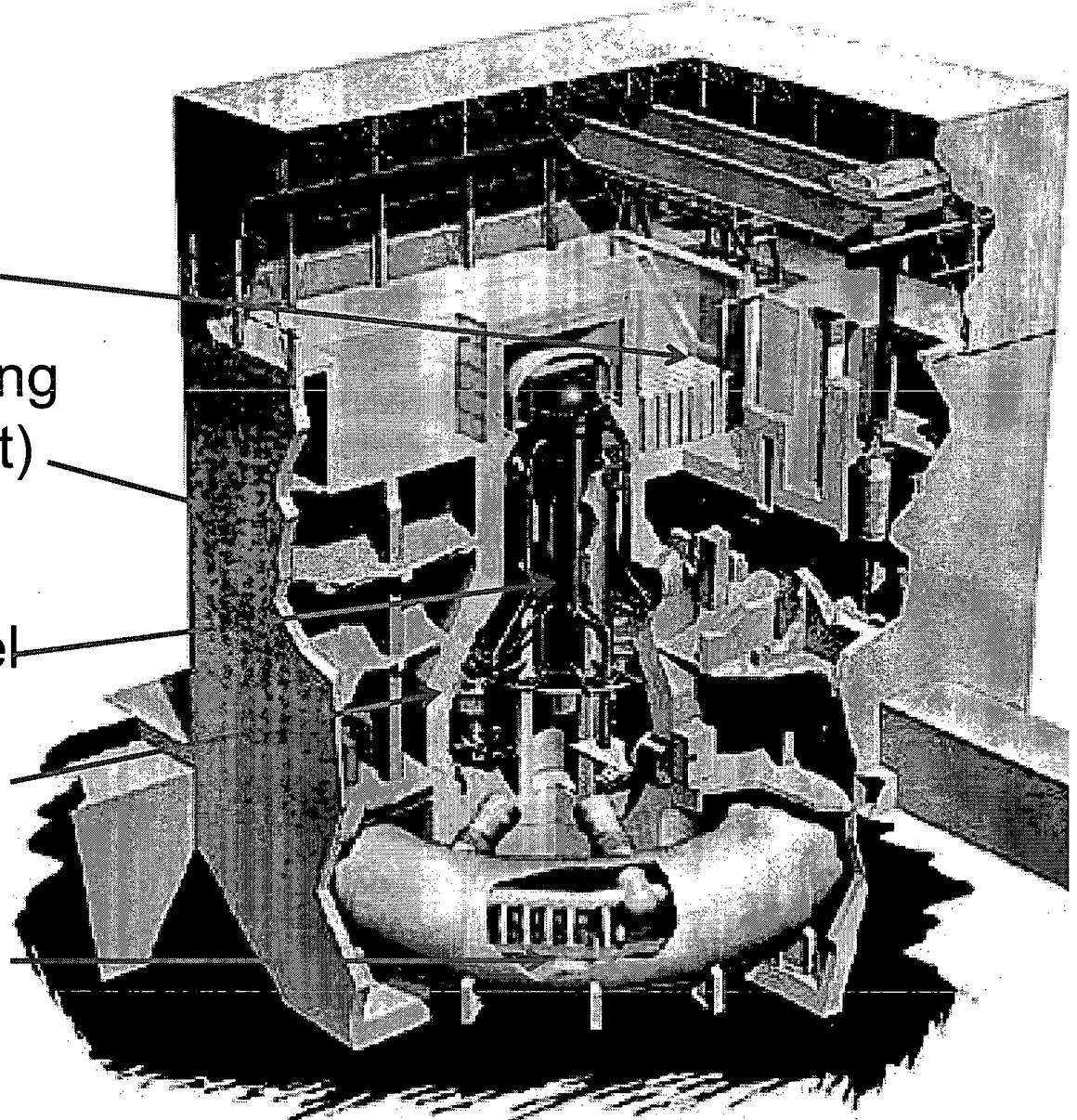


United States Nuclear Regulatory Commission

Protecting People and the Environment

BWR Mark I

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





United States Nuclear Regulatory Commission

Protecting People and the Environment

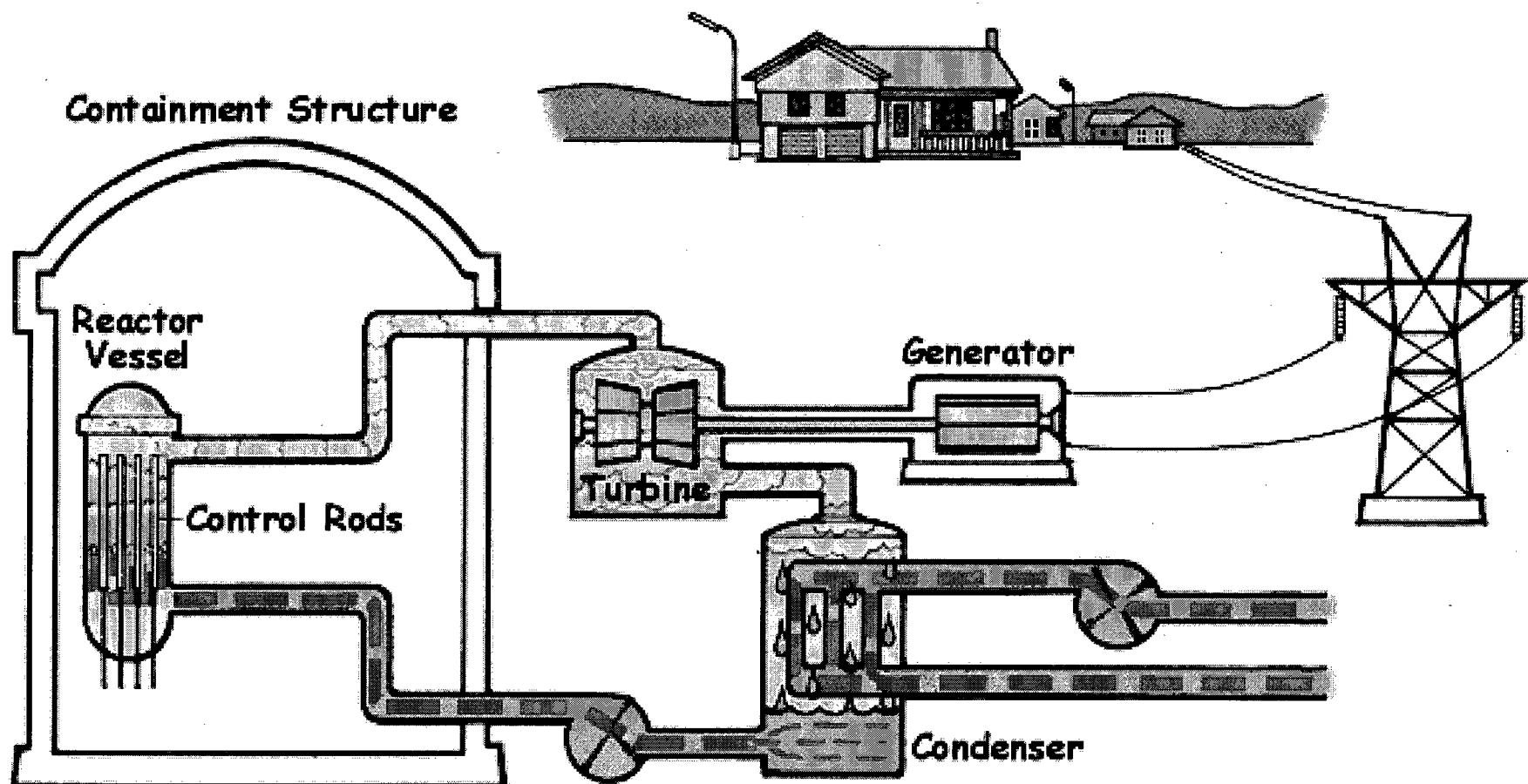
- ▶ **Reactor Service Floor
(Steel Construction)** →
 - ▶ **Concrete Reactor Building
(secondary Containment)** →
 - ▶ **Reactor Core** →
 - ▶ **Reactor Pressure Vessel** →
 - ▶ **Containment (Dry well)** →
 - ▶ **Containment (Wet Well)** →
- Spent Fuel Pool ↘



United States Nuclear Regulatory Commission

Protecting People and the Environment

Generic BWR



From: Hayden, Elizabeth
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: FW: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 12:53:00 PM
Attachments: NRR Presentation on Fukushima- April 2011 ppt.pptx

Hold on this posting on the current website, too.

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

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

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From: WebContractor Resource
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

666/182

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.



Presentation on Fukushima

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



NRC Mission – What Do We Do?

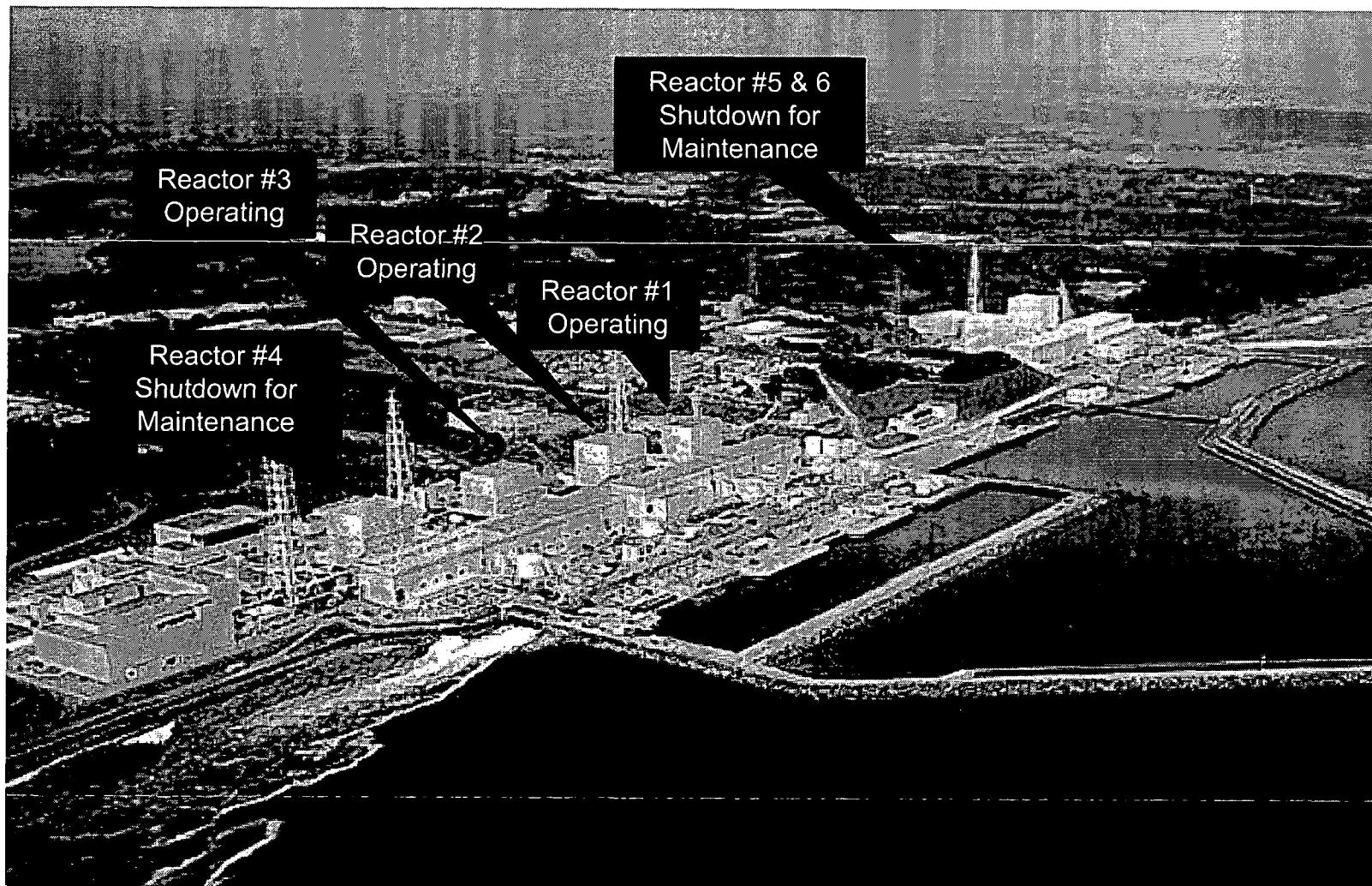
- The mission of the NRC is to license and regulate the Nation's civilian use of byproduct, source, and special nuclear materials in order to **protect public health and safety, promote the common defense and security, and protect the environment.**

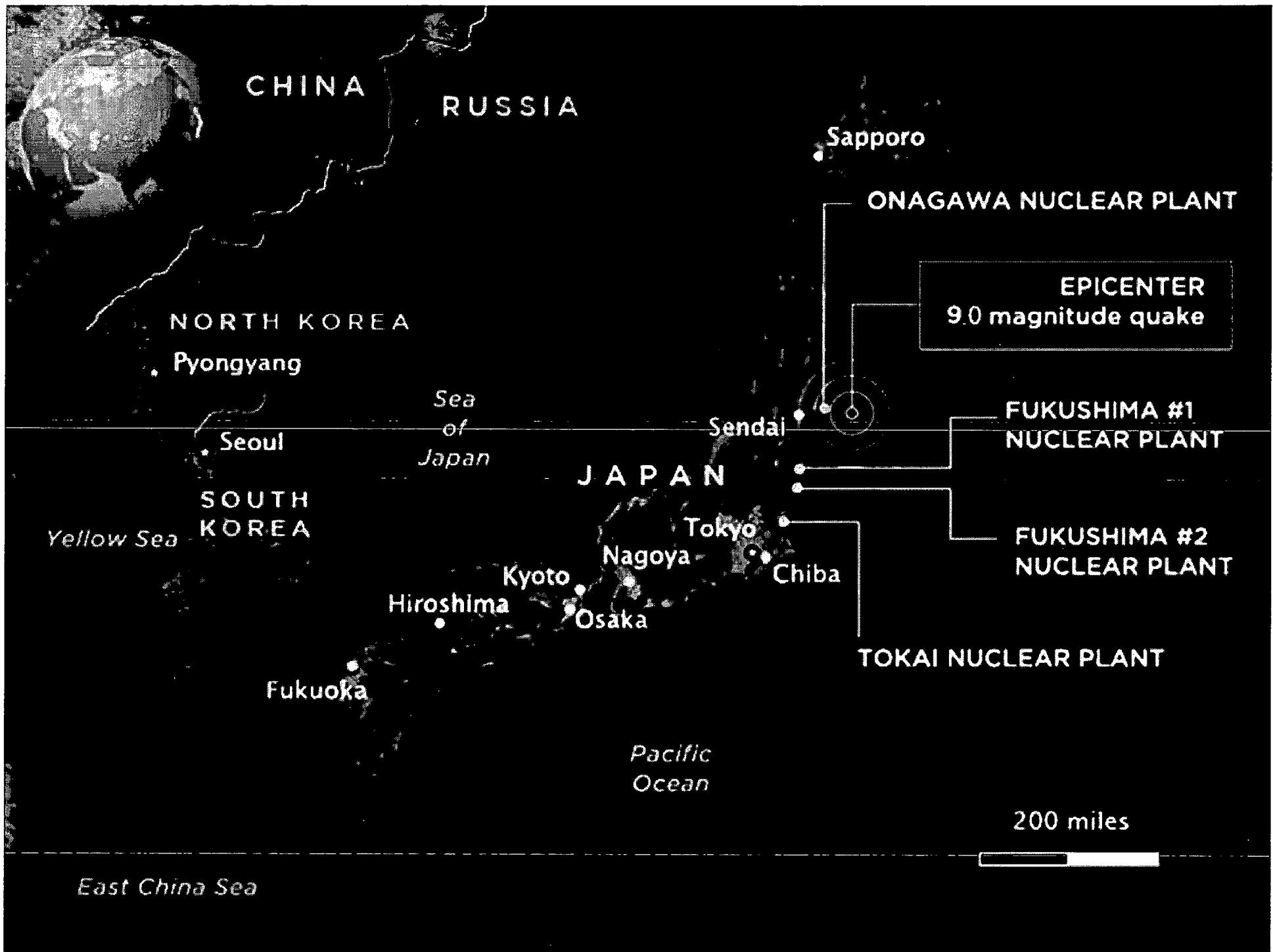


United States Nuclear Regulatory Commission

Protecting People and the Environment

Overview of Fukushima Daiichi Nuclear Power Station







Earthquake & tsunami sequence of events

Friday March 11th @ 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

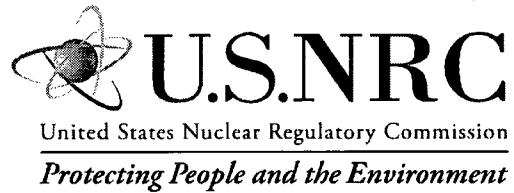


United States Nuclear Regulatory Commission

Protecting People and the Environment

NRC Response

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 - Combustible Gas Control
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United States Nuclear Regulatory Commission

Protecting People and the Environment

NRC Longer Term Actions

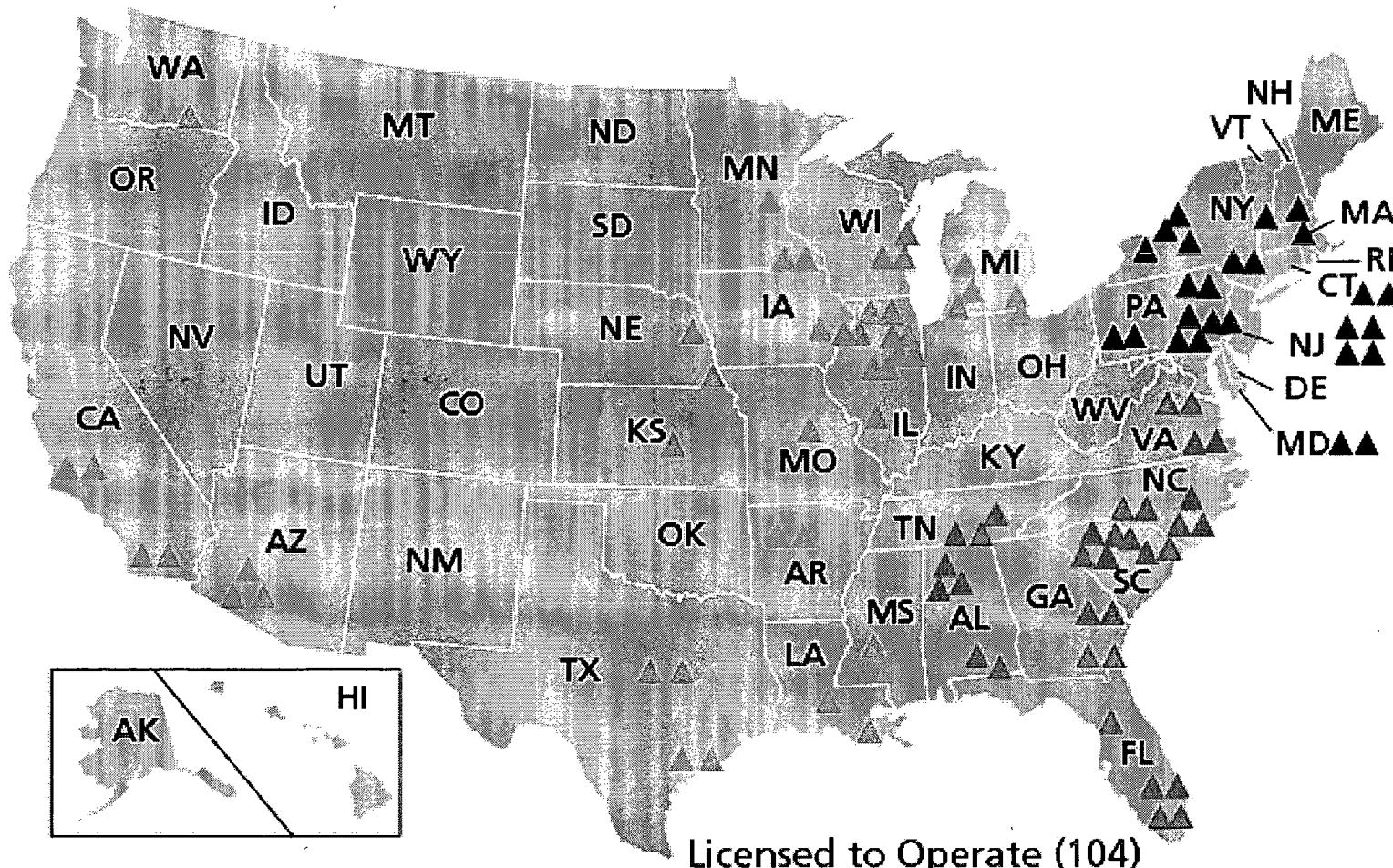
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United States Nuclear Regulatory Commission

Protecting People and the Environment

Operating Commercial Power Reactors



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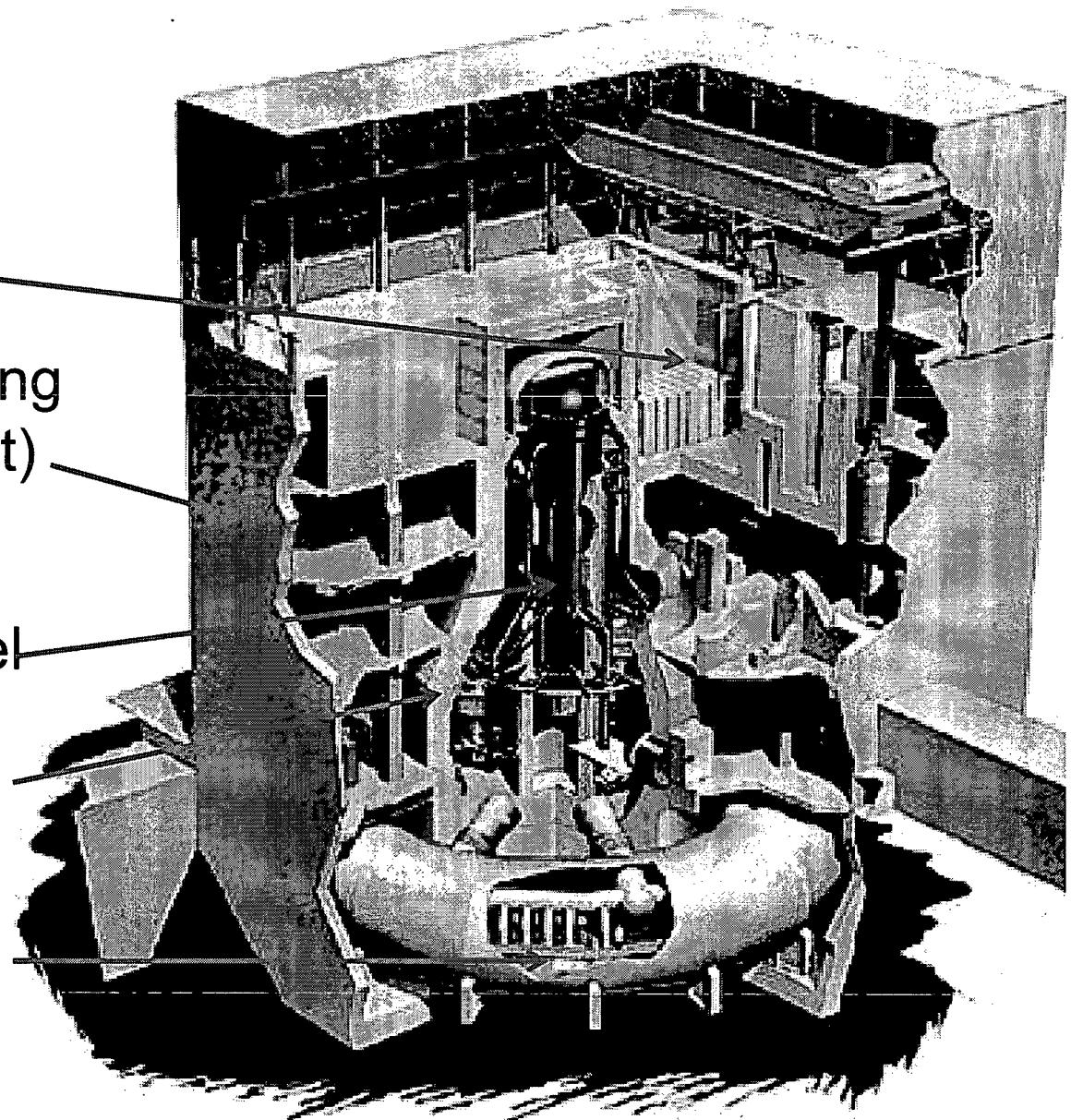


United States Nuclear Regulatory Commission

Protecting People and the Environment

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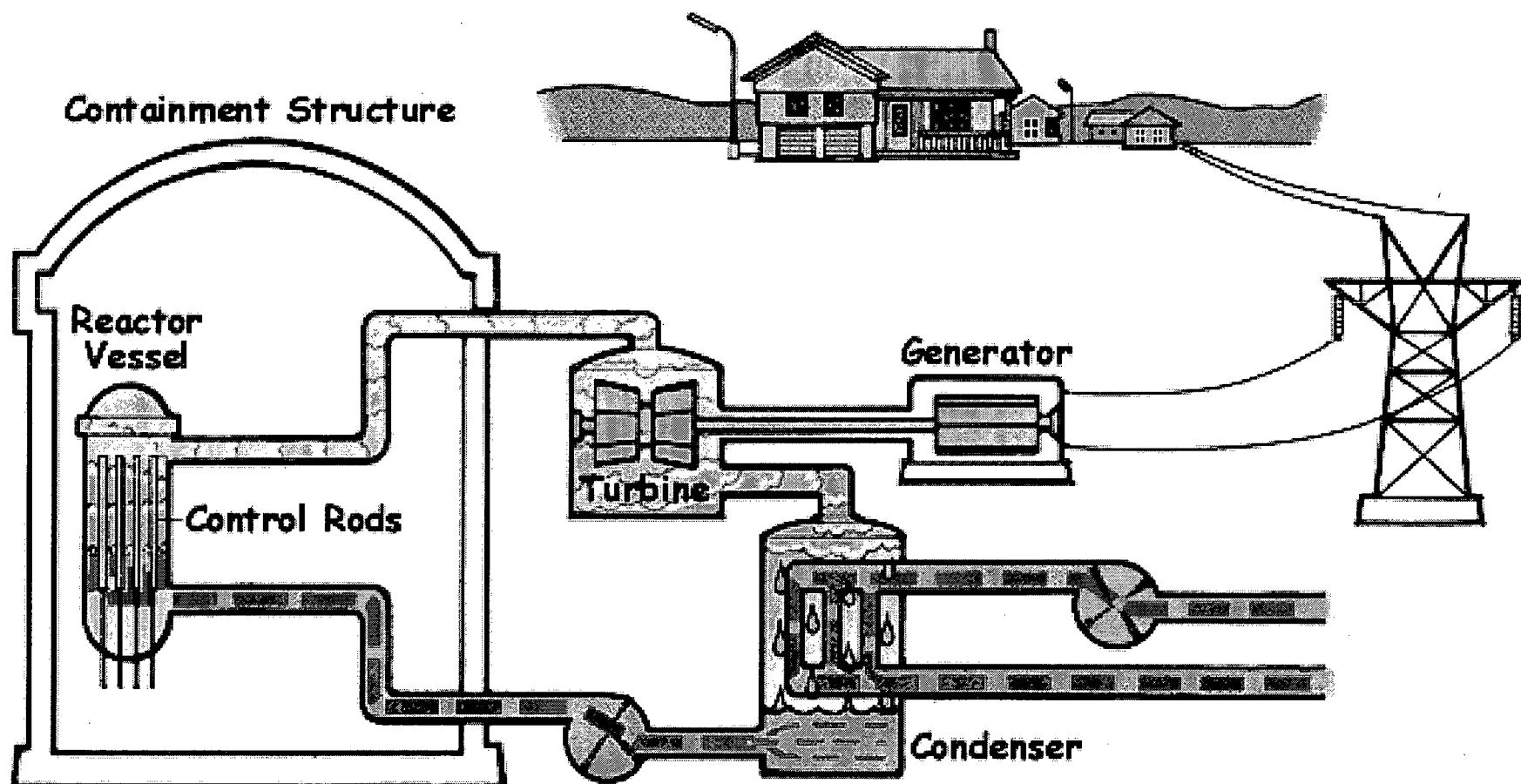


United States Nuclear Regulatory Commission

Protecting People and the Environment

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

Generic BWR



From: [WebContractor Resource](#)
To: Hayden, Elizabeth
Cc: [WebWork Resource](#)
Subject: RE: Japan Page
Date: Wednesday, April 13, 2011 10:34:50 AM

Good Morning Beth,

This has been updated and posted live.

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 9:48 AM
To: Hardy, Sally
Cc: WebContractor Resource; WebWork Resource
Subject: Japan Page
Importance: High

OK.

Please remove "2012" from the link on Chairman's April 12 testimony. My fault.

*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: Wednesday, April 13, 2011 9:16 AM
To: Hayden, Elizabeth
Subject: Re: Marty's Testimony

In a meeting now will call you as soon as I get out

Sent from NRC Blackberry
Sally Hardy

From: Hayden, Elizabeth
To: Hardy, Sally
Sent: Wed Apr 13 09:13:20 2011
Subject: RE: Marty's Testimony

Please call me 301-415-8202.

Beth Hayden

6666/183

*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: Wednesday, April 13, 2011 8:16 AM
To: WebWork Resource; Belmore, Nancy
Cc: Hayden, Elizabeth
Subject: RE: Marty's Testimony

My mistake this was already added under the 4/6 date. If there is anything else you need let us know. But I believe all is good now.

Sally

From: WebWork Resource
Sent: Wednesday, April 13, 2011 8:14 AM
To: Belmore, Nancy
Cc: Hayden, Elizabeth
Subject: RE: Marty's Testimony

Nancy

Marty's testimony is posted on the Japan page on the public web site. I'm coming in at the end of this email so I'm trying to figure out what the issue is? Are you wanting Marty's testimony post on the Congressional Testimony page as well? It currently is not there? Let us know and we can add this for you at:

<http://webwork.nrc.gov:300/reading-rm/doc-collections/congress-docs/congress-testimony/2011/>

Thanks
Sally

From: Belmore, Nancy
Sent: Wednesday, April 13, 2011 8:07 AM
To: Hayden, Elizabeth
Cc: Hardy, Sally; WebContractor Resource; WebWork Resource
Subject: RE: Marty's Testimony

This is posted – is this still an issue?

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

From: Hayden, Elizabeth
Sent: Tuesday, April 12, 2011 5:16 PM
To: Belmore, Nancy; WebContractor Resource; WebWork Resource
Cc: Hardy, Sally
Subject: RE: Marty's Testimony

No it isn't. Get the web folks to find out why it isn't listed.

*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
Sent: Wednesday, April 06, 2011 10:41 AM
To: Hayden, Elizabeth
Subject: RE: Marty's Testimony

Posted at: <http://webwork.nrc.gov:300/reading-rm/doc-collections/congress-docs/congress-testimony/2011/>

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

From: Hayden, Elizabeth
Sent: Wednesday, April 06, 2011 8:42 AM
To: Belmore, Nancy
Subject: RE: Marty's Testimony

Thanks, could you e-mail me when it's 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: Belmore, Nancy
Sent: Wednesday, April 06, 2011 8:22 AM
To: Hayden, Elizabeth

Subject: RE: Marty's Testimony

I just sent to ADAMS for immediate processing – as soon as they let me know it's an AOR I'll post.

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

From: Hayden, Elizabeth
Sent: Wednesday, April 06, 2011 8:19 AM
To: Belmore, Nancy
Subject: Marty's Testimony

When will Marty's testimony from this morning's hearing be available on the web? I just want to link to it from the Japan page.

*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: WebWork Resource; Belmore, Nancy
Cc: Hayden, Elizabeth
Subject: RE: Marty's Testimony
Date: Wednesday, April 13, 2011 8:16:05 AM

My mistake this was already added under the 4/6 date. If there is anything else you need let us know. But I believe all is good now.

Sally

From: WebWork Resource
Sent: Wednesday, April 13, 2011 8:14 AM
To: Belmore, Nancy
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From: Belmore, Nancy
Sent: Wednesday, April 13, 2011 8:07 AM
To: Hayden, Elizabeth
Cc: Hardy, Sally; WebContractor Resource; WebWork Resource
Subject: RE: Marty's Testimony

This is posted – is this still an issue?

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

From: Hayden, Elizabeth
Sent: Tuesday, April 12, 2011 5:16 PM
To: Belmore, Nancy; WebContractor Resource; WebWork Resource
Cc: Hardy, Sally
Subject: RE: Marty's Testimony

No it isn't. Get the web folks to find out why it isn't listed.

(g)G/G/184

*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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nancy.belmore@nrc.gov
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elizabeth.hayden@nrc.gov*

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U.S. Nuclear Regulatory Commission*

nancy.belmore@nrc.gov

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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](#)
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 2:04:41 PM

Beth,

Please review and approve for live posting. Note: We turn PowerPoint presentations into PDFs, so the PowerPoint icon was not added.

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

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 1:26 PM
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

OK. Attached is the scrubbed presentation. For the existing website, please put the link at the bottom of the box on the right (having equal status as FAQs and Blog) using this presentation with the PowerPoint icon (like in the subject line) in front of the words: Fukushima Presentation.

For the new website, please put this as the first item in the Related Information box on the bottom right.

Thanks!

Beth

From: WebContractor Resource
Sent: Wednesday, April 13, 2011 12:57 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Beth,

It's been removed from the live site, though it may take a few minutes for the servers to refresh and show the changes.

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 12:54 PM
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: FW: NRR Presentation on Fukushima- April 2011 ppt.pptx

Hold on this posting on the current website, too.

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

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

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From: WebContractor Resource
Sent: Tuesday, April 12, 2011 4:33 PM
To: Hayden, Elizabeth
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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.

From: [Hardy, Sally](#)
To: [Hayden, Elizabeth](#)
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 8:19:35 AM
Importance: High

Try this morning:

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

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

Let me know if you still have an issue. I tested just now and it's working for me.

Sally

From: Hayden, Elizabeth
Sent: Tuesday, April 12, 2011 4:24 PM
To: Hardy, Sally
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

nope

*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 3:53 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

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*

GGGG/186

*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.

From: [WebContractor Resource](#)
To: [Hayden, Elizabeth](#)
Cc: [WebWork Resource](#)
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx
Date: Wednesday, April 13, 2011 2:32:19 PM

Beth,

This has been posted live.

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 2:23 PM
To: WebContractor Resource
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Perfect. Thanks.

Beth

From: WebContractor Resource
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To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Beth,

This has been corrected. Please review and let me know of any further changes needed.

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 2:12 PM
To: WebContractor Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

No, the print should be bold like the **Blog** and **FAQs** and lined up to the margin like these two items. This is not a bullet under FAQ.

*Beth Hayden
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elizabeth.hayden@nrc.gov*

From: WebContractor Resource
Sent: Wednesday, April 13, 2011 2:04 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

Beth,

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Thank you,
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From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 1:26 PM
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: RE: NRR Presentation on Fukushima- April 2011 ppt.pptx

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Thanks!

Beth

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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.

From: Burnell, Scott
To: Smith, Rebecca
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Request for interview about license extensions
Date: Wednesday, April 13, 2011 5:39:57 PM

OK, let me check on availability tomorrow – times that work for you?

From: Smith, Rebecca [mailto:Rebecca.Smith@wsj.com]
Sent: Wednesday, April 13, 2011 5:37 PM
To: Burnell, Scott
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Request for interview about license extensions

Hi, Scott,

I have some questions that are about procedural matters and some that are more technical on aging management issues.

Regards,
Rebecca

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Wednesday, April 13, 2011 2:26 PM
To: Smith, Rebecca
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Request for interview about license extensions

Hi Rebecca;

I can certainly go over that with you, but I get the impression you'd want to speak to a technical staffer?

Scott

From: Smith, Rebecca [mailto:Rebecca.Smith@wsj.com]
Sent: Wednesday, April 13, 2011 5:24 PM
To: Burnell, Scott
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: WSJ: Request for interview about license extensions

Hi, Scott, Eliot and Elizabeth,

I'm writing a story about relicensing of nuclear plants and need to get a better understanding of what's fair game and what's off-limits in terms of issues that can be raised. Would it be possible to get an interview with someone there on Thursday or Friday?

I am reading what's on the web site but still would appreciate an interview. Thanks.

Regards,
Rebecca

Rebecca Smith
Staff Reporter
The Wall Street Journal
415-765-8212

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Wednesday, April 06, 2011 1:24 PM
To: Smith, Rebecca
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Today's house oversight and investigations report on peach bottom

Hi Rebecca;

We've discussed the preliminary SOARCA results at our annual conferences, including this year:

https://ric.nrc-gateway.gov/docs/abstracts/SessionAbstract_58.htm

and in 2009:

<http://www.nrc.gov/public-involve/conference-symposia/ric/past/2009/slides/presentations/wed-400-530-state-of-art-reactor/presentation-format/tinkler-joint-slides.ppt>
<http://www.nrc.gov/public-involve/conference-symposia/ric/past/2009/slides/presentations/wed-400-530-state-of-art-reactor/presentation-format/gaunt-slides.pdf>

The "full" SOARCA report is still being finalized.

Let me check on the 3/26. Thanks.

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From: Smith, Rebecca [mailto:Rebecca.Smith@wsj.com]
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To: Burnell, Scott
Subject: Re: Today's house oversight and investigations report on peach bottom

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Also, we finally got 3/26 NRC status update for Daiichi. Can we get these as produced? Not marked confidential and would help a lot.

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Rebecca

Sent from my BlackBerry Wireless Device

From: Burnell, Scott
To: Smith, Rebecca

Cc: Brenner, Eliot ; Hayden, Elizabeth
Sent: Wed Apr 06 13:08:35 2011
Subject: RE: Today's house oversight and invetigations report on peach bottom
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I understand you've spoken to other folks about SOARCA, do you still need to talk to us?

Scott

From: Smith, Rebecca [mailto:Rebecca.Smith@wsj.com]
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To: Burnell, Scott
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They presented information on an NRC analysis concerning the vulnerability of Peach Bottom, in a station blackout situation.
Could I get additional comment?

Regards,
Rebecca

Rebecca Smith
Staff Reporter
The Wall Street Journal
415-385-7224

From: Burnell, Scott [mailto:Scott.Burnell@nrc.gov]
Sent: Wednesday, April 06, 2011 8:10 AM
To: Burnell, Scott
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject:

Good Morning;

Here is the NRC response to the NY Times article:

The March 26 document represented an interim snapshot of what NRC staff and other experts considered as possible conditions inside the damaged units at Fukushima-Daiichi; the document does not reflect our understanding of the current situation. Based on those possible conditions, the NRC staff's recommendations should be considered prudent measures; they are not offered as the only possible solutions. We shared those recommendations with the Japanese operator and regulator of the plants. We understand they are pursuing an alternative set of strategies to control the plants and ensure the safety of the people working at the plants and living nearby. We are working with our counterparts to consider these strategies and explore additional steps that could enhance

safety.

If the NRC has any further comment, you'll be informed via e-mail. Thank you.

Scott Burnell

From: [Leslie Forgach](#)
To: [Hayden, Elizabeth](#)
Subject: RE: Speaker invitation: AEI-Japanese Business Roundtable, May 5th
Date: Wednesday, April 13, 2011 4:11:35 PM

Dear Beth,

Thank you for getting back to me. We look forward to inviting someone from the NRC to speak at a future roundtable—perhaps with a more specific focus on nuclear regulation.

Best,
Leslie

From: Hayden, Elizabeth [mailto:Elizabeth.Hayden@nrc.gov]
Sent: Tuesday, April 12, 2011 6:13 PM
To: Leslie Forgach
Cc: Frumkin, Daniel; Burnell, Scott; Nelson, Robert
Subject: FW: Speaker invitation: AEI-Japanese Business Roundtable, May 5th

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]
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 5th. I appreciate any suggestions you have towards the appropriate speaker to invite.

6666/189

Best,
Leslie

From: Frumkin, Daniel [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.

Dan

From: Leslie Forgach [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 4th. 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 4th 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: [Burnell, Scott](#)
Subject: RE: Request for interview about license extensions
Date: Thursday, April 14, 2011 8:11:00 AM

How about Melanie Galloway? Isn't there information in the Fact Sheet and pamphlet on LR that would be appropriate for Rebecca to look at before we decide an interview is needed with a technical person? We put all this information out on the web to help reporters but they still call for an interview anyway.

Beth

From: Burnell, Scott
Sent: Wednesday, April 13, 2011 5:40 PM
To: Smith, Rebecca
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Request for interview about license extensions

OK, let me check on availability tomorrow – times that work for you?

From: Smith, Rebecca [mailto:Rebecca.Smith@wsj.com]
Sent: Wednesday, April 13, 2011 5:37 PM
To: Burnell, Scott
Cc: Brenner, Eliot; Hayden, Elizabeth
Subject: RE: Request for interview about license extensions

Hi, Scott,
I have some questions that are about procedural matters and some that are more technical on aging management issues.
Regards,
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6/6/6/190

Hi, Scott, Eliot and Elizabeth,
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If the NRC has any further comment, you'll be informed via e-mail. Thank you.

Scott Burnell

From: Janney, Margie
To: Leong, Edwin; Goldberg, Francine
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events
Date: Thursday, April 14, 2011 9:30:40 AM

Edwin,

Please work with Adam Glazer in the Public Document Room. He has a lot of experience in helping the public with searches.

Thanks!

-Margie

From: Leong, Edwin
Sent: Thursday, April 14, 2011 6:57 AM
To: Janney, Margie; Goldberg, Francine
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events

Margie,

The technical capability is the same as what I requested. I do need to know the search criteria to return a list of 'exemptions'. Would IRSD be able to provide these criteria?

Thanks

edwin

From: Janney, Margie
Sent: Wednesday, April 13, 2011 3:38 PM
To: Leong, Edwin; Goldberg, Francine
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
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Edwin,

I'm assuming that your request that KG submit an ADAMS enhancement request to provide canned query capability also covers the second action item, "Add an 'exemptions' canned search on Facility Finder pages".

Thanks!

-Margie

From: Leong, Edwin
Sent: Saturday, April 09, 2011 9:07 AM
To: Goldberg, Francine; Janney, Margie
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events

All,

For the last action item, I have already engaged KG to submit an ADAMS enhancement request to provide canned query capability. I have a follow up discussion with his project team next week and will give you an update on this proposed feature.

Edwin

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
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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

From: [LIA07.Hoc](#)
To: [LIA07.Hoc](#)
Subject: OOU -- 1200 EDT (April 14, 2011) USNRC Earthquake-Tsunami Update
Date: Thursday, April 14, 2011 12:23:24 PM
Attachments: [USNRC Earthquake-Tsunami Update.041411.1200EDT.pdf](#)

Attached, please find a 1200 EDT, April 14, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is not intended to be shared outside of the Federal government without NRC approval.

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

Thank you,
Jim

Jim Anderson
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

6666/192

From: Leong, Edwin
To: Janney, Margie; Goldberg, Francine
Cc: Nichols, Russell; Sealing, Donna; Wimbush, Andrea; Williams, Evelyn; Hayden, Elizabeth; Landau, Mindy; Smith, Pat; Zabel, Joseph; Ousley, Elizabeth; Reiter, Stuart; Glazer, Adam; Smith, Arthur
Subject: RE: Action Items from Today's Open Gov. Mtg. to Facilitate Japan Events
Date: Thursday, April 14, 2011 6:57:00 AM

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

666/193

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Fran

Francine.Goldberg@nrc.gov

(301) 415-6921 (O)

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

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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

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-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

From: Hayden, Elizabeth
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: Request to add link to Japan page on web
Date: Thursday, April 14, 2011 4:52:00 PM

On the current and new websites, please add a bullet in the right-hand box above Potassium Iodide that says: Expanded Q&A on Japan Event. Link to this document in ADAMS at ML11103A063.

*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*

6666/194

From: Hayden, Elizabeth
To: WebContractor Resource
Cc: WebWork Resource
Subject: RE: Request to add link to Japan page on web
Date: Thursday, April 14, 2011 5:31:00 PM

Good to go.

*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: Thursday, April 14, 2011 5:19 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: Request to add link to Japan page on web

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: Thursday, April 14, 2011 4:52 PM
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: Request to add link to Japan page on web

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*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*

62-626261/195

Ross, Robin

From: Wertz, Trent on behalf of Leeds, Eric
Sent: Thursday, April 14, 2011 11:02 AM
To: Wertz, Trent
Subject: FW: FYI: Assessment of the need for protective actions in Tokyo

From: Casto, Chuck ✓
Sent: Saturday, April 02, 2011 4:46 PM
To: Leeds, Eric; Collins, Elmo
Cc: Weber, Michael; Virgilio, Martin; Evans, Michele; Carpenter, Cynthia; Blount, Tom; Sheron, Brian; McGinty, Tim; Ross-Lee, MaryJane; McDermott, Brian
Subject: Re: FYI: Assessment of the need for protective actions in Tokyo

Will advise embassy. Thanks.

Chuck

From: Leeds, Eric / ..
To: Casto, Chuck; Collins, Elmo
Cc: Weber, Michael; Virgilio, Martin; Evans, Michele; Carpenter, Cynthia; Blount, Tom; Sheron, Brian; McGinty, Tim; Ross-Lee, MaryJane; McDermott, Brian
Sent: Sat Apr 02 12:04:41 2011
Subject: FYI: Assessment of the need for protective actions in Tokyo

Chuck & Elmo – It looks like the “pessimistic” source term will not be run by NARAC. See below.

From: PMT09 Hoc
Sent: Saturday, April 02, 2011 11:26 AM
To: PMT07 Hoc; ET07 Hoc; Leeds, Eric; Hoc, PMT12
Subject: Assessment of the need for protective actions in Tokyo

A hypothetical source term (ST) was developed to provide the Ambassador with “worst case” dose information (Pessimistic source term for US Embassy in Tokyo 3/30/11). NARAC was expected to perform the dose calculation when directed by NSC/OSTP. Parameters of the source term were specified by NSC. RES delivered the ST and it was forwarded to NARAC on 3/31/11 @1012 hrs via email.

NRC was asked by the site team to encourage NSC to have NARAC to run the dose calc. However, PMT was contacted on 4/2/11 by Chuck Donnell of NSC to inform us that NSC/OSTP management, Drs. Fedder and Holdren determined that the ST need not be run. Previous hypothetical STs and dose calculations have provided contain enough information for the Embassy to determine radiological protective actions and travel advisories.

C. Donnell indicated that OSTP thinking was that radiological protective actions should not be necessary in Tokyo and need not be the basis for travel advisories in at least that region. PMT thinking is aligned with this; given:

- plant status,
- the likelihood of significant degradation,
- the distance to Tokyo,
- the prevailing wind directions and

- the availability of many channels of radiological information that would provide hours to days of warning before increasing radiation levels could reach Tokyo.

From: Weber, Michael
Sent: Friday, April 15, 2011 11:05 AM
To: Zimmerman, Roy; OST01 HOC
Cc: Landau, Mindy; Andersen, James; Muessle, Mary; Williams, Shawn; Schwartzman, Jennifer
Subject: FYI - CNRA: Senior Task Group on Impacts of Fukushima
Attachments: image001.gif; Preparation for initial STG meetingw charter.doc

From: Leeds, Eric
Sent: Friday, April 15, 2011 8:21 AM
To: Virgilio, Martin; Weber, Michael; Doane, Margaret
Cc: Miller, Charles; Holahan, Gary; Grobe, Jack; Boger, Bruce; Evans, Michele; Givvines, Mary; Johnson, Michael; Sheron, Brian; Wiggins, Jim
Subject: CNRA: Senior Task Group on Impacts of Fukushima

FYI – Michele Evans is the USA rep on the Task Group. The Task Group's charter is attached.

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

From: Diane.JACKSON@oecd.org [mailto:Diane.JACKSON@oecd.org]
Sent: Friday, April 15, 2011 5:55 AM
Subject: CNRA: Senior Task Group on Impacts of Fukushima

Dear CNRA members and STG members –

Please find attached the initial meeting notification for the CNRA Senior-level task group on the impacts of the Fukushima Accident.

Included in the meeting notification is the 30 March letter from Mike Weightman concerning the establishment of the group and the request for nominations. Additionally, a draft charter is attached.

Nominations and comments are always welcome.

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



Committee on Nuclear Regulatory Activities

Senior Level Task Group

Impacts of the Fukushima Accident

Initial Meeting Notification

The CNRA has established a senior-level task group to coordinate the response of CNRA activities, exchange information on national activities, and look at generic implications of the event. The task group will be asked to identify areas that in-depth evaluation would benefit on an international level and can be undertaken by CNRA or CSNI working groups, or by new task groups to address gaps that are not within the scope of an existing working group. The group would be also chartered to identify short-term and long-term activities. Nominations to the task group and comments on the charter are welcome.

Meeting Location:

Nuclear Energy Agency Headquarters, 12 boulevard des Iles, Issy-les-Moulineaux
<http://www.oecd-nea.org/general/practical/>

Schedule:

- 4 May, 14:00 – 17:00
- 5 May, 9:30 – 17:00
- 6 May, 9:30 – 12:00

Participants (to-date):

- Dr Marc VINCKE, Belgium
- Mr Greg RZENTKOWSKI, Canada
- Mr Petr BRANDEJS, Czech Republic
- Mr Thomas HOUDRE, France
- Mr Durk Hun LEE, Korea
- Mr Petteri TIIPPANA, Finland
- Mr Jose Ramon ALONSO, Spain
- Ms. Michele EVANS, United States

Secretariat: Ms. Diane Jackson, +33 01 45 24 10 55, Diane.Jackson@oecd.org

Attachment



30 March 2011
Paris, France

Dear CNRA members –

As our Japanese colleagues continue to work tirelessly towards stabilising the Fukushima nuclear power plants, the safety of all nuclear power plants world-wide have come under close scrutiny. Regulatory bodies have been called upon to affirm the safety of its power plants, regardless of type. Earlier this week, the CNRA Chair and Vice-chairs discussed the issue to seek ways to combine efforts internationally for improved effectiveness and efficiency.

The CNRA is establishing a senior-level task group to coordinate the response of CNRA activities, exchange information on national activities, and look at generic implications of the event. The task group will be asked to identify areas that in-depth evaluation would benefit on an international level and can be undertaken by CNRA or CSNI working groups, or by new task groups to address gaps that are not within the scope of an existing working group. The group would be also chartered to identify short-term and long-term activities.

Countries generally with operating nuclear power plants are invited to nominate a senior-level delegate to the group. It would be expected that the group could commence work through the immediate sharing of national activities, and follow-on shortly with a group meeting. Task group delegates should be available for a meeting in Paris in early May. Please send your nominations to Javier.Reig@oecd.org and Diane.Jackson@oecd.org

Additionally, in order for all CNRA members stay informed of the task group and National activities, documents for exchange will be posted on a NEA password protected member website. It will be accessible to CNRA, CSNI, and working group members. If you could send your documents regarding your country's plans for plant reviews and the timelines to Diane Jackson, she will make sure they are posted on the website.

Best regards,
Mike Weightman, CNRA Chair

Committee on Nuclear Regulatory Activities
Senior Task Group on the Impacts of the Fukushima Event

DRAFT CHARTER

Introduction

Following the Fukushima event, the CNRA Chair and Vice-chairs decided that a senior level task group should be established. On 30 March, the CNRA Chair sent a letter to all CNRA members (attached) asking for nominations and provided a brief description of the group.

CNRA member countries are invited to nominate a senior level delegate from the regulatory body or technical support organisation. NEA will provide the Technical Secretariat function.

Communication, co-operation and collaboration within the international community on national and regional responses is a key element moving forward as regulatory bodies in all countries must provide assurance that the nuclear power plant's (NPP) operation and design are adequate to protect public health and safety and the environment.

Objective

Activities and objectives of the Senior Task Group on the Impacts of the Fukushima Event will be further discussed at the June CNRA meeting, however it is expected that the Senior Level Task group will:

- Act as a focal point for the timely and efficient exchange of information on National and Regional activities, such as reviews, audits, inspections of National NPPs in response to the Fukushima event.
- Act as a resource for Japan to communicate and collaborate with international regulatory bodies in a timely and efficient manner.
- Identify Lessons Learnt as an international body of senior regulators from the event.
- Identify areas that the exchange of existing practices would assist in identifying commendable practices and areas that should be adapted based on insights from Fukushima event.
- Identify areas and issues which would benefit from in-depth evaluation or research.
- Identify short-term and long-term follow-on activities for the task group, current CNRA and CSNI working groups, or recommend the creation of a new temporary group.

Organisation and Implementation

The Task Group will meet 4 – 6 May 2011 at the NEA headquarters. The meeting will commence in the afternoon on 4 May. The task group will report to the CNRA during the special Fukushima discussion during the 6 – 7 June CNRA meeting in Paris. The dates and timing of additional meetings will be decided by the group, with guidance from CNRA following the June meeting.

A dedicated password-protected webpage has been established for the exchange of information on national activities in response to Fukushima. Members of CNRA, CSNI, observers to these Committees, and all members in CNRA and CSNI working groups (WGs) have access to the information through the established password-protected member page. Additionally, members of the MDEP Steering Technical Committee and MDEP Working Group chairs have been given access.

A unique task group member webpage will be created, as necessary, for the exchange of *working* documents.

From: McIntyre, David
To: Harrington, Holly; Brenner, Eliot; Hayden, Elizabeth; Chandrathil, Prema; Sheehan, Neil; Screni, Diane; Burnell, Scott; Couret, Ivonne; Janbergs, Holly; Clark, Theresa; Anderson, Brian; Stuckle, Elizabeth; Mityng, Viktoria; Uselding, Lara; Dricks, Victor; Hannah, Roger; Ledford, Joey
Subject: SNF Talking Points and Qs.docx
Date: Thursday, April 14, 2011 2:02:41 PM
Attachments: SNF Talking Points and Qs.docx

Rev. 3, with an additional Q&A on emergency planning for ISFSIs at decommissioning/decommissioned reactors.

(GLG/GG) / 198

OPA Talking Points and Qs&As

Spent Fuel Pools and Storage

[Revision 3, April 14, 2011]

Talking Points:

1. All U.S. nuclear power plants store spent nuclear fuel in “spent fuel pools.” These pools are robust constructions made of reinforced concrete several feet thick, with steel liners. The water is typically about 40 feet deep, and serves both to shield the radiation and cool the rods.
2. As the pools near capacity, utilities move some of the older spent fuel into “dry cask” storage. Fuel is typically cooled at least 5 years in the pool before transfer to cask. NRC has authorized transfer as early as 3 years; the industry norm is about 10 years.
3. The NRC believes spent fuel pools and dry casks both provide adequate protection of the public health and safety and the environment. Therefore there is no pressing safety or security reason to mandate earlier transfer of fuel from pool to cask. (*Note: We do not say they are “equally” safe. We say they are both safe.*)
4. After the September 11, 2001, terrorist attacks, the NRC issued orders to plant operators requiring several measures aimed at mitigating the effects of a large fire, explosion, or accident that damages a spent fuel pool. These were meant to deal with the aftermath of a terrorist attack or plane crash; however, they would also be effective in responding to natural phenomena such as tornadoes, earthquakes or tsunami. These mitigating measures include:
 - a. Controlling the configuration of fuel assemblies in the pool to enhance the ability to keep the fuel cool and recover from damage to the pool.
 - b. Establishing emergency spent fuel cooling capability.
 - c. Staging emergency response equipment nearby so it can be deployed quickly
5. According to the Congressional Research Service (using NEI data), there were 62,683 metric tons of commercial spent fuel accumulated in the United States as of the end of 2009.
 - a. Of that total, 48,818 metric tons – or about 78 percent – were in pools.
 - b. 13,856 metric tons – or about 22 percent – were stored in dry casks.

- c. The total increases by 2,000 to 2,400 tons annually.

Questions and Answers – General

Q1: What is spent nuclear fuel?

A1: “Spent nuclear fuel” refers to fuel elements that have been used at commercial nuclear reactors, but that are no longer capable of economically sustaining a nuclear reaction. Periodically, about one-third of the nuclear fuel in an operating reactor needs to be unloaded and replaced with fresh fuel.

Q2: Why is spent fuel hot?

A2: Spent fuel generates what is called “residual heat” because of radioactive decay of the elements inside the fuel. After the fission reaction is stopped and the reactor is shut down, the products left over from the fuel’s time in the reactor are still radioactive and emit heat as they decay into more stable elements. Although the heat production drops rapidly at first, heat is still generated many years after shutdown. Therefore, the NRC sets requirements on the handling and storage of this fuel to ensure protection of the public and the environment.

Questions and Answers – Spent Fuel Inventories

Q3: Why doesn’t the NRC have up-to-date figures on how much spent fuel is stored at U.S. nuclear plants? Doesn’t the regulator have a clue about how much of this stuff is out there?

A3: The NRC and Department of Energy (NNSA) operate the Nuclear Material Management and Safeguards System (NMMSS), a database that tracks Special Nuclear Material (enriched uranium and plutonium). This database does not distinguish between fresh and irradiated material, and the information is withheld from the public for security reasons. That’s why figures on spent fuel inventory come from the industry.

Q4: How much fuel is currently in dry cask storage?

A4: As of November 2010, there were 63 “independent spent fuel storage installations” (or ISFSIs) licensed to operate at 57 sites in 33 states. These locations are shown on a map on the NRC website at: <http://www.nrc.gov/waste/spent-fuel-storage/locations.pdf>. Over 1400 casks are stored in these independent facilities.

Q5: How much fuel is stored at decommissioned reactors? Is it in pools or casks?

A5: There are currently 10 decommissioned nuclear power reactors at 9 sites with no other nuclear operations. According to a 2008 Department of Energy report to Congress, approximately 2800 metric tons of spent fuel is stored at these nine sites. As of the writing of

that report, seven of the sites had independent spent fuel storage installations, or ISFSIs. Two additional sites had approximately 1000 metric tons of spent fuel remaining in pool storage.

Questions and Answers – ISFSIs

Q6: What is dry cask storage?

A6: Dry cask storage allows spent fuel that has already been cooled in the spent fuel pool for several years to be surrounded by inert gas inside a container called a cask. The casks are typically steel cylinders that are either welded or bolted closed. The steel cylinder provides containment of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public.

Q7: What is an “ISFSI”?

A7: An independent spent fuel storage installation, or ISFSI, is a facility that is designed and constructed for the interim storage of spent nuclear fuel. These facilities are licensed separately from a nuclear power plant and are considered independent even though they may be located on the site of another NRC-licensed facility.

Q8: What kind of license is required for an ISFSI?

A8: NRC authorizes storage of spent nuclear fuel at an ISFSI in two ways: site-specific or general license. For site-specific applications, the NRC reviews the safety, environmental, physical security and financial aspects of the licensee and proposed ISFSI and, if we conclude it can operate safely, we issue a license valid. This license contains requirements on topics such as leak testing and monitoring and specifies the quantity and type of material the licensee is authorized to store at the site. A general license authorizes storage of spent fuel in casks previously approved by the NRC at a site already licensed to possess fuel for or operate a nuclear power plant. Licensees must show the NRC that it is safe to store spent fuel in dry casks at their site, including analysis of earthquake intensity and tornado missiles. Licensees also review their programs (such as security or emergency planning) and make any changes needed to incorporate an ISFSI at their site. Of the currently licensed ISFSIs, 48 are operating under general licenses and 15 have specific licenses.

Questions and Answers – Dry Cask Safety

Q9: How do you know the dry casks are safe? Does the NRC inspect these facilities, or just the reactor and spent fuel pool?

A9: The NRC is responsible for inspection of dry cask storage. Before casks are loaded, inspectors with specific knowledge of ISFSI operations assess the adequacy of a “dry run” by the

licensee; they then observe all initial cask loadings. The on-site resident inspectors or region-based inspectors may observe later cask loadings, and the regional offices also perform periodic inspections of routine ISFSI operations.

Q10: What keeps fuel cool in dry casks?

A10: Fuel is often moved to dry cask storage after several years in spent fuel pools, so the residual heat given off by the fuel has significantly decreased. These casks are typically thick, leak-tight steel containers inside a robust steel or concrete overpack. The fuel is cooled by natural airflow around the cask.

Questions and Answers – Spent Fuel Pool Safety

Q11: What do you look at when you license a fuel storage facility? How do I know it can withstand a natural disaster?

A11: The NRC's requirements for both wet and dry storage can be found in Title 10 of the Code of Federal Regulations (10 CFR), including the general design criteria in Appendix A to Part 50 and the spent-fuel storage requirements in Part 72. The staff uses these rules to determine that the fuel will remain safe under anticipated operating and accident conditions. There are requirements on topics such as radiation shielding, heat removal, and criticality. In addition, the staff reviews fuel storage designs for protection against:

- natural phenomena, such as seismic events, tornados, and flooding
- dynamic effects, such as flying debris or drops from fuel handling equipment and drops of fuel storage and handling equipment
- hazards to the storage site from nearby activities

Q12: How do you know the fuel pools are safe? Does the NRC inspect these facilities, or just the reactor itself?

A12: NRC inspectors are responsible for verifying that spent fuel pools and related operations are consistent with a plant's license. For example, our staff inspects spent fuel pool operations during each refueling outage. We also performed specialized inspections to verify that new spent fuel cooling capabilities and operating practices were being implemented properly.

Q13: What would happen to a spent fuel pool during an earthquake? How can I be sure the pool wouldn't be damaged?

A13: All spent fuel pools are designed to seismic standards consistent with other important safety-related structures on the site. The pool and its supporting systems are located within structures that protect against natural phenomena and flying debris. The pools' thick walls and floors provide structural integrity and further protection of the fuel from natural phenomena and debris. In addition, the deep water above the stored fuel (typically more than 20 feet above the top of the spent fuel rods) would absorb the energy of debris that could fall into the pool. Finally,

the racks that support the fuel are designed to keep the fuel in its designed configuration after a seismic event.

Q14: Can spent fuel pools leak?

A14: Spent fuel pools lined with stainless steel are designed to protect against a substantial loss of the water that cools the fuel. Pipes typically enter the pool above the level of the stored fuel, so that the fuel would stay covered even if there were a problem with one of the pipes. The only exceptions are small leakage-detection lines and, at two pressurized water reactor (PWR) sites, robust fuel transfer tubes that enter the spent fuel pool directly. The liner normally prevents water from being lost through the leak detection lines, and isolation valves or plugs are available if the liner experiences a large leak or tear.

Q15: How would you know about a leak in such a large pool of water?

A15: The spent fuel pools associated with all but one operating reactor have liner leakage collection to allow detection of very small leaks. In addition, the spent fuel pool and fuel storage area have diverse instruments to alert operators to possible large losses of water, which could be indicated by low water level, high water temperature, or high radiation levels.

Q16: How can operators get water back in the pool if there is a leak or a failure?

A16: All plants have systems available to replace water that could evaporate or leak from a spent fuel pool. Most plants have at least one system designed to be available following a design basis earthquake. In addition, the industry's experience indicates that systems not specifically designed to meet seismic criteria are likely to survive a design basis earthquake and be available to replenish water to the spent fuel pools. Furthermore, plant operators can use emergency and accident procedures that identify temporary systems to provide water to the spent fuel pool if normal systems are unavailable. In some cases, operators would need to connect hoses or install short pipes between systems. The fuel is unlikely to become uncovered rapidly because of the large water volume in the pool, the robust design of the pool structure, and the limited paths for loss of water from the pool.

Q17: Do U.S. nuclear power plants store their fuel above grade? Why is this considered safe?

A17: For boiling water reactor (BWR) Mark I and II designs, the spent fuel pool structures are located in the reactor building at an elevation several stories above the ground (about 50 to 60 feet above ground for the Mark I reactors). The spent fuel pools at other operating reactors in the U.S. are typically located with the bottom of the pool at or below plant grade level. Regardless of the location of the pool, its robust construction provides the potential for the structure to withstand events well beyond those considered in the original design. In addition, there are multiple means of restoring water to the spent fuel pools in the unlikely event that any is lost.

Q18: How are spent fuel pools kept cool? What happens if the cooling system fails?

A18: The spent fuel pool is cooled by an attached cooling system. The system keeps fuel temperatures low enough that, even if cooling were lost, operators would have substantial time to recover cooling before boiling could occur in the spent fuel pool. Licensees also have backup ways to cool the spent fuel pool, using temporary equipment that would be available even after fires, explosions, or other unlikely events that could damage large portions of the facility and prevent operation of normal cooling systems. Operators have been trained to use this backup equipment, and it has been evaluated to provide adequate cooling even if the pool structure loses its water-tight integrity.

Q19: What keeps spent fuel from re-starting a nuclear chain reaction in the pool?

A19: Spent fuel pools are designed with appropriate space between fuel assemblies and neutron-absorbing plates attached to the storage rack between each fuel assembly. Under normal conditions, these design features mean that there is substantial margin to prevent criticality (i.e., a condition where nuclear fission would become self-sustaining). Calculations demonstrate that some margin to criticality is maintained for a variety of abnormal conditions, including fuel handling accidents involving a dropped fuel assembly.

Questions and Answers – Waste Confidence & Future Plans

Q20: How long is spent fuel allowed to be stored in a pool or cask?

A20: NRC regulations do not specify a maximum time for storing spent fuel in pool or cask. The agency’s “waste confidence decision” expresses the Commission’s confidence that the fuel can be stored safely in either pool or cask for at least 60 years beyond the licensed life of any reactor without significant environmental effects. At current licensing terms (40 years of initial reactor operation plus 20 of extended operation), that would amount to at least 120 years of safe storage.

However, it is important to note that this does not mean NRC “allows” or “permits” storage for that period. Dry casks are licensed or certified for 20 years, with possible renewals of up to 40 years. This shorter licensing term means the casks are reviewed and inspected, and the NRC ensures the licensee has an adequate aging management program to maintain the facility.

Q21: The most recent waste confidence findings say that fuel can be stored safely for 60 years beyond the reactor’s licensed life. Does this mean fuel will be unsafe starting in 2059 [60 years after Dresden 1’s original license ended]? What if the spent fuel pool runs out of room even before the end of a reactor license? What is the NRC going to do about this?

A21: The NRC staff is currently developing an extended storage and transportation (EST) regulatory program. One aspect of this program is a safety and environmental analysis to support long-term (up to 300 years) storage and handling of spent fuel, as well as associated updates to the “waste confidence” rulemaking. This analysis will include an Environmental Impact Statement (EIS) on the environmental impacts of extended storage of fuel. The 300-year

timeframe is appropriate for characterizing and predicting aging effects and aging management issues for EST. The staff plans to consider a variety of cask technologies, storage scenarios, handling activities, site characteristics, and aging phenomena—a complex assessment that relies on multiple supporting technical analyses. Any revisions to the waste confidence rulemaking, however, would not be an “approval” for waste to be stored longer than before—we do that through the licensing and certification of ISFSIs and casks. More information on the staff’s plan can be found in SECY-11-0029.

Q22: Does the waste confidence decision mean that a particular cask is safe?

A22: Not specifically. When the NRC issues of certificates and licenses for specific dry cask storage systems, the staff makes a determination that the designs provide reasonable assurance that the waste will be stored safely for the term of the license or certificate. The Commission’s Waste Confidence Decision is a generic action where the Commission found reasonable assurance that the waste from the nation’s nuclear facilities can be stored safely and with minimal environmental impacts until a repository becomes available.

Q23: The waste-confidence revision seems like a long-term effort. What is the NRC doing to improve safety of spent fuel storage now?

A23: The NRC staff is currently reviewing its processes to identify near-term ways to improve efficiency and effectiveness in licensing, inspection, and enforcement. We expect to identify enhancements to the certification and licensing of storage casks, to the integration of inspection and licensing, and to our internal procedures and guidance. More information on the staff’s plans can be found in COMSECY-10-0007.

Q24: The NRC is reviewing applications for new nuclear power plants. What is the environmental impact of all that extra fuel?

A24: Continued use and potential growth of nuclear power is expected to increase the amount of waste in storage. This increased amount of spent fuel affects the environmental impacts to be assessed by the NRC staff, such as the need for larger storage capacities. In the staff’s plan to develop an environmental impact statement for longer-term spent fuel storage, a preliminary scoping assumption is that nuclear power grows at a “medium” rate (as defined by the Department of Energy), in which nuclear power continues to supply about 20 percent of U.S. electricity production.

Questions and Answers – Security

Q25: What about security? How do you know terrorists won’t use all of this waste against us?

A25: For spent fuel, as with reactors, the NRC sets security requirements and licensees are responsible for providing the protection. We constantly remain aware of the capabilities of potential adversaries and threats to facilities, material, and activities, and we focus on physically protecting and controlling spent fuel to prevent sabotage, theft, and diversion. Some key features

of these protection programs include intrusion detection, assessment of alarms, response to intrusions, and offsite assistance when necessary. Over the last 20 years, there have been no radiation releases that have affected the public. There have also been no known or suspected attempts to sabotage spent fuel casks or storage facilities. The NRC responded to the terrorist attacks on September 11, 2001, by promptly requiring security enhancements for spent fuel storage, both in spent fuel pools and dry casks.

Questions and Answers – Emergency Planning

Q26: What emergency plans are required for spent fuel storage facilities at nuclear power plants undergoing decommissioning or sites that have completed decommissioning?

A26: Decommissioning reactors continue to be subject to the NRC's emergency planning requirements. For some period of time after the licensee ceases reactor operations, offsite emergency planning will be maintained. This period of time depends on when the reactor was last critical as well as site-specific considerations. Offsite emergency planning may be eliminated when the fuel has been removed from the reactor and placed in the spent fuel pool, and sufficient time has elapsed, such that there are no longer any postulated accidents that would result in offsite dose consequences large enough to require offsite emergency planning. There would be no requirement to maintain offsite systems to warn the public. Onsite emergency plans will be required for both the spent fuel pool and the Independent Spent Fuel Storage Installations, but offsite plans will not be required. If, however, an operating plant is located at the same site as the decommissioning plant, the emergency preparedness plans will still be in effect for the operating plant.

Although offsite emergency planning at a decommissioned site may no longer be required, licensees maintain offsite contacts since any emergency declaration requires notification of state and local officials as well as the NRC. In addition, due to the typically reduced staffs at a decommissioning facility they may rely even more on offsite assistance for fire, security, medical or other emergencies. These reduced EP requirements would remain in effect as long as fuel is onsite.

(Note: This general description also applies to emergency planning for specifically licensed ISFSIs; those requirements are spelled out in detail in 10 CFR 72.32.)

From: [LIA07 Hoc](#)
To: [LIA07 Hoc](#)
Subject: OOU -- 1200 EDT (April 15, 2011) USNRC Earthquake-Tsunami Update
Date: Friday, April 15, 2011 12:20:37 PM
Attachments: [USNRC Earthquake-Tsunami Update.041511.1200EDT.pdf](#)

Attached, please find a 1200 EDT, April 15, 2011, status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

Please note that this information is "Official Use Only" and is not intended to be shared outside of the Federal government without NRC approval.

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

Thank you,
Jim

Jim Anderson
US Nuclear Regulatory Commission
LIA07.HOC@nrc.gov (Operations Center)

666/199

From: Stuckle, Elizabeth
To: Stuckle, Elizabeth; Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McIntyre, David; Burnell, Scott; Couret, Ivonne
Subject: RE: Updated list of inaccuracies and concerning verbiage
Date: Friday, April 15, 2011 2:38:06 PM
Attachments: Thematic Concerns Repeatedly Expressed after Japanese Nuclear Incident.doc

I have marked where the new list ends and the old list begins on this copy

From: Stuckle, Elizabeth
Sent: Friday, April 15, 2011 2:17 PM
To: Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McIntyre, David; Burnell, Scott; Couret, Ivonne
Subject: Updated list of inaccuracies and concerning verbiage

Attached is the latest version of my log of inaccuracies and concerning verbiage. Covers 13 days (through today).

Elizabeth M. Stuckle
Office of Public Affairs
U.S. Nuclear Regulatory Commission
301-415-2169
elizabeth.stuckle@nrc.gov

616161/200

Thematic Concerns Repeatedly Expressed after Japanese Nuclear Incident

1. How can you guarantee that it's not going to happen here?
2. The NRC should do more to protect the public
3. Safety of spent fuel pools versus dry cask storage
4. Re-examination of evacuation zones (EPZs) – are they adequate. Many recommend expanding the EPZs.
5. Re-examination of whether there's sufficient backup power to reactors and to spent fuel pools
6. Fuel pools should be constructed with more safeguards and protection like reactors are.
7. Should there be a moratorium on the construction of new nuclear power plants?
8. Re-examination of what is the safety threshold for radiation amounts. Major fear and misunderstanding of radiation.
9. NRC is in bed with the industry since licensees pay fees to the NRC. They are more concerned about profit than safety.
10. How adequate are the backup plans to keep reactor cooling systems running if power is knocked out? Battery length is way too short, etc.

Inaccuracies and/or Concerning Verbiage from 3/30 through 4/15 clips (13 days)

California Lawmakers Press NRC to Halt Relicensing Work Pending Seismic Studies (AP 4/15)

Sen. Sam Blakeslee, whose district includes Diablo Canyon, says the commission sees earthquake risk through rose-colored glasses.

(KEYT-TV Santa Barbara, 4/14)

California State Senator Sam Blakeslee said that the NRC sees earthquake risk through rose colored glasses.

NRC Said To Be Too Close To Nuclear Industry (ProPublica 4/14)

Examining the 2002 incident at Davis-Besse station, when NRC regulators agreed to delay an emergency order to shut down for inspection, only to later find a football-sized hole in the reactor vessel's steel side, ProPublica (4/14, Sullivan) reports that according to an NRC inspector general's report, senior officials at the agency held off in part because they did not want to hurt the plant's bottom line. NRC critics say the problems at Davis Besse, are prime examples of the agency's deference to industry.

Gundersen Discusses Fukushima Plant Crisis (Huntington News Network 4/14)
Arnie Gundersen, Fairwinds Associate

Gundersen also tells how governments limit public access to radiation dose data

Lochbaum Faults Spent Fuel Storage Management (Palm Beach Post 4/13)
David Lochbaum, Union of Concerned Scientists

. . . spent fuel pools are among the most vulnerable spots at a nuclear plant, housed as they are in structures that aren't as strong as reactors containment buildings. It would be hard to manage this hazard (more) foolishly. The federal government's ineptitude in disposing of spent fuel has left Americans across the country exposed to elevated and undue risks,' Lochbaum said.

Critics Fault Rule for 10-Mile Evacuation Zone (Cape Cod Times, 4/140
Mary Lampert, Pilgrim Watch

. . . says the zones (10-mile EPZ) are arbitrary.

Asbury Park Press Calls For New Tritium Release Penalties (Asbury Park NJ Press, 4/13)

When it comes to the release of carcinogenic tritium, the Nuclear Regulatory Commission clearly has failed in its role to ensure the safety of a public at the mercy of nuclear power plants, an Asbury Park Press investigation published Sunday found. The Press says that current regulations don't provide for penalties for tritiated water releases at nuclear plants, which are threatening water supplies in New Jersey and other states.

Jaczko Defends Monitoring Mode Authority (Forbes "Ingenuity of the Commons blog, 4/13)

Senator James Inhofe (R-Okla)

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 "Jazcko 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&E News, 4/14)

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)

David Lochbaum, 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 Criticized For Reaffirming 10-Mile Evacuation Zone (Middletown NY Times Herald-Record, 4/10)

NRC critics “have long claimed that it sees itself as a part of the nuclear industry, not as the buffer between the interests of that industry and the safety of the nation. At a time when people are skeptical with good reason . . . the NRC has become the boy who won’t cry wolf even if the wolf is in the room.”

NRC Oversight Faulted As “Weak” And “Complacent” (Stamford CT Advocate 4/9)

New England Center for Investigative Reporting

“Internal government watchdogs and outside experts alike say the US Nuclear Regulatory Commission is too lenient on the industry it is charged with regulating, often making decisions based on the industry’s profit margins rather than public safety. The article likens the charges to those made about the Mine Health Safety Administration and the Minerals Management Service after disasters last year at the Upper Big Branch Mine and the Deepwater Horizon spill, and while the nuclear industry maintains the NRC is a tough regulator that asks tough questions, critics counter that the agency might ask tough questions, but is all too willing to accept easy answers.

WCVB-TV Boston 4/10

David Lochbaum, Union of Concerned Scientists

Concerns that the Nuclear Regulatory Commission is weak are nothing new, according to former nuclear engineer, David Lochbaum. In the wake of the Fukushima plant crisis questions about safety concerns are increasing. Lochbaum said, “The NRC is complacent . . .”

Group Says NRC May Not Have Learned From Davis Besse Experience (WPTZ-TV Burlington VT. 4/11)

Hearst Connecticut / New England Center for Investigative Reporting

. .the NRC allowed First Energy to keep the Davis Besse plant operating for 45 days beyond a required inspection date, during which time workers found a pineapple-sized cavity in the reactor's vessel head caused by leaking boric acid. Shay Totten, a reporter from the station working with the broader investigative journalism team, terms that fairly shocking and says the Hearst Media/NECIR report also raises questions about whether or not the regulatory agency built on the Ohio experience.

UCS Suspects NRC Skewed SOARCA Results (Union of Concerned Scientists "All Things Nuclear" blog, 4/9)

Ed Lyman

UCS has long been concerned that the NRC imposed constraints on the SOARCA program that would significantly skew its results to ensure an outcome suggesting the public has little to fear from severe nuclear plant accidents. In 2006, UCS requested that the NRC publicly release its guidelines for the program, the constraints it imposed on it, and the assumptions underlying the program's assessment of accident scenarios, but the NRC refused to release that information, despite the fact that the NRC plans to make SOARCA's results public and, earlier in 2006, NRC Commissioner Gregory Jaczko—now the agency's chairman—called for the agency to release the material UCS requested.

Tritium Leaks Said To Be Increasing At Plants (Asbury Park NJ Press, 4/10)

Asbury Park Press

Millions of gallons of radioactive water have leaked from nuclear power plants throughout the US since the 1970s, threatening water supplies in New Jersey and other states, an Asbury Park Press investigation found. Even though some of the massive leaks have polluted groundwater, the NRC has never fined a violator even plant operators that repeatedly leaked tritium, of which there was an average of one per year in the 1990s. That average increased to five leaks or spills reported in 2010, five in 2009 and three in 2008, according to an NRC document.

Fears Over Spent Nuclear Fuel Increasing (Chattanooga TN Times Free Press, 4/11)

David Lochbaum, Union of Concerned Scientists

David Lochbaum, who once worked at TVA's Browns Ferry Nuclear Plant and for the Nuclear Regulatory Commission (NRC), noted that the spent fuel pools at the TVA plants and around the country are not cooled by an array of highly reliable emergency systems that can be powered from the grid, diesel generators or batteries.

- - - - - **End of new list** - - - - -

Potassium Iodide Tablets Distributed In Delaware (Wilmington DE News Journal 4/7)

. .in a report released Wednesday, the Union of Concerned Scientists cited Nuclear Regulatory Commission documents that they believe show NRC analysts' concern about the reliability of a study of reactor accident consequences.// In that study, some NRC analysts questioned the ability of some American reactors to avert severe damage under scenarios that involve problems seen in Japan.

Lawmakers Say NRC Study Points To Vulnerabilities At US Plants (AFP 4/8)

Congresswoman Diana DeGette

. .a study conducted last year by the Nuclear Regulatory Committee (NRC) raised grave questions about US preparedness to address reactor accidents.// DeGette cited an NRC study which examined what would happen at Peach Bottom Station in Pennsylvania, and a number of other plants, in the event that the reactors lost both [main] power and back-up generators after an extreme event such as a quake, flood or fire. AFP says the Peach Bottom reactor came —perilously close to meltdown in the simulations.

Time's "Swampland" blog (4/8)

Henry Waxman (D-CA)

Committee Ranking Member Henry Waxman (D-Calif.) said yesterday. That result raises questions about whether our reactors may be as vulnerable as those in Fukushima,' he said.

The Peach Bottom plant came within one hour of core damage in a severe loss-of-power scenario,'

"All things Nuclear" Blog (4/7)

Ed Lyman, Union of Concerned Scientists

. .contrary to its assertions that —US nuclear plants are better prepared to withstand a catastrophic event like the March 11 earthquake and tsunami than Japanese plants, according to internal NRC documents, —there is no consensus within the NRC that US 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.

Group Wants NRC to Reconsider Approval Of AP1000 Design (WUNC-Radio 4/7)

John Runkle, AP1000 Oversight Group

The group argues that the AP-1000 reactor design is flawed and should not be used at Shearon-Harris and other sites. Attorney John Runkle says the group is troubled that the NRC seems poised on approving reactor designs that have not been fully reviewed nor fully resolved.

Op-Ed: Former Senator: Dry Storage Safest Option For Nuclear Waste (Reno News and Review 4/7)

Former Senator: Dry Storage Safest Option For Nuclear Waste

"Unlike a repository-at Yucca Mountain or elsewhere-dry storage can be done immediately, as opposed to waiting decades before a disposal or storage location could be ready." Bryan argues that this hasn't already been done.

NRC Focused On VY Safety, Not Shutdown (Bratboro Reformer VT 4/6)

Robert Bady, Vermont coordinator of the Safe and Green Campaign

Bady said the problem is financial, however. "The NRC tries to maintain the safety of the nuclear reactor while also maintaining the profitability of the nuclear industry," Bady said. "The profitability shouldn't be the NRC's concern. If the NRC put safety before profit, they wouldn't allow a spent fuel pool to be stored seven feet above ground."

He added that through activism, he hopes to effect a change in the NRC that safety be on equal footing of profits. "The NRC is not focusing on the decommissioning of the plant at this time but rather on its continued safe operation," Neil Sheehan, spokesman for NRC said.

NRC: Japanese Crisis Doesn't Support Pulling Oyster Creek's License. (AP 4/6))

Jeff Tittel, director of the New Jersey Sierra Club

"The New Jersey Sierra Club says the NRC has not learned anything from the Japanese disaster," and the group's director, Jeff Tittel, called the NRC "a cheerleader for industry" that "looks the other way when it comes to relicensing."

Concerns Expressed Over NRC Allowing Plants To Increase Output. KVNO-FM Omaha 4/4

Some groups like the Advisory Committee on Reactor Safeguards have voiced concerns at the ease in which the NRC grants permission to increase power. Questions have also been raised about financial motives possibly outweighing safety factors. But Mitlyng said modifications are put into place at the plants in order to accommodate the power increase in several forms.

Professor Calls For End of Nuclear Power. (The Independent 4/5)

Chris Williams, professor at Pace University

. .23 of the 104 operational nuclear reactors in the US "are built on the same 1960s design by the same company, General Electric, as the reactors at Fukushima," they "have been recognized to have serious design faults," and "design vulnerabilities...are routinely discovered." Furthermore, many nuclear plants are "on geologically active faults, in coastal locations or close to large sources of fresh water." Finally, Williams argues that nuclear power requires subsidies to be economically practical. Williams argues the reason for nuclear power is to be a justification for researching "the power to destroy life on a planetary scale" and producing plutonium for bombs. He calls for pressuring the government to not new nuclear plants or relicense old ones.

Nuclear Power Said To Not Make Economic Sense (Forbes 4/5)

Cato Institute senior fellows Jerry Taylor and Peter Van Doren

. .the current "relatively unshaken" political faith in nuclear power is "unfortunate," as "nuclear power makes no sense from an economic perspective." The electricity produces "is not even remotely competitive in power markets with gas-fired or coal-fired electricity now or in the foreseeable future." Furthermore, there is a high risk of cost overruns. The authors argue, "The political campaign to ram these plants down the market's throat threatens catastrophic harm to both taxpayers and ratepayers."

"Common Ground "program (KCRA-TV Sacramento 4/2)

Rochelle Becker of the Alliance for Nuclear Responsibility

calls the Japanese disaster "a huge game changer for California's nuclear industry," and the segment adds that "critics of the other nuclear industry say that Diablo Canyon and the state's other twin reactors San Onofre in San Diego County are just as vulnerable to earthquakes and tsunami damage as the plants in Japan."

Some Fear 10-Mile Evacuation Zone Plans Do Not Reflect Real-World Risks (Miami Herald 4/3)

Activists and some political leaders say the NRC's evacuation plans "don't reflect real-world risks"

WCBS-TV (New York 4/2)

Tom Syracuse, noted protester

"The Indian Point Power Plant is located near the intersection of two earthquake faults. Nuclear energy cannot be safe. Plutonium can contaminate the environment for hundreds of years. Studies show that New York City could not be evacuated in time."

Indian Point Plant Called Too Dangerous To Continue Operating (Westchester NY 4/2)

Gary Shaw, Indian Point Safe Energy Coalition

. .asserts mistakenly that "Indian Point 3 has just been named by the US Nuclear Regulatory Commission as the nuclear reactor in the US that is most likely to suffer reactor core damage due to an earthquake and the stated odds of that happening in any given year are higher than the odds of winning \$100 in the Powerball lottery." Shaw says he is not saying a "catastrophic event will definitely occur," but that one could happen, and "if the worst case happens, the consequences are simply too awful to imagine."

Pasadena CA Weekly (4/1)

Grula, PhD, Southern California Federation of Scientists

"The unfolding nuclear disaster in Japan should put an end, once and for all, to recent calls for a nuclear power 'renaissance' in the US." The crisis instead demonstrates that "nuclear power should be phased out completely." Grula added that it will take "many years" to determine how many deaths and cancers will be caused by radiation releases from the apparent Fukushima plant meltdowns, but the casualties may "eventually exceed those caused by the 1986 nuclear accident at the Chernobyl plant in Ukraine." Grula closes by saying that further development of nuclear power should to be "stopped in its tracks."

The Connecticut Post (4/1)

". .should something cause water to drain from a cooling pool, well, one doomsday scenario has a fire at the Millstone Nuclear Power Station in Waterford causing 29,000 square miles of land to become uninhabitable.."

WVUE-TV (New Orleans, 3/31)

the NRC "issued a report to Congress today suggesting it has concerns with" the natural disaster preparedness of "only three plants in the US." WVUE-TV adds that, according to the NRC, "those plants are in South Carolina, Kansas and Nebraska. NRC workers say the plants are operating safely but they want to conduct a more intense study of them."

Lawmakers, Medical Groups Support Expanding KI Distribution Radius (AP, 3/31)

The American Thyroid Association

. .the "American Thyroid Association, whose mission is to promote thyroid health, wants to go further - urging that potassium iodide be made available within 200 miles of a nuclear plant."

Columnist Dismisses Claims That Nuclear Power Is Safer Than Coal (Bluefield WV Daily Telegraph, 3/31)

Charles Owen, columnist

"given all of the distressing headlines coming out of Japan over the past two weeks, it seemed a little odd for someone to be saying that nuclear energy was 'safer' than coal - go green movement or not." Mentioning the possible contamination of radiation from one of the plants in Japan, Owens says, "I guess the point I'm trying to make is that coal isn't radioactive. It doesn't have the potential to sicken or kill thousands - if not millions,

KFOX-TV El Paso TX (3/29)

"separate report out today by a consumer interest group found several u-s nuclear power plants had close calls similar to the Japanese crisis - in the past 20 years.

**NRDC Wants Obama To Order An "Independent" Investigation Of Nuclear Safety
(Huffington Post, 3/29)**

Frances Beinecke, Natural Resources Defense Council president

Beinecke adds that an "autonomous investigation, similar to the Kemeny Commission" should be conducted. Such a review would be "especially challenging for the NRC, which has long been viewed as a weak regulator with insufficient separation from the industry it oversees."

From: [WebContractor Resource](#)
To: Hayden, Elizabeth
Cc: [WebWork Resource](#)
Subject: RE: Request to add link to Japan page on web
Date: Friday, April 15, 2011 8:38:27 AM

Beth,

This has been posted live.

Thank you,
Michael

From: Hayden, Elizabeth
Sent: Thursday, April 14, 2011 5:31 PM
To: WebContractor Resource
Cc: WebWork Resource
Subject: RE: Request to add link to Japan page on web

Good to go.

*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: Thursday, April 14, 2011 5:19 PM
To: Hayden, Elizabeth
Cc: WebWork Resource
Subject: RE: Request to add link to Japan page on web

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: Thursday, April 14, 2011 4:52 PM
To: WebContractor Resource; WebWork Resource; Hardy, Sally
Subject: Request to add link to Japan page on web

On the current and new websites, please add a bullet in the right-hand box above Potassium

6/201

Iodide that says: Expanded Q&A on Japan Event. Link to this document in ADAMS at
ML11103A063.

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: Brenner, Eliot
To: Stuckle, Elizabeth; Hayden, Elizabeth; Harrington, Holly; McIntyre, David; Burnell, Scott; Couret, Ivonne
Subject: RE: Updated list of inaccuracies and concerning verbiage
Date: Friday, April 15, 2011 3:21:01 PM

Wow. That's a really cheerful way to start the weekend. Thanks, I think! Have a good weekend.

Eliot

From: Stuckle, Elizabeth
Sent: Friday, April 15, 2011 2:17 PM
To: Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McIntyre, David; Burnell, Scott; Couret, Ivonne
Subject: Updated list of inaccuracies and concerning verbiage

Attached is the latest version of my log of inaccuracies and concerning verbiage. Covers 13 days (through today).

Elizabeth M. Stuckle
Office of Public Affairs
U.S. Nuclear Regulatory Commission
301-415-2169
elizabeth.stuckle@nrc.gov

GGGG / 202

From: Harrington, Holly
To: Stuckle, Elizabeth; Brenner, Eliot; Hayden, Elizabeth; McIntyre, David; Burnell, Scott; Couret, Ivonne
Subject: RE: Updated list of inaccuracies and concerning verbiage
Date: Friday, April 15, 2011 2:34:02 PM

It would help me if I knew which ones on this list were new/different than the last list . . . without me trying to find the previous list! Can you mark them in some way?

From: Stuckle, Elizabeth
Sent: Friday, April 15, 2011 2:17 PM
To: Brenner, Eliot; Hayden, Elizabeth; Harrington, Holly; McIntyre, David; Burnell, Scott; Couret, Ivonne
Subject: Updated list of inaccuracies and concerning verbiage

Attached is the latest version of my log of inaccuracies and concerning verbiage. Covers 13 days (through today).

Elizabeth M. Stuckle
Office of Public Affairs
U.S. Nuclear Regulatory Commission
301-415-2169
elizabeth.stuckle@nrc.gov

67666/203

Coe, Doug

From: Correia, Richard
Sent: Saturday, April 16, 2011 5:25 PM
To: Coe, Doug; Coyne, Kevin; Salley, MarkHenry; Nicholson, Thomas; Stutzke, Martin; Peters, Sean; Hudson, Daniel; Demoss, Gary; Beasley, Benjamin; Ott, William; Barnes, Valerie; Siu, Nathan; Marksberry, Don
Subject: Fw: OUO -- 1200 EDT (April 16, 2011) USNRC Earthquake-Tsunami Update
Attachments: USNRC Earthquake-Tsunami Update 041611 1200EDT.pdf

Rich Correia, Director
Division of Risk Analysis
RES

Sent from my Blackberry

From: LIA07 Hoc
To: LIA08 Hoc
Sent: Sat Apr 16 13:00:47 2011
Subject: OUO -- 1200 EDT (April 16, 2011) USNRC Earthquake-Tsunami Update

Attached, please find the 1200 EDT, April 16, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami in Japan.

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

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

Clyde Ragland
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

Coe, Doug

Re: CAPS on Fukushima event
From: Coyne, Kevin
Sent: Saturday, April 16, 2011 3:21 PM
To: Greg.LAMARRE@oecd.org
Cc: Siu, Nathan; 'Abdallah.AMRI@oecd.org'; Correia, Richard; Coe, Doug; Richards, Stuart
Subject: RE: CAPS on Fukushima event
Attachments: Fukushima Activity Plan CAPS DRAFT (April 15).docx; Data_Projects_CAPS Draft Final_15APR11.docx

Dear Greg –

As per Abdallah's request, please find attached the final draft CAPS proposed by WGRisk in response to the Fukushima event. This version incorporates all WGRisk member comments I have received to date. I've also attached the latest version of a proposed CAPS on the use of OECD data project products in PSA – this version also incorporates the latest feedback from our recent WGRisk annual meeting.

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

With my best regards,

Kevin

From: Abdallah.AMRI@oecd.org [mailto:Abdallah.AMRI@oecd.org]
Sent: Friday, April 15, 2011 3:34 AM
To: Coyne, Kevin
Cc: Siu, Nathan; Greg.LAMARRE@oecd.org
Subject: CAPS on Fukushima event

Dear Kevin,

As I will be out of the office all next week, I would like to ask you either to send me the final draft CAPS today by the afternoon (Paris time) or to send it by Monday to my colleague Greg Lamarre who is responsible for the PRG Secretariat. In both cases, Greg will distribute the CAPS to PRG members.

Thank you very much for your understanding and cooperation.

With my best regards.

E

DRAFT - WGRISK (2011) - xxxx

Project/Activity Title	Short-term Task Group to Identify Activities to Address PSA Technology Gaps Associated with Fukushima Dai-ichi Event
Objective	Identify and prioritize activities to assist in CSNI decision-making and to guide future, long-term WGRisk activities in order to address any significant gaps in OECD/NEA Probabilistic Safety Assessment (PSA) related products revealed by the March 11 Tohoku-Taiheiyou-Oki earthquake effects on Japanese nuclear power plants. It is expected that these future activities potentially would include improved treatment of external hazardsevents; consideration of site-wide risk (including multiple units and spent fuel pools); and extended accident scenarios (including long-term station blackout and loss of ultimate heat sink).
Scope/Justification/ Deliverables, Expected results and users, Relation to other projects	<p>Scope: In order to support timely feedback into the WGRisk program of work, it is necessary that this activity be conducted in an expedited manner. Additionally, many WGRisk member states have significant resources already dedicated to their national response to the Fukushima event. Consequently, the scope of this project must be limited and appropriately timed to ensure that this activity does not conflict with and instead benefits from and complements national activities being pursued by WGRisk member states.</p> <p>Justification: On March 11, 2011, a magnitude 9.0 earthquake and subsequent tsunami caused significant damage to at least four of the six units of the Fukushima Dai-ichi nuclear power station as the result of a sustained loss of both the offsite and on-site power systems. Efforts to restore power to emergency equipment were hampered or impeded by damage to the surrounding areas due to the tsunami and earthquake. Based on currently available information, it appears that this event resulted in core damage to one or more of the Fukushima Dai-ichi units in addition to potential</p>

	<p>loss of cooling to fuel stored in one or more onsite spent fuel pools. This event highlights a number of factors pertinent to PSA studies, including:</p> <ul style="list-style-type: none"> • The dependency between seismic events and tsunamis (and, more generally, between certain classes of external hazards) • The frequency of extreme hazards (or combination of hazards) • The risk-significance of long term station blackouts and/or loss of ultimate heat sink • Risk associated with multi-unit events • Emergency actions and means; and, <u>accident and consequences management</u> <p><u>Deliverables:</u> In order to provide timely feedback to WGRisk members and CSNI, an interim deliverable describing the status of this project will be provided approximately 6 months after approval of this activity by CSNI. This interim deliverable will describe the status of the near-term actions taken by WGRisk members following the Fukushima event and the preliminary results from the systematic literature and status review of pertinent NEA publications. The final deliverable from this project will be an activity plan intended to address NEA PSA-related product gaps revealed by the Fukushima event. In this context, NEA products include Technical Opinion Papers, Technical Notes, and reports. The final activity plan will also include a supporting basis document that explains why each activity described in the plan is needed.</p> <p><u>Activity:</u> This will be a short term activity intended to identify longer term objectives to resolve PSA technology gaps (<u>e.g., methods, models, tools, and data</u>) relevant to the Fukushima event. The task will utilize a small task team and operate on an expedited schedule. A systematic process will be used to develop an activity plan and the draft plan will be provided to WGRisk members for review and comment prior to being forwarded to CSNI for</p>
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	<p>approval. The following subtasks are envisioned:</p> <ol style="list-style-type: none"> 1. Summarize events and timeline associated with the March 11¹⁸ Fukushima event (it is assumed that this information can be provided by another CNRA/CSNI working group - perhaps WGOE) 2. Identification of near-term actions implemented by WGRisk member countries to address the Fukushima event (with an emphasis on actions and issues relevant to nuclear plant PSA) 3. Systematic literature and status review of NEA publications and related documents to identify: <ol style="list-style-type: none"> a. Which WGRisk member countries maintain Level 2 PSAs covering external events (e.g., based on review of Use and Development report, conference proceedings, journals, ...) b. Determine what relevant NEA work has been done in PSA technical areas pertinent to this event, including a status of recommendations arising from this previous work 4. Review, analysis, synthesis and development of future activity recommendations <p><u>Expected Results:</u> This task is intended to develop a comprehensive activity plan intended to address gaps in PSA-related NEA products revealed by the Fukushima event. Implementation of items in the activity plan will use the normal CSNI review and approval process described in the CSNI operating plan and the WGRisk integrated plan.</p> <p><u>Relation to Other Projects:</u> The development of this activity plan will require close coordination with other CSNI and CNRA working groups in order to avoid duplication of effort and ensure that the activity plan reflects the most up-to-date understanding of the events occurring at the Fukushima Dai-ichi nuclear plants following the March 11 earthquake and tsunami. For planning</p>
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	<p>purposes, it is assumed that other CNRA/CSNI working groups (e.g., WGOE) would develop a detailed summary and timeline of the events occurring at the Fukushima Dai-ichi nuclear plants.</p>
Safety significance/ priority (see priority criteria in Section IV)	<p>Criterion 1: Relevance to CSNI challenges and technical goals</p> <p>Criterion 2: Better accomplished by an international group</p> <p>Criterion 3: Likely to bring conclusive results in reasonable time frame</p> <p>Criterion 4: Maintain and preserve strategic safety competence</p>
Technical Goal(s) covered	<p>3g – to further review and assess the development of PSA methods</p> <p>3i – to contribute to the enhancement of safety performance at current nuclear installations by identifying and resolving safety issues revealed by operating experience feedback.</p>
Knowledge Management and Transfer covered	<p>The activity plan and supporting basis will be documented in a CSNI report in order to provide an effective means for sharing and transferring the knowledge gained as a result of this task.</p>
Milestones (deliverables vs. time)	<p>If approved by CSNI, this task will be conducted in an expedited manner. The following project milestones will support this activity:</p> <ul style="list-style-type: none"> • April 2011 – Survey of WGRisk member country's responses to the Fukushima event (note that this task was initiated at the April 2011 WGRisk annual meeting). • June 2011 – Status report and event timeline for the Fukushima Dai-ichi event obtained by task team (it is assumed that this information can be supplied by another CNRA/CSNI working group) • October 2011 – Complete review of pertinent NEA publications, products, and related documents to determine the status of PSA technology relevant to the Fukushima event • December 2011 – Provide interim deliverable to WGRisk members and CSNI describing status of project and brief CSNI on status of activity

	<ul style="list-style-type: none"> • March 2012 – Draft activity plan and basis report (gap analysis) for discussion at WGRISK annual meeting • June 2012 – CSNI approval of draft activity plan • December 2012 – CSNI approval of final activity plan (and issue as a CSNI publication) <p>It is expected that a significant portion of this activity will be complete by March 2012. The time between March and December 2012 will be used to address comments on the draft plan and to finalize a final CSNI document. Note that this schedule is intended to leverage near-term work being conducted by WGRisk member countries. Specifically, the timing of the activity is intended to allow member countries to focus on their national priorities as a result of the Fukushima event. Once these near-term actions are developed and implemented, the information gained from this experience will be factored into the medium and long range activity plan.</p>
Lead organization(s) and coordination	The lead organization for this task is (<u>TBD</u>). Members of the core group include U.S. NRC, PSI (Switzerland), STUK (Finland), NRI (Czech Republic), IRSN and EdF (France), <u>ENEA (Italy)</u> , and <u>KAERI (Korea)</u> .
Participants (individuals and organizations)	To be determined.
Resources	In order to accomplish this task in a timely fashion and minimize the resource burden to member states, the scope of this activity has been limited to review of PSA technology gaps in NEA products that are relevant to the Fukushima event. A resource estimate of approximately 6 staff-months will be needed to collect pertinent information and data; conduct reviews and analysis; and develop the activity plan. To minimize travel needs, task group meetings will be coordinated with periodic WGRisk bureau meetings to the extent practical.

Requested action from PRG/CSNI	Approval of this CAPS
PRG Recommendation	

From: OST01 HOC
Sent: Sunday, April 17, 2011 9:20 PM
To: Boger, Bruce
Subject: FW: Japan One Pager 1500 EDT 4-17-11
Attachments: Japan One Pager 1500 EDT 4-17-11.docx

From: OST01 HOC
Sent: Sunday, April 17, 2011 6:13 PM
To: RST01 Hoc; Hoc, PMT12; LIA08 Hoc
Subject: Japan One Pager 1500 EDT 4-17-11

For editing of 2200 EDT 4-17-11

Coe, Doug

From: Correia, Richard
Sent: Sunday, April 17, 2011 7:02 PM
To: Coe, Doug; Demoss, Gary; Coyne, Kevin; Siu, Nathan; Salley, MarkHenry; Ott, William; Beasley, Benjamin; Barnes, Valerie; Nicholson, Thomas; Marksberry, Don; Peters, Sean; Hudson, Daniel
Subject: Fw: USNRC Emergency Operations Center Status Update
Attachments: USNRC Earthquake-Tsunami Update 041711 1200EDT.pdf

Rich Correia, Director
Division of Risk Analysis
RES

Sent from my Blackberry

From: LIA08 Hoc
Sent: Sun Apr 17 12:25:09 2011
Subject: USNRC Emergency Operations Center Status Update

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

67 Gag/Gg/207

Coe, Doug

From: Correia, Richard
Sent: Monday, April 18, 2011 1:41 PM
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: RESEND: USNRC Emergency Operations Center Status Update
Attachments: USNRC Earthquake-Tsunami Update 041811 1200EDT.docx

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

richard.correia@nrc.gov

From: LIA08 Hoc
Sent: Monday, April 18, 2011 1:30 PM
To: Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE_Resource; Copeland, Douglas; Correia, Richard; Craffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitis, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Giitter, Joseph; Gott, William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Logaras, Harral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR_DDSP_ILTAB_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Nelson, Robert; ROO hoc; Rothschild, Trip; RST01 Hoc; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffry; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tifft, Doug; Kolb, Timothy; Ulises, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp, Trapp, James; Trojanowski, Robert; Turtl, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zimmerman, Roy; Zorn, Jason
Subject: RESEND: USNRC Emergency Operations Center Status Update

Resent to internal NRC to include missed contacts.

*** Attachment is Official Use Only ***

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

Wittick, Brian

From: Wittick, Brian
Sent: Monday, April 18, 2011 6:27 AM
To: '?? ??'
Subject: RE: Interpreter for April 19th & 20th

Dear Yoriko

Thank you for the update. We have a busy day scheduled for tomorrow. Wit meetings at:

1100 TEPCO/NISA
1230 TEPCO/NISA
1600 NISA
1900 KANTEI

Kind regards
Brian

From: 上村 依子 [mailto:y-uemura@simul.co.jp]
Sent: Monday, April 18, 2011 5:03 AM
To: Wittick, Brian
Cc: 'McKenna, Surin (DCHA/OFDA)'
Subject: Interpreter for April 19th & 20th

Dear Brian-san,

Thank you for your call and email regarding the cancellation.

We have assigned Ms. Morioka for 19th and Ms. Nagai for 20th.
Ms. Nagai will also work for Kantei meeting @19:00 tomorrow.
Please refer to the attached schedule.

Thank you!

Best regards,
Yoriko

上村（うえむら）依子／コミュニケーション事業部
(株)サイマル・インターナショナル
<http://www.simul.co.jp>
TEL: 03-3524-3177(直通) FAX: 03-3524-3105
〒104-0045
東京都中央区築地 1-12-6 築地えとビル 5 階

From: Wittick, Brian [mailto:Brian.Wittick@nrc.gov]
Sent: Saturday, April 16, 2011 9:47 AM

To: 上村 依子
Cc: 'McKenna, Surin (DCHA/OFDA)'
Subject: RE: Interpreter for April 16th&17th

Dear Yoriko-san,

This is to confirm our conversation that we do not require interpreter services for the rest of the weekend. Interpreters will be needed again on Monday.

Kind regards,
Brian

From: 上村 依子 [mailto:y-uemura@simul.co.jp]
Sent: Friday, April 15, 2011 4:21 AM
To: Wittick, Brian
Subject: Interpreter for April 16th&17th

Dear Brian-san,

As I informed you before, we have assigned Ms. Sumita for 9-17 this weekend.
She will visit the Embassy @9:00.

If any change of the arrangement is required, please let me know.

I won't be able to check my office PC during weekend.
Please call my cell phone when you need an extra interpreter this weekend.
My number is 090-5415-3414.

Thank you.

Best regards,
Yoriko

=====
上村（うえむら）依子／コミュニケーション事業部
(株)サイマル・インターナショナル
<http://www.simul.co.jp>
TEL: 03-3524-3177(直通) FAX: 03-3524-3105
〒104-0045
東京都中央区築地1-12-6 築地えとビル5階

From: Wittick, Brian [mailto:Brian.Wittick@nrc.gov]
Sent: Thursday, April 14, 2011 6:07 PM
To: 上村 依子
Subject: RE: Interpreter for April 15th

Thank you.

From: 上村 依子 [mailto:y-uemura@simul.co.jp]
Sent: Thursday, April 14, 2011 5:01 AM

To: Wittick, Brian
Cc: 'tanabeyx@state.gov'; 'smckenna@ofda.gov'
Subject: RE: Interpreter for April 15th

Dear Brian-san,

Thank you for your updated information.
I added the interpreters' name to each meeting.

1. Nagai
11:00- @ TEPCO
2. Nagai
13:30- @TEPCO
3. Ohno
14:00- @NISA
4. Nagai
15:00- Kantei Building
5. Ohno
16:00- with NISA
6. Nagai
17:30- with NISA

Ms. Nagai will visit the Embassy at 9:00 tomorrow like she did today.
Ms. Ohno will also visit the Embassy at 13:30.

I updated the schedule of interpreters as attached.

Thank you.

Best regards,
Yoriko

=====
上村（うえむら）依子／コミュニケーション事業部
(株)サイマル・インターナショナル
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〒104-0045
東京都中央区築地1-12-6 築地えとビル5階

From: Wittick, Brian [mailto:Brian.Wittick@nrc.gov]
Sent: Thursday, April 14, 2011 5:35 PM
To: 上村 依子
Cc: 'tanabeyx@state.gov'; 'smckenna@ofda.gov'
Subject: RE: Interpreter for April 15th

Dear Yoriko,

This is correct that we need a second interpreter to cover the afternoon meetings tomorrow.

Please let me know what the plan will be for the interpreters to meet up for each of the groups.

If there are questions or issues during the day, my phone number is 202-285-6128.

Thank you,
Brian Wittick

From: 上村 依子 [mailto:y-uemura@simul.co.jp]
Sent: Thursday, April 14, 2011 3:00 AM
To: Wittick, Brian
Cc: 'tanabeyx@state.gov'; Stahl, Eric; 'smckenna@ofda.gov'
Subject: Interpreter for April 15th

Dear Brian-san,

Ms. Nagai has just informed me of the schedule of 15th as below

1.
11:00- @ TEPCO
2.
13:30- @TEPCO
3.
14:00- @NISA
4.
15:00- Kantei Building
5.
16:00- with NISA
6.
17:30- with NISA

Can we assign an extra interpreter for 3 and 5?

Ms. Nagai will interpret at 1, 2, 4 and 6.

If this is okay with you, I will make an arrangement accordingly.

Thank you.

Best regards,
Yoriko

上村（うえむら）依子／コミュニケーション事業部
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東京都中央区築地1-12-6 築地えとビル5階

From: [Hayden, Elizabeth](#)
To: [Dinitz, Ira](#)
Subject: RE: I am unable to attend next week's Price Anderson presentation
Date: Monday, April 18, 2011 11:24:00 AM

We're not prepared to talk about Price Anderson

*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: Dinitz, Ira
Sent: Monday, April 18, 2011 11:19 AM
To: Hayden, Elizabeth
Cc: Anderson, Brian; Regan, Christopher
Subject: RE: I am unable to attend next week's Price Anderson presentation

I'll sorry that Brian won't be available, but we would still like to have someone from OPA. Thanks.

From: Anderson, Brian
Sent: Monday, April 18, 2011 10:06 AM
To: Hayden, Elizabeth
Cc: Harrington, Holly; Dinitz, Ira
Subject: I am unable to attend next week's Price Anderson presentation
Importance: High

Beth – I'm sorry to report that I have an unmovable NRO conflict for the Price-Anderson presentation next week. I won't be able to attend on the 26th, but if it would help with preparing for the presentation, I'm happy to work with Ira sometime this week.

Thanks,
Brian

From: Anderson, Brian
Sent: Wednesday, April 13, 2011 4:33 PM
To: Hayden, Elizabeth
Cc: Harrington, Holly
Subject: RE: Price Anderson Presentation

Beth - I'm happy to support...but I need to check with my NRO supervisor first.

My time with OPA is scheduled to end on Friday, April 22nd so I'd like to make sure I don't have any NRO conflicts on the 26th.

I'll let you know,
Brian

6666/210

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

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*

From: Hayden, Elizabeth
To: Dinitz, Ira
Cc: Harrington, Holly; Anderson, Brian
Subject: RE: I am unable to attend next week's Price Anderson presentation
Date: Monday, April 18, 2011 11:19:00 AM

Ira,

I'm afraid that OPA will not be able to support this request due to unavailability of Brian Anderson (per his note below). When we originally agreed to support this seminar, it was based on Brian being available to do the briefing. There is already so much on our plate that we do not have a person who could step in, get up-to-speed and do this briefing. If you decide on another date, please let me know.

For reference, there is a Fact Sheet on Price Anderson and Qs and As on the Japan page on our newly redesigned website.

*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: Anderson, Brian
Sent: Monday, April 18, 2011 10:06 AM
To: Hayden, Elizabeth
Cc: Harrington, Holly; Dinitz, Ira
Subject: I am unable to attend next week's Price Anderson presentation
Importance: High

Beth – I'm sorry to report that I have an unmovable NRO conflict for the Price-Anderson presentation next week. I won't be able to attend on the 26th, but if it would help with preparing for the presentation, I'm happy to work with Ira sometime this week.

Thanks,
Brian

From: Anderson, Brian
Sent: Wednesday, April 13, 2011 4:33 PM
To: Hayden, Elizabeth
Cc: Harrington, Holly
Subject: RE: Price Anderson Presentation

Beth - I'm happy to support...but I need to check with my NRO supervisor first.

My time with OPA is scheduled to end on Friday, April 22nd so I'd like to make sure I don't have any NRO conflicts on the 26th.

GGGG/211

I'll let you know,
Brian

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

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*

From: Hayden, Elizabeth
To: Dinitz, Ira
Subject: RE: I am unable to attend next week's Price Anderson presentation
Date: Monday, April 18, 2011 2:43:00 PM

As I indicated before, Ira, if you want someone to talk about the details of Price Anderson, then you will need to get someone from NRR. If you just need someone from OPA to talk about the nature of the calls/inquiries we've been getting, then we can have someone cover that and they don't need preparation.

Who all is attending? Various offices? What else is on the agenda for discussion?

Beth

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. I would be willing to work with someone on your staff to prepare them if necessary. I see from the daily media reports that Scott has been fielding many questions and of course, we have had many conversations about Price-Anderson over the years. Someone from OPA would be of great assistance for this seminar. Thanks for your assistance.

From: Hayden, Elizabeth
Sent: Monday, April 18, 2011 11:20 AM
To: Dinitz, Ira
Cc: Harrington, Holly; Anderson, Brian
Subject: RE: I am unable to attend next week's Price Anderson presentation

Ira,

I'm afraid that OPA will not be able to support this request due to unavailability of Brian Anderson (per his note below). When we originally agreed to support this seminar, it was based on Brian being available to do the briefing. There is already so much on our plate that we do not have a person who could step in, get up-to-speed and do this briefing. If you decide on another date, please let me know.

For reference, there is a Fact Sheet on Price Anderson and Qs and As on the Japan page on our newly redesigned website.

Beth Hayden

6666/212

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

From: Anderson, Brian
Sent: Monday, April 18, 2011 10:06 AM
To: Hayden, Elizabeth
Cc: Harrington, Holly; Dinitz, Ira
Subject: I am unable to attend next week's Price Anderson presentation
Importance: High

Beth – I'm sorry to report that I have an unmovable NRO conflict for the Price-Anderson presentation next week. I won't be able to attend on the 26th, but if it would help with preparing for the presentation, I'm happy to work with Ira sometime this week.

Thanks,
Brian

From: Anderson, Brian
Sent: Wednesday, April 13, 2011 4:33 PM
To: Hayden, Elizabeth
Cc: Harrington, Holly
Subject: RE: Price Anderson Presentation

Beth - I'm happy to support...but I need to check with my NRO supervisor first.

My time with OPA is scheduled to end on Friday, April 22nd so I'd like to make sure I don't have any NRO conflicts on the 26th.

I'll let you know,
Brian

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

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

Coe, Doug

From: Correia, Richard
Sent: Wednesday, April 20, 2011 2:36 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: April 20, 2011 NRC Emergency Operations Center Status Update
Attachments: USNRC Earthquake-Tsunami Update 042011 1300 EDT.pdf

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

richard.correia@nrc.gov

From: LIA08 Hoc - NSI2
Sent: Wednesday, April 20, 2011 12:59 PM
To: LIA08 Hoc
Subject: FW: April 20, 2011 NRC Emergency Operations Center Status Update

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: LIA08 Hoc
Sent: Wednesday, April 20, 2011 12:58 PM
To: Temple, Jeffrey
Subject: April 20, 2011 NRC Emergency Operations Center Status Update

Jeff Temple
Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

GGGG/213

From: LIA07_Hoc
To: LIA07_Hoc
Subject: USNRC Earthquake-Tsunami Update.031811.0600EDT
Date: Friday, March 18, 2011 6:13:53 AM
Attachments: NRC Status Update 3-18 11--0600am.pdf

Attached, please find a 0600 EDT from March 18 situation report from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami on March 11, 2011.

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

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

Thank you,

Rebecca Clinton
EBT Coordinator

(S) G G G / 214

From: [LIA07.HOC](#)
Subject: USNRC Earthquake-Tsunami Update - 1800 EDT (March 18, 2011)
Date: Friday, March 18, 2011 6:36:58 PM
Attachments: [USNRC Earthquake-Tsunami Update_031811_1800EDT.pdf](#)

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

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

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

-Sara

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

6666/215

From: Dinitz, Ira
To: Hayden, Elizabeth
Cc: Anderson, Brian; Regan, Christopher
Subject: RE: I am unable to attend next week's Price Anderson presentation
Date: Monday, April 18, 2011 11:18:40 AM

I'll sorry that Brian won't be available, but we would still like to have someone from OPA. Thanks.

From: Anderson, Brian
Sent: Monday, April 18, 2011 10:06 AM
To: Hayden, Elizabeth
Cc: Harrington, Holly; Dinitz, Ira
Subject: I am unable to attend next week's Price Anderson presentation
Importance: High

Beth – I'm sorry to report that I have an unmovable NRO conflict for the Price-Anderson presentation next week. I won't be able to attend on the 26th, but if it would help with preparing for the presentation, I'm happy to work with Ira sometime this week.

Thanks,
Brian

From: Anderson, Brian
Sent: Wednesday, April 13, 2011 4:33 PM
To: Hayden, Elizabeth
Cc: Harrington, Holly
Subject: RE: Price Anderson Presentation

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My time with OPA is scheduled to end on Friday, April 22nd so I'd like to make sure I don't have any NRO conflicts on the 26th.

I'll let you know,
Brian

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

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.

6666/216

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: Dinitz, Ira
To: Hayden, Elizabeth
Cc: Regan, Christopher
Subject: RE: I am unable to attend next week's Price Anderson presentation
Date: Monday, April 18, 2011 2:51:23 PM

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: Hayden, Elizabeth
Sent: Monday, April 18, 2011 2:44 PM
To: Dinitz, Ira
Subject: RE: I am unable to attend next week's Price Anderson presentation

As I indicated before, Ira, if you want someone to talk about the details of Price Anderson, then you will need to get someone from NRR. If you just need someone from OPA to talk about the nature of the calls/inquiries we've been getting, then we can have someone cover that and they don't need preparation.

Who all is attending? Various offices? What else is on the agenda for discussion?

Beth

From: Dinitz, Ira
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To: Hayden, Elizabeth
Cc: Regan, Christopher
Subject: RE: I am unable to attend next week's Price Anderson presentation

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From: Hayden, Elizabeth
Sent: Monday, April 18, 2011 11:20 AM
To: Dinitz, Ira
Cc: Harrington, Holly; Anderson, Brian
Subject: RE: I am unable to attend next week's Price Anderson presentation

Ira,

I'm afraid that OPA will not be able to support this request due to unavailability of Brian Anderson (per his note below). When we originally agreed to support this seminar, it was based on Brian being available to do the briefing. There is already so much on our plate that we do not have a person who could step in, get up-to-speed and do this briefing. If you decide on another date, please let me know.

For reference, there is a Fact Sheet on Price Anderson and Qs and As on the Japan page on our newly redesigned website.

*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: Anderson, Brian
Sent: Monday, April 18, 2011 10:06 AM
To: Hayden, Elizabeth
Cc: Harrington, Holly; Dinitz, Ira
Subject: I am unable to attend next week's Price Anderson presentation
Importance: High

Beth – I'm sorry to report that I have an unmovable NRO conflict for the Price-Anderson presentation next week. I won't be able to attend on the 26th, but if it would help with preparing for the presentation, I'm happy to work with Ira sometime this week.

Thanks,
Brian

From: Anderson, Brian
Sent: Wednesday, April 13, 2011 4:33 PM
To: Hayden, Elizabeth
Cc: Harrington, Holly
Subject: RE: Price Anderson Presentation

Beth - I'm happy to support...but I need to check with my NRO supervisor first.

My time with OPA is scheduled to end on Friday, April 22nd so I'd like to make sure I don't have any NRO conflicts on the 26th.

I'll let you know,
Brian

From: Hayden, Elizabeth
Sent: Wednesday, April 13, 2011 11:40 AM
To: Anderson, Brian

Cc: Dinitz, Ira
Subject: Price Anderson Presentation

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*

From: OST01 HOC
Sent: Friday, April 15, 2011 8:36 AM
To: RST01 Hoc; RST09 Hoc
Subject: FW: Last Shift's One Pager
Attachments: Japan One Pager 0700 EDT 4-15-11.docx

Resent to ensure correct location is receiving this request.

Thanks!

From: OST01 HOC
Sent: Friday, April 15, 2011 7:31 AM
To: RST07 Hoc; Hoc, PMT12; LIA08 Hoc; Zimmerman, Roy
Subject: Last Shift's One Pager

Please see attached a copy of last shift's one pager.

Please update this through the day and send it back to OST01 by 2:00 pm for compilation and vetting. Please remove any items that you feel should be removed as well, to help keep it to one page in length.

Thanks!

Emily Larson
ET Support

GGGG/217

From: Hayden, Elizabeth
To: Brenner, Eliot
Subject: Caption for Mikulski photo
Date: Monday, April 18, 2011 2:33:00 PM

Do you think I need to run this by Josh? Other changes you have?

Sen. Barbara Mikulski (D-Md.) toured NRC's Headquarters Operations Center in Rockville, Md., where she thanked Chairman Gregory Jaczko (right) and other staff for helping the Japanese with their damaged nuclear power plants and for keeping U.S. plants safe.

GGGG/218

From: Hayden, Elizabeth
To: Hardy, Sally
Cc: McIntyre, David
Subject: Additional item--request to post to spent fuel page
Date: Tuesday, April 19, 2011 10:04:00 AM
Attachments: SpentFuelTalking Points and Qs.docx
Importance: High

This attachment (once it is posted) should also be linked to from this page:
<http://www.nrc.gov/waste/spent-fuel-storage/pools.html>

Sally,---Please disregard previous e-mail as it had an error in the attachment. This is the correct one.

Can you check with NMSS about adding a link in the box on the upper right of this page:
<http://www.nrc.gov/waste/spent-fuel-storage.html> for the attached document? NMSS and others have chopped on it.

Beth

G1G2G3G4/219

Spent Fuel Pools and Storage

Key Points and Qs&As

Key Points:

1. All U.S. nuclear power plants store spent nuclear fuel in “spent fuel pools.” These pools are robust constructions made of reinforced concrete several feet thick, with steel liners. The water is typically about 40 feet deep, and serves both to shield the radiation and cool the rods.
2. As the pools near capacity, utilities move some of the older spent fuel into “dry cask” storage. Fuel is typically cooled at least 5 years in the pool before transfer to cask. NRC has authorized transfer as early as 3 years; the industry norm is about 10 years.
3. The NRC believes spent fuel pools and dry casks both provide adequate protection of the public health and safety and the environment. Therefore there is no pressing safety or security reason to mandate earlier transfer of fuel from pool to cask.
4. After the September 11, 2001, terrorist attacks, the NRC issued orders to plant operators requiring several measures aimed at mitigating the effects of a large fire, explosion, or accident that damages a spent fuel pool. These were meant to deal with the aftermath of a terrorist attack or plane crash; however, they would also be effective in responding to natural phenomena such as tornadoes, earthquakes or tsunami. These mitigating measures include:
 - a. Controlling the configuration of fuel assemblies in the pool to enhance the ability to keep the fuel cool and recover from damage to the pool.
 - b. Establishing emergency spent fuel cooling capability.
 - c. Staging emergency response equipment nearby so it can be deployed quickly
5. According to the Congressional Research Service (using NEI data), there were 62,683 metric tons of commercial spent fuel accumulated in the United States as of the end of 2009.
 - a. Of that total, 48,818 metric tons – or about 78 percent – were in pools.
 - b. 13,856 metric tons – or about 22 percent – were stored in dry casks.
 - c. The total increases by 2,000 to 2,400 tons annually.

Questions and Answers – General

Q1: What is spent nuclear fuel?

A1: “Spent nuclear fuel” refers to fuel elements that have been used at commercial nuclear reactors, but that are no longer capable of economically sustaining a nuclear reaction. Periodically, about one-third of the nuclear fuel in an operating reactor needs to be unloaded and replaced with fresh fuel.

Q2: Why is spent fuel hot?

A2: Spent fuel generates what is called “residual heat” because of radioactive decay of the elements inside the fuel. After the fission reaction is stopped and the reactor is shut down, the products left over from the fuel’s time in the reactor are still radioactive and emit heat as they decay into more stable elements. Although the heat production drops rapidly at first, heat is still generated many years after shutdown. Therefore, the NRC sets requirements on the handling and storage of this fuel to ensure protection of the public and the environment.

Questions and Answers – Spent Fuel Inventories

Q3: Why doesn’t the NRC have up-to-date figures on how much spent fuel is stored at U.S. nuclear plants? Doesn’t the regulator have a clue about how much of this stuff is out there?

A3: The NRC and Department of Energy (NNSA) operate the Nuclear Material Management and Safeguards System (NMMSS), a database that tracks Special Nuclear Material (enriched uranium and plutonium). This database does not distinguish between fresh and irradiated material, and the information is withheld from the public for security reasons. That’s why figures on spent fuel inventory come from the industry.

Q4: How much fuel is currently in dry cask storage?

A4: As of November 2010, there were 63 “independent spent fuel storage installations” (or ISFSIs) licensed to operate at 57 sites in 33 states. These locations are shown on a map on the NRC website at: <http://www.nrc.gov/waste/spent-fuel-storage/locations.pdf>. Over 1400 casks are stored in these independent facilities.

Q5: How much fuel is stored at decommissioned reactors? Is it in pools or casks?

A5: There are currently 10 decommissioned nuclear power reactors at 9 sites with no other nuclear operations. According to a 2008 Department of Energy report to Congress, approximately 2800 metric tons of spent fuel is stored at these nine sites. As of the writing of that report, seven of the sites had independent spent fuel storage installations, or ISFSIs. Two additional sites had approximately 1000 metric tons of spent fuel remaining in pool storage.

Questions and Answers – ISFSIs

Q6: What is dry cask storage?

A6: Dry cask storage allows spent fuel that has already been cooled in the spent fuel pool for several years to be surrounded by inert gas inside a container called a cask. The casks are typically steel cylinders that are either welded or bolted closed. The steel cylinder provides containment of the spent fuel. Each cylinder is surrounded by additional steel, concrete, or other material to provide radiation shielding to workers and members of the public.

Q7: What is an “ISFSI”?

A7: An independent spent fuel storage installation, or ISFSI, is a facility that is designed and constructed for the interim storage of spent nuclear fuel. These facilities are licensed separately from a nuclear power plant and are considered independent even though they may be located on the site of another NRC-licensed facility.

Q8: What kind of license is required for an ISFSI?

A8: NRC authorizes storage of spent nuclear fuel at an ISFSI in two ways: site-specific or general license. For site-specific applications, the NRC reviews the safety, environmental, physical security and financial aspects of the licensee and proposed ISFSI and, if we conclude it can operate safely, we issue a license valid. This license contains requirements on topics such as leak testing and monitoring and specifies the quantity and type of material the licensee is authorized to store at the site. A general license authorizes storage of spent fuel in casks previously approved by the NRC at a site already licensed to possess fuel for or operate a nuclear power plant. Licensees must show the NRC that it is safe to store spent fuel in dry casks at their site, including analysis of earthquake intensity and tornado missiles. Licensees also review their programs (such as security or emergency planning) and make any changes needed to incorporate an ISFSI at their site. Of the currently licensed ISFSIs, 48 are operating under general licenses and 15 have specific licenses.

Questions and Answers – Dry Cask Safety

Q9: How do you know the dry casks are safe? Does the NRC inspect these facilities, or just the reactor and spent fuel pool?

A9: The NRC is responsible for inspection of dry cask storage. Before casks are loaded, inspectors with specific knowledge of ISFSI operations assess the adequacy of a “dry run” by the licensee; they then observe all initial cask loadings. The on-site resident inspectors or region-based inspectors may observe later cask loadings, and the regional offices also perform periodic inspections of routine ISFSI operations.

Q10: What keeps fuel cool in dry casks?

A10: Fuel is often moved to dry cask storage after several years in spent fuel pools, so the residual heat given off by the fuel has significantly decreased. These casks are typically thick, leak-tight steel containers inside a robust steel or concrete overpack. The fuel is cooled by natural airflow around the cask.

Questions and Answers – Spent Fuel Pool Safety

Q11: What do you look at when you license a fuel storage facility? How do I know it can withstand a natural disaster?

A11: The NRC's requirements for both wet and dry storage can be found in Title 10 of the Code of Federal Regulations (10 CFR), including the general design criteria in Appendix A to Part 50 and the spent-fuel storage requirements in Part 72. The staff uses these rules to determine that the fuel will remain safe under anticipated operating and accident conditions. There are requirements on topics such as radiation shielding, heat removal, and criticality. In addition, the staff reviews fuel storage designs for protection against:

- natural phenomena, such as seismic events, tornados, and flooding
- dynamic effects, such as flying debris or drops from fuel handling equipment and drops of fuel storage and handling equipment
- hazards to the storage site from nearby activities

Q12: How do you know the fuel pools are safe? Does the NRC inspect these facilities, or just the reactor itself?

A12: NRC inspectors are responsible for verifying that spent fuel pools and related operations are consistent with a plant's license. For example, our staff inspects spent fuel pool operations during each refueling outage. We also performed specialized inspections to verify that new spent fuel cooling capabilities and operating practices were being implemented properly.

Q13: What would happen to a spent fuel pool during an earthquake? How can I be sure the pool wouldn't be damaged?

A13: All spent fuel pools are designed to seismic standards consistent with other important safety-related structures on the site. The pool and its supporting systems are located within structures that protect against natural phenomena and flying debris. The pools' thick walls and floors provide structural integrity and further protection of the fuel from natural phenomena and debris. In addition, the deep water above the stored fuel (typically more than 20 feet above the top of the spent fuel rods) would absorb the energy of debris that could fall into the pool. Finally, the racks that support the fuel are designed to keep the fuel in its designed configuration after a seismic event.

Q14: Can spent fuel pools leak?

A14: Spent fuel pools lined with stainless steel are designed to protect against a substantial loss of the water that cools the fuel. Pipes typically enter the pool above the level of the stored fuel, so that the fuel would stay covered even if there were a problem with one of the pipes. The only exceptions are small leakage-detection lines and, at two pressurized water reactor (PWR) sites, robust fuel transfer tubes that enter the spent fuel pool directly. The liner normally prevents water from being lost through the leak detection lines, and isolation valves or plugs are available if the liner experiences a large leak or tear.

Q15: How would you know about a leak in such a large pool of water?

A15: The spent fuel pools associated with all but one operating reactor have liner leakage collection to allow detection of very small leaks. In addition, the spent fuel pool and fuel storage area have diverse instruments to alert operators to possible large losses of water, which could be indicated by low water level, high water temperature, or high radiation levels.

Q16: How can operators get water back in the pool if there is a leak or a failure?

A16: All plants have systems available to replace water that could evaporate or leak from a spent fuel pool. Most plants have at least one system designed to be available following a design basis earthquake. In addition, the industry's experience indicates that systems not specifically designed to meet seismic criteria are likely to survive a design basis earthquake and be available to replenish water to the spent fuel pools. Furthermore, plant operators can use emergency and accident procedures that identify temporary systems to provide water to the spent fuel pool if normal systems are unavailable. In some cases, operators would need to connect hoses or install short pipes between systems. The fuel is unlikely to become uncovered rapidly because of the large water volume in the pool, the robust design of the pool structure, and the limited paths for loss of water from the pool.

Q17: Do U.S. nuclear power plants store their fuel above grade? Why is this considered safe?

A17: For boiling water reactor (BWR) Mark I and II designs, the spent fuel pool structures are located in the reactor building at an elevation several stories above the ground (about 50 to 60 feet above ground for the Mark I reactors). The spent fuel pools at other operating reactors in the U.S. are typically located with the bottom of the pool at or below plant grade level. Regardless of the location of the pool, its robust construction provides the potential for the structure to withstand events well beyond those considered in the original design. In addition, there are multiple means of restoring water to the spent fuel pools in the unlikely event that any is lost.

Q18: How are spent fuel pools kept cool? What happens if the cooling system fails?

A18: The spent fuel pool is cooled by an attached cooling system. The system keeps fuel temperatures low enough that, even if cooling were lost, operators would have substantial time to recover cooling before boiling could occur in the spent fuel pool. Licensees also have backup

ways to cool the spent fuel pool, using temporary equipment that would be available even after fires, explosions, or other unlikely events that could damage large portions of the facility and prevent operation of normal cooling systems. Operators have been trained to use this backup equipment, and it has been evaluated to provide adequate cooling even if the pool structure loses its water-tight integrity.

Q19: What keeps spent fuel from re-starting a nuclear chain reaction in the pool?

A19: Spent fuel pools are designed with appropriate space between fuel assemblies and neutron-absorbing plates attached to the storage rack between each fuel assembly. Under normal conditions, these design features mean that there is substantial margin to prevent criticality (i.e., a condition where nuclear fission would become self-sustaining). Calculations demonstrate that some margin to criticality is maintained for a variety of abnormal conditions, including fuel handling accidents involving a dropped fuel assembly.

Questions and Answers – Waste Confidence & Future Plans

Q20: How long is spent fuel allowed to be stored in a pool or cask?

A20: NRC regulations do not specify a maximum time for storing spent fuel in pool or cask. The agency’s “waste confidence decision” expresses the Commission’s confidence that the fuel can be stored safely in either pool or cask for at least 60 years beyond the licensed life of any reactor without significant environmental effects. At current licensing terms (40 years of initial reactor operation plus 20 of extended operation), that would amount to at least 120 years of safe storage.

However, it is important to note that this does not mean NRC “allows” or “permits” storage for that period. Dry casks are licensed or certified for 20 years, with possible renewals of up to 40 years. This shorter licensing term means the casks are reviewed and inspected, and the NRC ensures the licensee has an adequate aging management program to maintain the facility.

Q21: The most recent waste confidence findings say that fuel can be stored safely for 60 years beyond the reactor’s licensed life. Does this mean fuel will be unsafe starting in 2059 [60 years after Dresden 1’s original license ended]? What if the spent fuel pool runs out of room even before the end of a reactor license? What is the NRC going to do about this?

A21: The NRC staff is currently developing an extended storage and transportation (EST) regulatory program. One aspect of this program is a safety and environmental analysis to support long-term (up to 300 years) storage and handling of spent fuel, as well as associated updates to the “waste confidence” rulemaking. This analysis will include an Environmental Impact Statement (EIS) on the environmental impacts of extended storage of fuel. The 300-year timeframe is appropriate for characterizing and predicting aging effects and aging management issues for EST. The staff plans to consider a variety of cask technologies, storage scenarios, handling activities, site characteristics, and aging phenomena—a complex assessment that relies

on multiple supporting technical analyses. Any revisions to the waste confidence rulemaking, however, would not be an “approval” for waste to be stored longer than before—we do that through the licensing and certification of ISFSIs and casks. More information on the staff’s plan can be found in SECY-11-0029.

Q22: Does the waste confidence decision mean that a particular cask is safe?

A22: Not specifically. When the NRC issues of certificates and licenses for specific dry cask storage systems, the staff makes a determination that the designs provide reasonable assurance that the waste will be stored safely for the term of the license or certificate. The Commission’s Waste Confidence Decision is a generic action where the Commission found reasonable assurance that the waste from the nation’s nuclear facilities can be stored safely and with minimal environmental impacts until a repository becomes available.

Q23: The waste-confidence revision seems like a long-term effort. What is the NRC doing to improve safety of spent fuel storage now?

A23: The NRC staff is currently reviewing its processes to identify near-term ways to improve efficiency and effectiveness in licensing, inspection, and enforcement. We expect to identify enhancements to the certification and licensing of storage casks, to the integration of inspection and licensing, and to our internal procedures and guidance. More information on the staff’s plans can be found in COMSECY-10-0007.

Q24: The NRC is reviewing applications for new nuclear power plants. What is the environmental impact of all that extra fuel?

A24: Continued use and potential growth of nuclear power is expected to increase the amount of waste in storage. This increased amount of spent fuel affects the environmental impacts to be assessed by the NRC staff, such as the need for larger storage capacities. In the staff’s plan to develop an environmental impact statement for longer-term spent fuel storage, a preliminary scoping assumption is that nuclear power grows at a “medium” rate (as defined by the Department of Energy), in which nuclear power continues to supply about 20 percent of U.S. electricity production.

Questions and Answers – Security

Q25: What about security? How do you know terrorists won’t use all of this waste against us?

A25: For spent fuel, as with reactors, the NRC sets security requirements and licensees are responsible for providing the protection. We constantly remain aware of the capabilities of potential adversaries and threats to facilities, material, and activities, and we focus on physically protecting and controlling spent fuel to prevent sabotage, theft, and diversion. Some key features of these protection programs include intrusion detection, assessment of alarms, response to intrusions, and offsite assistance when necessary. Over the last 20 years, there have been no radiation releases that have affected the public. There have also been no known or suspected

attempts to sabotage spent fuel casks or storage facilities. The NRC responded to the terrorist attacks on September 11, 2001, by promptly requiring security enhancements for spent fuel storage, both in spent fuel pools and dry casks.

Questions and Answers – Emergency Planning

Q26: What emergency plans are required for spent fuel storage facilities at nuclear power plants undergoing decommissioning or sites that have completed decommissioning?

A26: Decommissioning reactors continue to be subject to the NRC's emergency planning requirements. For some period of time after the licensee ceases reactor operations, offsite emergency planning will be maintained. This period of time depends on when the reactor was last critical as well as site-specific considerations. Offsite emergency planning may be eliminated when the fuel has been removed from the reactor and placed in the spent fuel pool, and sufficient time has elapsed, such that there are no longer any postulated accidents that would result in offsite dose consequences large enough to require offsite emergency planning. There would be no requirement to maintain offsite systems to warn the public. Onsite emergency plans will be required for both the spent fuel pool and the Independent Spent Fuel Storage Installations, but offsite plans will not be required. If, however, an operating plant is located at the same site as the decommissioning plant, the emergency preparedness plans will still be in effect for the operating plant.

Although offsite emergency planning at a decommissioned site may no longer be required, licensees maintain offsite contacts since any emergency declaration requires notification of state and local officials as well as the NRC. In addition, due to the typically reduced staffs at a decommissioning facility they may rely even more on offsite assistance for fire, security, medical or other emergencies. These reduced EP requirements would remain in effect as long as fuel is onsite.

(Note: This general description also applies to emergency planning for specifically licensed ISFSIs; those requirements are spelled out in detail in 10 CFR 72.32.)

April 14, 2011

From: [LIA07.HOC](#)
Subject: USNRC Earthquake-Tsunami Update - 0600 EDT (March 19, 2011)
Date: Saturday, March 19, 2011 6:15:56 AM
Attachments: [USNRC Earthquake-Tsunami Update.031911.0600EDT.pdf](#)

Attached, please find an 0600 EDT March 19, 2011 status update from the US Nuclear Regulatory Commission's Emergency Operations Center regarding the impacts of the earthquake/tsunami.

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

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

Thanks,
Christine

Christine A. Steger
US Nuclear Regulatory Commission
Christine.Steger@nrc.gov
LIA07.HOC@nrc.gov (Operations Center)

6766/220

From: Hayden, Elizabeth
To: Rakovan, Lance
Cc: Burnell, Scott; Frumkin, Daniel
Subject: FW: Speaker invitation: AEI-Japanese Business Roundtable, May 5th
Date: Tuesday, April 19, 2011 11:52:00 AM

Lance,

I believe I already forwarded this request to Mindy, but wanted to be sure you had it as part of the Japan speaker's bureau you are heading. Since the date for this engagement is coming up quickly, suggest you touch base with Ms. Forgach to provide her a response quickly as to whether we would be participating. I doubt we would be participating, but someone needs to respond back to the requester.

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]
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 5th. I appreciate any suggestions you have towards the appropriate speaker to invite.

Best,
Leslie

From: Frumkin, Daniel [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.

Dan

G1 G2 G3 / 221

From: Leslie Forgach [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 4th. 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 4th 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: [Dinitz, Ira](#)
Cc: [Regan, Christopher](#); [Burnell, Scott](#)
Subject: Price Anderson presentation
Date: Tuesday, April 19, 2011 12:56:00 PM

Ira,

Scott Burnell will be available from 2-3 pm to talk at your seminar about the questions we've gotten from the media and the public about the Japan disaster particularly with regard to nuclear insurance coverage should there be an accident at a U.S. plant (a la Price Anderson).

*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: 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 be 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 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. Someone from OPA would be of great assistance for this seminar. Thanks for your assistance.

GIGGG/222

Coe, Doug

From: Correia, Richard
Sent: Tuesday, April 19, 2011 1:01 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: USNRC Earthquake-Tsunami Update 041911 Revision 1, 1300 EDT
Attachments: USNRC Earthquake-Tsunami Update 041911 Revision 1, 1300 EDT.pdf

Rev. 1...this report does have new information.

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

richard.correia@nrc.gov

From: LIA08 Hoc
Sent: Tuesday, April 19, 2011 12:52 PM

To: OST01 HOC; A Green; A Rock; Al Coons; Aleshia Duncan; alexancg; Anthony Herbold; Appleman Binkert; B Green; B Russo; Bill King; Bill King2; Bruce Howard; C Lay; C Noser; C Ops; Charles Burrows; Charles Donnell; Christopher Meadow; Clinton Carroll; Conrad Burnside; D Drakeley; D May; D Murakami; D Webb; Damian Peko; Dan Feighert; Darrell Hammons; DHS Ops; DOE NIT; DOT; DTRA; Dudek; E Wright; Elmer Naples; EOP; EPA; EPA2; Eric Sinibaldi; F Lewis; G Szeto; G Whitmire; George Higdon; gregopk; Gregory Simonson; Gretchen McCoy; H; Harry Sherwood; HHS; I Clark; Intel DIA; J Barnes; J Bartlett; J Moeller; J Noonkester; J Szymanski; J Tippets; James Purvis; Japan Embassy Task Force; Japan Pentagon; Jason CIA; Jason Pepin; Jeffrey Conran; Jeremy Demott; Jeremy Morrow; Jeremyft1; Jim Kish; Johanna Berkey; John Holdren; Joyce Connery; K Donald; K Gonzalez; K Ousley; Karyn Keller; Kyle Viayra; L Mayer; Lee Nickel; Lee-Jake Strunk; Lisa; Lisa Hammond; Lukas McMichael; M Huchla; M Kerber; M Lansley; M Thon; M Thon2; maceck; MARFORPAC CAT All Hazards Div; MARFORPAC CAT G2; Mark Shaffer; markwb2; Marshall Shull; Michelle Ralston; Nan Calhoun; Navy; NICC; NMIC; NOC; NOC Duty Director; Nulcear SSA; P Gardner; pentagon; Peter Lyons; Phillip Barks; R Roesler; R Schueneman; Rebecca Thomson; roberhh; Ron Cherry; Ron McCabe; S Basile; S Buntman; S Levy; scotc1; Seamus O'Boyle; seiden; state; Stephen Trautman; Steve Colman; Steve Horwitz; T Gatling; T Roberts; Thomas Conran; Thomas Zerr; Tim Greten; Timothy Hitzelberger; Trent Hughes; Troy Heytens; USDA, John; USMC; Vanessa Quinn; Victoria Kinsey; W Cluff; W Young; Will Friese; William Harding; William Webb; A Aviles; A Brown; A Estes; A Hough; A Tribble; B goldberg; B Moffat; B Perry; B Woo; Beavers, Shane; Brinser, Andrew; Brooks, Andrae; Brown, Michael; C Fiore; C Good; C Kim; Carlos Islas; CPF CATN5; Craig Gaddis; D Fletcher; D Putthoff; D Scully; D Smith; D Souza; D Wade; D Williams; David Graves; DOE DART; E Fiser; E kaye; E Price; E Shelland; E Train; Elder, Troy M SGT MIL USA USARPAC; Eric Wright; F Bantell; Fossum, Sgt Zachary; Guathier, Ronald; H Zito; Hickam; Hickam; J Blankenburg; J Kreykes; J McCallister; J Rhodes; J Scarbrough; J Soderbeck; J Stewart; J Trussler; James Williams; JR Haley; JTF505-MAIN-JOC-J2; JTF505-MAIN-JOC-J2-INTEL-ANAY; K Bollow; K Bollow; K Tomlinson; Koluch, SSgt Eric; L Bolling; L Elkins; L Heinrich; L Walter; M Howsare; M Kabbur; M Nguyen; M Opfer; M Taafe; M Thon; M Thon; Marina Llewellyn; Michael Anderson; Micheael Eberlein; Monaghan, Dylan; N Albritton; N Albritton; NCMI Ops; Office of Secretary of Defense Watch Officer ; Olson, Niels; P Almquist; P Higginbotham; P Higgins; P Lyons; P Smalley; P Somboonpakron; PACOM; PACOM; Pasit Sombookpakron; Powers, Jeffrey; R Backley; R Fisher; R Garrett; R Neff; R Stephenson; R Tashma; Richard, Sgt William; Robert Duke; Robert P; RST01 Hoc; RST01B Hoc; RST03 Hoc; S Aoki; S Jerabek; Sean Basile; Shirey, Sgt Eric; Simmers, Keith; Spencer Nordgran; Spurlock, Kenneth; Stephen Greco; T Baden; T Lowman; T Miller; T Reeves; T Reeves; T True; Tovar, SSgt Eric; USAFJ.A2@yokota.af.mil; USFJ; USFJ Intel; V Raphael; Valerie Makino; Vaughn, Sgt Jerrod; Walter Hokett; Wanda Ayuso; William Brysacz; Andersen, James; Anderson, Joseph; Ash, Darren; Baggett, Steven; Barker, Allan; Batkin, Joshua; Boger, Bruce; Borchardt, Bill; Bradford, Anna; Brenner, Eliot; Breskovic, Clarence; Smith, Brooke; Brown, Frederick; Brown, Milton; Bubar, Patrice; Burns, Stephen; Camper, Larry; Carpenter, Cynthia; Castleman, Patrick; Ader, Charles; Casto, Chuck; Coggins, Angela; Collins, Elmo; ConE_Resource; Copeland, Douglas; Correia, Richard; Caffey, Ryan; Dapas, Marc; Dean, Bill; Decker, David; Diaz-Sanabria, Yoira; Dickman-Disabled-11/14/2010, Paul; Dorman, Dan; Droggitis, Spiros; Dyer, Jim; English, Lance; ET02 Hoc; Evans, Michele; Franovich, Mike; Frye, Timothy; Garmon, David; Apostolakis, George; Gibbs, Catina; Gitter, Joseph; Gott,

William; Grobe, Jack; Hahn, Matthew; Haney, Catherine; Harrington, Holly; Hipschman, Thomas; Hoc, PMT12; Holahan, Gary; Holahan, Patricia; HOO Hoc; Howe, Allen; Howell, Art; Howell, Linda; Issa, Alfred; Itzkowitz, Marvin; Foster, Jack; Jackson, Donald; Jaczko, Gregory; Johnson, Andrea; Johnson, Michael; Jones, Cynthia; Kahler, Robert; King, Mark; Foggie, Kirk; Kock, Andrea; Kozal, Jason; Leeds, Eric; LIA01 Hoc; LIA02 Hoc; LIA03 Hoc; LIA06 Hoc; LIA08 Hoc; LIA11 Hoc; Logaras, Harral; Loyd, Susan; Magwood, William; Maier, Bill; Marshall, Jane; Marshall, Michael; McCree, Victor; McDermott, Brian; McIntosh, Angela; McNamara, Nancy; Michalak, Paul; Miller, Charles; Miller, Chris; Monninger, John; Morris, Scott; Nease, Rebecca; Nieh, Ho; NRCHQ; NSIR_DDSP_ILTAB_Distribution; Ordaz, Vonna; Orders, William; OST05 Hoc; Ostendorff, William; Pace, Patti; Patel, Jay; Pearson, Laura; Pederson, Cynthia; Plisco, Loren; Powell, Amy; Quichocho, Jessie; R1 IRC; R2 IRC; R3 IRC; R4 IRC; Reddick, Darani; Reyes, Luis; Devercelly, Richard; Nelson, Robert; ROO hoc; Rothschild, Trip; Satorius, Mark; Schmidt, Rebecca; Sharkey, Jeffry; Sheron, Brian; Sigmon, Rebecca; Snodderly, Michael; Sosa, Belkys; Speiser, Herald; Svinicki, Kristine; Tabatabai, Omid; Thoma, John; Thomas, Eric; Tifft, Doug; Kolb, Timothy; Ulses, Anthony; Nakanishi, Tony; Tracy, Glenn; Trapp, Trapp, James; Trojanowski, Robert; Turtl, Richard; Uhle, Jennifer; Virgilio, Martin; Warnick, Greg; Warren, Roberta; Weber, Michael; Westreich, Barry; Wiggins, Jim; Cook, William; Williams, Kevin; Wittick, Brian; Woodruff, Gena; Zimmerman, Roy; Zimmerman, Roy; Zorn, Jason; Borchardt, Bill; Cohen, Shari; Cooper, LaToya; Dyer, Jim; ET07 Hoc; Flory, Shirley; Hudson, Sharon; Schwarz, Sherry; Sprogeris, Patricia; Taylor, Renee; Virgilio, Martin; Walker, Dwight; Walls, Lorena; Weber, Michael

Subject: USNRC Earthquake-Tsunami Update 041911 Revision 1, 1300 EDT

From: Montes, David
To: Hayden, Elizabeth; Pace, Patti
Cc: Loyd, Susan
Subject: RE: Chairman's Itinerary for Tomorrow
Date: Wednesday, April 20, 2011 5:09:43 PM
Attachments: Johns Hopkins FINAL.pptx

The Chairman opted for a powerpoint

From: Hayden, Elizabeth
Sent: Wednesday, April 20, 2011 5:06 PM
To: Pace, Patti; Montes, David
Subject: RE: Chairman's Itinerary for Tomorrow

Do you have a copy of the Chairman's speech you could send me? Also, just heard, no C-Span.

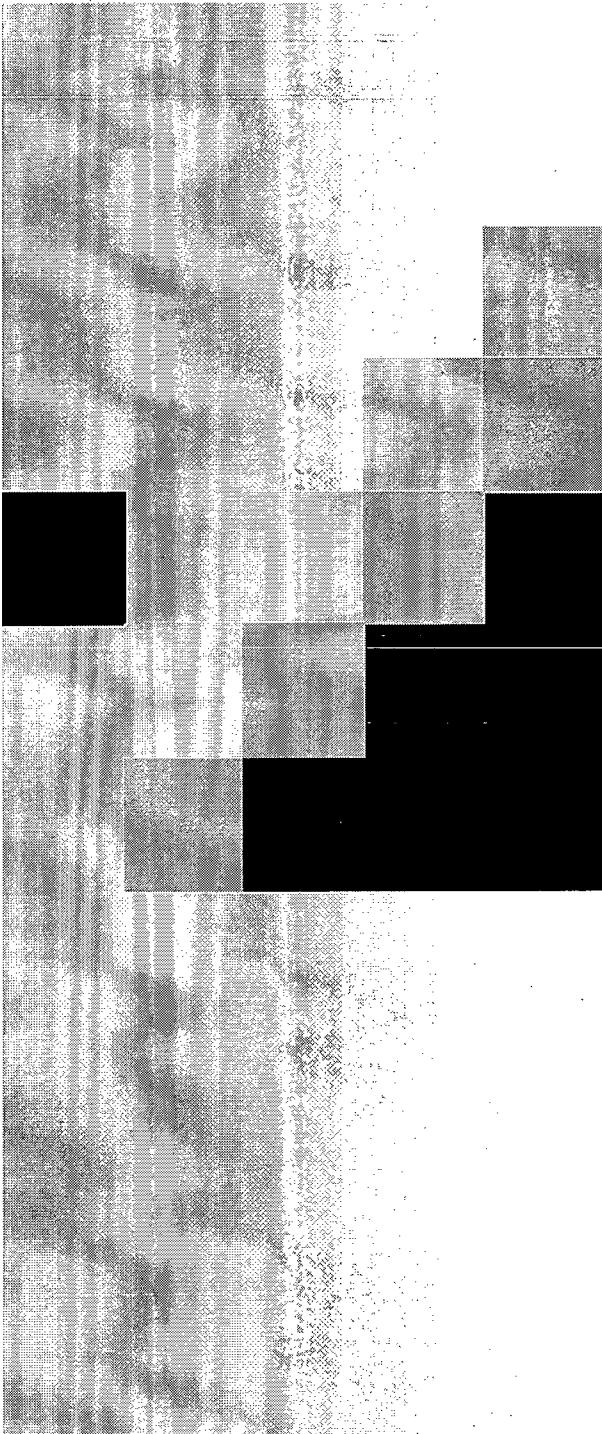
Beth

From: Pace, Patti
Sent: Wednesday, April 20, 2011 3:10 PM
To: Montes, David; Hayden, Elizabeth
Subject: Chairman's Itinerary for Tomorrow

Attached.

Patti Pace
Assistant to Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
301-415-1820 (office)
301-415-3504 (fax)

GIGIGI/224



The Past, Present, and Future of Nuclear Power: A Regulator's Perspective

Chairman Gregory B. Jaczko
U.S. Nuclear Regulatory Commission
April 21, 2011

What is the Nuclear Regulatory Commission?

- 5 Commissioners
- 4000 staff
- \$1 billion budget
- Created in 1954 as the Atomic Energy Commission
- Regulation and promotional functions divided between the NRC and the Department of Energy

A. ENERGY REORGANIZATION ACT OF 1974, AS AMENDED
Public Law 93-438 88 STAT. 1233

October 11, 1974

An Act

To reorganize and consolidate certain functions of the Federal Government in a new Energy Research and Development Administration and in a new Nuclear Regulatory Commission in order to promote more efficient management of such functions.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

That the Energy Reorganization Act of 1974, as amended, is amended to read as follows:

Sec. 1. **Short Title**
The Act may be cited as the "Energy Reorganization Act of 1974".

Sec. 2. **Declaration of Purpose**

(a) The Congress hereby declares that the general welfare and the common defense and security require effective action to develop, and increase the efficiency and reliability of use of, all energy sources to meet the needs of present and future generations, to increase the productivity of the national economy and strengthen its position in regard to international trade, to make the Nation self-sufficient in energy, to advance the goals of restoring, protecting, and enhancing environmental quality, and to assure public health and safety.

(b) The Congress finds that, to best achieve these objectives, improve Government operations, and assure the coordinated and effective development of all energy sources, it is necessary to establish an Energy Research and Development Administration to bring together and direct Federal activities relating to research and development on the various sources of energy, to increase the efficiency and reliability in the use of energy, and to carry out the performance of other functions, including but not limited to the Atomic Energy Commission's military and production activities and its general basic research activities. In establishing an Energy Research and Development Administration to achieve these objectives, the Congress intends that all possible sources of energy be developed consistent with warranted priorities.

(c) The Congress finds that it is in the public interest that the licensing and related regulatory functions of the Atomic Energy Commission be separated from the performance of the other functions of the Commission, and that this separation be effected in an orderly manner, pursuant to this Act, assuring adequacy of technical and other resources necessary for the performance of each.

(d) The Congress declares that it is in the public interest and the policy of Congress that small business concerns be given a reasonable opportunity to participate, insofar as is possible, fairly and equitably in grants, contracts, purchases, and other Federal activities relating to research, development, and demonstration of sources of energy efficiency, and utilization and conservation of energy. In carrying out this policy, to the extent practicable, the Administrator shall consult with the Administrator of the Small Business Administration.

Energy
Reorganization
Act
of 1974.

42 USC 5861
note.
42 USC 5861.

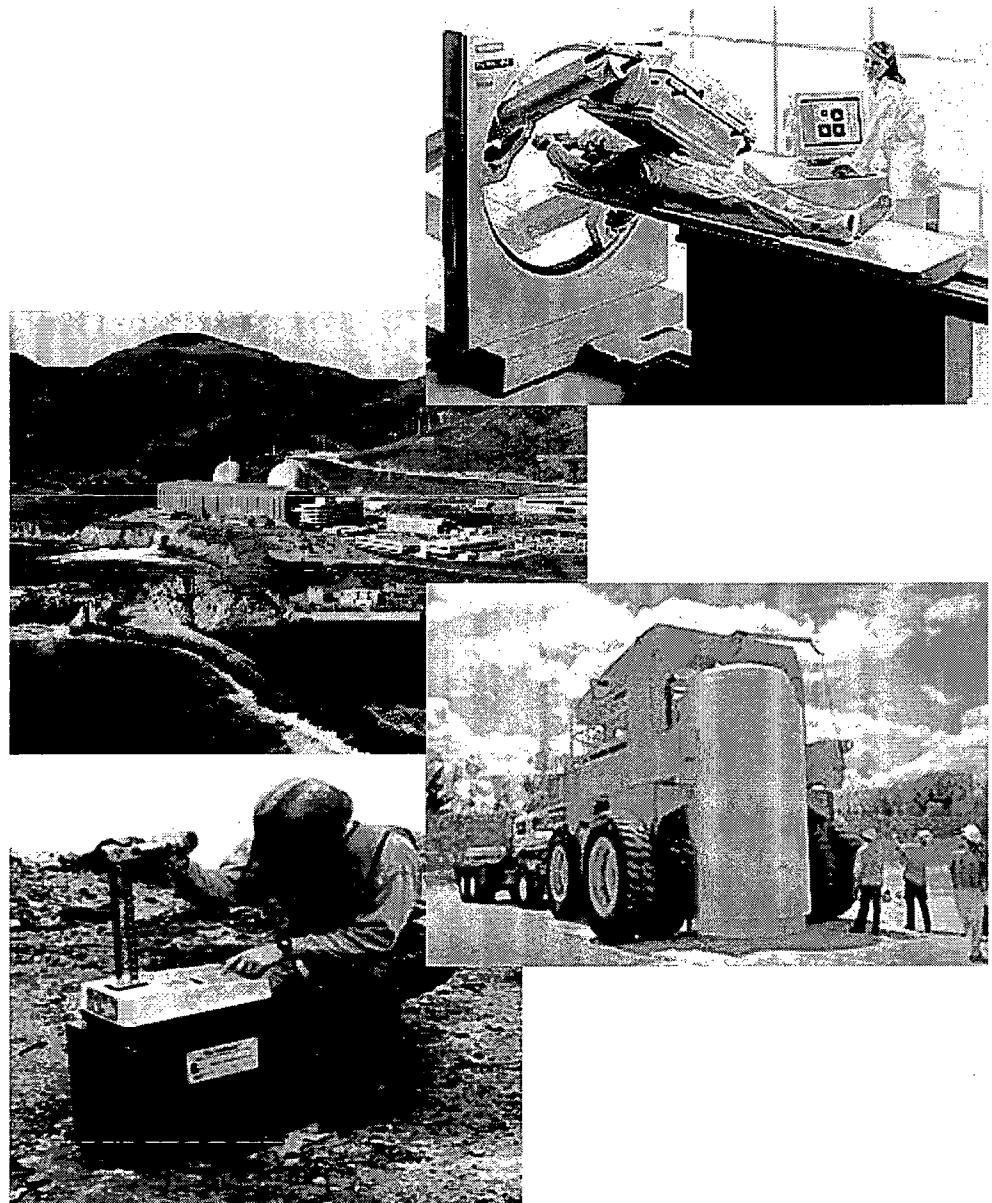
Energy
Research and
Development
Administration,
establishment.

Separation of
AEC licensing
and regulatory
functions.

Small business
participation.

What do we do?

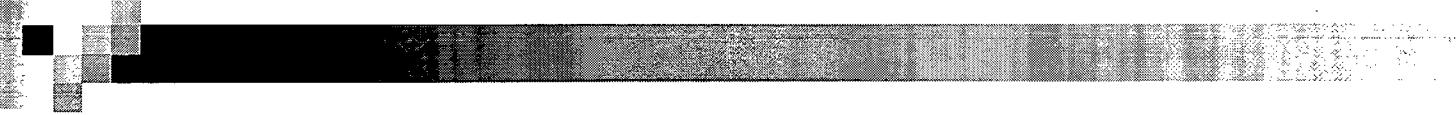
- The NRC's mission is to regulate civilian uses of nuclear material
 - Protect public health and safety
 - Promote common defense and security
 - Protect the environment
- Major activities
 - Licensing
 - Oversight
 - Research
 - Rulemaking
 - Incident Response



Where do we fit in the Federal government?

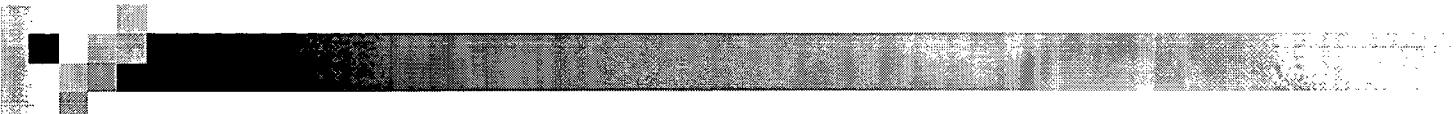
- Independent federal agency
- The President appoints Commissioners, who are confirmed by the Senate
- The President designates one of the Commissioners as Chairman—that's me





Nuclear Power—The Past, Present, and Future?

- “Our children will enjoy in their homes electrical energy too cheap to meter....”
 - Lewis Strauss, Chairman of the Atomic Energy Commission, 1954
- “Once claimed to be too cheap to meter, nuclear power is now too expensive to matter.”
 - The Economist Magazine, 2001
- 2011 and beyond?



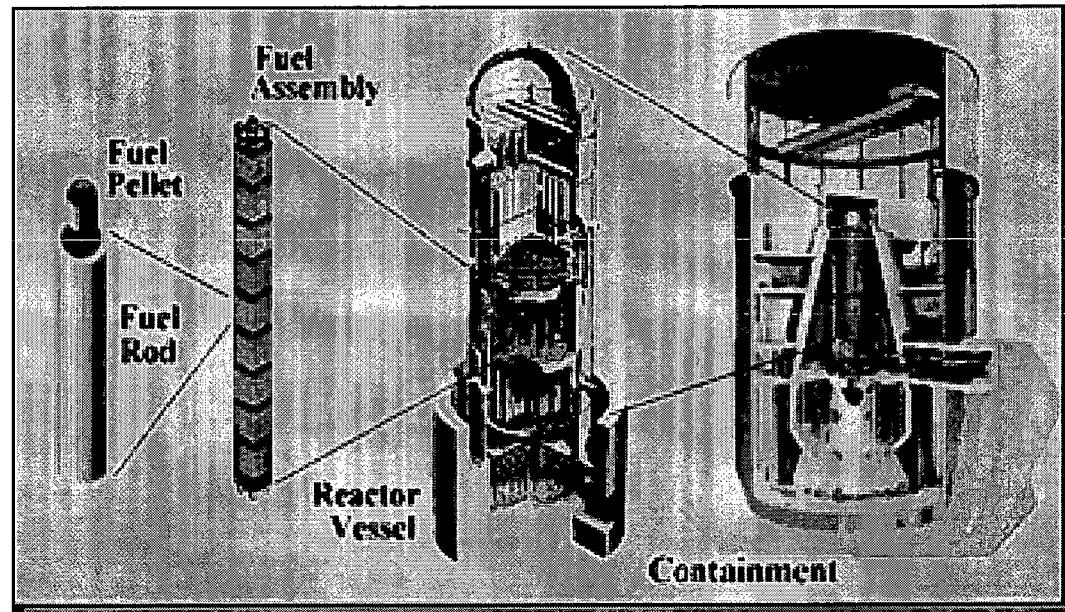
THE PAST:

Adding Greater Scientific Rigor

to Regulation

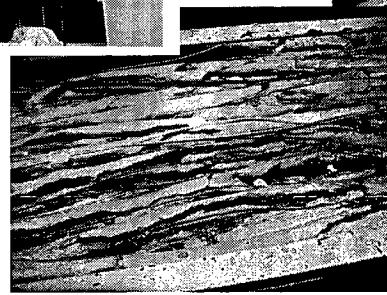
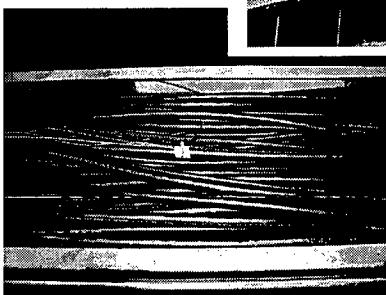
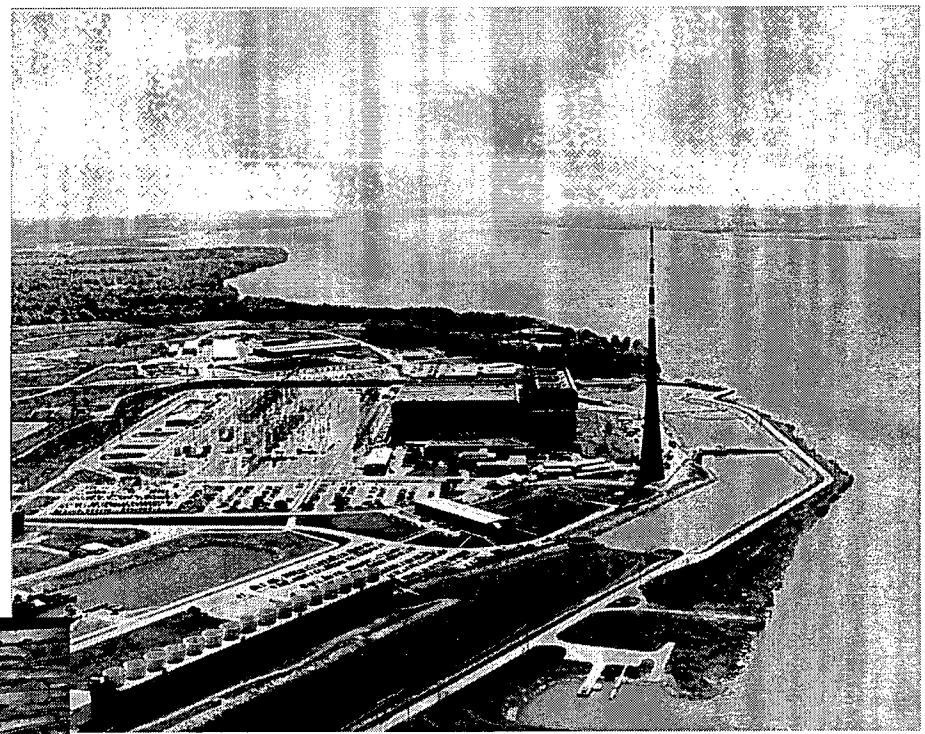
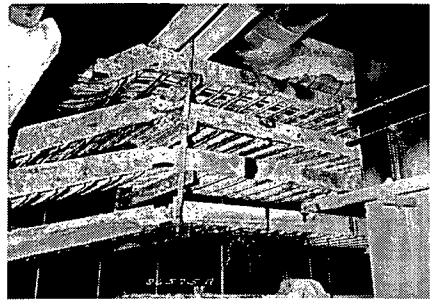
Historical Approach to Licensing and Oversight

- Deterministic
- Defense-in-depth
- Redundancy
- Diversity
- Single failure criteria



Operational Experience

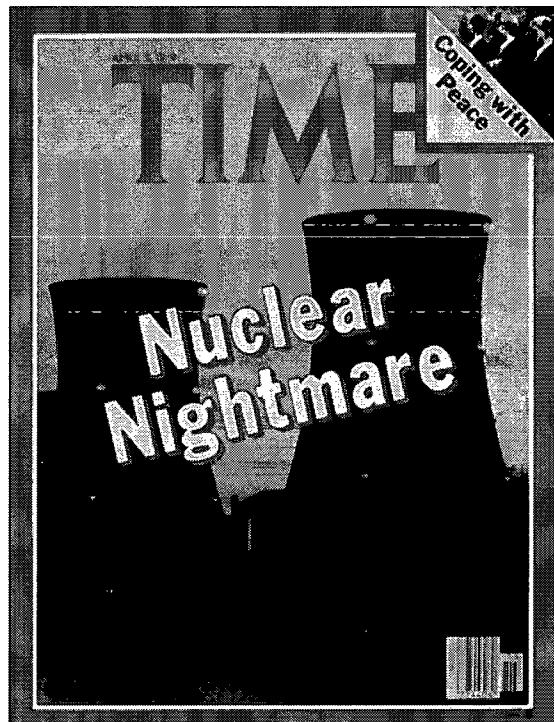
- Prior to 1975, fire was treated as an industrial hazard
- Browns Ferry Fire
- March 22, 1975: fire in cable spreading room and reactor building



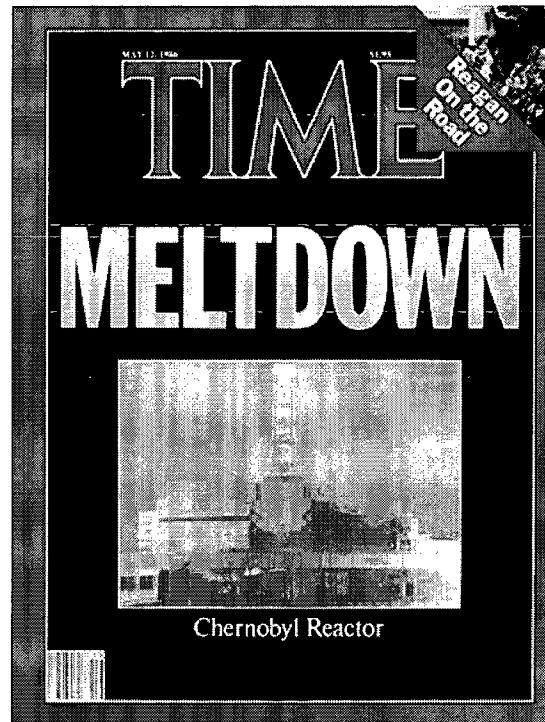
Response to Fire

- Backfit requirements on plants
- Compensatory measures
- Directed toward assuring plant shutdown and core cooling
- Very prescriptive
 - Defines defense in depth for fires
 - Prevent fires
 - Detect, control, and extinguish fires
 - Protect equipment for plant shutdown and cooling

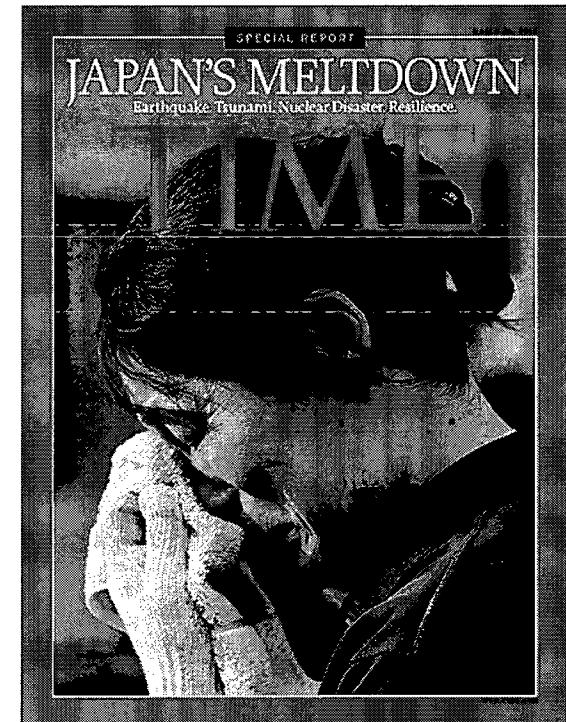
More Operational Experience



1979



1986



2011

Beginnings of Risk-Informed Regulation

- Recognition of challenges to reactor safety from other accidents and events outside the design basis
- WASH-1400: “Reactor Safety Study – An Assessment of Accident Risks in U.S. Commercial Nuclear Power Plants,” 1975
 - Early attempt to measure plant risk
 - Results showed low risk, but the study was controversial at the time

TABLE 6-3 INDIVIDUAL RISK OF EARLY FATALITY BY VARIOUS CAUSES
(U.S. Population Average 1969)

Accident Type	Total Number for 1969	Approximate Individual Risk Early Fatality Probability/yr ^(a)
Motor Vehicle	55,791	3×10^{-4}
Falls	17,827	9×10^{-5}
Fires and Hot Substances	7,451	4×10^{-5}
Drowning	6,181	3×10^{-5}
Poison	4,516	2×10^{-5}
Firearms	2,309	1×10^{-5}
Machinery (1968)	2,054	1×10^{-5}
Water Transport	1,743	9×10^{-6}
Air Travel	1,778	9×10^{-6}
Falling Objects	1,271	6×10^{-6}
Electrocution	1,148	6×10^{-6}
Railway	684	4×10^{-6}
Lightning	160	5×10^{-7}
Tornadoes	110 ^(b)	4×10^{-7}
Hurricanes	50 ^(c)	4×10^{-7}
All Others	8,695	4×10^{-5}
All Accidents (from Table 6-1)	115,000	6×10^{-4}
Nuclear Accidents (100 reactors)	-	2×10^{-10} ^(d)

(a) Based on total U.S. population, except as noted.

(b) (1953-1971 avg.)

(c) (1901-1972 avg.)

(d) Based on a population at risk of 15×10^6 .

Beginnings of Risk-Informed Regulation

- Policy Statement, “Safety Goals for the Operations of Nuclear Power Plants,” 1986

- How safe is safe enough?
 - Qualitative Health Objectives

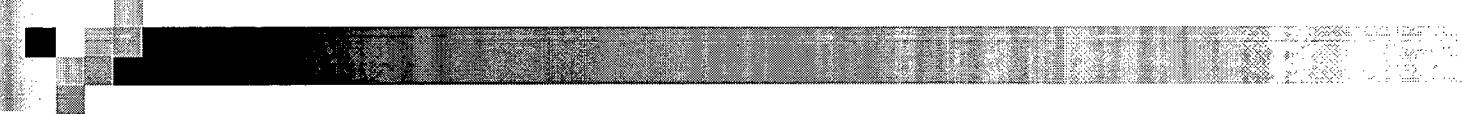
- Individual members of the public should be provided a level of protection from the consequences of nuclear power plant operation such that individuals bear no significant additional risk to life and health
 - Societal risks to life and health from nuclear power plant operation should be comparable to or less than the risk of generating electricity by viable competing technologies and should not be a significant addition to other societal risks

- Quantitative Health Objectives

- The risk to an average individual in the vicinity of a nuclear power plant of prompt fatalities that might result from reactor accidents should not exceed one-tenth of one percent (0.1%) of the sum of prompt fatality risks resulting from other accident to which members of the U.S. population are generally exposed
 - The risk to the population in the area of nuclear power plant of cancer fatalities that might result from nuclear power plant operation should not exceed one-tenth of one percent (0.1%) of the sum of cancer fatality risks resulting from all other causes

Beginnings of Risk-Informed Regulation

- NUREG-1150, “Severe Accident Risks: An Assessment for Five U.S. Nuclear Power Plants,” 1990
 - Systematic study of internal and external events for Surry, Peach Bottom, Sequoyah, Grand Gulf, and Zion
- 1995 Probabilistic Risk Assessment (PRA) Policy Statement
 - Encouraged the use of probabilistic risk assessments to complement deterministic approach
 - Considers a broader set of potential challenges to safety
 - Prioritizes challenges based on risk significance
 - Considers broader set of potential responses
- Reactor Oversight Process



THE PRESENT:

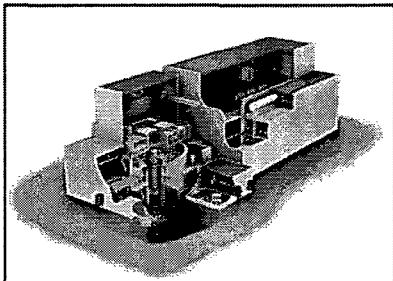
Better Regulatory Science

Safety of the Operating Reactors

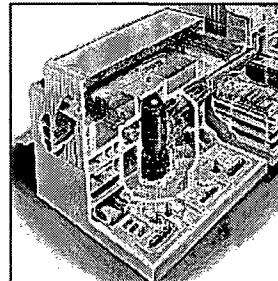


Potential Mixed Generations of Reactors

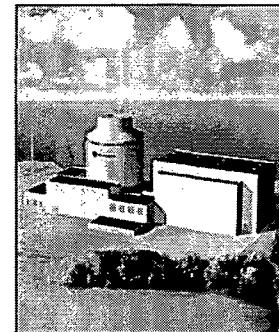
- 104 operating nuclear power plants
- 5 designs under review
- 12 applications under review for 20 new reactors
- \$6-\$10 billion for each plant
- \$18 billion of DOE federal loan guarantees
- Small modular reactors?



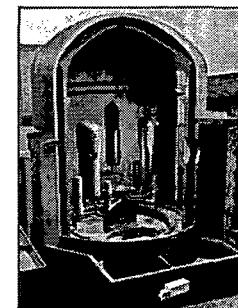
ESBWR



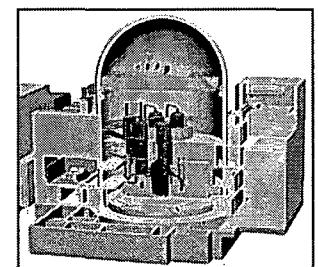
ABWR



AP1000

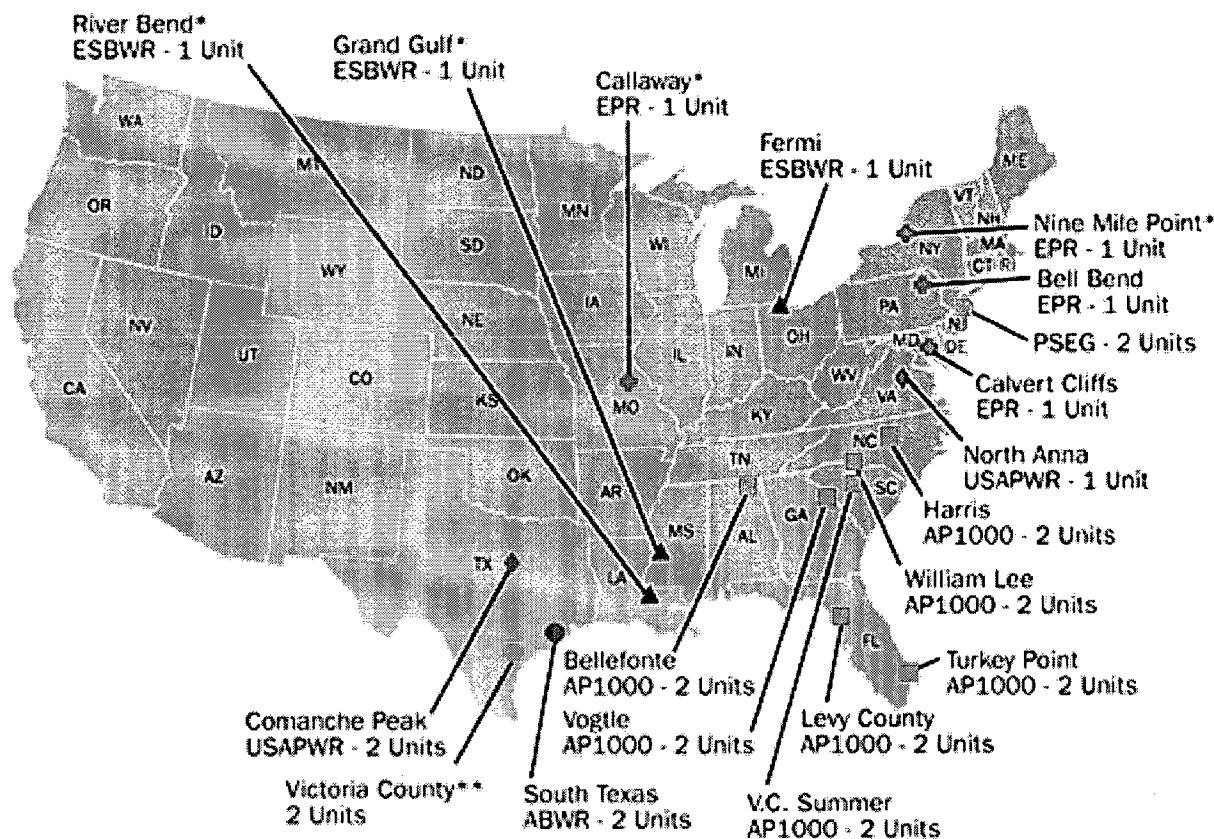


U.S. EPR



US-APWR

Safety Reviews for Potential New Reactors

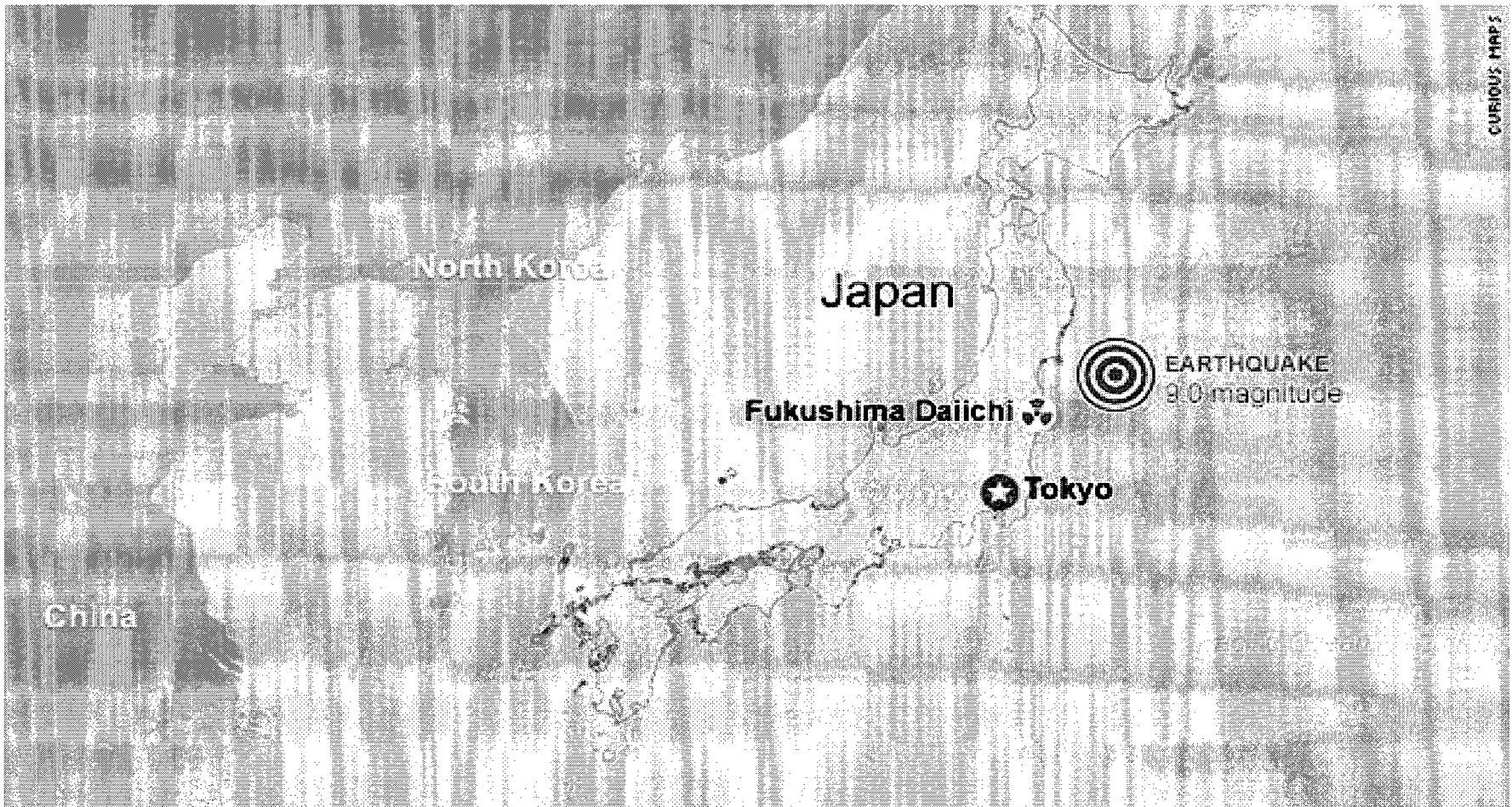


● ABWR ■ AP1000 ♦ EPR ▲ ESBWR ♦ USAPWR ▽ Design/Units - TBA ◉ ESP

*Review Suspended by Applicant

** COL Application Amended by Applicant to ESP on 03/25/2010

3/11 Japan Earthquake and Tsunami

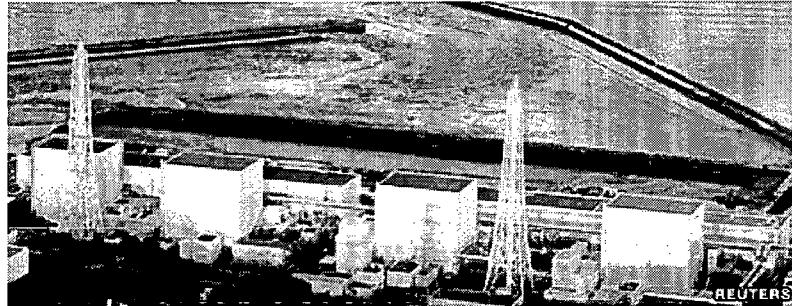


Fukushima Units 1 - 4



3/11 Earthquake & 3/12 Unit 1 Hydrogen Explosion

After earthquake 11 March



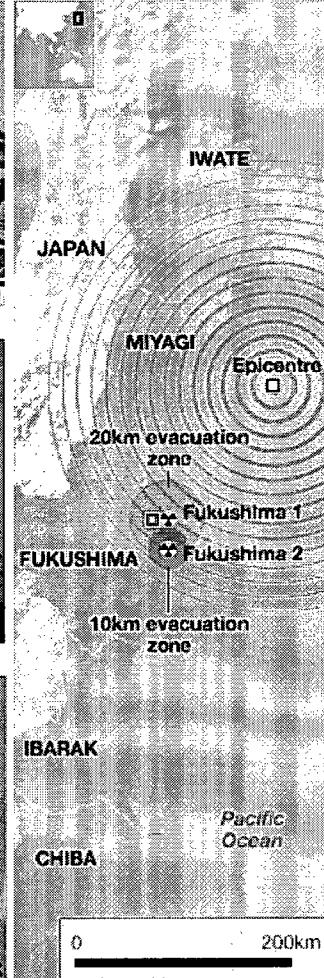
Explosion 0630 GMT 12 March



After explosion 0730 GMT



Fukushima plants



The New York Times

MONDAY, MARCH 14, 2011 EDITION NO. 1244

NUCLEAR CRISIS GROWS FOR A STRICKEN JAPAN AFTER RADIATION SPEWS FROM A REACTOR FIRE



WORKERS TOLD TO GO

Residents Ordered to Stay Indoors — President Obama Asks Callers

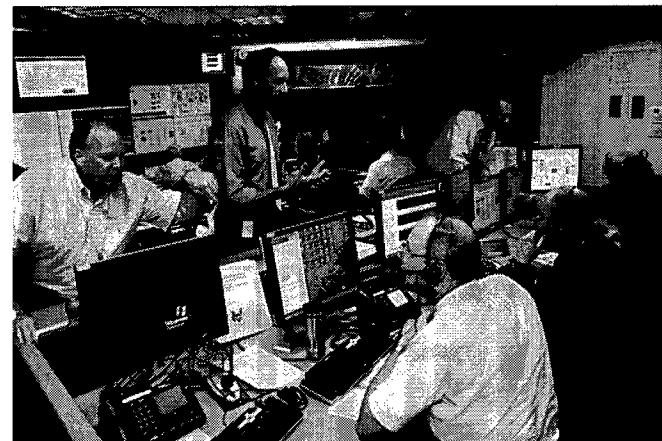
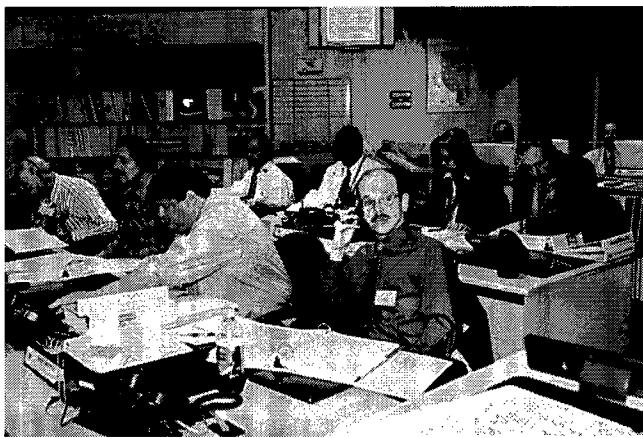
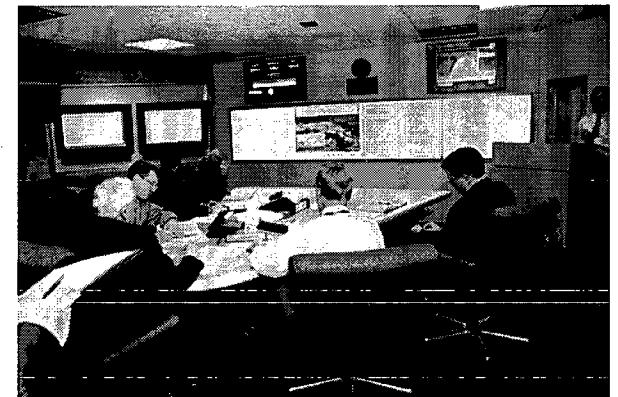
Japan's nuclear crisis深化了。政府和公用事业公司称，福岛第一核电站的反应堆在经历数天的紧急关机后，仍继续泄漏放射性物质。日本原子能机构说，辐射水平已上升到正常水平的数倍。福岛第一核电站位于福岛县，是日本最大的核电站，也是世界第三大核电站。该核电站有六台反应堆，其中三台仍在运行。据日本广播协会报道，福岛第一核电站的三个反应堆在地震后发生了爆炸，导致放射性物质泄漏。福岛第一核电站附近的居民被要求留在室内，以减少辐射暴露。日本首相菅直人呼吁民众保持冷静，并表示政府将尽一切努力确保公众安全。

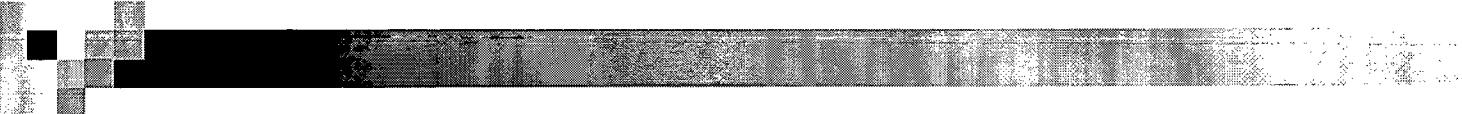
福岛第一核电站的反应堆在经历数天的紧急关机后，仍继续泄漏放射性物质。日本原子能机构说，辐射水平已上升到正常水平的数倍。福岛第一核电站位于福岛县，是日本最大的核电站，也是世界第三大核电站。该核电站有六台反应堆，其中三台仍在运行。据日本广播协会报道，福岛第一核电站的三个反应堆在地震后发生了爆炸，导致放射性物质泄漏。福岛第一核电站附近的居民被要求留在室内，以减少辐射暴露。日本首相菅直人呼吁民众保持冷静，并表示政府将尽一切努力确保公众安全。

福岛第一核电站的反应堆在经历数天的紧急关机后，仍继续泄漏放射性物质。日本原子能机构说，辐射水平已上升到正常水平的数倍。福岛第一核电站位于福岛县，是日本最大的核电站，也是世界第三大核电站。该核电站有六台反应堆，其中三台仍在运行。据日本广播协会报道，福岛第一核电站的三个反应堆在地震后发生了爆炸，导致放射性物质泄漏。福岛第一核电站附近的居民被要求留在室内，以减少辐射暴露。日本首相菅直人呼吁民众保持冷静，并表示政府将尽一切努力确保公众安全。

Japan—NRC's Initial Response

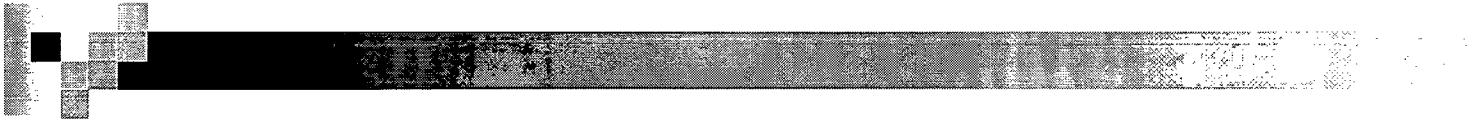
- 24-hour monitoring and analysis
- Sent NRC team to offer expert advice
- Monitored for impact of tsunami
- Supported broader U.S. response





Japan—NRC's Ongoing Response

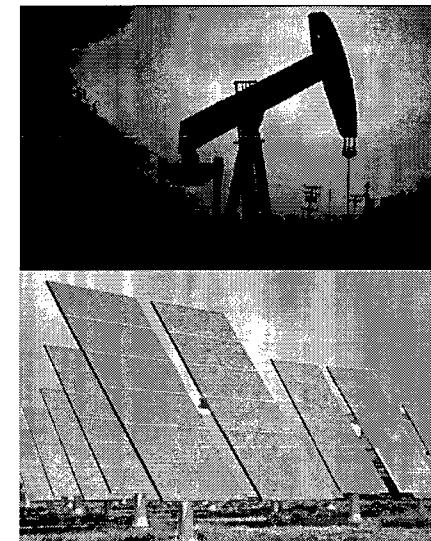
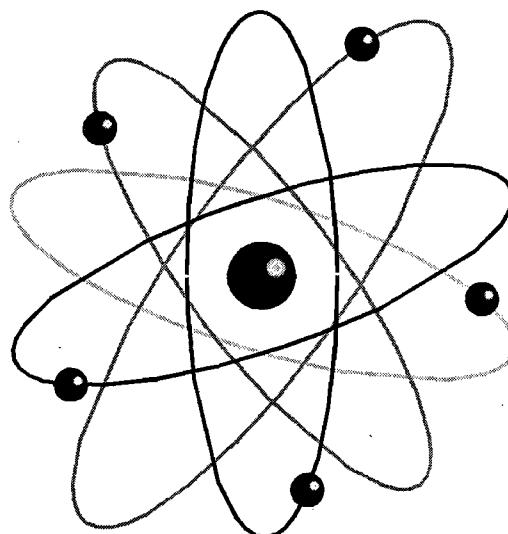
- Inspection of NRC reactor licensees preparedness
- 90 day near-term review
 - Evaluate currently available technical and operational information from the events
 - Identify potential or preliminary near term/ immediate operational or regulatory issues
 - Develop recommendations, as appropriate, for potential changes
- Long-Term Review
 - Systematic and methodical
 - 6 months after 90-day review



THE FUTURE: Public Perception

112th Congress: A Look Ahead

- New Congress = new leadership = new agenda
- Focus on piecemeal approaches
- The easiest way to get things done in Washington is to have Democrats and Republicans agree
- Energy issues are *regional* – potential for compromise?
- Stay tuned...



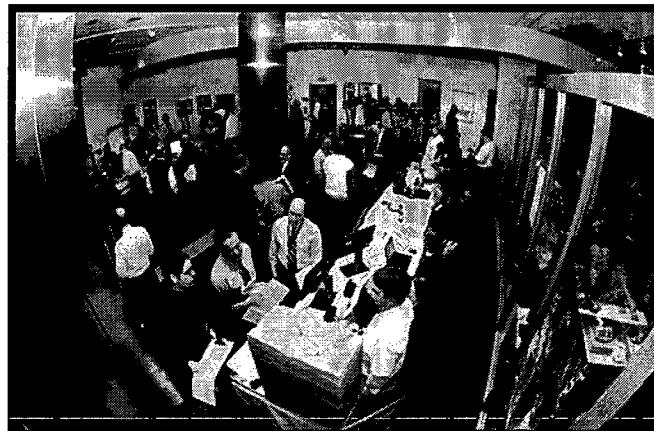
Safety Must Remain the No. 1 Priority



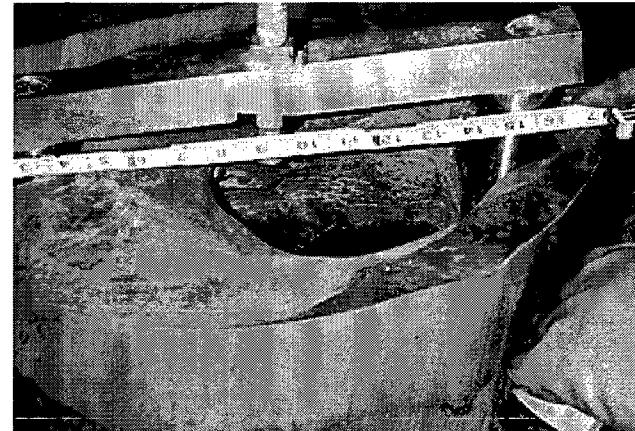
Safety Culture



New Technologies



Knowledge Management



Materials Degradation

U.S. NRC: Best Place to Work

- First out of 250 other Federal Agencies
- Among our “Best in Class” ratings, the NRC was:
- #1 Large Agency Rankings
- #1 Strategic Management
- #1 Effective Leadership
- #1 Work / Life Balance
- #1 Support for Diversity
- #1 Among Employees Under 40
- #1 Pay and Benefits



From: Rakovan, Lance
To: Barkley, Richard; Bonaccorso, Amy; Cai, June; Croston, Sean; Culp, Lisa; Ellmers, Glenn; Farnholtz, Thomas; Gold, Meg; Goldberg, Francine; Hayden, Elizabeth; Heck, Jared; Jasinski, Robert; Joosten, Sandy; Landau, Mindy; Loyd, Susan; Medina, Veronika; Montes, David; Mroz (Sahm), Sara; Pedersen, Renee; Rakovan, Lance; Rihm, Roger; Ryan, Michelle; Sall, Basia; Salter, Susan; Shane, Raeann; Steger (Tucci), Christine; Virgilio, Rosetta; Woodruff, Gena; Wright, Lisa (Gibney); Robbins, Emily
Cc: Donaldson, Leslie; Harrington, Holly; English, Kimberly; Oklesson, Edward; Chan, Deborah
Subject: Nuclear Boy Link
Date: Wednesday, April 20, 2011 11:08:28 AM

As I mentioned in today's Communications Council meeting, this links to a Japanese video cartoon that apparently seeks to explain the Fukushima nuclear power plant to children. I apologize in advance if you are somehow offended by the material.

<http://www.youtube.com/watch?v=5sakN2hSVxA>

-Lance

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From: [Bulletin News](#)
To: NRC-editors@bulletinnews.com
Subject: NRC News Summary for Wednesday, April 20, 2011
Date: Wednesday, April 20, 2011 7:04:34 AM
Attachments: [NRCSummary110420.doc](#)
[NRCSummary110420.pdf](#)
[NRCclips110420.doc](#)
[NRCclips110420.pdf](#)

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

Website: You can also read today's briefing, including searchable archive of past editions, at <http://www.BulletinNews.com/nrc>.

Full-text Links: Clicking the hypertext links in our write-ups will take you to the newspapers' original full-text articles.

Interactive Table of Contents: Clicking a page number on the table of contents page will take you directly to that story.

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NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

WEDNESDAY, APRIL 20, 2011 7:00 AM EDT

WWW.BULLETINNEWS.COM/NRC

TODAY'S EDITION

NRC News:

Obama Nominates Ostendorff For Second Term As NRC Commissioner.....	1
NRG Decides To Back Away From New Reactor Build At South Texas Project.....	2
NRC Discontinues Special Monitoring At Surry Station.....	3
NRC To Discuss Callaway Plant Safety Performance.....	3
NRC Finds No Environmental Impediments To New Reactors At Summer Station.....	3
NRC To Meet With Global Nuclear Fuel-America About Plant's Performance	3
Obama Administration Nearing Decision On Uranium Mining Near Grand Canyon	3
Entergy Buys Newspaper Ads To Reach Vermonters On Yankee Benefits	4
Entergy To Conduct Simulate Combat Drill At Indian Point.....	5
Palo Verde Station Engineered To Maximize Safety, Official Says.....	5
Congressional Delegation Visits FPL's South Florida Nuclear Power Plant	5
NRC Dockets Group's Petition Against GE Mark 1 BWR.....	5
Oconee Nuclear Station Hosts Safety Meeting.....	5
NRC To Discuss Plant Vogtle Safety At Meeting.....	6

Fleischmann, DesJarlais Endorse Nuclear Facility.....	6
Connecticut Governor Opposes Hefty Millstone Nuclear Tax	6
New DOE Nuclear Chief Has Full Agenda.....	6
Nuclear Power Said To Be Too Costly, Slow.....	6
Experts Fear Effects Of Fukushima Plant Crisis Will Persist For Decades.....	6
Report: Security Trails Cyber Threats At Global Utilities	7

International Nuclear News:

TEPCO Begins Pumping Radioactive Water From Plant Buildings	7
IAEA Says Worst Of Radiation Leaks May Be Over.....	8
Donor Conference To Clean Up Chernobyl Falls Short.....	8
During Visit To Chernobyl, IAEA Head Says Nuclear Energy Is Important.....	8
Protests Continue Against Planned Indian Nuclear Plant.....	9
Italian Government Shelves Nuclear Plans.....	9
Rosatom's Kiriyenko Envisions New Safety Demands, Costlier Plants	9
Greenpeace Protesters Occupy Office Of Ontario Energy Minister	9
Russia Pressing Ahead On Floating Nuclear Plants	9

NRC NEWS:

Obama Nominates Ostendorff For Second Term As NRC Commissioner. [Greenwire](#) (4/19, Northey) reports, "President Obama has nominated William Ostendorff to a second term as commissioner on the Nuclear Regulatory Commission." Ostendorff, whose term expires June 30, has served since April 2010. "The Nuclear Energy Institute applauded the nomination, calling Ostendorff a qualified candidate with experience as an engineer, lawyer, policy adviser and naval officer." NEI Senior Vice President Tony Pietrangelo said his organization hopes for a "speedy confirmation because a full complement of experienced commissioners is essential as the agency reviews operation

of US reactors in light of events in Japan and judges certifications for reactor designs and licenses for new reactors and fuel facilities."

Commissioner Ostendorff, Sen. Alexander Tour Watts Bar Plant. [WBIR-TV](#) Knoxville, Tennessee (4/19, 6:34 a.m., EDT) broadcast, "Senator Lamar Alexander wants to know about the safety of a local nuclear power plant in light of the Fukushima disaster last month. On Monday the Senator along with members of TVA and the Nuclear Regulatory Commission toured the Watts Bar Nuclear Plant in Rhea County. They were seeing exactly what the plant does or would do in case of a shutdown of power or a natural disaster. In his findings, the Senator says he was quite impressed with the safety record of the plant." Sen. Lamar Alexander, "We saw a whole variety of backup ways to deal

with that in case anything would ever happen here." WBIR-TV continues, "Currently Watts Bar is on a refueling outage. It's a standard maintenance procedure at the plant. It'll begin full operations again in early May."

Blog: Alexander Reassures On Nuclear Energy, Sees Earthquake Simulation At Watts Bar Plant. Greg Johnson writes in the Knoxville News Sentinel (4/20, 96K) "A Mountainview" blog that on Monday, Senator Lamar Alexander was "in Rhea County visiting the Watts Bar Nuclear Plant with Bill Ostendorff of Nuclear Regulatory Commission." Johnson says that "a report in the Rhea Herald-News (by my son, Reed Johnson) said Alexander and Ostendorff said Watts Bar 'is not in danger of succumbing to natural disasters.'"

NRG Decides To Back Away From New Reactor Build At South Texas Project. The New York Times (4/20, Wald, Subscription Publication, 950K) reports on NRG Energy's decision to back away from its plan to build "two giant reactors" at the South Texas Project, announced Tuesday "that it was giving up and writing off its investment of \$331 million after uncertainties created by the accident in Japan." The project had been in "considerable doubt" even before the nuclear accident at Fukushima, given that Texas "has a surplus of electricity and low prices for natural gas, which sets the price of electricity on the market there." NRG CEO David Crane said the project could yet proceed "if circumstances changed," though he acknowledged the "prospect of that occurring was 'extremely daunting and at this point not particularly likely.'

The AP (4/20, Fahey) reports, "Support for new nuclear projects in the US has eroded in the aftermath of the nuclear crisis in Japan, according to an Associated Press-GfK poll conducted earlier this month. One of NRG's partners was to be TEPCO, the Japanese utility that owns the reactor complex crippled by last month's earthquake and tsunami." Though it is "in line for a federal loan guarantee," low energy costs "clouded prospects" for the new reactors even before the incident in Japan. The AP (4/20) ran an abbreviated report on the issue.

The Wall Street Journal (4/20, Smith, Subscription Publication, 2.02M) reports, NRG's CEO David Crane noted that the NRC is currently conducting a safety review of the US commercial fleet and suggested that potential design changes emerging from that review could increase the project's costs. Of NRG's partners, neither Toshiba nor TEPCO has indicated it wants out of the project, but Crane said "there's no reason to believe our Japanese partners want to go forward, either. They haven't been calling us to reassure us."

The Dallas Morning News (4/20, Souder, 262K) adds the decision shows the "Japanese disaster has the potential

to derail the budding US nuclear power renaissance." The "nuclear explosions in Japan mean that Tokyo Electric and the Japanese government, which had considered offering its own loan guarantees for the project, must focus on domestic problems, Crane said." While Crane said the NRC's reaction to launch a review of the US fleet was the "right decision," he noted that it also "delays his project."

The San Antonio Express-News (4/20, Hamilton, 151K) reports, Crane said the "extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development of the STP project."

The Austin American Statesman (4/20, Price, Toohey, 132K) adds that Crane said that with what happened at Fukushima, "the confluence of events that would have to occur in NRG's view in order to get (reactors) 3 and 4 truly back on track is extremely daunting and at this point not particularly likely." Standard and Poor's analyst Swami Venkataraman said the announcement "doesn't mean they can never restart it," but added that NRG had "planned to get a license by the end of 2012. ... Once they get a license, they have to find out how much more it will cost, and then they will know how much time they need to proceed."

The Victoria (TX) Advocate (4/20, Acosta, 30K) notes that Crane said Nuclear Innovation North America, will "continue its focus in securing a combined operating license from the Nuclear Regulatory Commission and on obtaining a loan guarantee from" the DOE. The Advocate adds, "The news was not good for Bay City officials who have worked with STP to benefit from the expansion." Mitch Thamas of the Bay City Chamber of Commerce president said the "expectations of job and community growth through the expansion of 3 and 4 were something that we were looking forward to although we have known for years that this was a complicated process with many things that could go wrong."

The Bloomberg News (4/20, Klump) adds, Wunderlich Securities analyst James Dobson, said the announcement was no surprise. "The question was when management was going to fully decide they were ready to make an announcement." With the NRC 90-day review underway, the nuclear industry "may be forced to spend more than \$10 billion to address long-standing safety concerns including fire safety and storage of spent fuel that have gained new urgency following the accident, according to estimates by Bloomberg Government."

The blog website, GigaOm (4/20) Katie Fehrenbacher writes that NRG Energy says it will be "recording a first quarter 2011 pretax charge of about \$481 million."

Dow Jones Newswires (4/20, Malik) and Reuters (4/20, O'Grady) and Financial Times (4/20, McNulty, Subscription Publication, 448K) also covered the announcement.

NRC Discontinues Special Monitoring At Surry Station.

The Virginia Gazette (4/19) reports, "The Nuclear Regulatory Commission announced Tuesday that it has discontinued monitoring mode status related to the weekend storms that hit the Surry nuclear power plant." The agency "is evaluating whether additional follow up will be needed," after the plant lost offsite power "when an apparent tornado touched down in the adjacent switchyard. The facility's emergency diesel generators immediately started up, providing emergency power until offsite power was restored."

The Williamsburg Yorktown Daily (4/19) added, "Dominion, which operates the two-unit facility near Surry, exited its unusual event, which was the lowest of four NRC emergency classifications."

The Virginia Gazette (4/19) notes that following the shutdown, "Four diesel generators kicked in to power the units' emergency loads. Plant operators have partially restored offsite power to both plants."

Local TV Coverage. WVEC-TV Norfolk, Virginia (4/19, 6:15 p.m., EDT) broadcast, "The Nuclear Regulatory Commission is no longer monitoring the Surry Nuclear Power Plant. Officials were keeping a close eye on things after a twister touched down on the electrical switch guard after Saturday's storms. But they have given it the all clear. Storms knocked down power lines cutting electricity to the reactor. Of course, the back-up generator kicked in, but officials say it will be days before the reactor is up and running at full power." WAVY-TV Norfolk, Virginia (4/19, 11:06 p.m., EDT), WUSA-TV Washington, DC (4/19, 7:05 p.m. EST), WSLS-TV Roanoke (4/19, 5:55 p.m. EST), WRIC-TV Richmond (4/19, 5:10 p.m. EST), WTKR-TV Norfolk (4/19, 5:05 p.m. EST), WWBT-TV Richmond (4/19, 5:00 p.m. EST) aired segments on this story.

NRC To Discuss Callaway Plant Safety

Performance. The St. Louis Business Journal (4/20, Volkmann, Subscription Publication) reported that NRC regulators said Tuesday that Ameren's Callaway plant operated safely during 2010 and plan to discuss the findings at a public meeting April 26. Though Callaway plant "did receive heightened oversight during the first half of 2010," a "subsequent inspection determined that appropriate corrective actions were implemented, NRC officials said." NRC Region IV Administrator Elmo Collins said the "informal meeting will provide members of the public with an opportunity to learn about our annual assessment of safety performance at the plant."

NRC Finds No Environmental Impediments To New Reactors At Summer Station. The AP (4/20) reports, NRC "regulators say there are no environmental impacts from two proposed nuclear reactors" at VC Summer Nuclear Station in Jenkinsville "that would prevent South Carolina Electric & Gas from getting a license to operate the plants." An NRC and Army Corps of Engineers "environmental review began in January 2009 and included input from several public meetings. The final statement is part of a long process for approval for the reactors that will be among the first built in the US in a generation."

Power-Gen Worldwide (4/20) notes that "South Carolina Electric & Gas (SCE&G) and Santee Cooper are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant." The NRC "continues to compile its final safety evaluation report, which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards." The "NRC's final licensing decision will be based on the final environmental impact statement and the safety evaluation findings, along with a ruling from the five-member Commission."

NRC To Meet With Global Nuclear Fuel-America About Plant's Performance.

The Wilmington Star News (4/20, Faulkner, 40K) reports that NRC "regulators will present results of a performance review of Global Nuclear Fuel-America's commercial nuclear fuel fabrication plant at a public meeting April 26 in Wilmington." The agency will meet with GNF-A management at 10 am in "Azalea Coast Room A of UNCW's Fisher Student Center, the NRC said." The Commission assessed "performance at Global from May 23, 2009 to Dec. 31, 2010, on safety operations, radiological controls, facility support and special topics." While the NRC review determined that Global conducted its activities with "safely and securely," management attention is "still warranted to improve the identification and implementation of safety controls," NRC said.

Obama Administration Nearing Decision On Uranium Mining Near Grand Canyon.

The Christian Science Monitor (4/19, Clayton, 48K) reports that with the past decades' renewed interest in mining for uranium, prospecting and mining-project proposals have been "popping up" across the western United States. But the Obama Administration has "put the brakes on thousands of new mining plans or claims" on about a million acres of public land bordering the Grand Canyon. The Administration is poised to decide whether to "allow the mining-claims process to move forward or extend its moratorium for up to 20 years." The "decision could set a precedent for other natural

landmarks also being hedged in by uranium and other mining claims, observers say."

Entergy Buys Newspaper Ads To Reach Vermonters On Yankee Benefits.

The AP (4/20) reports, Vermont Yankee plant owner Entergy Corp., took out "full page newspaper advertisements" Tuesday "in nine Vermont newspapers," in which the CEO of plant owner Entergy Corp. "says the company wishes it didn't have to go to court but that it had no choice." CEO J. Wayne Leonard said "Yankee's owners have a responsibility -- to the plant's employees, the company's investors and electricity consumers -- to stake its claim to operating past March 2012, when the state wants it shut down." Leonard said, Entergy is "only a resolution of our disagreement with the state and we will abide by the results of the judicial process."

In a shorter version of its coverage, the AP (4/20) notes that Yankee spokesman Larry Smith, "said Leonard wanted to have a conversation about the issue with the people of Vermont."

Rutland (VT) Herald (4/20, Smallheer) reports, "In a lengthy letter addressed to 'Dear Vermonters,' J. Wayne Leonard, chairman and chief executive officer of Entergy Corp., outlined his company's reasons for suing the state of Vermont, Gov. Peter Shumlin and the Public Service Board, in order to keep Vermont Yankee open beyond its projected closing date of March 21, 2012."

Leonard "had his harshest criticism for some unnamed 'public officials,' and the Vermont Legislature, which he said changed the rules of the regulatory game Entergy agreed to in 2002." The Herald added, the "full-page advertisements came a day after Entergy and two of its subsidiaries," sued the state in US District Court in Burlington.

Vermont Attorney General Says State Should Be Able To Enforce Own Laws. On its website, WCAX-TV Burlington, Vermont (4/19, Reading) reported that in response to Entergy's suit to keep the plant operating, Vermont Attorney General Bill Sorrell, said, "We're going to try very hard in court to say that this is not the kind of case in which an injunction should be issued and that we should be able to enforce our laws." The battle over legal jurisdiction pits federal government against the state of Vermont over who has authority to order Yankee to close. Entergy claims the "Atomic Energy Act and the Federal Power Act-- two federal laws-- pre-empt state control over Yankee's license and power sales."

On its website, Vermont Public Radio (4/19) carries an audio link to its coverage of an interview with "Michael Dworkin, a former chairman of the Vermont Public Service Board who now heads the Institute for Energy and the Environment at Vermont Law School," who spoke on his opinion of the lawsuit's chances for success.

Shumlin Says Entergy Did Not Argue Against Act 160 At The Time.

The Brattleboro (VT) Reformer (4/20, Audette) reported, "Gov. Peter Shumlin disputed Entergy's contention that the Legislature's approval of Act 160 'changed the rules' of an agreement reached when Entergy bought Vermont Yankee power plant in 2002." Shumlin said that while Act 160 may not have been part of the memorandum of understanding signed in 2002, "Entergy's lobbyists, executives and lawyers all participated in the process of reviewing Act 160." Shumlin has said if "Entergy sued the state, it would have a hard time justifying its position before a federal judge." New England Coalition spokesman Ray Shadis "agreed with the governor's characterization of Entergy's position on Act 160."

Rutland (VT) Herald (4/20, Smallheer) reports, "Shumlin, joined by Attorney General William Sorrell, said the state was ready to defend the 2006 state law, which established the Legislature as the gatekeeper of state approval. Last year, the Vermont Senate, led by then-Sen. Shumlin, soundly defeated a move toward relicensing, in the wake of underground radioactive tritium leaks at the plant and misstatements by plant executives under oath about the existence of underground pipes carrying radioactive materials." Shumlin, "pointing to a 2006 Rutland Herald article, noted that Entergy itself supported Act 160 at the time, which gave the Legislature a key role in the issuing of any new certificate of public good for Vermont Yankee."

WVNY-TV Burlington, Vermont (4/19, 6:32 a.m., EDT) broadcast, "The owner of Vermont Yankee is taking legal action against the state of Vermont in an effort to keep the plant running past 2012. Despite last year's vote in the senate to close Yankee as scheduled, Entergy has filed a lawsuit arguing the state has no authority over relicensing." Gov. Peter Shumlin, "This is an example of a company that doesn't want to follow the laws and is trying desperately to avoid the laws and I just don't think that's a very prudent legal course." WVNY-TV continues, "Entergy is also expected to file an injunction, this week, which would prevent Vermont from closing the plant in March of next year."

Also covering the lawsuit were WBUR-FM Boston (4/19, Bever), Christian Science Monitor (4/19, Clayton, 48K), World Nuclear News (4/19), and the Keene (NH) Sentinel (4/19, Jarvis, 10K).

State May Raise Other Operational Hurdles For Entergy. Rutland (VT) Herald (4/20, Hirschfield) reports, "When Entergy Corp. sued in US District Court on Monday to keep Vermont Yankee operating, the fate of the nuclear plant appeared to have been placed in the hands of a federal judge." But even if Entergy emerges "victorious, the Legislature and state regulators will retain considerable power over the facility's ability to operate beyond 2012. From new taxes to more burdensome regulations, Vermont could

undermine Vermont Yankee's ability to profitably run its 660-megawatt reactor in Vernon." Legal observers believe the case is "likely headed for the Supreme Court," where justices will decide whether the federal Atomic Energy Act of 1954 "totally and absolutely pre-empt[s] state law" said Law School professor, Patrick Parenteau.

Precedents Argue Against One-Sided Changes Of Contract Language. On a blog entry for Energy Collective (4/20), Meredith Angwin wrote "According to the Memorandum of Understanding (page 6) the parties "expressly and irrevocably decree that the Board (Public Service Board) (1) has jurisdiction under current law to grant or deny approval of operation of VYNPS beyond March 12, 2011." However, in 2006, the legislature voted that the PSB could not issue such a certificate without legislative approval (Act 160)." This became "a one-sided change to a written contract" and many legal precedents argue "that one side cannot change a contract without the other side's approval."

Brattleboro Board Signs Letter To Vermont Yankee. Brattleboro (VT) Reformer (4/20, Stilts) reports, "After several edits from Selectboard members David Gartenstein and Ken Schneck, the board voted 3-2 in favor of signing a letter of concern about the Vermont Yankee nuclear power plant." Originally "prepared by the Safe & Green Campaign, the letter states several concerns and requests when the nuclear plant in Vernon closes."

Entergy's Silence On 2006 Law May Be Telling In Court. In an editorial, the Rutland (VT) Herald (4/20) says, "When Entergy bought Vermont Yankee in 2002, it signed an agreement stating it would not seek to operate beyond 2012 without approval from the state Public Service Board. It also stated expressly that it would not seek to undo that commitment by arguing that federal law pre-empted state law on the operation of the plant." Entergy believes "that Vermont has changed the rules of the game" suggesting that the "2006 law abrogated the 2002 agreement, though it raised no objections at the time." The Herald adds, "Michael Dworkin, professor of law and former chairman of the PSB, says that Entergy's silence on that issue for five years will be telling in a court of law."

Entergy To Conduct Simulate Combat Drill At Indian Point. Mid-Hudson News (4/20) reports, "Entergy will be conducting security training drills at the Indian Point Energy Center the evening of April 19 and April 28 using simulated weaponry that sounds like actual gunfire." Residents near the site may hear "simulated gunfire as participants carry out simulated attack scenarios" that are intended to be realistic. "Entergy will be using a technical innovation for the exercise known as 'MILES' gear, or Multiple Integrated Laser Engagement Systems."

Palo Verde Station Engineered To Maximize Safety, Official Says. The Arizona Daily Star (4/18, Nevarez, 98K) reported on a press visit to Palo Verde Nuclear Generating Station, and how with the Unit 2 reactor "having its fuel rods replaced, plant officials are using the opportunity to show how Palo Verde is different from the Japanese nuclear power plant that's leaking radiation" after the devastating earthquake and tsunami. Palo Verde's operators say those differences start with a thicker and heavier containment wall than those in the Dai-ichi plant, able to "withstand the impact of a jumbo jet or a 300 mph tornado." The Daily Star added, "While the general public isn't allowed this far inside the plant, Bob Bement, senior vice president of site operations, said Arizonans should understand that Palo Verde was engineered to maximize safety."

Congressional Delegation Visits FPL's South Florida Nuclear Power Plant. The South Florida Sun-Sentinel (4/20, Veiga, 196K) reports, "In the wake of the ongoing nuclear meltdown in Japan, members of a congressional delegation on Monday toured FPL's Turkey Point nuclear power plant, and said they are reassured the South Florida facility is safe." The article said "Reps. Ileana Ros-Lehtinen, Frederica Wilson, Mario Diaz-Balart and David Rivera said they still support nuclear energy but promised to keep vigilant." FPL spokesman Michael Waldron said "one of the differences between" the FPL plant and the crippled Japanese plant "is a backup cooling process that runs on steam when generators fail, which is what happened in Japan."

NRC Dockets Group's Petition Against GE Mark 1 BWR. According to a news release (4/20), Beyond Nuclear announced that the NRC had "docketed an emergency enforcement petition" filed to suspend "operating licenses at 21 General Electric Boiling Water Reactors of the Mark 1 design (GE BWR Mark 1s). Beyond Nuclear has filed the petition in the wake of catastrophic failure of just such containment systems at identical atomic reactors in Fukushima, Japan at the Dai-Ichi nuclear power plant. In addition, Beyond Nuclear has highlighted the extreme risk posed by GE BWR Mark 1 high-level radioactive waste storage pools, at a total of 24 such reactors in the US, which lack emergency backup power supplies for circulating cooling water in the event of a loss of electricity from the primary grid."

Oconee Nuclear Station Hosts Safety Meeting. WYFF-TV Greenville, South Carolina (4/19, 5:08 p.m., EDT) "The Oconee Nuclear Station will have a safety meeting tonight and you're invited. The US Nuclear Regulatory Commission staff scheduled the meeting for this evening.

Oconee Nuclear Station met all NRC safety objectives during 2010. But the NRC says the station failed to adequately maintain the plant's standby shutdown systems. They say corrective action has already been taken. The meeting begins tonight at 6:30 with a short presentation followed by an open house until 8 tonight."

NRC To Discuss Plant Vogtle Safety At Meeting.

WSB-TV Atlanta (4/19, 12:20 p.m., EDT) broadcast, "Officials plan to talk safety at tonight's meeting about Plant Vogtle. The US Nuclear Regulatory Commission will discuss safety performance for the two operating units at the nuclear power plant in 2010. And that meeting is scheduled for 6:30 tonight and will be held at the Burke County library in Waynesboro. The safety review happens every year."

Fleischmann, DesJarlais Endorse Nuclear Facility.

The Knoxville News Sentinel (4/20, Fowler, 96K) reports, "The two US congressmen who represent Roane County voiced support Tuesday for plans by TVA to build a modular nuclear power plant at the old Clinch River Breeder Reactor site." On Tuesday, "freshmen Republican lawmakers Scott DesJarlais and Chuck Fleischmann gave their endorsements...during a get-together in the headquarters of the Roane Alliance." The Sentinel says that "Fleischmann called the modular reactor proposal the 'wave of the future.'"

Connecticut Governor Opposes Hefty Millstone Nuclear Tax.

The Hartford Business (4/20, Kane) reports, "Gov. Dannel Malloy says he opposes the proposed tax of the Millstone nuclear plant in Waterford, which forced the facilities owners to consider closing Connecticut's largest producer of electricity. The proposed electric generators tax in Senate Bill 1176 would have raised \$340 million in taxes annually, with \$332 million of that money coming only from Millstone." The Governor "still favors a tax on electricity generation, although much smaller and spread out over all the electricity generators in Connecticut, which includes natural gas, coal and oil plants as well."

Commentary. The Hartford Courant (4/20, 143K) editorializes, "Dominion officials, aware of this state's budget problems, seem willing to go along with a significantly smaller tax proposed by Gov. Dannel P. Malloy that would cost Millstone about \$33 million. ... Although more palatable, this remains a generation tax, which a number of states have considered and rejected." The Courant concludes, "Should this lower tax rate be approved, the law should include a provision to revisit its implementation when the next two-year budget is being drawn."

In an editorial, the New London Day (4/20) writes, "Gov. Malloy, who voiced his objections to the new nuclear tax

during a radio interview Monday, has proposed a smaller tax on nearly all electric-generating plants that would raise about \$50 million. While this newspaper is not completely sold on the new tax, we at least support the idea that the burden of any additional levy be shared by other power generators."

A letter to the Hartford Courant (4/20, 143K) by Donald V. Clark of East Lyme criticizes the taxation plans.

An editorial by the North Andover Eagle Tribune (4/20) expresses concern about the impact of the tax.

Millstone Power Station worker Bill Forrestt, in a piece for the New London Day (4/20), writes, "I am disappointed with The Day's continued inadequate coverage of a proposed state generation tax that would cost the company about \$330 million annually." He continues, "The Day should use investigative reporting and produce all the facts about this bad proposal. ... Are we sure that the people of Connecticut want this?"

New DOE Nuclear Chief Has Full Agenda.

Greenwire (4/20, Northey) reports that new DOE assistant secretary for nuclear energy, Peter Lyons plans to help "craft a US response to an international nuclear crisis, help jump-start the US nuclear industry and wrestle with a long-standing question of where to put America's nuclear waste." Lyons also said he "hopes to ramp up deployment of small modular reactors," suggesting that "small modular reactors could offer a new paradigm for nuclear power," though "industry giants like General Electric Co. say the modular reactors are more politically charged than economically sensible, and have cast doubt on widespread production of the plants."

Nuclear Power Said To Be Too Costly, Slow.

In a piece for the Nation (4/19, 147K), Christian Parenti writes that for "about a decade now, nuclear boosters have been telling us that a 'nuclear renaissance' is underway thanks to the advent of cheaper, safer and faster-built 'third'- and 'fourth-generation' reactors." And while it's "true that Generation III reactors are safer than older reactors like the GE MAC 1 at Fukushima, Vermont Yankee and other plants around the world," it is not "not cheap, nor is it quick to construct." Parenti adds that "only one Generation III+ reactor project has even been approved" and while work has just begun in Georgia, there're already conflicts between "the utility, Southern Company and the Nuclear Regulatory Commission." Parenti says nuclear power is "not only physically dangerous; it is also economically wasteful and slow."

Experts Fear Effects Of Fukushima Plant Crisis Will Persist For Decades.

The University of California, Los Angeles Daily Bruin (4/20, Strutner) reports, "The effects of the Fukushima nuclear power plant damage in

Japan could span a century, Glen MacDonald announced at a panel discussion on Monday." MacDonald, "director of the UCLA Institute of the Environment and Sustainability, said the Japanese government has categorized the incident in the same sector as the 1986 Chernobyl disaster." Though the radioactive "contamination has not yet caused sicknesses or deaths, many Japanese citizens will eventually die from radiation-related illnesses, said Albert Carnesale, UCLA chancellor emeritus and a professor of public policy and of aerospace engineering."

Chicago Tribune Urges Policymakers To Take "Fresh Look At Nuclear Power." The Chicago Tribune (4/19, 475K), writing about the impact of the nuclear disaster in Japan, editorialized: "There's no denying that the ongoing disaster has shaken the nuclear industry worldwide. Six in 10 Americans oppose building new nuclear power plans," according to a recent AP-GfK poll. The paper said it is "urgent that governments and power providers take a fresh look at nuclear power in light of this crisis." Citing the example of the TVA, the Tribune said the utility "said Thursday it is considering millions of dollars in improvements to protect its six nuclear reactors from earthquakes and floods." The editorial noted that "as emotions cool and acceptance of nuclear power re-emerges, power providers and regulators will focus intently on modern designs for future plants."

Report: Security Trails Cyber Threats At Global Utilities. AFP (4/19, Lefkow) reports that despite an increasing danger of cyberattacks against critical infrastructure across the globe, many facilities still lack the ability to effectively counter the threat, according to a new report from computer security firm McAfee and the Center for Strategic and International Studies (CSIS). "We found that the adoption of security measures in important civilian industries badly trailed the increase in threats over the last year," said Stewart Baker of CSIS. The survey, which was based on interviews with 200 information technology security executives at utility firms around the world, found that many facilities "are not ready" and that "the professionals charged with protecting these systems report that the threat has accelerated – but the response has not."

National Journal Daily (4/20, Smith, Subscription Publication) reports that nearly a year after the emergence of Stuxnet – a game-changing computer worm that targets industrial systems – security improvements at critical infrastructure facilities have been "modest and overmatched by the threat," according to the McAfee-CSIS report. "Overall, we found little good news about cybersecurity in the electric grid and other crucial services that depend on information technology and industrial control systems," the report found.

The Financial Times (4/20, Menn, Subscription Publication, 448K) reports that the survey revealed that 85% of the respondent utilities had undergone a cyberattack, while almost two-thirds discovered malicious software on their systems every month. Experts conclude that electricity grid, among other infrastructure targets, is unprepared for sophisticated cyberattacks.

Document Detailing Bomb-Resistant Features Of DOD Building Inadvertently Posted Online. Reuters (4/20, Hosenball, Ryan) reports that a document detailing the design features of a bomb-resistant Defense Department building was inadvertently posted to a website maintained by the Army Corps of Engineers. The document, stamped "For Official Use Only," describes the bomb-resistant features of the Mark Center office complex in Alexandria, VA. Approximately 6,400 DOD employees are schedule to move into the building this year.

Audit Finds That LLNL Failed To Establish Adequate Cyber Security Controls. According to an audit from the Department of Energy, the AP (4/20, Burke) reports "Lawrence Livermore National Laboratory failed to set up adequate cyber security controls for classified information, including details about the nation's nuclear stockpile." Rickey R. Hass, the DOE's deputy inspector general for audits and inspections, "said in the report that outside contractors had made changes to one system meant to monitor nuclear explosions without first getting approval from the proper federal officials."

INTERNATIONAL NUCLEAR NEWS:

TEPCO Begins Pumping Radioactive Water From Plant Buildings. The New York Times (4/20, A10, Bradsher, Tabuchi, Subscription Publication) reports, "The difficult task of pumping highly radioactive water out of the basement of a turbine building at a damaged Japanese nuclear power plant began Tuesday, but officials cautioned that the work would be slow and difficult. The Japanese government, meanwhile, said it was considering a plan to further restrict access to the evacuated area within 12 miles of the plant, the Fukushima Daiichi Nuclear Power Station." The Tokyo Electric Power Company said "that it planned to pump 10,000 metric tons of water into a storage building at a rate of 480 tons a day, which would take nearly three weeks." TEPCO is still developing a plan for the removal of an additional 57,500 tons of heavily contaminated water at the same building and at other buildings at the site.

The AP (4/20) explains that "removing the 25,000 metric tons (about 6.6 million gallons) of contaminated water that has collected in the basement of a turbine building at Unit

2 of the Fukushima Dai-ichi plant will help allow access for workers trying to restore vital cooling systems that were knocked out in the March 11 tsunami." TEPCO "plans to use technology developed by French nuclear engineering giant Areva to reduce radioactivity and remove salt from the contaminated water so that it can be reused to cool the plant's reactors," Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency said, "adding that this process would take 'several months."

Now that the reactors have been cooled by water, the Wall Street Journal (4/20, A8, Obe, Subscription Publication, 2.02M) adds, officials plan to now focus on preventing further leaks of radioactive material. Said Nishiyama, "Our focus, for the time being, will be on preventing spillage of irradiated water into the ocean."

Japanese Government Considers Banning Access To Evacuation Zone. Meanwhile, in a separate story, the AP (4/20) adds that the Japanese government is considering banning access to the evacuation zone; "citing concerns Wednesday over radiation risks for residents who may be returning to check on their homes." Almost all of the 70-80,000 people who were living within 12 miles of the plant left "after being advised to do so, but some occasionally have returned, defying warnings from police who have set up roadblocks on only a few major roads in the area." Noriyuki Shikata, one of Chief Cabinet Secretary Yukio Edano's deputies, "said the government was still considering details of how to control access to the immediate vicinity of the nuclear plant while also responding to demands from residents to check their homes and collect belongings."

The Wall Street Journal (4/20, Sekiguchi, Subscription Publication, 2.02M) reports Edano said, "We understand people wanting to return, having evacuated with just the clothes on their backs," adding, "We are in the last stages of coming up with a plan to allow temporary re-entry for evacuated residents, while safeguarding their health and safety."

US Engineers Say Compared To TMI Cleanup Will Be Difficult. The New York Times (4/20, A10, Wald, Subscription Publication, 950K) reports, "Veterans of the Three Mile Island cleanup said that a much larger task faced the Japanese engineers who are trying contain and secure the damaged Fukushima Daiichi reactors." Lake Barrett, the senior NRC engineer at Three Mile Island during the early phases of the cleanup said that by comparison, "it was a walk in the park compared to what they've got." While the Fukushima Daiichi reactors are similar to those at TMI, engineers have pointed out several key differences. "In Japan, four separate reactors are damaged, and fixing each one is complicated by the presence of its leaking neighbors." A large amount of replacement equipment will be necessary

too, as pumps and switchgear that are located far from the reactors were destroyed by the tsunami.

IAEA Says Worst Of Radiation Leaks May Be Over.

The AP (4/20) reports Denis Flory, a deputy director general at the UN's International Atomic Energy Agency, "is suggesting the worst may be over as far as radiation leaks at Japan's stricken reactor complex are concerned." He said "he expects the total amount of radiation releases to be only a 'small increase from what it is today' if 'things go as foreseen.'" But he "emphasized Tuesday that his forecast was based on an estimate of the situation."

AFP (4/20) adds that Flory said that while radioactivity was still leaking from the plant, the amounts have been decreasing. "So, taking into account all the measures that are foreseen, the new amount of release will be decreasing and decreasing, and the total amount would not be much different from what it is today," Flory said. When asked whether "TEPCO's six-to-nine-month timeframe for achieving a cold shutdown was realistic, Flory replied: 'Whether they will be able to keep (to) this...will be shown by the facts.'"

Donor Conference To Clean Up Chernobyl Falls Short.

The AP (4/20) reports that a Kiev conference, donors agreed to give \$785 million toward making the Chernobyl site "environmentally safe," below the \$1.1 billion goal. However, "officials remained optimistic that money will be found." Donated money will be used to construct "a gargantuan long-term shelter to cover the nuclear reactor that exploded April 26, 1986, and to build a facility to store waste from the plant's three other decommissioned reactors." Japan didn't offer assistance this time, citing the crises that recently hit the nation. Top donors included the US, Germany, Russia, and the European Commission. During a subsequent summit, UN Secretary General Ban Ki-moon declared "the time has come to strengthen the IAEA."

The Wall Street Journal (4/20, Marson, Subscription Publication, 2.02M) reports that despite the fact that some powers, including Japan, did not extend donations, Ukrainian President Victor Yanukovych deemed the conference a success. A spokesman for the entity handling the fund said he was encouraged by the donations. Reuters (4/20, Subscription Publication) also covers this.

During Visit To Chernobyl, IAEA Head Says Nuclear Energy Is Important.

The AP (4/20) reports, Yukiya Amano, the head of the IAEA "speaking at the site of the Chernobyl nuclear power plant explosion, says that accident and the Japanese nuclear crisis do not undermine the value of nuclear power." Amano said "many countries will continue to find nuclear power an important option for energy diversification but that the global community must do its

utmost to ensure its safety. His visit comes just days before the 25th anniversary of the Chernobyl disaster."

Protests Continue Against Planned Indian Nuclear Plant.

The AP (4/20, George) reports that during a protest of a planned Avera-constructed nuclear plant in the Indian state of Maharashtra, a mob "ransacked a hospital and set buses on fire." The government plans to build a nuclear plant in Jaitapur, but the Japanese nuclear crisis magnified opposition to the plant. Critics contend "that Jaitapur is in a seismic zone." After the Japanese earthquake, "India's Environment Minister Jairam Ramesh has said additional safeguards will be taken." Protesters plan to hold another march on Sunday to oppose the plant.

AFP (4/20) adds that the anti-nuclear protests "blocked a highway in western India." Local television in the area reported that police have banned "large public gatherings and political rallies" because of the protests. Protests have grown since Indian national environment minister Jairam Ramesh nixed the idea of "a 'rethink' on the planned six-reactor, 9,900-megawatt facility in Jaitapur."

Reuters (4/20) reports that currently, during peak hours, India runs a 12% energy deficit, which causes blackouts and hinders further economic growth.

Italian Government Shelves Nuclear Plans. The AP (4/20) reports that the Italian government "proposed on Tuesday to shelve indefinitely its nuclear plans following radiation leaks at" the Fukushima Daiichi nuclear plant. An amendment to Senate legislation that authorized new nuclear plants was added calling for the government to devise "a new energy strategy instead." Economic Development Minister Paolo Romani said the Japanese nuclear disaster "changed everything." However, critics believe that the legislation was meant to deter turnout for a planned June referendum on nuclear expansion.

However, Reuters (4/20, Fonte) says the amendment allows the government to abandon plans for the referendum. Furthermore, others note that scrapping the referendum, which was likely to fail, saves the already unpopular prime minister, Silvio Berlusconi, from another public embarrassment. The Senate will vote on the measure today and then pass it along to the lower chamber. Industry Minister Paolo Romani said that government will host a special energy conference after the summer break where the government will unveil, as he stated, "a new energy strategy which will reinforce and strengthen the Italian energy and production system for the next 20 years."

The Financial Times (4/20, Dinmore, Subscription Publication, 448K) adds that the amendment means that Berlusconi's government has abandoned plans to restart Italy's nuclear sector. Similarly, the New York Times (4/20,

Pianigiani, Subscription Publication, 950K) reports that the Italian government's proposed amendment "would indefinitely delay plans to develop a nuclear energy strategy, including the building of plants."

Rosatom's Kiriienko Envisions New Safety Demands, Costlier Plants.

Reuters (4/20, De Carbonnel) reports that the Rosatom director, Sergei Kiriienko, believes as a result of the Japanese nuclear crisis, plants will be subjected to enhanced safety requirements. These demands will translate to costlier plant and increased competition, Kiriienko predicts. Kiriienko also believes that the disaster will also hasten demand for new plants to replace aging ones. Also, Kiriienko called on increased powers for the IAEA.

Greenpeace Protesters Occupy Office Of Ontario Energy Minister.

The Toronto Star (4/19, Olive) reports that four Greenpeace protesters "spent several hours Tuesday in the office of energy minister Brad Duguid calling for a halt to new nuclear development in Ontario." Police spent several hours cutting through a heavy chain that linked the protesters, who were charged with trespassing. "Duguid said he has no intention of deviating from plans to continue getting about half Ontario's electricity from nuclear plants, calling that an 'appropriate level.'"

Russia Pressing Ahead On Floating Nuclear Plants.

Reuters (4/19, de Carbonnel) reports that even after the Fukushima Daiichi plant crisis, Russia is vowing to move ahead with plans to develop an offshore nuclear power plant. A new 500 foot long barge with a floating reactor named the Akademik Lomonosov is under construction at St. Petersburg's Baltiysky shipyard. Head of the shipyard, Andrey Fomichev said Russia is not worried. "Even Japan has no alternative to atomic energy. The safety on Russian reactors is many times higher."

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NUCLEAR REGULATORY COMMISSION NEWS SUMMARY

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TODAY'S EDITION

NRC News:

Obama Nominates Ostendorff For Second Term As NRC Commissioner.....	1
NRG Decides To Back Away From New Reactor Build At South Texas Project.....	2
NRC Discontinues Special Monitoring At Surry Station.....	3
NRC To Discuss Callaway Plant Safety Performance.....	3
NRC Finds No Environmental Impediments To New Reactors At Summer Station.....	3
NRC To Meet With Global Nuclear Fuel-America About Plant's Performance	3
Obama Administration Nearing Decision On Uranium Mining Near Grand Canyon	3
Entergy Buys Newspaper Ads To Reach Vermonters On Yankee Benefits	4
Entergy To Conduct Simulate Combat Drill At Indian Point.....	5
Palo Verde Station Engineered To Maximize Safety, Official Says	5
Congressional Delegation Visits FPL's South Florida Nuclear Power Plant	5
NRC Dockets Group's Petition Against GE Mark 1 BWR.....	5
Oconee Nuclear Station Hosts Safety Meeting.....	5
NRC To Discuss Plant Vogtle Safety At Meeting.....	6

Fleischmann, DesJarlais Endorse Nuclear Facility.....	6
Connecticut Governor Opposes Hefty Millstone Nuclear Tax	6
New DOE Nuclear Chief Has Full Agenda.....	6
Nuclear Power Said To Be Too Costly, Slow.....	6
Experts Fear Effects Of Fukushima Plant Crisis Will Persist For Decades.....	6
Report: Security Trails Cyber Threats At Global Utilities	7

International Nuclear News:

TEPCO Begins Pumping Radioactive Water From Plant Buildings	7
IAEA Says Worst Of Radiation Leaks May Be Over.....	8
Donor Conference To Clean Up Chernobyl Falls Short.....	8
During Visit To Chernobyl, IAEA Head Says Nuclear Energy Is Important.....	8
Protests Continue Against Planned Indian Nuclear Plant.....	9
Italian Government Shelves Nuclear Plans.....	9
Rosatom's Kiriyenko Envisions New Safety Demands, Costlier Plants	9
Greenpeace Protesters Occupy Office Of Ontario Energy Minister	9
Russia Pressing Ahead On Floating Nuclear Plants	9

NRC NEWS:

Obama Nominates Ostendorff For Second Term As NRC Commissioner. [Greenwire](#) (4/19, Northey) reports, "President Obama has nominated William Ostendorff to a second term as commissioner on the Nuclear Regulatory Commission." Ostendorff, whose term expires June 30, has served since April 2010. "The Nuclear Energy Institute applauded the nomination, calling Ostendorff a qualified candidate with experience as an engineer, lawyer, policy adviser and naval officer." NEI Senior Vice President Tony Pietrangelo said his organization hopes for a "speedy confirmation because a full complement of experienced commissioners is essential as the agency reviews operation

of US reactors in light of events in Japan and judges certifications for reactor designs and licenses for new reactors and fuel facilities."

Commissioner Ostendorff, Sen. Alexander Tour Watts Bar Plant. [WBIR-TV](#) Knoxville, Tennessee (4/19, 6:34 a.m., EDT) broadcast, "Senator Lamar Alexander wants to know about the safety of a local nuclear power plant in light of the Fukushima disaster last month. On Monday the Senator along with members of TVA and the Nuclear Regulatory Commission toured the Watts Bar Nuclear Plant in Rhea County. They were seeing exactly what the plant does or would do in case of a shutdown of power or a natural disaster. In his findings, the Senator says he was quite impressed with the safety record of the plant." Sen. Lamar Alexander, "We saw a whole variety of backup ways to deal

with that in case anything would ever happen here." WBIR-TV continues, "Currently Watts Bar is on a refueling outage. It's a standard maintenance procedure at the plant. It'll begin full operations again in early May."

Blog: Alexander Reassures On Nuclear Energy, Sees Earthquake Simulation At Watts Bar Plant. Greg Johnson writes in the Knoxville News Sentinel (4/20, 96K) "A Mountainview" blog that on Monday, Senator Lamar Alexander was "in Rhea County visiting the Watts Bar Nuclear Plant with Bill Ostendorff of Nuclear Regulatory Commission." Johnson says that "a report in the Rhea Herald-News (by my son, Reed Johnson) said Alexander and Ostendorff said Watts Bar 'is not in danger of succumbing to natural disasters.'"

NRG Decides To Back Away From New Reactor Build At South Texas Project. The New York Times (4/20, Wald, Subscription Publication, 950K) reports on NRG Energy's decision to back away from its plan to build "two giant reactors" at the South Texas Project, announced Tuesday "that it was giving up and writing off its investment of \$331 million after uncertainties created by the accident in Japan." The project had been in "considerable doubt" even before the nuclear accident at Fukushima, given that Texas "has a surplus of electricity and low prices for natural gas, which sets the price of electricity on the market there." NRG CEO David Crane said the project could yet proceed "if circumstances changed," though he acknowledged the "prospect of that occurring was 'extremely daunting and at this point not particularly likely.'

The AP (4/20, Fahey) reports, "Support for new nuclear projects in the US has eroded in the aftermath of the nuclear crisis in Japan, according to an Associated Press-GfK poll conducted earlier this month. One of NRG's partners was to be TEPCO, the Japanese utility that owns the reactor complex crippled by last month's earthquake and tsunami." Though it is "in line for a federal loan guarantee," low energy costs "clouded prospects" for the new reactors even before the incident in Japan. The AP (4/20) ran an abbreviated report on the issue.

The Wall Street Journal (4/20, Smith, Subscription Publication, 2.02M) reports, NRG's CEO David Crane noted that the NRC is currently conducting a safety review of the US commercial fleet and suggested that potential design changes emerging from that review could increase the project's costs. Of NRG's partners, neither Toshiba nor TEPCO has indicated it wants out of the project, but Crane said "there's no reason to believe our Japanese partners want to go forward, either. They haven't been calling us to reassure us."

The Dallas Morning News (4/20, Souder, 262K) adds the decision shows the "Japanese disaster has the potential

to derail the budding US nuclear power renaissance." The "nuclear explosions in Japan mean that Tokyo Electric and the Japanese government, which had considered offering its own loan guarantees for the project, must focus on domestic problems, Crane said." While Crane said the NRC's reaction to launch a review of the US fleet was the "right decision," he noted that it also "delays his project."

The San Antonio Express-News (4/20, Hamilton, 151K) reports, Crane said the "extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development of the STP project."

The Austin American Statesman (4/20, Price, Toohey, 132K) adds that Crane said that with what happened at Fukushima, "the confluence of events that would have to occur in NRG's view in order to get (reactors) 3 and 4 truly back on track is extremely daunting and at this point not particularly likely." Standard and Poor's analyst Swami Venkataraman said the announcement "doesn't mean they can never restart it," but added that NRG had "planned to get a license by the end of 2012. ... Once they get a license, they have to find out how much more it will cost, and then they will know how much time they need to proceed."

The Victoria (TX) Advocate (4/20, Acosta, 30K) notes that Crane said Nuclear Innovation North America, will "continue its focus in securing a combined operating license from the Nuclear Regulatory Commission and on obtaining a loan guarantee from" the DOE. The Advocate adds, "The news was not good for Bay City officials who have worked with STP to benefit from the expansion." Mitch Thamas of the Bay City Chamber of Commerce president said the "expectations of job and community growth through the expansion of 3 and 4 were something that we were looking forward to although we have known for years that this was a complicated process with many things that could go wrong."

Bloomberg News (4/20, Klump) adds, Wunderlich Securities analyst James Dobson, said the announcement was no surprise. "The question was when management was going to fully decide they were ready to make an announcement." With the NRC 90-day review underway, the nuclear industry "may be forced to spend more than \$10 billion to address long-standing safety concerns including fire safety and storage of spent fuel that have gained new urgency following the accident, according to estimates by Bloomberg Government."

The blog website, GigaOm (4/20) Katie Fehrenbacher writes that NRG Energy says it will be "recording a first quarter 2011 pretax charge of about \$481 million."

Dow Jones Newswires (4/20, Malik) and Reuters (4/20, O'Grady) and Financial Times (4/20, McNulty, Subscription Publication, 448K) also covered the announcement.

NRC Discontinues Special Monitoring At Surry Station.

The Virginia Gazette (4/19) reports, "The Nuclear Regulatory Commission announced Tuesday that it has discontinued monitoring mode status related to the weekend storms that hit the Surry nuclear power plant." The agency "is evaluating whether additional follow up will be needed," after the plant lost offsite power "when an apparent tornado touched down in the adjacent switchyard. The facility's emergency diesel generators immediately started up, providing emergency power until offsite power was restored."

The Williamsburg Yorktown Daily (4/19) added, "Dominion, which operates the two-unit facility near Surry, exited its unusual event, which was the lowest of four NRC emergency classifications."

The Virginia Gazette (4/19) notes that following the shutdown, "Four diesel generators kicked in to power the units' emergency loads." Plant operators have partially restored offsite power to both plants."

Local TV Coverage. WVEC-TV Norfolk, Virginia (4/19, 6:15 p.m., EDT) broadcast, "The Nuclear Regulatory Commission is no longer monitoring the Surry Nuclear Power Plant. Officials were keeping a close eye on things after a twister touched down on the electrical switch guard after Saturday's storms. But they have given it the all clear. Storms knocked down power lines cutting electricity to the reactor. Of course, the back-up generator kicked in, but officials say it will be days before the reactor is up and running at full power." WAVY-TV Norfolk, Virginia (4/19, 11:06 p.m., EDT), WUSA-TV Washington, DC (4/19, 7:05 p.m. EST), WSLS-TV Roanoke (4/19, 5:55 p.m. EST), WRIC-TV Richmond (4/19, 5:10 p.m. EST), WTKR-TV Norfolk (4/19, 5:05 p.m. EST), WWBT-TV Richmond (4/19, 5:00 p.m. EST) aired segments on this story.

NRC To Discuss Callaway Plant Safety

Performance. The St. Louis Business Journal (4/20, Volkmann, Subscription Publication) reported that NRC regulators said Tuesday that Ameren's Callaway plant operated safely during 2010 and plan to discuss the findings at a public meeting April 26. Though Callaway plant "did receive heightened oversight during the first half of 2010," a "subsequent inspection determined that appropriate corrective actions were implemented, NRC officials said." NRC Region IV Administrator Elmo Collins said the "informal meeting will provide members of the public with an opportunity to learn about our annual assessment of safety performance at the plant."

NRC Finds No Environmental Impediments To New Reactors At Summer Station. The AP (4/20) reports, NRC "regulators say there are no environmental impacts from two proposed nuclear reactors" at VC Summer Nuclear Station in Jenkinsville "that would prevent South Carolina Electric & Gas from getting a license to operate the plants." An NRC and Army Corps of Engineers "environmental review began in January 2009 and included input from several public meetings. The final statement is part of a long process for approval for the reactors that will be among the first built in the US in a generation."

Power-Gen Worldwide (4/20) notes that "South Carolina Electric & Gas (SCE&G) and Santee Cooper are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant." The NRC "continues to compile its final safety evaluation report, which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards." The "NRC's final licensing decision will be based on the final environmental impact statement and the safety evaluation findings, along with a ruling from the five-member Commission."

NRC To Meet With Global Nuclear Fuel-America About Plant's Performance.

The Wilmington Star News (4/20, Faulkner, 40K) reports that NRC "regulators will present results of a performance review of Global Nuclear Fuel-America's commercial nuclear fuel fabrication plant at a public meeting April 26 in Wilmington." The agency will meet with GNF-A management at 10 am in "Azalea Coast Room A of UNCW's Fisher Student Center, the NRC said." The Commission assessed "performance at Global from May 23, 2009 to Dec. 31, 2010, on safety operations, radiological controls, facility support and special topics." While the NRC review determined that Global conducted its activities with "safely and securely," management attention is "still warranted to improve the identification and implementation of safety controls," NRC said.

Obama Administration Nearing Decision On Uranium Mining Near Grand Canyon.

The Christian Science Monitor (4/19, Clayton, 48K) reports that with the past decades' renewed interest in mining for uranium, prospecting and mining-project proposals have been "popping up" across the western United States. But the Obama Administration has "put the brakes on thousands of new mining plans or claims" on about a million acres of public land bordering the Grand Canyon. The Administration is poised to decide whether to "allow the mining-claims process to move forward or extend its moratorium for up to 20 years." The "decision could set a precedent for other natural

landmarks also being hedged in by uranium and other mining claims, observers say."

Entergy Buys Newspaper Ads To Reach Vermonters On Yankee Benefits.

The AP (4/20) reports, Vermont Yankee plant owner Entergy Corp., took out "full page newspaper advertisements" Tuesday "in nine Vermont newspapers," in which the CEO of plant owner Entergy Corp. "says the company wishes it didn't have to go to court but that it had no choice." CEO J. Wayne Leonard said "Yankee's owners have a responsibility -- to the plant's employees, the company's investors and electricity consumers -- to stake its claim to operating past March 2012, when the state wants it shut down." Leonard said, Entergy is "only a resolution of our disagreement with the state and we will abide by the results of the judicial process."

In a shorter version of its coverage, the AP (4/20) notes that Yankee spokesman Larry Smith, "said Leonard wanted to have a conversation about the issue with the people of Vermont."

Rutland (VT) Herald (4/20, Smallheer) reports, "In a lengthy letter addressed to 'Dear Vermonters,' J. Wayne Leonard, chairman and chief executive officer of Entergy Corp., outlined his company's reasons for suing the state of Vermont, Gov. Peter Shumlin and the Public Service Board, in order to keep Vermont Yankee open beyond its projected closing date of March 21, 2012."

Leonard "had his harshest criticism for some unnamed 'public officials,' and the Vermont Legislature, which he said changed the rules of the regulatory game Entergy agreed to in 2002." The Herald added, the "full-page advertisements came a day after Entergy and two of its subsidiaries," sued the state in US District Court in Burlington.

Vermont Attorney General Says State Should Be Able To Enforce Own Laws. On its website, WCAX-TV Burlington, Vermont (4/19, Reading) reported that in response to Entergy's suit to keep the plant operating, Vermont Attorney General Bill Sorrell, said, "We're going to try very hard in court to say that this is not the kind of case in which an injunction should be issued and that we should be able to enforce our laws." The battle over legal jurisdiction pits federal government against the state of Vermont over who has authority to order Yankee to close. Entergy claims the "Atomic Energy Act and the Federal Power Act-- two federal laws-- pre-empt state control over Yankee's license and power sales."

On its website, Vermont Public Radio (4/19) carries an audio link to its coverage of an interview with "Michael Dworkin, a former chairman of the Vermont Public Service Board who now heads the Institute for Energy and the Environment at Vermont Law School," who spoke on his opinion of the lawsuit's chances for success.

Shumlin Says Entergy Did Not Argue Against Act 160 At The Time.

The Brattleboro (VT) Reformer (4/20, Audette) reported, "Gov. Peter Shumlin disputed Entergy's contention that the Legislature's approval of Act 160 'changed the rules' of an agreement reached when Entergy bought Vermont Yankee power plant in 2002." Shumlin said that while Act 160 may not have been part of the memorandum of understanding signed in 2002, "Entergy's lobbyists, executives and lawyers all participated in the process of reviewing Act 160." Shumlin has said if "Entergy sued the state, it would have a hard time justifying its position before a federal judge." New England Coalition spokesman Ray Shadis "agreed with the governor's characterization of Entergy's position on Act 160."

Rutland (VT) Herald (4/20, Smallheer) reports, "Shumlin, joined by Attorney General William Sorrell, said the state was ready to defend the 2006 state law, which established the Legislature as the gatekeeper of state approval. Last year, the Vermont Senate, led by then-Sen. Shumlin, soundly defeated a move toward relicensing, in the wake of underground radioactive tritium leaks at the plant and misstatements by plant executives under oath about the existence of underground pipes carrying radioactive materials." Shumlin, "pointing to a 2006 Rutland Herald article, noted that Entergy itself supported Act 160 at the time, which gave the Legislature a key role in the issuing of any new certificate of public good for Vermont Yankee."

WVNY-TV Burlington, Vermont (4/19, 6:32 a.m., EDT) broadcast, "The owner of Vermont Yankee is taking legal action against the state of Vermont in an effort to keep the plant running past 2012. Despite last year's vote in the senate to close Yankee as scheduled, Entergy has filed a lawsuit arguing the state has no authority over relicensing." Gov. Peter Shumlin, "This is an example of a company that doesn't want to follow the laws and is trying desperately to avoid the laws and I just don't think that's a very prudent legal course." WVNY-TV continues, "Entergy is also expected to file an injunction, this week, which would prevent Vermont from closing the plant in March of next year."

Also covering the lawsuit were WBUR-FM Boston (4/19, Bever), Christian Science Monitor (4/19, Clayton, 48K), World Nuclear News (4/19), and the Keene (NH) Sentinel (4/19, Jarvis, 10K).

State May Raise Other Operational Hurdles For Entergy. Rutland (VT) Herald (4/20, Hirschfield) reports, "When Entergy Corp. sued in US District Court on Monday to keep Vermont Yankee operating, the fate of the nuclear plant appeared to have been placed in the hands of a federal judge." But even if Entergy emerges "victorious, the Legislature and state regulators will retain considerable power over the facility's ability to operate beyond 2012. From new taxes to more burdensome regulations, Vermont could

undermine Vermont Yankee's ability to profitably run its 660-megawatt reactor in Vernon." Legal observers believe the case is "likely headed for the Supreme Court," where justices will decide whether the federal Atomic Energy Act of 1954 "totally and absolutely pre-empt[s] state law" said Law School professor, Patrick Parenteau.

Precedents Argue Against One-Sided Changes Of Contract Language. On a blog entry for Energy Collective (4/20), Meredith Angwin wrote "According to the Memorandum of Understanding (page 6) the parties "expressly and irrevocably decree that the Board (Public Service Board) (1) has jurisdiction under current law to grant or deny approval of operation of VYNPS beyond March 12, 2011." However, in 2006, the legislature voted that the PSB could not issue such a certificate without legislative approval (Act 160)." This became "a one-sided change to a written contract" and many legal precedents argue "that one side cannot change a contract without the other side's approval."

Brattleboro Board Signs Letter To Vermont Yankee. Brattleboro (VT) Reformer (4/20, Stilts) reports, "After several edits from Selectboard members David Gartenstein and Ken Schneck, the board voted 3-2 in favor of signing a letter of concern about the Vermont Yankee nuclear power plant." Originally "prepared by the Safe & Green Campaign, the letter states several concerns and requests when the nuclear plant in Vernon closes."

Entergy's Silence On 2006 Law May Be Telling In Court. In an editorial, the Rutland (VT) Herald (4/20) says, "When Entergy bought Vermont Yankee in 2002, it signed an agreement stating it would not seek to operate beyond 2012 without approval from the state Public Service Board. It also stated expressly that it would not seek to undo that commitment by arguing that federal law pre-empted state law on the operation of the plant." Entergy believes "that Vermont has changed the rules of the game" suggesting that the "2006 law abrogated the 2002 agreement, though it raised no objections at the time." The Herald adds, "Michael Dworkin, professor of law and former chairman of the PSB, says that Entergy's silence on that issue for five years will be telling in a court of law."

Entergy To Conduct Simulate Combat Drill At Indian Point. Mid-Hudson News (4/20) reports, "Entergy will be conducting security training drills at the Indian Point Energy Center the evening of April 19 and April 28 using simulated weaponry that sounds like actual gunfire." Residents near the site may hear "simulated gunfire as participants carry out simulated attack scenarios" that are intended to be realistic. "Entergy will be using a technical innovation for the exercise known as 'MILES' gear, or Multiple Integrated Laser Engagement Systems."

Palo Verde Station Engineered To Maximize Safety, Official Says. The Arizona Daily Star (4/18, Nevarez, 98K) reported on a press visit to Palo Verde Nuclear Generating Station, and how with the Unit 2 reactor "having its fuel rods replaced, plant officials are using the opportunity to show how Palo Verde is different from the Japanese nuclear power plant that's leaking radiation" after the devastating earthquake and tsunami. Palo Verde's operators say those differences start with a thicker and heavier containment wall than those in the Dai-ichi plant, able to "withstand the impact of a jumbo jet or a 300 mph tornado." The Daily Star added, "While the general public isn't allowed this far inside the plant, Bob Bement, senior vice president of site operations, said Arizonans should understand that Palo Verde was engineered to maximize safety."

Congressional Delegation Visits FPL's South Florida Nuclear Power Plant. The South Florida Sun-Sentinel (4/20, Veiga, 196K) reports, "In the wake of the ongoing nuclear meltdown in Japan, members of a congressional delegation on Monday toured FPL's Turkey Point nuclear power plant, and said they are reassured the South Florida facility is safe." The article said "Reps. Ileana Ros-Lehtinen, Frederica Wilson, Mario Diaz-Balart and David Rivera said they still support nuclear energy but promised to keep vigilant." FPL spokesman Michael Waldron said "one of the differences between" the FPL plant and the crippled Japanese plant "is a backup cooling process that runs on steam when generators fail, which is what happened in Japan."

NRC Dockets Group's Petition Against GE Mark 1 BWR. According to a news release (4/20), Beyond Nuclear announced that the NRC had "docketed an emergency enforcement petition" filed to suspend "operating licenses at 21 General Electric Boiling Water Reactors of the Mark 1 design (GE BWR Mark 1s). Beyond Nuclear has filed the petition in the wake of catastrophic failure of just such containment systems at identical atomic reactors in Fukushima, Japan at the Dai-Ichi nuclear power plant. In addition, Beyond Nuclear has highlighted the extreme risk posed by GE BWR Mark 1 high-level radioactive waste storage pools, at a total of 24 such reactors in the US, which lack emergency backup power supplies for circulating cooling water in the event of a loss of electricity from the primary grid."

Oconee Nuclear Station Hosts Safety Meeting. WYFF-TV Greenville, South Carolina (4/19, 5:08 p.m., EDT) "The Oconee Nuclear Station will have a safety meeting tonight and you're invited. The US Nuclear Regulatory Commission staff scheduled the meeting for this evening.

Oconee Nuclear Station met all NRC safety objectives during 2010. But the NRC says the station failed to adequately maintain the plant's standby shutdown systems. They say corrective action has already been taken. The meeting begins tonight at 6:30 with a short presentation followed by an open house until 8 tonight."

NRC To Discuss Plant Vogtle Safety At Meeting. WSB-TV Atlanta (4/19, 12:20 p.m., EDT) broadcast, "Officials plan to talk safety at tonight's meeting about Plant Vogtle. The US Nuclear Regulatory Commission will discuss safety performance for the two operating units at the nuclear power plant in 2010. And that meeting is scheduled for 6:30 tonight and will be held at the Burke County library in Waynesboro. The safety review happens every year."

Fleischmann, DesJarlais Endorse Nuclear Facility. The Knoxville News Sentinel (4/20, Fowler, 96K) reports, "The two US congressmen who represent Roane County voiced support Tuesday for plans by TVA to build a modular nuclear power plant at the old Clinch River Breeder Reactor site." On Tuesday, "freshmen Republican lawmakers Scott DesJarlais and Chuck Fleischmann gave their endorsements...during a get-together in the headquarters of the Roane Alliance." The Sentinel says that "Fleischmann called the modular reactor proposal the 'wave of the future.'"

Connecticut Governor Opposes Hefty Millstone Nuclear Tax. The Hartford Business (4/20, Kane) reports, "Gov. Dannel Malloy says he opposes the proposed tax of the Millstone nuclear plant in Waterford, which forced the facilities owners to consider closing Connecticut's largest producer of electricity. The proposed electric generators tax in Senate Bill 1176 would have raised \$340 million in taxes annually, with \$332 million of that money coming only from Millstone." The Governor "still favors a tax on electricity generation, although much smaller and spread out over all the electricity generators in Connecticut, which includes natural gas, coal and oil plants as well."

Commentary. The Hartford Courant (4/20, 143K) editorializes, "Dominion officials, aware of this state's budget problems, seem willing to go along with a significantly smaller tax proposed by Gov. Dannel P. Malloy that would cost Millstone about \$33 million. ... Although more palatable, this remains a generation tax, which a number of states have considered and rejected." The Courant concludes, "Should this lower tax rate be approved, the law should include a provision to revisit its implementation when the next two-year budget is being drawn."

In an editorial, the New London Day (4/20) writes, "Gov. Malloy, who voiced his objections to the new nuclear tax

during a radio interview Monday, has proposed a smaller tax on nearly all electric-generating plants that would raise about \$50 million. While this newspaper is not completely sold on the new tax, we at least support the idea that the burden of any additional levy be shared by other power generators."

A letter to the Hartford Courant (4/20, 143K) by Donald V. Clark of East Lyme criticizes the taxation plans.

An editorial by the North Andover Eagle Tribune (4/20) expresses concern about the impact of the tax.

Millstone Power Station worker Bill Forrestt, in a piece for the New London Day (4/20), writes, "I am disappointed with The Day's continued inadequate coverage of a proposed state generation tax that would cost the company about \$330 million annually." He continues, "The Day should use investigative reporting and produce all the facts about this bad proposal. ... Are we sure that the people of Connecticut want this?"

New DOE Nuclear Chief Has Full Agenda.

Greenwire (4/20, Northey) reports that new DOE assistant secretary for nuclear energy, Peter Lyons plans to help "craft a US response to an international nuclear crisis, help jump-start the US nuclear industry and wrestle with a long-standing question of where to put America's nuclear waste." Lyons also said he "hopes to ramp up deployment of small modular reactors," suggesting that "small modular reactors could offer a new paradigm for nuclear power," though "industry giants like General Electric Co. say the modular reactors are more politically charged than economically sensible, and have cast doubt on widespread production of the plants."

Nuclear Power Said To Be Too Costly, Slow. In a piece for the Nation (4/19, 147K), Christian Parenti writes that for "about a decade now, nuclear boosters have been telling us that a 'nuclear renaissance' is underway thanks to the advent of cheaper, safer and faster-built 'third'- and 'fourth-generation' reactors." And while it's "true that Generation III reactors are safer than older reactors like the GE MAC 1 at Fukushima, Vermont Yankee and other plants around the world," it is not "not cheap, nor is it quick to construct." Parenti adds that "only one Generation III+ reactor project has even been approved" and while work has just begun in Georgia, there're already conflicts between "the utility, Southern Company and the Nuclear Regulatory Commission." Parenti says nuclear power is "not only physically dangerous; it is also economically wasteful and slow."

Experts Fear Effects Of Fukushima Plant Crisis Will Persist For Decades. The University of California, Los Angeles Daily Bruin (4/20, Strutner) reports, "The effects of the Fukushima nuclear power plant damage in

Japan could span a century, Glen MacDonald announced at a panel discussion on Monday." MacDonald, "director of the UCLA Institute of the Environment and Sustainability, said the Japanese government has categorized the incident in the same sector as the 1986 Chernobyl disaster." Though the radioactive "contamination has not yet caused sicknesses or deaths, many Japanese citizens will eventually die from radiation-related illnesses, said Albert Carnesale, UCLA chancellor emeritus and a professor of public policy and of aerospace engineering."

Chicago Tribune Urges Policymakers To Take "Fresh Look At Nuclear Power." The Chicago Tribune (4/19, 475K), writing about the impact of the nuclear disaster in Japan, editorialized: "There's no denying that the ongoing disaster has shaken the nuclear industry worldwide. Six in 10 Americans oppose building new nuclear power plans," according to a recent AP-GfK poll. The paper said it is "urgent that governments and power providers take a fresh look at nuclear power in light of this crisis." Citing the example of the TVA, the Tribune said the utility "said Thursday it is considering millions of dollars in improvements to protect its six nuclear reactors from earthquakes and floods." The editorial noted that "as emotions cool and acceptance of nuclear power re-emerges, power providers and regulators will focus intently on modern designs for future plants."

Report: Security Trails Cyber Threats At Global Utilities. AFP (4/19, Lefkow) reports that despite an increasing danger of cyberattacks against critical infrastructure across the globe, many facilities still lack the ability to effectively counter the threat, according to a new report from computer security firm McAfee and the Center for Strategic and International Studies (CSIS). "We found that the adoption of security measures in important civilian industries badly trailed the increase in threats over the last year," said Stewart Baker of CSIS. The survey, which was based on interviews with 200 information technology security executives at utility firms around the world, found that many facilities "are not ready" and that "the professionals charged with protecting these systems report that the threat has accelerated – but the response has not."

National Journal Daily (4/20, Smith, Subscription Publication) reports that nearly a year after the emergence of Stuxnet – a game-changing computer worm that targets industrial systems – security improvements at critical infrastructure facilities have been "modest and overmatched by the threat," according to the McAfee-CSIS report. "Overall, we found little good news about cybersecurity in the electric grid and other crucial services that depend on information technology and industrial control systems," the report found.

The Financial Times (4/20, Menn, Subscription Publication, 448K) reports that the survey revealed that 85% of the respondent utilities had undergone a cyberattack, while almost two-thirds discovered malicious software on their systems every month. Experts conclude that electricity grid, among other infrastructure targets, is unprepared for sophisticated cyberattacks.

Document Detailing Bomb-Resistant Features Of DOD Building Inadvertently Posted Online. Reuters (4/20, Hosenball, Ryan) reports that a document detailing the design features of a bomb-resistant Defense Department building was inadvertently posted to a website maintained by the Army Corps of Engineers. The document, stamped "For Official Use Only," describes the bomb-resistant features of the Mark Center office complex in Alexandria, VA. Approximately 6,400 DOD employees are schedule to move into the building this year.

Audit Finds That LLNL Failed To Establish Adequate Cyber Security Controls. According to an audit from the Department of Energy, the AP (4/20, Burke) reports "Lawrence Livermore National Laboratory failed to set up adequate cyber security controls for classified information, including details about the nation's nuclear stockpile." Rickey R. Hass, the DOE's deputy inspector general for audits and inspections, "said in the report that outside contractors had made changes to one system meant to monitor nuclear explosions without first getting approval from the proper federal officials."

INTERNATIONAL NUCLEAR NEWS:

TEPCO Begins Pumping Radioactive Water From Plant Buildings. The New York Times (4/20, A10, Bradsher, Tabuchi, Subscription Publication) reports, "The difficult task of pumping highly radioactive water out of the basement of a turbine building at a damaged Japanese nuclear power plant began Tuesday, but officials cautioned that the work would be slow and difficult. The Japanese government, meanwhile, said it was considering a plan to further restrict access to the evacuated area within 12 miles of the plant, the Fukushima Daiichi Nuclear Power Station." The Tokyo Electric Power Company said "that it planned to pump 10,000 metric tons of water into a storage building at a rate of 480 tons a day, which would take nearly three weeks." TEPCO is still developing a plan for the removal of an additional 57,500 tons of heavily contaminated water at the same building and at other buildings at the site.

The AP (4/20) explains that "removing the 25,000 metric tons (about 6.6 million gallons) of contaminated water that has collected in the basement of a turbine building at Unit

2 of the Fukushima Dai-ichi plant will help allow access for workers trying to restore vital cooling systems that were knocked out in the March 11 tsunami." TEPCO "plans to use technology developed by French nuclear engineering giant Areva to reduce radioactivity and remove salt from the contaminated water so that it can be reused to cool the plant's reactors," Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency said, "adding that this process would take 'several months."

Now that the reactors have been cooled by water, the Wall Street Journal (4/20, A8, Obe, Subscription Publication, 2.02M) adds, officials plan to now focus on preventing further leaks of radioactive material. Said Nishiyama, "Our focus, for the time being, will be on preventing spillage of irradiated water into the ocean."

Japanese Government Considers Banning Access To Evacuation Zone. Meanwhile, in a separate story, the AP (4/20) adds that the Japanese government is considering banning access to the evacuation zone, "citing concerns Wednesday over radiation risks for residents who may be returning to check on their homes." Almost all of the 70-80,000 people who were living within 12 miles of the plant left "after being advised to do so, but some occasionally have returned, defying warnings from police who have set up roadblocks on only a few major roads in the area." Noriyuki Shikata, one of Chief Cabinet Secretary Yukio Edano's deputies, "said the government was still considering details of how to control access to the immediate vicinity of the nuclear plant while also responding to demands from residents to check their homes and collect belongings."

The Wall Street Journal (4/20, Sekiguchi, Subscription Publication, 2.02M) reports Edano said, "We understand people wanting to return, having evacuated with just the clothes on their backs," adding, "We are in the last stages of coming up with a plan to allow temporary re-entry for evacuated residents, while safeguarding their health and safety."

US Engineers Say Compared To TMI Cleanup Will Be Difficult. The New York Times (4/20, A10, Wald, Subscription Publication, 950K) reports, "Veterans of the Three Mile Island cleanup said that a much larger task faced the Japanese engineers who are trying contain and secure the damaged Fukushima Daiichi reactors." Lake Barrett, the senior NRC engineer at Three Mile Island during the early phases of the cleanup said that by comparison, "it was a walk in the park compared to what they've got." While the Fukushima Daiichi reactors are similar to those at TMI, engineers have pointed out several key differences. "In Japan, four separate reactors are damaged, and fixing each one is complicated by the presence of its leaking neighbors." A large amount of replacement equipment will be necessary

too, as pumps and switchgear that are located far from the reactors were destroyed by the tsunami.

IAEA Says Worst Of Radiation Leaks May Be Over.

The AP (4/20) reports Denis Flory, a deputy director general at the UN's International Atomic Energy Agency, "is suggesting the worst may be over as far as radiation leaks at Japan's stricken reactor complex are concerned." He said "he expects the total amount of radiation releases to be only a 'small increase from what it is today' if 'things go as foreseen.'" But he "emphasized Tuesday that his forecast was based on an estimate of the situation."

AFP (4/20) adds that Flory said that while radioactivity was still leaking from the plant, the amounts have been decreasing. "So, taking into account all the measures that are foreseen, the new amount of release will be decreasing and decreasing, and the total amount would not be much different from what it is today," Flory said. When asked whether "TEPCO's six-to-nine-month timeframe for achieving a cold shutdown was realistic, Flory replied: 'Whether they will be able to keep (to) this...will be shown by the facts.'"

Donor Conference To Clean Up Chernobyl Falls Short.

The AP (4/20) reports that a Kiev conference, donors agreed to give \$785 million toward making the Chernobyl site "environmentally safe," below the \$1.1 billion goal. However, "officials remained optimistic that money will be found." Donated money will be used to construct "a gargantuan long-term shelter to cover the nuclear reactor that exploded April 26, 1986, and to build a facility to store waste from the plant's three other decommissioned reactors." Japan didn't offer assistance this time, citing the crises that recently hit the nation. Top donors included the US, Germany, Russia, and the European Commission. During a subsequent summit, UN Secretary General Ban Ki-moon declared "the time has come to strengthen the IAEA."

The Wall Street Journal (4/20, Marson, Subscription Publication, 2.02M) reports that despite the fact that some powers, including Japan, did not extend donations, Ukrainian President Victor Yanukovych deemed the conference a success. A spokesman for the entity handling the fund said he was encouraged by the donations. Reuters (4/20, Subscription Publication) also covers this.

During Visit To Chernobyl, IAEA Head Says Nuclear Energy Is Important.

The AP (4/20) reports, Yukiya Amano, the head of the IAEA "speaking at the site of the Chernobyl nuclear power plant explosion, says that accident and the Japanese nuclear crisis do not undermine the value of nuclear power." Amano said "many countries will continue to find nuclear power an important option for energy diversification but that the global community must do its

utmost to ensure its safety. His visit comes just days before the 25th anniversary of the Chernobyl disaster."

Protests Continue Against Planned Indian Nuclear Plant.

The AP (4/20, George) reports that during a protest of a planned Avera-constructed nuclear plant in the Indian state of Maharashtra, a mob "ransacked a hospital and set buses on fire." The government plans to build a nuclear plant in Jaitapur, but the Japanese nuclear crisis magnified opposition to the plant. Critics contend "that Jaitapur is in a seismic zone." After the Japanese earthquake, "India's Environment Minister Jairam Ramesh has said additional safeguards will be taken." Protesters plan to hold another march on Sunday to oppose the plant.

AFP (4/20) adds that the anti-nuclear protests "blocked a highway in western India." Local television in the area reported that police have banned "large public gatherings and political rallies" because of the protests. Protests have grown since Indian national environment minister Jairam Ramesh nixed the idea of "a 'rethink' on the planned six-reactor, 9,900-megawatt facility in Jaitapur."

Reuters (4/20) reports that currently, during peak hours, India runs a 12% energy deficit, which causes blackouts and hinders further economic growth.

Italian Government Shelves Nuclear Plans. The AP (4/20) reports that the Italian government "proposed on Tuesday to shelve indefinitely its nuclear plans following radiation leaks at" the Fukushima Daiichi nuclear plant. An amendment to Senate legislation that authorized new nuclear plants was added calling for the government to devise "a new energy strategy instead." Economic Development Minister Paolo Romani said the Japanese nuclear disaster "changed everything." However, critics believe that the legislation was meant to deter turnout for a planned June referendum on nuclear expansion.

However, Reuters (4/20, Fonte) says the amendment allows the government to abandon plans for the referendum. Furthermore, others note that scrapping the referendum, which was likely to fail, saves the already unpopular prime minister, Silvio Berlusconi, from another public embarrassment. The Senate will vote on the measure today and then pass it along to the lower chamber. Industry Minister Paolo Romani said that government will host a special energy conference after the summer break where the government will unveil, as he stated, "a new energy strategy which will reinforce and strengthen the Italian energy and production system for the next 20 years."

The Financial Times (4/20, Dinmore, Subscription Publication, 448K) adds that the amendment means that Berlusconi's government has abandoned planed to restart Italy's nuclear sector. Similarly, the New York Times (4/20,

Pianigiani, Subscription Publication, 950K) reports that the Italian government's proposed amendment "would indefinitely delay plans to develop a nuclear energy strategy, including the building of plants."

Rosatom's Kiriienko Envisions New Safety Demands, Costlier Plants.

Reuters (4/20, De Carbonnel) reports that the Rosatom director, Sergei Kiriienko, believes as a result of the Japanese nuclear crisis, plants will be subjected to enhanced safety requirements. These demands will translate to costlier plant and increased competition, Kiriienko predicts. Kiriienko also believes that the disaster will also hasten demand for new plants to replace aging ones. Also, Kiriienko called on increased powers for the IAEA.

Greenpeace Protesters Occupy Office Of Ontario Energy Minister.

The Toronto Star (4/19, Olive) reports that four Greenpeace protesters "spent several hours Tuesday in the office of energy minister Brad Duguid calling for a halt to new nuclear development in Ontario." Police spent several hours cutting through a heavy chain that linked the protesters, who were charged with trespassing. "Duguid said he has no intention of deviating from plans to continue getting about half Ontario's electricity from nuclear plants, calling that an 'appropriate level.'"

Russia Pressing Ahead On Floating Nuclear Plants.

Reuters (4/19, de Carbonnel) reports that even after the Fukushima Daiichi plant crisis, Russia is vowing to move ahead with plans to develop an offshore nuclear power plant. A new 500 foot long barge with a floating reactor named the Akademik Lomonosov is under construction at St. Petersburg's Baltiysky shipyard. Head of the shipyard, Andrey Fomichev said Russia is not worried. "Even Japan has no alternative to atomic energy. The safety on Russian reactors is many times higher."

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NUCLEAR REGULATORY COMMISSION NEWS CLIPS

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TODAY'S EDITION

NRC News:

Obama Nominates Ostendorff For Second Term (GWIRE)	2
Alexander Reassures On Nuclear Energy, Sees Earthquake Simulation At Watts Bar Plant (KNOXNS)	2
NRG Abandons Project For 2 Reactors In Texas (NYT)	3
NRG To Write Down South Texas Nuclear Investment (AP)	3
NRG To Write Down South Texas Nuclear Investment (AP)	4
NRG Drops Plan For Texas Reactors (WSJ).....	4
NRG Ends Project To Build New Nuclear Reactors (DMN).....	4
NRG Suspends Investment In South Texas Nuclear Expansion (SAEN).....	5
NRG Pulls Financial Support For South Texas Nuclear Plant Expansion (AUSTIN)	5
NRG Stops Investing In South Texas Project Units 3 And 4 (VICTORA)	6
NRG To Write Down Texas Nuclear Investment After Japan (2) (BLOOM)	7
NRG Energy Provides Clarity On Nuclear Project: No More Money (GIGAOM)	8
NRG To Take 1Q Charge Of \$481 Million On Texas Nuclear Power Project (DJNews)	8
UPDATE 3-NRG Energy Abandons Texas Nuclear Expansion Plan (REU).....	9
NRG Energy Set For \$481m Writedown Charge (FT)	9
NRC Halts Monitoring Of Surry Power Plant (VAGAZ).....	9
NRC Concludes Emergency Monitoring At Surry Nuclear Plant (WILYDAILY)	9
Surry Units Shut Down After Power Station Damaged (VAGAZ) .9	
Nuclear Regulators To Discuss Ameren's Callaway Plant (STLBIZ)	10
Federal Nuclear Regulators Issue Last Environmental Report On Proposed South Carolina Reactors (AP)	10
Final Environmental Impact Statement Issued For Two Nuclear Reactors (POWGENWLD)	10
Business Briefs - Commission To Release Report On Nuclear Plant (WILMIN)	11
Time To Lift Ban On Uranium Mining Near Grand Canyon? Deadline Nears. (CSM)	11
Vt Nuke Plant Appeals To Public In Newspaper Ads (BOS)	12
Vermont Yankee Appeals To Public In Newspaper Ads (WPTZ)13	

Entergy Takes Its Message To Ads (RUTHER).....	13
State Readies For Legal Showdown With Vt. Yankee (WCAX) .13	
Former PSB Chair Says Vermont In Position Of Strength In Lawsuit (VTPR).....	14
Shumlin Disputes Entergy Claims (BR).....	14
Entergy Sues Vermont To Keep Yankee Going (RUTHER).....	16
Vermont Yankee Nuclear Station Takes Vt. To Court (WBUR) .. 17	
How A Federal Court Battle In Vermont Could Recast Nuclear Power (CSM)	18
Entergy Files Suit To Keep Plant Open (WorldNuclearNews)....	19
Shumlin Up For Showdown (KEENE)	19
Vt. Has Ways To Pressure Yankee (RUTHER)	20
Entergy Files Suit To Keep Vermont Yankee Open (ENERCOL)21	
Entergy's Half Truths (RUTHER).....	22
Security Exercises Planned For Indian Point (MIDHUD)	23
AZ Nuke Plant Offers Look Inside (ADS)	23
Turkey Point: Congressional Members Tour FPL's South Florida Nuclear Power Plant (FLSUNSEN)	24
Beyond Nuclear Petitions US NRC For Suspension Of 21 Atomic Reactor Licenses In Wake Of Japanese Nuclear Catastrophe (Common Dreams)	24
Fleischmann, DesJarlais Endorse Nuclear Facility (KNOXNS) ..26	
Malloy Opposes Millstone Nuclear Tax (HARTBZ)	26
Defeat Tax On Power Plants (HARTC)	27
Pull Nuke Tax Plug (NLDAY)	27
Concerns About Taxation (HARTC)	28
Editorial: Tax Grab From South Of The Border (NORAND)	28
Proposed Millstone Tax Is Discriminatory (NLDAY)	28
Crowded, Complicated Agenda Awaits New Nuclear Chief (GWIRE)	29
Nuclear Dead End: It's The Economics, Stupid (NAT)	30
Japan's Fukushima Nuclear Meltdown Forces US To Rethink Its Disaster Preparation (UCLA).....	32
After Fukushima (CHIT)	33
Cyberattack Fears On The Rise: Study (AFP)	34
Execs: Electrical Companies Moving Slowly To Address Cyber Threats (NATJO)	34
Electricity Grid Vulnerable To Cyber Attacks (FT)	35
EXCLUSIVE-Anti-bomb Plan For Pentagon Annex Posted Online (REU)	35

Report: US National Lab Needs More Cyber Controls (AP)	35	With Eye To Japan, World Pledges Cash For Chernobyl (NYT/REU).....	42
International Nuclear News:			
Water Pumping Begins At Japan Nuclear Reactor (NYT)	36	IAEA Chief Defends Nuclear Energy (AP)	42
Japan Nuke Plants Start Pumping Radioactive Water (USAT/AP)	37	Mob Sets Fires In Protest Of India Nuclear Plant (AP)	42
Removal Of Radioactive Water Starts (WSJ)	38	Second Day Of Violent Protests Over India Atomic Plant (AFP)	43
Japan Mulls Restricting Access To Evacuation Zone Near Crippled Nuclear Plant (AP)	38	Protests Against India Nuclear Plant Turn Violent (REU)	44
Japan Considers Banning Entry Into Evacuation Zone (WSJ) ...	39	Italy Indefinitely Shelves Nuclear Plans After Japan Quake, Opposition Cries Foul (WP/AP).....	44
US Engineers Cite Lengthy Cleanup In Japan (NYT).....	39	Italy Scraps Nuclear Power Preparations (REU)	44
UN Nuclear Agency Expects Little New Radiation Release If All Goes According To Plan (AP)	40	Italy Freezes Return To Nuclear Power (FT)	44
Radiation Release From Fukushima Won't Increase Much: IAEA (AFP)	40	Italy: Nuclear Plants On Hold (NYT).....	44
Chernobyl Donors Conference Falls Short Of Goal (AP)	41	Russian Nuclear Chief Says Plants To Grow Costlier (REU)	44
Pledges For New Chernobyl Cleanup Fall Short (WSJ)	42	Protesters Call For Halt To Nuclear Development (TORST).....	45
		Can Nuclear Power Plants Float? (REU)	45

NRC NEWS:

Obama Nominates Ostendorff For Second Term (GWIRE)

By Hannah Northey

Greenwire, April 19, 2011

President Obama has nominated William Ostendorff to a second term as commissioner on the Nuclear Regulatory Commission.

Ostendorff has been serving the commission since April 2010. His term expires June 30.

The Nuclear Energy Institute applauded the nomination, calling Ostendorff a qualified candidate with experience as an engineer, lawyer, policy adviser and naval officer.

"We hope for a speedy confirmation because a full complement of experienced commissioners is essential as the agency reviews operation of US reactors in light of events in Japan and judges certifications for reactor designs and licenses for new reactors and fuel facilities," NEI Senior Vice President Tony Pietrangelo said.

Ostendorff served as the principal deputy administrator at the National Nuclear Security Administration from 2007 to 2009, and was a staffer for the House Armed Services Committee from 2003 to 2007.

Alexander Reassures On Nuclear Energy, Sees Earthquake Simulation At Watts Bar Plant (KNOXNS)

"A Mountainview" blog

By Greg Johnson

Knoxville News Sentinel (TN), April 20, 2011

Alexander reassures on nuclear energy, sees earthquake simulation at Watts Bar Plant

Sen. Lamar Alexander, R-Tenn., has been an unapologetic advocate for nuclear power, last year calling for the construction of 100 new nuclear plants in the United States. After the disaster at Japan's Fukushima Nuclear plant in Japan, Alexander still endorses nuclear as a source of clean energy. From a 30 March press release:

"I think it's very important that as a country we learn to honestly ask questions and continuously improve what we're doing," Alexander said. "But it's important that we keep in perspective that the safety record of nuclear power in the United States really couldn't be better."

"The 104 civilian reactors we have in the United States have never produced a fatality, and the navy ships that have had nuclear reactors since the 1950s have never had a fatality from a reactor accident. While we've heard a lot about Three Mile Island, the worst nuclear accident we've had in our country, no one was hurt. ...So the nuclear industry has a safety record in the United States that's not surpassed by any other form of energy production."

On Monday, Alexander was in Rhea County visiting the Watts Bar Nuclear Plant with Bill Ostendorff of Nuclear Regulatory Commission. A report in the Rhea Herald-News (by my son, Reed Johnson) said Alexander and Ostendorff said Watts Bar "is not in danger of succumbing to natural disasters." Alexander and media watched an earthquake simulation at the plant. Click here to watch Reed's video of the simulation.

NRG Abandons Project For 2 Reactors In Texas (NYT)

By Matthew L. Wald

New York Times, April 20, 2011

The company planning the largest nuclear project in the United States, two giant reactors in South Texas, announced on Tuesday that it was giving up and writing off its investment of \$331 million after uncertainties created by the accident in Japan.

But the project — planned by NRG, a New Jersey-based independent power producer, and its minority partner, Toshiba — was in considerable doubt even before the accident at Fukushima began on March 11. Texas has a surplus of electricity and low prices for natural gas, which sets the price of electricity on the market there.

The project could go forward if circumstances changed, said David Crane, the chief executive of NRG, but he said the prospect of that occurring was "extremely daunting and at this point not particularly likely."

The plan was for the South Texas Project 3 and 4 reactors, and was identified more than two years ago by the Energy Department as one of the four candidates for loan guarantees that were authorized by the 2005 Energy Act.

It is the second of the four to die; Calvert Cliffs 3, in Maryland, seems unlikely at this point, because Constellation Energy could not reach financial terms with the Energy Department. The department has granted a conditional loan guarantee to one project in Georgia and may give another to a project in South Carolina.

In a conference call with investment analysts on Tuesday evening, Mr. Crane said that to proceed with the project, the federal government would probably have to institute a "clean energy standard" that would create quotas for nuclear power, as states have already done for wind and solar.

He said that Toshiba, which is writing off \$150 million for the project, would continue to pay to proceed with a license application with the Nuclear Regulatory Commission for the time being, on the chance that a new investor could be found. But, he said, "we have concluded that financially, this is the end of the line for us." If the plant goes forward, he said, "it will have to be funded by somebody else's resources."

The public's appetite for nuclear power projects resembles the situation right after the Three Mile Island accident of 1979, said Charles A. Zielinski, a lawyer in Washington who is a former chairman of the New York State Public Service Commission. Companies now factor in the prospect of higher construction costs, mixed with a slack demand.

The South Texas Project "may have been on the fence already, and Fukushima pushed it over," Mr. Zielinski said.

Tom Smith, an organizer in Austin with Public Citizen and a longtime campaigner against the project, cited higher construction costs and uncertainty after the Fukushima accident.

"The wheels are starting to fall off the nuclear renaissance," he said.

NRG To Write Down South Texas Nuclear Investment (AP)

By Jonathan Fahey

Associated Press, April 20, 2011

NEW YORK — Blaming uncertainties arising from the nuclear crisis in Japan, NRG Energy says it will write down its \$481 million investment in two planned new nuclear reactors in South Texas.

NRG Chief Executive David Crane said Tuesday it was unlikely the two reactors could be completed in a timely fashion.

Support for new nuclear projects in the US has eroded in the aftermath of the nuclear crisis in Japan, according to an Associated Press-GfK poll conducted earlier this month. One of NRG's partners was to be TEPCO, the Japanese utility that owns the reactor complex crippled by last month's earthquake and tsunami.

NRG, based in Princeton, N.J., hoped to build two new reactors at its South Texas Project nuclear station, an operating two-reactor power plant 90 miles southwest of Houston. The project is in line for a federal loan guarantee, but low electricity prices had clouded prospects for the plan even before the incident in Japan.

When prices of natural gas and electricity were high in the middle of the last decade, dozens of proposals for new nuclear reactors were submitted to the Nuclear Regulatory Commission. Now just a handful of projects remain active.

Southern Co. has begun work on a two-reactor project near Augusta, Ga. SCANA is preparing to build two reactors in South Carolina, about 20 miles northwest of Columbia. The Tennessee Valley Authority has resumed construction of a reactor in Eastern Tennessee that was abandoned in 1988 when it was nearly complete.

Crane said Tuesday he still believes the construction of new nuclear reactors in the US is an "absolute necessity." He said NRG will continue to seek an operating license and the loan guarantee in hopes that the project can be revived. Last month NRG announced it would suspend engineering and pre-construction work on the project.

NRG expects to record a pretax charge of \$481 million in the first quarter of this year. That includes \$331 million contributed by NRG to the joint venture that was to build the project and \$150 million from a partner, Toshiba American Nuclear Energy Corp., a unit of the Japanese industrial giant Toshiba.

Toshiba was to supply the design for the reactor and build the station. Toshiba will be responsible for future licensing costs.

NRG To Write Down South Texas Nuclear Investment (AP)

Associated Press, April 20, 2011

NEW YORK (AP) - NRG Energy will write down its \$481 million investment in two planned new nuclear reactors in South Texas.

NRG Chief Executive David Crane said Tuesday that the nuclear crisis in Japan has reduced the probability that the two reactors could be completed in a timely fashion.

1 of NRG's partners on the project was to be TEPCO, the Japanese utility that owns the reactor complex crippled by last month's earthquake and tsunami.

NRG, based in Princeton, N.J., hoped to build two new reactors at its South Texas Project nuclear station, which currently has two working reactors. The project was in line for a loan guarantee from the federal government, but low electricity prices had clouded prospects for the plan even before the incident in Japan.

NRG Drops Plan For Texas Reactors (WSJ)

By Rebecca Smith

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

NRG Ends Project To Build New Nuclear Reactors (DMN)

By Elizabeth Souder

Dallas Morning News, April 20, 2011

NRG Energy Inc. officially ended plans to build more nuclear power reactors in Texas.

The second-largest power generator in the state said Tuesday it will stop spending money on plans to build two more reactors at the South Texas Project, outside of Houston. The project was doomed when a financial partner, Tokyo Electric Power Co., saw its reactors in Japan explode after the earthquake.

"We have concluded that, financially, this is the end of the line for us," said NRG chief executive David Crane. And even if the project is resurrected, "it will have to be fueled by somebody else's financial resources."

The decision means the one Texas nuclear project close to getting a license and federal loan guarantees won't get built anytime soon. And it is evidence that the Japanese disaster has the potential to derail the budding US nuclear power renaissance.

NRG has already struggled to finance the plant. Crane said the persistently low wholesale power prices in Texas were weighing on the project, and investors had been urging him to scale back.

The nuclear explosions in Japan mean that Tokyo Electric and the Japanese government, which had considered offering its own loan guarantees for the project, must focus on domestic problems, Crane said.

Also, he said, the US Nuclear Regulatory Commission's reaction to the Japanese explosions is to start its own safety review. Crane said that's the right decision, but it delays his project.

"Until that safety review was over and our project was given a clean bill of health, you couldn't move it forward," he said. "Nothing was going to happen except we were going to continue to spend money, month after month, which we've been doing for five years."

NRG will take a \$481 million pretax charge in the first quarter to write down the value of the investment so far. Since NRG began the project in 2006, it spent \$331 million on the project, and its joint venture partner Toshiba, spent \$150 million.

Toshiba agreed to continue funding the project until it receives licenses to build and operate the new plants.

The decision by NRG leaves one Texas nuclear project with the potential to eventually break ground. Energy Future Holdings Corp. seeks a license to expand the Comanche Peak plant near Glen Rose.

NRG had planned for the first reactor to go online in 2016. The Electric Reliability Council of Texas hadn't been counting on the reactors for its official calculations of whether Texas has enough power plants to keep the lights on.

"I think it's a shame," said Bruce Bullock, director of Southern Methodist University's Maguire Energy Institute.

Shelving nuclear power projects might resolve concerns about safety, but those plants will be replaced by something else, and probably something with another environmental consequence, he said.

"At this rate you're looking at coal, which is not environmentally friendly, or natural gas, which would be the preferred fuel, but the environmental community has raised issues regarding it as well," Bullock said. Some environmental advocates say the process of drilling for natural gas pollutes air and water.

Plus, natural gas and coal plants don't take nearly as long to build as nuclear. Consider this: Today is the fifth anniversary of the announcement by EFH that it would build a new fleet of coal-fired plants. Those plants have been permitted and built, while the NRG reactors, announced a few months later, still lack licenses.

"Look at our situation. We responded to the [federal] inducements back in 2005. We spent \$331 million of our shareholders' money for five years. And we had a year to go of permitting and five years of construction, and what do we have for it?" Crane said.

NRG Suspends Investment In South Texas Nuclear Expansion (SAEN)

By Tracy Idell Hamilton

San Antonio Express-News, April 20, 2011

NRG Energy announced Tuesday it would no longer invest in the South Texas Project nuclear expansion and will write down its investment in it because of diminished prospects for the project after Japan's worst-ever nuclear accident.

The company plans to record a first-quarter pre-tax charge of roughly \$481 million for its joint venture with Toshiba Corp., NRG said in a statement Tuesday afternoon.

NRG CEO David Crane said in the statement that the company continues to believe in the necessity of a US nuclear renaissance and that the expansion of STP is still one of the best development projects in the country.

"However, the extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development of the STP project," he said.

NRG announced last month that it had suspended indefinitely all detailed engineering work and other pre-construction activities, a move that reduced the project work force from 1,000 workers to about 350.

Going forward the joint venture, called Nuclear Innovation North America, will be focused solely on securing an operating license from the Nuclear Regulatory Commission and on obtaining a loan guarantee from the US Department of Energy, "two assets that are absolutely essential to the success of any future project development," according to the statement.

Toshiba will be responsible for funding ongoing costs to continue the licensing process.

CPS Energy, which retains a 7.6 percent stake in the expansion, said it will continue to support NRG in its efforts to secure the federal loan guarantee and an operating license. It will not invest more than the roughly \$386 million it has already sunk into the project.

San Antonio's utility stands to gain an \$80 million payment from NRG if the project receives the loan guarantee.

NRG recognized last month that it likely lost a major investor — up to \$280 million — in the proposed expansion after the earthquake and tsunami sparked Japan's worst-ever nuclear accident.

Tokyo Electric Power Co.'s president confirmed Monday the company will reconsider its overseas business strategy, according to a story in Nikkei.com, as it focuses on bringing the damaged plants under control.

Previously, Tepco had said it was ready to spend roughly billions over the next decade on nuclear and liquefied natural gas projects around the world, including the STP investment.

The Japan Export Bank was also expected to provide financing, since Japanese firms Tepco and Toshiba were investing so heavily in the project.

NRG Pulls Financial Support For South Texas Nuclear Plant Expansion (AUSTIN)

By Asher Price And Marty Toohey

Austin American Statesman, April 20, 2011

A multibillion-dollar expansion of a South Texas nuclear facility appears to have been derailed by last month's tsunami in Japan.

NRG Energy, the company orchestrating the expansion plans — and hoping Austin would partner with it in some capacity — said Tuesday that it was pulling its financial support, leaving a multibillion-dollar gap other partners would have to fill.

NRG President and CEO David Crane said the expansion faces "diminished prospects" in the aftermath of the tsunami that devastated Japan last month and caused the world's biggest nuclear crisis since Chernobyl at the damaged Fukushima nuclear plant.

"In the wake of Fukushima, the confluence of events that would have to occur in NRG's view in order to get (reactors) 3 and 4 truly back on track is extremely daunting and at this point not particularly likely," Crane said in a conference call with investors Tuesday.

NRG has spent \$331 million so far on planning and permitting of the expansion, but the company "could not justify further financial participation," Crane said.

NRG is the majority owner and operator of the South Texas Project, a facility in Matagorda County with two reactors that were opened in the 1980s. The City of Austin owns 16 percent of those reactors, which generate about a quarter of the city's electricity.

NRG had hoped to double the size of the plant, from two reactors to four, and persuade Austin and others to buy power from the new reactors. The company estimates that the project would cost about \$10 billion.

Toshiba, which is a 12 percent partner in the expansion, has committed to pursuing it even without NRG's financial backing, NRG officials said. Crane said NRG also will continue to seek the necessary federal licenses because the facility is more valuable with permits in hand.

"It's simply good asset management," he said.

But NRG's absence leaves a significant funding gap. Even if NRG can find enough partners to shrink its ownership share to 40 percent, as the company was planning, it would be responsible for at least \$4 billion of the project's construction costs.

Another partner, Tokyo Electron, which had committed to covering up to 20 percent of the project costs, faces its own difficulties because it operates the Fukushima plant.

The City of San Antonio is a 7.6 percent owner, after having tried to pull out of the project.

Swami Venkataraman, senior director of utilities and infrastructure ratings at Standard and Poor's, said the expansion already had faced hurdles and was put in an even more uncertain position by the events in Japan.

"It's not clear what the new safety regulations will be that any new plants will be required to undertake," he said.

"It doesn't mean they can never restart it," Venkataraman said. "But under the original schedule, they planned to get a license by the end of 2012. Now we don't know. Once they get a license, they have to find out how much more it will cost, and then they will know how much time they need to proceed."

Tom "Smitty" Smith, a nuclear critic and head of the Texas chapter of Public Citizen, said that "all that's left is for the (justice of the peace) to be called in and pronounce the expansion dead."

Because of the tsunami, talks already had been put on hold with Austin, San Antonio and other Texas cities that NRG had been hoping to partner with.

"If they get back on the path of moving the project forward, we will meet with them and be interested in what they have to say," Austin Energy spokesman Ed Clark said.

NRG Stops Investing In South Texas Project Units 3 And 4 (VICTORA)

By Adriana Acosta

Victoria (TX) Advocate, April 20, 2011

BAY CITY - NRG Energy announced on Tuesday it will drop its investment in the South Texas Project development of Units 3 and 4.

NRG, the plant's main investor, had invested \$481 million into the development of units 3 and 4.

This comes as a result of the ongoing nuclear incident in Japan, after the earthquake and tsunami brought down the Fukushima Nuclear Power Plant in March.

"The tragic nuclear incident in Japan has introduced multiple uncertainties around new nuclear development in the United States, which have had the effect of dramatically reducing the probability that STP 3 and 4 can be successfully developed in a timely fashion," said David Crane, president and chief operating officer of NRG.

Ed Halpin, president and chief operating officer for STP, said they remain committed top operating the plant as safely as possible.

"Our team's commitment and focus remain unchanged - the continued safe and reliable operation of our existing units," he said.

STP employs about 1,200 people.

Crane said they continue to believe in the necessity of a US nuclear renaissance and STP being the best new nuclear development project in the country.

But the challenges facing US nuclear development now and the large financial resources spent by NRG on the project over the past five years make it impossible for them to continue financial participation in the development of the STP project, he said.

NRG will cooperate with and support its current partners and any future prospective partners in attempt to develop units 3 and 4 successfully, he said.

In order for the project to get back on track, the following would have to happen:

The Nuclear Regulatory Commission give STP a clean bill of health, ending current regulatory uncertainty.

The Department of Energy award a conditional loan guarantee;

Find an investor to replace NRG.

Find energy companies to purchase future power.

"Despite today's announcement, project activity continues on obtaining a combined construction and operating license and in securing a federal loan guarantee," said Buddy Eller, director of communication for STP.

Last month, Nuclear Innovation North America, the company's nuclear development joint venture with Toshiba American Nuclear Energy Corp., suspended indefinitely all detailed engineering work and pre-construction activities, including reducing project work force at STP.

Crane said NINA will continue its focus in securing a combined operating license from the Nuclear Regulatory Commission and on obtaining a loan guarantee from the US Department of Energy.

The news was not good for Bay City officials who have worked with STP to benefit from the expansion.

"The expectations of job and community growth through the expansion of 3 and 4 were something that we were looking forward to although we have known for years that this was a complicated process with many things that could go wrong," said Mitch Thames, Bay City Chamber of Commerce president.

NRG To Write Down Texas Nuclear Investment After Japan (2) (BLOOM)

By Edward Klump

Bloomberg News, April 20, 2011

April 19 (Bloomberg) – NRG Energy Inc., the largest US independent power producer, won't invest more money to build two reactors in Texas and will write down its investment in the project because of diminished prospects following Japan's nuclear crisis.

The company plans to record a first-quarter charge of about \$481 million before taxes for its nuclear joint venture with Toshiba Corp., Princeton, New Jersey-based NRG said in a statement today. Some engineering work was halted on the project last month and Tokyo-based Toshiba will fund ongoing efforts to get a license for Units 3 and 4 at the South Texas Project, according to the statement.

Tokyo Electric Power Co., which had an option to buy into the Texas project, has been battling a meltdown of damaged units at its Fukushima Dai-Ichi nuclear plant in Japan since a March 11 earthquake and tsunami. The accident, which crippled four of six reactors at the site north of Tokyo, has a severity level of 7, the same as the 1986 Chernobyl disaster.

"The tragic nuclear incident in Japan has introduced multiple uncertainties around new nuclear development in the United States which have had the effect of dramatically reducing the probability that STP 3&4 can be successfully developed in a timely fashion," NRG Chief Executive Officer David Crane said in the statement.

NRG and Toshiba own Nuclear Innovation North America LLC, the development company that proposed to build two reactors at the site about 80 miles (130 kilometers) southwest of Houston. The two units would cost about \$10 billion, Crane has said.

Writing on Wall

"The writing's been on the wall here," said James Dobson, an analyst at Wunderlich Securities in New York who has a "buy" rating on NRG shares and owns none. "The question was when management was going to fully decide they were ready to make an announcement."

The price of natural gas, a power-plant fuel that can compete with reactors to generate electricity, already had created questions about the economics of the project, Dobson said. Gas prices have averaged \$4.197 per million British thermal units this year on the New York Mercantile Exchange, a 53 percent drop from the average price in 2008.

"The extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development," Crane said.

Nuclear Review

The Nuclear Regulatory Commission last month announced a 90-day review of US facilities to identify areas for further study following the Japan incident. The industry may be forced to spend more than \$10 billion to address long-standing safety concerns including fire safety and storage of spent fuel that have gained new urgency following the accident, according to estimates by Bloomberg Government.

NRG expects to incur as much as \$20 million in costs associated with the expansion project in the second quarter, according to the release. The company owns about 88 percent and Toshiba owns about 12 percent of Nuclear Innovation North America. San Antonio utility CPS Energy owns 7.6 percent of the project.

NRG fell 22 cents, or 1 percent, to \$21.66 at 5:02 p.m. in after-hours trading in New York.

NRG Energy Provides Clarity On Nuclear Project: No More Money (GIGAOM)

By Katie Fehrenbacher

GigaOm, April 20, 2011

When I last chatted with NRG Energy CEO David Crane, he explained to me how the nuclear disaster in Japan had created an environment of uncertainty for US nuclear projects, and specifically for the expansion of NRG's own South Texas nuclear plant. That's partly because Tokyo Electric Power Company (TEPCO), the beleaguered utility that owns the damaged nuclear plants in Japan, was supposed to be an investor in NRG's nuclear project. Well, this afternoon in a note to investors, NRG Energy says it will be providing no more money for the development of the South Texas Project units 3&4, and will be recording a first quarter 2011 pretax charge of about \$481 million.

Ouch. NRG said in a statement that given the "diminished prospects" of the South Texas nuclear project it "will not invest additional capital in the STP development effort." At the same time, NRG said it would fully support any of its current or future partners if they want to continue to develop STP 3&4 units. (Crane will be speaking at our Green:Net 2011 event this Thursday April 21, in San Francisco).

The design work for the project had already essentially been halted, as NRG Energy waited for a review of the industry by the Nuclear Regulatory Commission (NRC) in the wake of the incident at the Fukushima reactors in Japan. The NRC is reviewing all nuclear projects built and under construction in the US to see if there could be any lessons learned from the Japanese nuclear incident. Nuclear industry executives fear the NRC review process will be very lengthy and will paralyze any new nuclear projects in the pipeline, which was what happened in the aftermath of the nuclear incident at Three Mile Island in 1979. Crane told me last month that he hoped a NRC review process wouldn't last any longer than 3 months.

CPS Energy, which had been in discussions to purchase the nuclear power from NRG's expanded plants, had already suspended its talks to buy the power. CPS also owns over 7 percent in the expansion project.

The US hasn't built any new nuclear reactors in decades, thanks to fears after Chernobyl and Three Mile Island. The short-term costs of nuclear construction after the Japanese nuclear disaster is expected to soar in the short term, and development of new nuclear technologies from some startups could be stalled as well. Nuclear technology has also crept along because of the low price of natural gas.

NRG's decision to cut its losses so to speak, is an even greater indication that the Japanese nuclear disaster has set back development of nuclear power in the US by many years. Other countries, like Germany, are moving even more swiftly to halt the construction of nuclear plants.

NRG will be holding a conference call later today to provide more details on its decision.

NRG To Take 1Q Charge Of \$481 Million On Texas Nuclear-Power Project (DJNews)

By Naureen S. Malik

Dow Jones Newswires, April 20, 2011

NEW YORK -(Dow Jones)- NRG Energy Corp. (NRG) won't make any additional capital investments to build two nuclear reactors in South Texas and will book a \$481 million pre-tax charge for the project in the first quarter.

The Princeton-based company said it isn't withdrawing from the project. However, it has become "impossible for us to justify to our shareholders any further financial participation" in developing the South Texas project, Chief Executive David Crane said in a statement.

The move isn't a complete surprise. The project, estimated to cost \$13.5 billion, has been on shaky ground because of weak power prices and demand. Texas is a competitive market and low natural-gas prices has made it difficult to justify expending billions of dollars on power plants. In the past month, financial and regulatory challenges have heightened with the ongoing Japanese nuclear crisis. It may be months before officials can contain radiation at Tokyo Electric Power Co.'s (9501.TO) Fukushima Daiichi plant that was rattled by a magnitude-9.0 earthquake and subsequent tsunami last month. The Japanese accident has added new uncertainties to new nuclear-power development in the US and has "had the effect of dramatically reducing the probability" that the two Texas reactors can be developed in a timely fashion, Crane said.

NRG has a 44% stake in the project to build two additional reactors at an existing site in South Texas. The power company and its partners—Toshiba Corp. (6502.TO, TOSYY) and Tokyo Electric—are seeking a loan guarantee from the US Department of Energy to help raise financing. Uncertainties around the project include whether Tokyo Electric will back out of the deal, whether the project will be granted a loan guarantee at favorable rates and the timing of federal regulatory approval for the project.

NRG had already announced it is halting pre-construction work on the South Texas project. In addition to the charge in the first-quarter, NRG said it expects to incur a one-time expense of no more than \$20 million from the project, mostly in the second quarter.

UPDATE 3-NRG Energy Abandons Texas Nuclear Expansion Plan (REU)

By Eileen O'Grady

Reuters, April 20, 2011

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

NRG Energy Set For \$481m Writedown Charge (FT)

By Sheila McNulty

Financial Times, April 20, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

NRC Halts Monitoring Of Surry Power Plant (VAGAZ)

Virginia Gazette, April 20, 2011

SURRY -- The Nuclear Regulatory Commission announced Tuesday that it has discontinued monitoring mode status related to the weekend storms that hit the Surry nuclear power plant.

NRC resident inspectors continue to review the events, and the agency is evaluating whether additional follow up will be needed. The plant lost offsite power Saturday when an apparent tornado touched down in the adjacent switchyard. The facility's emergency diesel generators immediately started up, providing emergency power until offsite power was restored.

NRC Concludes Emergency Monitoring At Surry Nuclear Plant (WILYDAILY)

Williamsburg Yorktown Daily, April 20, 2011

The Nuclear Regulatory Commission discontinued its monitoring mode status Tuesday morning that arose after Saturday's storm in which an apparent tornado touched down nearby the Surry nuclear power plant.

Dominion, which operates the two-unit facility near Surry, exited its unusual event, which was the lowest of four NRC emergency classifications.

The NRC's resident inspectors continue to review the events and the agency is evaluating whether additional followup will be needed.

The plant lost offsite power on Saturday when an apparent tornado touched down in the adjacent switchyard. The facility's emergency diesel generators immediately started up, providing emergency power until offsite power was restored.

In an earlier press release, an NRC spokesman said all safety systems operated as needed.

Surry Units Shut Down After Power Station Damaged (VAGAZ)

Tornado hits offsite electric switchyard

Virginia Gazette, April 19, 2011

SURRY -- The US Nuclear Regulatory Commission is monitoring the Surry nuclear power plant after the site lost offsite power around 7 p.m. Saturday.

In a press release issued Sunday morning, the NRC said a tornado affected an electrical switchyard next to the plant. The NRC is monitoring the event through resident inspectors at the site and in the Atlanta regional office.

The two units at the Surry plant automatically shut down after losing offsite power. Four diesel generators kicked in to power the units' emergency loads. Plant operators have partially restored offsite power to both plants. Safety systems have operated as needed. Dominion notified the NRC soon after it happened and the agency dispatched inspectors to the site as well as staffed its incident response center in Atlanta.

Nuclear Regulators To Discuss Ameren's Callaway Plant (STLBIZ)

By Kelsey Volkmann

St. Louis Business Journal, April 20, 2011

Nuclear regulators plan to publicly discuss next week the findings of their inspection of Ameren's Callaway County plant.

The Nuclear Regulatory Commission said Tuesday that Callaway operated safely during 2010. The plant did receive heightened oversight during the first half of 2010, but a subsequent inspection determined that appropriate corrective actions were implemented, NRC officials said. Inspections are performed by two NRC resident inspectors assigned to the plant and by inspection specialists from the Region IV Office in Arlington, Texas.

NRC staff will hold an open house in Fulton, Mo., on April 26 to discuss the agency's 2010 assessment of safety performance for the Callaway nuclear power plant. The open house will begin at 6 p.m. at the Burton Business Building, Classroom 6, William Woods University, One University Ave., in Fulton. Members of the public will have an opportunity to meet informally with the NRC staff, ask questions and learn about the agency's role in ensuring safe plant operation.

"The NRC continually reviews the performance of Callaway and the nation's other commercial nuclear power facilities," NRC Region IV Administrator Elmo Collins said. "This informal meeting will provide members of the public with an opportunity to learn about our annual assessment of safety performance at the plant."

Read a letter sent from the NRC Region IV office to plant officials addressing the performance of the plant during 2010. The NRC holds public meetings annually about each nuclear plant it oversees.

Coincidentally, the open house will occur on the 25th anniversary of the Chernobyl nuclear disaster.

Next week's forum is unrelated to the NRC inspection that was announced last month at Callaway. Inspectors were sent to the plant in March to determine whether an auxiliary feedwater pump is properly lubricated. The pump is used to supply water to the plant's steam generators, which cool the reactors during accidents. A final report about that inspection is due out in May.

Federal Nuclear Regulators Issue Last Environmental Report On Proposed South Carolina Reactors (AP)

Associated Press, April 20, 2011

JENKINSVILLE, S.C. — Federal nuclear regulators say there are no environmental impacts from two proposed nuclear reactors in Jenkinsville that would prevent South Carolina Electric & Gas from getting a license to operate the plants.

The Nuclear Regulatory Commission and the US Army Corps of Engineers said in a news release Tuesday that the environmental review began in January 2009 and included input from several public meetings.

The final statement is part of a long process for approval for the reactors that will be among the first built in the US in a generation.

SCE&G and state-owned utility Santee Cooper want to operate two 1,100-megawatt reactors at the V.C. Summer Nuclear Station about 25 miles northwest of Columbia. Officials expect the first reactor to generate power by 2016, and the second in 2019.

Final Environmental Impact Statement Issued For Two Nuclear Reactors (POWGENWLD)

Power-Gen Worldwide, April 20, 2011

No environmental factors preclude issuing combined licenses for two nuclear reactors proposed to be built at the Summer nuclear station in South Carolina, federal regulators have found.

South Carolina Electric & Gas (SCE&G) and Santee Cooper are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant. The companies submitted the application March 27, 2008. The AP1000 is a 1,100 MWe pressurized-water reactor design the Nuclear Regulatory Commission certified in 2006. The agency is reviewing Westinghouse's May 2007 application to amend the certified design.

The NRC and the US Army Corps of Engineers, Charleston District, completed the Final Environmental Impact Statement for the combined licenses. The Corps of Engineers will use the information in making its federal permit decision.

The decision is part of the overall Summer application review. NRC staff continues to compile its final safety evaluation report, which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards, an independent group

of nuclear safety experts. The NRC's final licensing decision will be based on the final environmental impact statement and the safety evaluation findings, along with a ruling from the five-member Commission.

Business Briefs - Commission To Release Report On Nuclear Plant (WILMIN)

By Wayne Faulkner

Wilmington Star News, April 20, 2011

CASTLE HAYNE | Federal regulators will present results of a performance review of Global Nuclear Fuel-America's commercial nuclear fuel fabrication plant at a public meeting April 26 in Wilmington.

The Nuclear Regulatory Commission (NRC) will meet with management of the Wilmington-based company during a meeting at 10 a.m. in the Azalea Coast Room A of UNCW's Fisher Student Center, the NRC said.

NRC officials will be available following the business portion of the meeting at the University of North Carolina Wilmington to answer questions.

The NRC staff assessed performance at Global from May 23, 2009 to Dec. 31, 2010, on safety operations, radiological controls, facility support and special topics.

The NRC staff review determined that Global continued to conduct its activities safely and securely, protecting public health and the environment.

But "management attention is still warranted to improve the identification and implementation of safety controls," the NRC said in a statement.

It will continue inspections to monitor the company's corrective actions. Ten entrepreneurs named finalists for award.

Time To Lift Ban On Uranium Mining Near Grand Canyon? Deadline Nears. (CSM)

Obama administration must decide by midsummer whether to extend a freeze on uranium mining claims near the Grand Canyon. A recent report cites 10 national 'treasures' at risk.

By Mark Clayton

Christian Science Monitor, April 20, 2011

In the past decade, interest in mining for uranium has surged, with prices for the metal soaring in world markets a few years ago. Uranium prospecting and mining-project plans have been popping up like jack rabbits across the western United States.

But for at least one of America's iconic natural landmarks, the Obama administration has put the brakes on thousands of new mining plans or claims. In 2009, it blocked claims for uranium and other mining on about 1 million acres of public land bordering the Grand Canyon.

Now, the administration is nearing a decision point: whether to allow the mining-claims process to move forward or extend its moratorium for up to 20 years. The decision could set a precedent for other natural landmarks also being hedged in by uranium and other mining claims, observers say.

More than 8,300 uranium and other mining claims, their development frozen by the government moratorium, are staked on the public lands near the Grand Canyon, according to a new study by the Pew Environment Group, an environmental watchdog based in Washington, D.C.

The report labels the Grand Canyon, as well as nine other national "treasures" in the West, as "at risk" from surging industrial mining claims on nearby public lands. More than 4,400 mining claims have been staked near those nine other sites.

In the middle of the storm is the Department of Interior's Bureau of Land Management (BLM), which controls much land around the 10 sites. Also getting involved is Congress, which is unhappy about growing foreign ownership of many uranium mining claims and a lack of revenue for the government from any resulting mines. The legislation regulating these activities needs updating, say some lawmakers.

As for the Grand Canyon, environmentalists and water managers from Los Angeles to Las Vegas decry any uranium mining near the land-mark, citing visual impacts, flash floods, and radioactivity leaching into ground water that feeds the vital Colorado River.

"These are national parks and other special places Americans hold dear – and they're now at risk thanks to mining claims staked in close proximity to them," says Jane Danowitz, director of the Pew public-land program that produced the report. "It's all due largely to the fact that we have this outdated mining law, so anyone who wants to mine and take minerals from US soil can do it no matter how much damage it does."

Such fears are overblown, industry experts say, with predictions of only 1 in 10 mining claims, if that, being developed into a mine.

"The uranium mining industry in this area has had a stellar environmental track record," says Pamela Hill, executive director of the American Clean Energy Resources Trust, a coalition of uranium exploration and mining companies based in Kanab, Utah. "A lot of these concerns are without basis in science or history of uranium mining in this area."

May 4 will mark the end of a public-comment period on the environmental impact statement that has been drawn up about mining by the Grand Canyon. A decision by the government on whether to lift its moratorium is expected by July 20.

Even with the Obama administration's moratorium, one mining claim near the Grand Canyon, deemed to have existing rights, was allowed to go forward, and a mine is now in operation. Also, as many as 11 existing uranium claims near the Grand Canyon could be eligible for permits whether or not newer claims are blocked, the BLM says.

Although the Obama administration has not blocked mining claims in other areas, such claims are just starting to reach fruition. Earlier this month, a uranium mine in Wyoming announced its opening. Other sites are expected to be developed, too, according to the Nuclear Regulatory Commission (NRC).

Congress has been watching closely. Some lawmakers have zeroed in on the 1872 Mining Law, under which the US government does not receive any mineral royalties.

Earlier this month, legislation was introduced by Reps. Martin Heinrich and Ben Ray Luján, both Democrats from New Mexico, to shift regulation of uranium mining from "the antiquated 1872 Mining Law" to the Mineral Leasing Act. The latter would allow uranium mining to be managed through a competitive leasing program.

Others also worry that most of America's best uranium mining prospects – including those by the Grand Canyon – are now controlled by Canadian, Korean, Russian, and other foreign companies. In November, the NRC approved transfer of control of licenses from Uranium One USA Inc. and Uranium One Americas Inc., which are Canadian entities, to JSC Atomredmetzoloto (ARMZ), a Russian corporation.

"This transaction would give the Russian government control over a sizable portion of America's uranium production capacity," complained Sen. John Barrasso (R) of Wyoming in a December letter to President Obama. Russia has aided Iranian nuclear ambitions, he wrote.

"I remain concerned with any attempt to grant an export license to ARMZ which would allow the Russian government to ship US uranium overseas," Senator Barrasso added.

Gregory Jaczko, chairman of the NRC, assured Barrasso in a letter that ARMZ had not applied for an export license, so it could not send any US uranium overseas.

In the March 21 letter, Mr. Jaczko also touts expected robust growth in US uranium mining, despite the Fukushima crisis in Japan.

"We are now expecting as many as 16 new applications by 2013 for new recovery facilities or for expanding existing uranium recovery facilities, in addition to those we have already received," he wrote.

One key reason that new US uranium production is needed, Ms. Hill and other advocates say, is to lessen US dependence on foreign energy. About 90 percent of uranium fuel for US nuclear plants today is imported.

But according to a draft BLM study of uranium mining impacts on the Grand Canyon, such mining would do little to boost domestic uranium supplies.

"Currently there are no laws in place that would require domestic uranium to be solely purchased and consumed within the United States," the draft BLM study concluded. "Uranium mined and produced within the parcels would not necessarily move the United States toward energy independence and thus would not represent an impact to national energy resources."

Vt Nuke Plant Appeals To Public In Newspaper Ads (BOS)

Boston Globe, April 20, 2011

The Vermont Yankee nuclear plant, which is suing the state of Vermont in a bid to stay open past next year, is taking its case to newspaper readers.

In full page newspaper advertisements taken out Tuesday in nine Vermont newspapers, the CEO of plant owner Entergy Corp. says the company wishes it didn't have to go to court but that it had no choice. J. Wayne Leonard's signed letter says Vermont Yankee's owners have a responsibility -- to the plant's employees, the company's investors and electricity consumers -- to stake its claim to operating past March 2012, when the state wants it shut down.

The suit, filed Monday in US District Court in Burlington, says the US Nuclear Regulatory Commission has jurisdiction over Vermont Yankee -- not the state of Vermont -- and that it has granted the plant a new license.

"We mean no disrespect by this action," Leonard wrote. "We seek only a resolution of our disagreement with the state and we will abide by the results of the judicial process."

Entergy contends that Vermont lawmakers overstepped their bounds when they passed a 2006 law giving the Legislature a say in whether the plant is allowed to operate past the scheduled March 2012 expiration of its state operating permit.

State officials say Entergy expressed support for the law when it was passed but that now that the state doesn't want to renew the permit, it wants the law declared unconstitutional because the US Nuclear Regulatory Commission has jurisdiction over nuclear plants.

Vermont Yankee Appeals To Public In Newspaper Ads (WPTZ)

WPTZ-TV Burlington, VT, April 20, 2011

The Vermont Yankee nuclear plant, which is suing the state of Vermont in a bid to stay open past next year, is taking its case to newspaper readers.

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Larry Smith, a Vermont Yankee spokesman, said Leonard wanted to have a conversation about the issue with the people of Vermont.

Entergy Takes Its Message To Ads (RUTHER)

By Susan Smallheer

Rutland Herald, April 20, 2011

BRATTLEBORO — Entergy Corp., took its battle to win the minds — if not the hearts — of Vermonters with a stack of full-page advertisements Tuesday in nine Vermont newspapers.

In a lengthy letter addressed to "Dear Vermonters," J. Wayne Leonard, chairman and chief executive officer of Entergy Corp., outlined his company's reasons for suing the state of Vermont, Gov. Peter Shumlin and the Public Service Board, in order to keep Vermont Yankee open beyond its projected closing date of March 21, 2012.

"I know that Vermonters are deeply divided on the subject of nuclear power," Leonard wrote.

But Leonard had his harshest criticism for some unnamed "public officials," and the Vermont Legislature, which he said changed the rules of the regulatory game Entergy agreed to in 2002.

"We agreed to a process in which an independent expert agency would decide Vermont Yankee's future based on evidence and facts developed through an impartial process with the possibility, if necessary, of court review," he wrote.

The full-page advertisements came a day after Entergy and two of its subsidiaries, sued the state in US District Court in Burlington, claiming the state has violated the Atomic Energy Act by trying to block Vermont Yankee's continued operation.

Leonard, reiterating many of the arguments made by Entergy executive Richard Smith Monday with reporters on a conference call, said that Entergy tried to avoid a costly and lengthy lawsuit.

Entergy Nuclear spokesman Larry Smith said Entergy placed the advertisements in nine Vermont newspapers in an effort to "open a conversation" with the people of Vermont.

The full-page ads come after a long series of advertisements promoting Yankee as "safe, clean and reliable" that Entergy has been running in Vermont media — television, radio and newspapers.

On Monday, there was a large ad featuring Michael Colomb, the site vice president of Entergy Nuclear at Vermont Yankee, addressing issues raised by the nuclear disaster at the Fukushima Daiichi nuclear plant.

Smith said that the company was having a positive response to the ad campaign.

"His message is receiving positive response from members of the business community in the state and supporters of Vermont Yankee," he said, while adding he could not answer questions about the federal lawsuit.

State Readies For Legal Showdown With Vt. Yankee (WCAX)

By Jennifer Reading

WCAX-TV Burlington, VT, April 20, 2011

The swords are drawn. Both Vermont and Vermont Yankee are ready to go to war over the future of the aging nuclear power plant in Vernon.

"They've finally started the battle and we're ready to fight," said Bill Sorrell, D-Vt. Attorney General.

On Monday Entergy— the New Orleans-based company that owns Vermont Yankee— sued the state. It wants a court order blocking Vermont from shutting Yankee down next year.

"We believe the general assembly changed the rules and left us with no other choice. We had a judgment call to make. Seek relief in the courts or shut the plant down at the end of the current license," said Richard Smith, the president of Entergy.

"We're going to try very hard in court to say that this is not the kind of case in which an injunction should be issued and that we should be able to enforce our laws," Sorrell said.

This is a legal battle over jurisdiction. Does the federal government or the state of Vermont have the authority to close Yankee's doors? Vermont is the only state with a law requiring legislative approval for a license extension. But Entergy now claims that the Atomic Energy Act and the Federal Power Act-- two federal laws-- pre-empt state control over Yankee's license and power sales. This case is expected to draw national attention. And the battle's not expected to be brief.

"This case could drag on for years. Easily," Sorrell said.

And that could mean hundreds of thousands of dollars if not more in legal fees for the state. Sorrell says he has the governor's financial support, explaining the case will be paid for through attorney general's office budget and a special appropriation if necessary.

"I don't really care which pot it comes from as long as we have it available to expend to defending this important case," Sorrell said.

A fight he says is worth every penny.

If Entergy wins its injunction it would be allowed to continue operating despite state law while the case is litigated and that gives Entergy little motivation to speed things along.

Former PSB Chair Says Vermont In Position Of Strength In Lawsuit (VTPR)

By Mitch Wertlieb

Vermont Public Radio, April 20, 2011

The owner of Vermont Yankee nuclear power plant has sued the state, asking a federal judge to block the state from shutting the plant down next year.

Yankee's original 40-year operating license was scheduled to expire next March. But, the Nuclear Regulatory Commission has approved extending the license for another 20 years.

So will Vermont Yankee be able to keep operating? VPR's Mitch Wertlieb gets some perspective from Michael Dworkin, a former chairman of the Vermont Public Service Board who now heads the Institute for Energy and the Environment at Vermont Law School.

Shumlin Disputes Entergy Claims (BR)

By Bob Audette

Brattleboro Reformer, April 20, 2011

BRATTLEBORO -- During a press conference in Montpelier on Monday, Gov. Peter Shumlin disputed Entergy's contention that the Legislature's approval of Act 160 "changed the rules" of an agreement reached when Entergy bought Vermont Yankee power plant in 2002.

Act 160 may not have been part of the memorandum of understanding signed in 2002, said Shumlin, but Entergy's lobbyists, executives and lawyers all participated in the process of reviewing Act 160.

"Indeed, Entergy expressed its support of that law at the time," he said.

During an interview with the Reformer

on April 7, Shumlin said if Entergy sued the state, it would have a hard time justifying its position before a federal judge.

"I think it's a tough argument to make to a judge -- 'Your honor, we didn't tell the truth about the underground pipes, we didn't tell the truth about supporting the legislation that [former Gov. James] Douglas signed that gave the Legislature the authority to determine whether or not the power company's a public good,'" he said. "How many times are they going to tell us they didn't mean what they said?"

In a statement issued on Monday, Shumlin said as governor he has taken an oath to uphold and protect the laws of Vermont. He also stated that Entergy's decision to sue "flies in the face" of the commitments it made to the state.

"Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law," stated Shumlin. "Instead of following Vermont law, Entergy seeks to subject the taxpayers of Vermont to an expensive legal proceeding."

Entergy clearly agreed that it would not attempt to claim preemption regarding the state's licensing decision, he stated.

"The Public Service Board relied upon that promise when it allowed Entergy to purchase the plant," stated Shumlin. "Later, Entergy supported the law passed by the Legislature and signed by my predecessor giving the Legislature a role in the state licensing process."

Larry Smith, director of communications for Yankee, said he had no comment on Shumlin's contention that Entergy did not oppose the enactment of Act 160.

Ray Shadis, spokesman for the New England Coalition, which is opposed to Yankee's continued operation, agreed with the Governor's characterization of Entergy's position on Act 160.

When Entergy dropped its opposition to the legislation it gave "tacit approval to its affirmative vote out of committee and to passage," wrote Shadis in an e-mail to the media.

Entergy dropped its opposition to the act because it was confident that the Legislature would never vote against Yankee's continued operation, he stated.

Rep. Sarah Edwards, P-Brattleboro, also asserted Entergy's position on Act 160 was clear at the time the Legislature passed it.

Vernon Selectboard member Patty O'Donnell, who formerly represented Vernon in the Legislature and supports Yankee's continued operation, said she wasn't surprised by Entergy's decision.

"They have every right to do what they are doing," she said, adding the state will be spending millions of dollars on defending itself in federal court, money that would be better spent elsewhere.

"It's a shame we are putting our resources into a court case instead of in the vulnerable people in Vermont," said O'Donnell.

Attorney General Bill Sorrell said his office has been preparing for well over a month for the possibility that either Entergy would be suing the state or it would continue operating the plant, forcing the state to sue Entergy.

"We've known this was going to end up in court," he said. "The governor authorized us to get more resources, both in staffing and expert witnesses. We've got a lot of work to do, but we're not scrambling woefully behind."

He said the judge who will be hearing the case will decide on a schedule in the next few weeks, but he expects a decision will be rendered sometime between the end of spring and mid-fall.

Despite which way the federal judge rules, Sorrell said he expected the case to wend its way to the federal appeals court in New York City and most likely to the US Supreme Court.

"I would be shocked if the litigation ended in district court," he said.

He also said Entergy's filing will not delay the release of a report his office has been working on investigating whether Entergy representatives knowingly gave false or misleading testimony to the state about the nature of underground and buried pipes at Yankee.

However, said Sorrell, he would not release the date on when he expects that report to be available to the public.

In a letter to Shumlin and Sorrell, State Auditor Tom Salmon stated no one was surprised by the filing of the lawsuit.

"It has been a relationship scheduled for failure," he wrote.

In the letter, he wrote that Vermonters "deserve professionalism, transparency and a lack of nonsense more than ever. Please keep that in mind as you proceed."

Salmon asked that Shumlin and Sorrell detail how much the state will spend defending its position in court, how many experts it will hire and if the matter had been directed to the Public Service Board, would the costs of that process incurred be billed back to Entergy?

"This process creates a risk to the financial stability of the state. According to the Pew Center on the States, Vermont has demonstrated its inability to plan ahead and was given low marks for attaining traction in strategic directions," wrote Salmon. "Posturing and out-messaging ... does nothing to promote a stable and attractive business climate."

He stated that policy-makers might consider focusing on making Vermont a no-income tax state by 2021.

"Instead, we seek to expend energy and resources in a fight ... that we created ..." he wrote.

In an e-mail update to his constituents, Rep. Oliver Olsen, R-Jamaica, wrote Vermont has no jurisdiction over radiological safety issues, which is why the state has taken care to frame any formal discussions about the nuclear plant within the context of reliability and economic benefit.

"But, in offering their case, the owners point to actions of the Vermont Legislature and statements by elected officials in support of their claim that Vermont's real focus has been concern over radiological safety," he wrote. "It would not be surprising to find public statements from elected officials that might lead one to conclude that Vermont's unwillingness to authorize continued operation of the plant has been motivated by concerns about radiological safety."

Olsen asserted that the Legislature's "politicization of the process through the post-2002 enactments" and repeated statements by Shumlin and other elected officials crossed the line into concerns over safety and public health.

Vermont's congressional delegation also stepped into the fray.

"It appears that Entergy has developed a bad case of corporate amnesia in refusing to honor an agreement it signed with the state in 2002," stated Senators Patrick Leahy and Bernie Sanders and Rep. Peter Welch. "Entergy agreed to waive any claim that federal law preempts the jurisdiction of Vermont. The company also agreed to comply with the terms of the agreement and Vermont laws. Now, reversing course, Entergy is seeking in federal litigation to avoid complying with Vermont law and the agreement. We look forward to the court system resolving this case in Vermont's favor."

If Entergy wins the suit, said O'Donnell, the state's utilities will lose the ability to negotiate a power purchase agreement with Entergy, but even without a power purchase agreement, said Steve Costello, spokesman for Central Vermont Public Service, the state will continue to benefit via a revenue sharing agreement.

"Under that agreement, if the plant operates after March 2012, Entergy must share with our affiliate, Vermont Yankee nuclear power corporation, 50 percent of any revenues derived from sales above an escalating strike price of \$61/MwH for 10 years," said Costello.

Entergy Sues Vermont To Keep Yankee Going (RUTHER)

By Susan Smallheer

Rutland Herald, April 20, 2011

BRATTLEBORO — Finally ending the guessing over its future, Entergy Corp. filed suit Monday against the state of Vermont in a bid to keep the Vermont Yankee nuclear plant operating past 2012.

In a 57-page filing in US District Court in Vermont, Entergy claimed that Vermont was violating the Atomic Energy Act by impinging on federal authority over nuclear power plants. It also said the state was withholding its approval of continued operation in order to extract a lower price power contract from Entergy.

"We have made every reasonable effort to accommodate the state of Vermont and its officials," said Richard Smith, president of Entergy Wholesale Commodities, in a morning statement.

Smith said Entergy had no choice but to file suit in order to protect not just its shareholders but its 650 employees.

"We believe that the state of Vermont changed the rules on us," Smith said, referring to Act 160, a 2006 law.

Gov. Peter Shumlin said the state was well-prepared to fight Entergy over Vermont Yankee's future operation.

Shumlin said Entergy's lawsuit was one more example of Entergy's corporate untrustworthiness.

"Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law," Shumlin said at a Montpelier afternoon news conference.

Shumlin, joined by Attorney General William Sorrell, said the state was ready to defend the 2006 state law, which established the Legislature as the gatekeeper of state approval.

Last year, the Vermont Senate, led by then-Sen. Shumlin, soundly defeated a move toward relicensing, in the wake of underground radioactive tritium leaks at the plant and misstatements by plant executives under oath about the existence of underground pipes carrying radioactive materials.

Shumlin noted that in 1970, it took a vote of the Vermont Legislature before Vermont Yankee could be given its original certificate of public good, so it was keeping with that precedent that the 2006 law set up another legislative vote.

Shumlin, pointing to a 2006 Rutland Herald article, noted that Entergy itself supported Act 160 at the time, which gave the Legislature a key role in the issuing of any new certificate of public good for Vermont Yankee.

Under the law, the Legislature had to vote in favor of Vermont Yankee's continued operation before the Public Service Board could render its final decision on a proposed certificate of public good.

Sorrell said that a team of lawyers from his office had been working on the state's response to a federal pre-emption issue challenge. He said he expected Entergy to file for an injunction to keep Yankee open while the lawsuit was pending later this week.

Sorrell said that the case is not just important to Vermont, and that it has national repercussions.

"This is a case of potentially national significance, not only with the nuclear power industry watching this case closely, but an awful lot of states and state-legislatures will be watching this case very closely," said Sorrell.

Sorrell scoffed at the Entergy contention that Vermont's strategy was an attempt to get a better price on a power contract.

Smith told reporters that he had met personally with Shumlin on March 30 to discuss if there was any room for a compromise and to keep the plant open.

Some legal observers said that Entergy was not on firm ground in challenging the state's oversight on Yankee's reliability, its economics, and its environmental impact.

Michael Dworkin, the director of the Vermont Law School Institute for Energy and the Environment, was chairman of the Vermont Public Service Board in 2002 when the board approved the sale of Vermont Yankee to Entergy.

Dworkin said Monday that Entergy overlooked half of the US Supreme Court 1983 case it cited on the issue of federal pre-emption, which granted states a role in nuclear power plants, with the exception of safety.

Dworkin said that Entergy's obvious omission of half of the Pacific Gas & Electric case was another strike against its credibility.

"I find it very troubling they would change this," said Dworkin, who added that Entergy had supported the law back in 2006 and "five years of silence" on the law would not go well in a court of law.

Entergy had benefitted from Act 160 for those five years, he said.

In 2002, Entergy officials said under oath that they would not challenge state regulatory authority, he said, noting the state had long been interested in having a concrete role in its energy future.

"It wasn't just an abstract idea," he said.

Environmental and anti-nuclear groups said the Entergy lawsuit was not a surprise.

James Moore of the Vermont Public Interest Research Group, noted that Entergy was now challenging legislation it had supported.

"Just on its face, it is remarkably questionable," said Moore. "It would be a heck of a lot better if Entergy would just recognize this facility's time has come, and that they should close it down and clean it up."

And Moore said Entergy's claim that the state was "trying to gouge" Entergy over power contract deals "just doesn't fly."

Moore said VPIRG would likely file for intervenor status in the court case.

"This is the legal version of an attempted home invasion," said Raymond Shadis, technical advisor to the New England Coalition, who said the coalition would do "whatever is necessary to support the state in its opposition to imposed Entergy occupation."

On the other side of the discussion came William Driscoll of Associated Industries of Vermont.

"It has been a failure of leadership and responsibility on the part of the administration and legislative leaders that this issue has come to this point," he said in a statement.

"The legislative interference with the Public Service Board doing its job in deciding on Vermont Yankee's future has undermined the

credibility of our regulatory system. Unfortunately, with the Legislature and the governor blocking any decision on the part of the

Public Service Board, Vermont Yankee would seem to have had little other choice than to take the action that they have."

Vermont Yankee Nuclear Station Takes Vt. To Court (WBUR)

By Fred Bever

WBUR FM Boston, April 20, 2011

The owners of the Vermont Yankee nuclear power station are taking the state of Vermont to court. Depending on the outcome of the case, the plant could shut down next year or stay in service for another two decades.

Vermont Yankee's federal license was due to expire in less than a year, but last month the Nuclear Regulatory Commission approved a two-decade license extension. But Vermont legislators, its governor and others who want the plant closed say a state law — unique in the nation — gives the legislature what amounts to veto power over the future of the plant after next year.

Now Richard Smith, an executive at Yankee's owner, the Entergy Corp., has announced a lawsuit seeking federal preemption of Vermont's law.

"We came to one conclusion. We had no choice. We believe that the state of Vermont changed the rules on us," Smith said.

The 650-megawatt plant sits next to the Connecticut River, just north of the Massachusetts border, and it supplies relatively low-cost electricity to the New England power grid. Entergy's suit cites the supremacy and commerce clauses of the US Constitution. And Smith cited the needs of neighboring states.

"This issue is not just about Vermont. Retiring the plant would have an impact on the cost and reliability of service in New Hampshire and Massachusetts, which receive power from Vermont Yankee on the wholesale market," Smith said. "Those states deserve consideration in this discussion."

"Entergy has said, and said repeatedly, that they would abide by Vermont law, and obviously they don't want to now," said William Sorrell, Vermont's attorney general.

Sorrell said the state will fight to make sure the plant closes next March, whether or not the federal judiciary has reached a final decision on the suit.

"Among other things that we will be litigating is that one, Vermont's lie is appropriate and legal, and that two, when Entergy bought the plant, and subsequent to that, they made statements that they had every intention of abiding by Vermont law," Sorrell said.

Sorrell said if Vermont wins the case, that would set significant precedent for other state legislatures that may want to assert their own authority over nuclear power plants. And, he said, the state continues to pursue a separate criminal investigation concerning allegedly false statements Entergy officials made under oath about the existence of underground pipes at the plant, pipes which last year proved to be leaking irradiated water.

Fred Bever is news director of WFCR-FM in Amherst.

How A Federal Court Battle In Vermont Could Recast Nuclear Power (CSM)

By Mark Clayton

Christian Science Monitor, April 20, 2011

A utility company has challenged a state's sovereignty over nuclear power plants within its borders, in a case whose eventual outcome could ripple across the nation.

The owner of the Vermont Yankee nuclear power plant – a subsidiary of New Orleans-based Entergy Corporation – sued Vermont yesterday in federal court, to prevent the state from forcing the 39-year-old power plant to cease operation next March.

Whoever prevails, the precedent could affect the relicensing process for aging reactors nationwide, legal experts agree. There are 104 nuclear reactors, now operating in 31 states across the country, that collectively provide about 20 percent of the nation's electricity. As costs for new construction of a nuclear power plant skyrocket, Entergy is only one of a long line of utilities seeking federal permits to extend – by 20 years – the 40-year licenses held by more than three-quarters of existing reactors.

"This will likely be a landmark case, establishing a dividing line between federal government and states over nuclear issues," says Boris Mamlyuk, an assistant professor at Ohio Northern University College of Law, who has written about the case. "It also holds potential – if the ruling goes for Vermont – to help revive the nuclear safety debate in the US on a major scale."

The case, he and others note, is heightened by public concern over the Fukushima accident and the safety of 28 existing plants in the US with the same design as the Japanese plant – including the Vermont Yankee plant. Some question whether federal oversight is adequate, since the Nuclear Regulatory Commission (NRC) granted a new federal license to the plant – over Vermont's protests – even as the Fukushima crisis was unfolding.

"NRC violated the law by re-licensing the Vermont Yankee reactor at the same time it launched an investigation into whether US safety and environmental standards are strong enough, in light of the Fukushima accident," says Diane Curran, a Washington attorney representing several groups seeking an NRC review of relicensing.

Under existing law, states have definite – if strictly limited – rights regarding nuclear power plants. These included a say in the siting, economics, transmission, aesthetics and other issues. States do not have authority over safety and licensing. That resides squarely with the federal government.

The Vermont case could reinforce those states' rights, expand them – or see them overturned entirely. Entergy argues the federal government has near-complete control over the licensing of nuclear power plants. If the case rises to the US Supreme Court, as some suspect it might, the ruling could sharply curb federal say on nuclear power plants inside state lines.

"Litigation is by far the least-preferred approach," said Richard Smith, president of Entergy Wholesale Commodities, in a statement. "But it is clear our disagreement with the state of Vermont on the scope of its authority over Vermont Yankee cannot be resolved between the two parties."

There are unique issues, too. Unlike other states, Vermont negotiated a 2002 agreement with Entergy, which it amended in 2006, giving the state authority to grant – or not – a state permit, if the company sought to relicense the plant. Last year, the state senate voted 26 to 4 to refuse a new state permit, citing radioactive leaks that went unreported and the collapse of a Vermont Yankee cooling tower in 2007, among other concerns.

Despite these unique elements, Mr. Mamlyuk, Ms. Curran, and other experts say the decision appears to fall under precedent set by a 1983 Supreme Court case in which California succeeded in blocking Pacific Gas & Electric (PG&E) from building new nuclear plants, due to lack of nuclear-waste storage. The case also established "federal preemption" – and the supremacy of federal oversight of nuclear licensing and safety matters.

"If this case were to change the 1983 court decision, then every state would lose the power they've had since joining the union," says Michael Dworkin, former chairman of the Vermont Public Service Board. "We're talking about a state's power over

land use and all powers not expressly taken away by Congress. That's what's at stake if the company convinces the Supreme Court to take away those powers currently granted."

Peter Bradford is less sure the case outcome could broaden state power, but agrees it could provoke Congress to set new terms for the collision between nuclear-power jurisdiction and states' rights.

"This is probably the first major litigation involving [federal] preemption in years," says Mr. Bradford, a former NRC member and former chair of the Maine and New York utility commissions. "It will present some big questions for Congress to solve, no matter the outcome of this case."

Entergy Files Suit To Keep Plant Open (WorldNuclearNews)

World Nuclear News, April 20, 2011

Entergy Corporation has filed a complaint with the US District Court in a bid to prevent the state of Vermont from forcing the closure of the Vermont Yankee nuclear power plant in 2012.

The suit filed by Entergy subsidiaries Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations follows the March 2011 decision by the US Nuclear Regulatory Commission (NRC) to renew the plant's operating licence to March 2032. The single boiling water reactor plant has been in operation since 1972. The state of Vermont remains opposed to the operation of the plant beyond the expiry of its original licence, in March 2012.

The NRC's licence renewal decision, reached after an in-depth review, would normally be sufficient to ensure that a plant could continue to operate. However, in the case of Vermont Yankee, state approval is also needed for it to extend operations -- a condition of the purchase of the plant by Entergy in 2002. Under a memorandum of understanding (MoU) signed at the time, the two Entergy subsidiaries had agreed they would seek a certificate of public good from the Vermont Public Service Board if seeking to operate the plant beyond 21 March 2012. Entergy contests that a law passed by the Vermont General Assembly in 2006 repudiated the MoU, breaching the agreement and excusing the two Entergy subsidiaries' obligation to further comply with that specific provision.

"The 2006 state law took the decision about Vermont Yankee's future away from the Public Service Board, a quasi-judicial expert decision-maker, independent of legislative control," said Entergy Wholesale Commodities president Richard Smith. In so doing, it "placed Vermont Yankee's fate in the hands of political decision-makers," who could deny the plant's continued operation for unsupported or arbitrary reasons. "This is not what we signed up for in 2002," Smith added.

Entergy says it has made considerable efforts to achieve the necessary state approvals to allow the continued operation of the plant without resorting to litigation, including filing for a certificate of public good, offering Vermont utilities favourable terms for long-term power purchase agreements, offering to negotiate a date for commencement of decommissioning activities at Vermont Yankee earlier than the 60-year SAFSTOR period permitted by NRC regulations, and exploring the potential sale of the plant. The company says its recent attempts to sell the plant were stymied by political uncertainty in the state, and "more specifically, due to the stated intent of Vermont officials to shut down the plant."

Smith described litigation as by far the last preferred approach, but the action was taken following a 30 March meeting between Entergy and state governor Peter Shumlin in which the governor reiterated his opposition to the continued operation of Vermont Yankee beyond March 2012.

The suit contends that the state of Vermont is violating the Atomic Energy Act in asserting that it can close a federally licensed and operating nuclear power plant, and the Federal Power Act in making an agreement to provide power to Vermont utilities at preferential wholesale rates a condition of continued operation.

Meanwhile, Governor Shumlin accused Entergy of "attempting to rewrite history." Shumlin states that the 2006 law clearly outlined the requirements for continued operation of a nuclear power plant in the state. "When it purchased Vermont Yankee, Entergy clearly agreed that it must obtain a new state licence to operate beyond March 2012, and that it would not attempt to claim preemption regarding the state's licensing decision," he said. "Vermont has a proper role in granting or denying state approval for Vermont Yankee," he added.

Shumlin Up For Showdown (KEENE)

By Kyle Jarvis, Sentinel Staff

Keene (NH) Sentinel, April 20, 2011

The battle over whether to extend the Vermont Yankee nuclear power plant's operating license beyond March 2012 advanced Monday, as plant owner Entergy Corp. filed suit against the state.

But Vermont officials, including Gov. Peter Shumlin, are crying foul, claiming Entergy is doing exactly what it promised not to do when it signed an agreement after purchasing the plant in 2002.

The lawsuit, an attempt to keep the state from forcing a shutdown of the plant next year, comes on the heels of the federal Nuclear Regulatory Commission's renewal of Vermont Yankee's license for 20 years, allowing the plant to remain online through March 21, 2032.

"They (Entergy) signed a memorandum of understanding to follow all Vermont laws," Shumlin said Monday in a telephone interview. "They supported the legislation passed in 2006 that they're now complaining about."

The legislation Shumlin referred to involves a 2002 agreement between Entergy and state officials that said Entergy would need approval from the Vermont Public Service Board if it hoped to operate the Vernon, Vt., plant beyond March 21, 2012.

In 2006, state officials revisited the law, requiring approval from the Legislature in addition to the Vermont Public Service Board.

Last year, the state Senate voted 26-4 against renewing Vermont Yankee's license.

By doing so, Vermont broke its deal with Entergy, making it more difficult for it to be approved for continued operation, Entergy argued in its suit, because it would need approval from the Vermont Public Service Board as well as the state Legislature.

But Vermont officials said Entergy was onboard with the 2006 legislation, making its suit all the more curious.

"Entergy's lobbyists, executives, and lawyers all participated in that process — indeed, Entergy expressed its support of that law at the time," Shumlin said in a statement released Monday. "Entergy is now attempting to rewrite history, breaking its own promise and its own support of Vermont law."

Shumlin said he's concerned by the Entergy suit because "it flies in the face of commitments made by Entergy."

Entergy's suit cites federal law under the Atomic Energy Act and the Federal Power Act, which says states have no authority over nuclear power plant licensing and prevents states from interfering in regulation of rates in the wholesale power market.

Shumlin said Entergy agreed it would not cite this provision when it came to licensing matters.

In a statement Monday, the Vermont delegation agreed.

"It appears that Entergy has developed a bad case of corporate amnesia in refusing to honor an agreement it signed with the state in 2002," officials said in the statement. "Entergy agreed to waive any claim that federal law preempts the jurisdiction of Vermont."

Entergy said it has done everything in its power to appease the state, including filing a petition for a certificate of public good in 2008 required by the state, offering Vermont utilities a 20-year power purchase agreement at reduced rates, offering to establish a "date certain" for starting the plant's shutdown process and trying to sell the property.

Entergy said it has been unable to sell the property due to the uncertain political climate in Vermont, and because of the stated intent by Vermont officials to have the plant closed next year.

Shumlin said he's confident about what's to come.

"We'll make sure the Attorney General's Office has all the resources it needs to argue this case in court," he said.

Vt. Has Ways To Pressure Yankee (RUTHER)

By Peter Hirschfeld

Rutland Herald, April 20, 2011

MONTPELIER — When Entergy Corp. sued in US District Court on Monday to keep Vermont Yankee operating, the fate of the nuclear plant appeared to have been placed in the hands of a federal judge.

However, lawmakers say that even if the plant's owners emerge victorious, the Legislature and state regulators will retain considerable power over the facility's ability to operate beyond 2012.

From new taxes to more burdensome regulations, Vermont could undermine Vermont Yankee's ability to profitably run its 660-megawatt reactor in Vernon.

"The state has a whole lot of ways in which they could make it more expensive for Entergy to continue to operate the plant in the event the Supreme Court eventually rules the state has no authority to actually shut the plant down," said Patrick Parenteau, a Vermont Law School professor who formerly headed the school's Environmental Law Center and the Environmental and Natural Resources Law Clinic.

Legal observers say the case is likely headed for the Supreme Court, where justices will determine whether the federal Atomic Energy Act of 1954 supersedes states' ability to reject nuclear power plants.

"I do think the case could end up in the Supreme Court," Parenteau said. "And we could get into that question: Does federal law totally and absolutely pre-empt state law?"

Parenteau said it's unlikely the Supreme Court would reach that conclusion, especially in light of a 1983 decision in which the court upheld states' authority over certain aspects of nuclear oversight.

Even if the court did grant absolute authority over nuclear power to the federal government, Parenteau said, "it certainly doesn't pre-empt states' regulation over things like water quality."

Rep. David Deen, D-Westminster, chairman of the House Committee on Fish, Wildlife and Water Resources, said Vermont's authority over "thermal discharges" into the Connecticut River lends it considerable influence over the cost at which Yankee is able to produce nuclear power.

Thermal discharges are governed by a National Pollution Discharge Elimination System permit, issued by the state of Vermont.

Water-quality standards, according to Deen, stipulate that industrial operations cannot raise ambient water temperatures in Class B waterways like the Connecticut River more than 1 degree.

Under an exemption allowed in the federal Clean Water Act, the state allows Vermont Yankee, which uses water from the river to cool its reactor, to raise river temperatures by 6 degrees.

"But that does not mean we have to issue that exemption," Deen said.

The exemption allows Vermont Yankee to keep idle the 22 cooling towers that would otherwise cool the reactor. Revoking that exemption, according to Deen and Parenteau, could increase Yankee's operating expenses dramatically.

"The state could insist Vermont Yankee use its cooling towers year-round, instead of allowing them to shut down," Parenteau said. "Entergy claims it costs \$1 million a day to run those towers. I don't know if that's true, but certainly that could impose significant new costs."

Deen said "there are a couple of ways Entergy could be forced to be a better neighbor, and they could be very expensive."

Reducing the "shine" — a term that refers to levels of radioactivity — at the boundary of the plant property to zero, for instance, could force costly additions of lead cladding, Deen said.

"The Department of Health could say they have to go to zero, and that would be a huge retrofit," Deen said. New restrictions might not make it financially impossible for Yankee to continue to operate beyond 2012, Deen said.

"'Impossible' is a big word," he said. "But it could certainly make operations much more expensive and more demanding."

Lawmakers also could levy additional taxes, a tool Parenteau said the state would retain regardless of the outcome of the court case.

"(Gov. Peter Shumlin) has proposed in the past a waste storage tax, and there is nothing in the Atomic Energy Act that prohibits that," Parenteau said.

Sen. Ginny Lyons of Chittenden County, chairwoman of the Senate Committee on Natural Resources, said if Vermont Yankee is to continue operating, the communities near which it stores radioactive waste should be compensated handsomely.

"And I feel strongly that all communities in the state should benefit financially from allowing the owners of Vermont Yankee to store their spent fuel here," Lyons said.

Shumlin has said he's readying a proposal for a tax on radioactive waste for consideration in next year's legislative session.

Parenteau said the state could impose other financial burdens on Entergy. According to recent projections, the company's decommissioning fund — money needed to retire the plant when it does shut down — is short by as much as \$400 million.

"The state is free to impose additional decommissioning costs on operating nuclear power plants beyond what the Nuclear Regulatory Commission would require," Parenteau said.

Vermont could also seek monetary damages for groundwater contamination caused by tritium leaks.

"The state could certainly require a total cleanup, and that's an expensive proposition," Parenteau said.

Entergy Files Suit To Keep Vermont Yankee Open (ENERCOL)

Energy Collective, April 20, 2011

This morning, Entergy filed suit to keep the Vermont Yankee plant open by requiring Vermont to honor its signed contracts. The State of Vermont signed a Memorandum of Understanding with Entergy in 2002. The State has attempted to amend that contract on a one-sided basis. Entergy's lawsuit was described in a Burlington Free Press article this morning. You can also download the filed lawsuit [here](#).

According to the Memorandum of Understanding (page 6) the parties "expressly and irrevocably decree that the Board (Public Service Board)(1) has jurisdiction under current law to grant or deny approval of operation of VYNPS beyond March 12, 2011."

However, in 2006, the legislature voted that the PSB could not issue such a certificate without legislative approval (Act 160). This was basically a one-sided change to a written contract. There are tons of precedents that one side cannot change a contract without the other side's approval. Let's see the list of such precedents.

According to the Vermont Yankee press release, there are further precedents, not closely related to Act 160. (Note, the precedents cited above are my opinions, not taken from Entergy documents.) Here's a quote from that release about some nuclear and interstate commerce law precedents.

The Governor

Not surprisingly, it comes down to Shumlin again.

Another quote from the press release:

In a meeting with Entergy representatives on March 30, 2011, the governor reiterated his firm opposition to the operation of Vermont Yankee after March 21, 2012.

Ah well. At least he's consistent, I suppose. He campaigned against Vermont Yankee, and he was losing. Then he began campaigning on reproductive rights and healthcare and sneaked to victory.

Was I Behind the Curve on This?

Sometimes, I think I am the last person to know these things. Do you remember this chart of Vermont's Committed Resources that I put in my blog several weeks ago? The chart comes from a Department of Public Service presentation from March of this year. Note that Vermont Yankee electricity supply doesn't end on March 21, 2012, but continues for a while. If there's a lawsuit, the plant can almost certainly keep running while the suit continues. Why didn't I notice this aspect of the chart before?

Entergy's Half Truths (RUTHER)

Rutland Herald, April 20, 2011

Entergy's bag of tricks is empty so it has had to resort to bullying and half truths.

That is the conclusion that must be drawn from the company's decision to sue the state of Vermont in an effort to set aside Vermont law concerning its bid to renew the license of the Vermont Yankee nuclear power plant for another 20 years.

When Entergy bought Vermont Yankee in 2002, it signed an agreement stating it would not seek to operate beyond 2012 without approval from the state Public Service Board. It also stated expressly that it would not seek to undo that commitment by arguing that federal law pre-empted state law on the operation of the plant. But that is exactly the argument Entergy is making.

In 2006 the Vermont Legislature passed a law approving storage of nuclear waste in dry casks, and as one condition of that approval established that the PSB would not have the power to grant a license extension to Vermont Yankee without approval of the Legislature.

Since then Entergy's stewardship of Vermont Yankee has been a fiasco. Physical problems at the plant have included the collapse of cooling towers, a highly visible sign of the inadequate resources devoted to the plant's upkeep, as described by the report of an independent review panel. And there was the leakage of radioactive water into the groundwater from pipes whose existence the company originally denied.

Physical problems at the plant have been compounded by the mistrust generated by company policy and the lack of truthfulness of company officials. It was not lost on Vermonters that the company had failed to contribute to the decommissioning fund it would need to pay for the closing and cleanup of the plant. Then when Entergy sought to spin off ownership of Yankee to a highly indebted independent corporate entity, it was a warning sign that the company was seeking to escape its responsibilities through shady Wall Street-style maneuvering.

The company has since abandoned its proposed spin-off, and it has also failed to sell the plant to another potential owner. Further, the likelihood that the Legislature will approve continued operation of the plant is nil. Last year, the Senate voted decisively not to extend Vermont's license to operate, and without approval from both houses of the Legislature and the signature of the governor, the PSB has no authority to consider Entergy's request for a license extension. In a desperate gesture before the Senate vote last year the company dangled the possibility of a favorable contract for Vermont utilities, but the Senate did not fall for it. Peter Shumlin, then a senator and now the governor, has said Vermont cannot be bought.

Entergy argues that Vermont has changed the rules of the game. It believes the 2006 law abrogated the 2002 agreement, though it raised no objections at the time. What it did for the next five years was collect millions of dollars in profits on the basis of the 2002 agreement. Michael Dworkin, professor of law and former chairman of the PSB, says that Entergy's silence on that issue for five years will be telling in a court of law.

Entergy's legal arguments depend on half truths. It argues correctly that a 1983 US Supreme Court case established that the Nuclear Regulatory Commission is the body that rules on nuclear safety and that state laws on nuclear safety are pre-empted

by federal law. What Entergy does not say is that the same Supreme Court decision found that states have the right to regulate nuclear power plants on other issues, such as reliability, land use, and rates.

Entergy has agreed to submit to the findings of the PSB, a state board whose powers are established by the Legislature. Now Entergy is seeking to renege on its agreement. It is acting like a corporate bully in an attempt to salvage its bad investment in Vermont Yankee. The state of Vermont must mount a strong defense of Vermont law as a rebuff to Entergy's arrogant evasion of responsibility and disregard for the truth.

Security Exercises Planned For Indian Point (MIDHUD)

Mid-Hudson News, April 20, 2011

Entergy will be conducting security training drills at the Indian Point Energy Center the evening of April 19 and April 28 using simulated weaponry that sounds like actual gunfire.

During the drills, persons near the site may hear the sound of simulated gunfire as participants carry out simulated attack scenarios that are intended to be as realistic as possible.

Local law enforcement agencies have been informed of the events.

Entergy will be using a technical innovation for the exercise known as "MILES" gear, or Multiple Integrated Laser Engagement Systems. They use laser "bullets" and vests with laser detection equipment, and duplicate the effects, including the sound, of live ammunition. MILES gear is used for military and counter-terrorism training across the country to be as realistic as possible without using real bullets.

AZ Nuke Plant Offers Look Inside (ADS)

By Griselda Nevarez

Arizona Daily Star, April 19, 2011

WINTERSBURG - When this reactor at Palo Verde Nuclear Generating Station is operating, no one, let alone a group of reporters, is allowed into this viewing area overlooking its core.

But on this day, when Unit 2's reactor is having its fuel rods replaced, plant officials are using the opportunity to show how Palo Verde is different from the Japanese nuclear power plant that's leaking radiation after a devastating earthquake and tsunami.

The differences start, they say, with the containment walls towering above the core. Much thicker than those in the Fukushima Dai-ichi plant, the steel-reinforced concrete walls can withstand the impact of a jumbo jet or a 300 mph tornado.

The interior of the containment dome is 10 times more spacious than the containment buildings in Japan, meaning they would be better able to absorb energy during an emergency, plant officials say.

While the general public isn't allowed this far inside the plant, Bob Bement, senior vice president of site operations, said Arizonans should understand that Palo Verde was engineered to maximize safety.

"It is important that the public learn about nuclear power," he said. "Nuclear power, I believe, is part of our future."

Palo Verde, which Arizona Public Service runs on behalf of several power companies, is the largest nuclear generating facility in the US and supplies electricity to about 4 million customers in Arizona, California, New Mexico and Texas.

While concerns about Japan weren't the only reason for the tour, events there are informing how Palo Verde's operators prepare for emergencies.

In the plant's response room, workers were going through responses to scenarios involving a power outage similar to the one that occurred at the Japanese plant.

During a power outage, Bement said, Palo Verde would have access to multiple sources of backup electricity, including emergency diesel generators and sets of batteries in each unit.

Palo Verde officials now are modifying procedures so the plant can operate on battery power for up to 72 hours if backup generators malfunction, Bement said.

"Now that we've seen a plant that lost off-site power and lost all of their backup AC power for an extended period of time, we will train on that," he said.

Employees in the response room also have been monitoring the Japanese plant and are working with the US Nuclear Regulatory Commission and the Institute of Nuclear Power Operations to improve ways the plant would share information with the public in an emergency, said Michael Powell, who is part of the plant's crisis team.

As the reporters cross a four-story-high walkway into the turbine building at Unit 1, the sweeping desert view illustrates the operators' primary argument that this plant is nothing like the one in Japan.

Palo Verde, which is about 50 miles west of downtown Phoenix, is located far from the ocean and away from areas prone to major earthquakes.

"This is an excellent location, and it was picked looking at how to design a plant and where to design it," Bement said.

Although the plant isn't close to a large body of water, it has enough water on-site - treated effluent - to cool its reactors for a year.

The plant's biggest risks include an earthquake, the possibility of a 100-year flood and dust storms, but Dwayne Carnes, a communications consultant who was recently the assistant plant manager for Unit 2, said Palo Verde is prepared to withstand all of those.

And while the federal government has frozen efforts to build a central repository for spent nuclear fuel from plants across the nation, Palo Verde is in a good position to store its fuel, Carnes said. Tall storage cylinders with 28-inch-thick concrete walls house the waste, and the plant has enough land to keep increasing its storage capacity indefinitely, he said.

Turkey Point: Congressional Members Tour FPL's South Florida Nuclear Power Plant (FLSUNSEN)

South Florida Sun-Sentinel, April 20, 2011

MIAMI DADE COUNTY—

In the wake of the ongoing nuclear meltdown in Japan, members of a congressional delegation on Monday toured FPL's Turkey Point nuclear power plant, and said they are reassured the South Florida facility is safe.

US Reps. Ileana Ros-Lehtinen, Frederica Wilson, Mario Diaz-Balart and David Rivera said they still support nuclear energy but promised to keep vigilant.

"We understand how different this facility is from the facility in Japan," Ros-Lehtinen said. "So we have a responsibility to reach out to our constituents, explain what the dangers, and the problems, and the challenges are — and allay their fears."

One of the differences between the two plants, said FPL spokesman Michael Waldron, is a backup cooling process that runs on steam when generators fail, which is what happened in Japan.

Delegation members still had concerns. Wilson questioned the safety of the storage of the facility's spent fuel.

"I am concerned that no matter how secure that waste is kept in a sealed room, or container, or box — or how many levels of cement that they have put there — there's always some way," Wilson said. "Some terrorist, some kind of activity [could] take place that would destroy that."

At the Turkey Point plant, spent fuel is stored in cooling pools. The plant is building a "dry" storage facility, which would store the material in airtight steel-and-concrete canisters, according to the power company. FPL says both storage methods have been used safely for more than 20 years.

Security measures to enter the facility also were an issue, Wilson said. The plant is guarded by screened personnel, features concrete barriers and a crash-resistant gate, according to FPL. But while an armed guard stood at the plant's entrance on Monday, Wilson said the gate was unstaffed the day before on a pre-visit.

The congressional delegates were given a safety briefing and toured the facility. Then the delegates packed into a control room simulator, with wall-to-wall gauges, switches and flashing lights. Plant officials ran a simulation of what would happen should the plant lose power, which happened in Japan.

In less than 30 seconds, the simulation showed the plant had switched to its diesel generators and was producing power again. Officials were assured that the generators are protected in buildings meant to withstand earthquakes, floods and hurricanes.

"This plant is designed for anything way beyond anything that is expected in this area — as far as an earthquake, as far as flooding," said Greg Laughlin, operation training supervisor with FPL.

Beyond Nuclear Petitions US NRC For Suspension Of 21 Atomic Reactor Licenses In Wake Of Japanese Nuclear Catastrophe (Common Dreams)

Watchdog group alleges General Electric Boiling Water Reactor Mark 1 design's weak containment, inadequate experimental venting back fit, and radioactive waste storage pool are accidents waiting to happen

Common Dreams, April 20, 2011

Today the US Nuclear Regulatory Commission (NRC) docketed an emergency enforcement petition filed by the environmental watchdog group Beyond Nuclear. Beyond Nuclear's petition calls for the suspension of operating licenses at 21 General Electric Boiling Water Reactors of the Mark 1 design (GE BWR Mark 1s). Beyond Nuclear has filed the petition in the wake of catastrophic failure of just such containment systems at identical atomic reactors in Fukushima, Japan at the Dai-Ichi

nuclear power plant. In addition, Beyond Nuclear has highlighted the extreme risk posed by GE BWR Mark 1 high-level radioactive waste storage pools, at a total of 24 such reactors in the US, which lack emergency backup power supplies for circulating cooling water in the event of a loss of electricity from the primary grid. Lack of cooling water circulation in high-level radioactive waste storage pools can result in boil off, subsequent irradiated nuclear fuel fire, and large-scale releases of hazardous radioactivity directly into the environment, as has occurred at Fukushima Dai-Ichi Unit 4.

Beyond Nuclear's Reactor Oversight Project Director, Paul Gunter, has identified 21 GE Mark 1 BWRs in the United States that utilize the Fukushima Dai-Ichi style, free-standing primary containment structure composed of a carbon steel drywell, connected by large diameter piping to the carbon steel suppression chamber referred to as the wet well or torus, which altogether comprises the safety-credited pressure suppression containment system. The 21 GE BWR Mark 1 atomic reactors at risk of catastrophic containment failure in the US are, in alphabetical order: Browns Ferry Units 1, 2, and 3 in Alabama; Cooper Unit 1 in Nebraska; Dresden Units 2 and 3 in Illinois; Duane Arnold Unit 1 in Iowa; Fermi Unit 2 in Michigan; Fitzpatrick Unit 1 in New York; Hatch Units 1 and 2 in Georgia; Hope Creek Unit 1 in New Jersey; Monticello Unit 1 in Minnesota; Nine Mile Point Unit 1 in New York; Oyster Creek Unit 1 in New Jersey; Peach Bottom Units 2 and 3 in Pennsylvania; Pilgrim Unit 1 in Massachusetts; Quad Cities Units 1 and 2 in Illinois; and Vermont Yankee Unit 1 in Vermont.

"The Fukushima Dai-Ichi nuclear catastrophe in Japan has dramatically illuminated the grave risks and unforgiving consequences of a severe accident combined with the fundamental failures of the GE BWR Mark 1 containment concept, design, construction, and subsequent experimental retrofit which unsuccessfully attempted to mitigate these significant flaws," said Gunter. "Any loss of cooling to the reactor core could lead to pressure build up that could breach these old, small, weak, badly designed and built containment structures," he added.

Gunter recounted that high-level US nuclear power regulators have long identified the undue risks associated with GE BWR Mark 1 type containments. In 1972, Dr. Stephen Hanauer of the US Atomic Energy Commission (AEC) warned about the buildup of explosive hydrogen gas during a reactor core accident in such relatively small containment structures, and urged that "the AEC adopt a policy of discouraging further use of pressure suppression containments....".

At Fukushima Dai-Ichi Units 1, 3, and 4, such hydrogen explosions severely damaged or entirely destroyed the secondary containment buildings. This happened despite attempts, in the earliest days of the Fukushima Dai-Ichi nuclear catastrophe, to vent radioactive steam into the environment in an effort to prevent catastrophic rupture of the containment structures.

Also, at Fukushima Dai-Ichi Unit 2, failure of the containment venting system led to a large hydrogen explosion within the primary containment structure which has very likely severely damaged the wet well/torus, creating a direct pathway to the environment for hazardous radioactivity releases. This is made all the worse by the likelihood that the Fukushima Dai-Ichi Unit 2 nuclear fuel core has melted through the bottom of the reactor pressure vessel.

"It is unreasonable to back fit an identified severe design flaw with a venting system to deliberately defeat the purpose of a leak tight containment in order to save it from catastrophic failure based on the unlikelihood that the task will be required," Gunter surmised.

In addition, safety concerns over the substandard Mark I pressure suppression containment system were again affirmed in 1986 by Dr. Harold Denton, Director of Nuclear Reactor Regulation at NRC. Denton told a nuclear industry conference that this flawed reactor containment type has as high as a 90% chance of failure if challenged by severe accident conditions.

Beyond Nuclear's emergency enforcement petition, brought under Title 10, Part 2.206 of the Code of Federal Regulations, also calls for emergency diesel generators and backup batteries to be connected to 24 GE BWR Mark 1 reactor units' storage pools for high-level radioactive waste. Currently, these elevated storage pools for irradiated nuclear fuel are located outside of credited primary containment structures and lack "Class E1" safety-related backup power supply systems in the event of a loss of electricity from the primary grid for running cooling water circulation pumps. These 24 pools include those at the permanently closed Millstone Unit 1 atomic reactor in Connecticut, as well as the Brunswick Units 1 and 2 atomic reactors in North Carolina.

"It is incredible that pools for storing high-level radioactive wastes in the US are not connected to emergency backup power supplies," said Kevin Kamps, Radioactive Waste Watchdog at Beyond Nuclear. "Any loss of the electrical grid – whether due to tornadoes, hurricanes, ice storms, or even wildlife or tree branches touching power lines – could begin pool boiling within hours, leading to complete boil off within a day or two, followed by a radioactive waste inferno within hours of the irradiated nuclear fuel losing its cooling water cover," Kamps added.

"Whereas Fukushima Dai-Ichi Unit 4's pool contained around 130 tons of high-level radioactive waste, pools in the US are crammed with significantly more," Kamps added. "For example, Fermi Unit 2 in Michigan – the largest GE BWR Mark 1 in the world – has well over 500 tons of high-level radioactive waste crammed into its pool. This means that without the primary electrical grid, the pool could begin boiling in just over four hours, could boil dry and catch fire all that much more quickly, and the

consequences downwind would be multiple times worse than the still-unfolding catastrophe at Fukushima Dai-Ichi Unit 4's pool," Kamps concluded.

A 1997 study commissioned by the NRC estimated the median consequences of a high-level radioactive waste storage pool fire, which included: 54,000 to 143,000 latent cancer deaths downwind; 770 to 2,700 square miles of agricultural land condemned; and economic costs due to evacuation of \$117 to 566 billion (\$158 to 765 billion when adjusted for inflation to current dollar values).

Beyond Nuclear's 2.206 emergency enforcement petition, and NRC's docketing announcement, are posted at the top of Beyond Nuclear's homepage, www.beyondnuclear.org, and can be provided upon request.

Fleischmann, DesJarlais Endorse Nuclear Facility (KNOXNS)

By Bob Fowler

Knoxville News Sentinel (TN), April 20, 2011

KINGSTON — The two US congressmen who represent Roane County voiced support Tuesday for plans by TVA to build a modular nuclear power plant at the old Clinch River Breeder Reactor site.

Freshmen Republican lawmakers Scott DesJarlais and Chuck Fleischmann gave their endorsements Tuesday during a get-together in the headquarters of the Roane Alliance.

The first-ever event offered local officials and Roane Alliance members a chance to "get to know our congressmen," said Leslie Henderson, president and CEO of the county's economic development organization.

Fleischmann called the modular reactor proposal the "wave of the future."

"We've got to have nuclear power," he said, calling it part of the solution to the country's long-term energy needs.

While TVA's concept is now seen as something that could happen in 10 years, "I'd like to see it expedited," DesJarlais said.

The breeder reactor site is a 1,364-acre tract owned by TVA next to the Clinch River in Roane County. That cutting-edge reactor project was abandoned in the 1980s.

DesJarlais represents all or parts of 24 counties in the 4th Congressional District, which includes parts of Middle and East Tennessee.

Fleischmann's 3rd Congressional District includes 11 East Tennessee counties in a narrow swath that stretches from Kentucky to Georgia.

They each represent part of Roane County.

Both men were swept into office in the Republican takeover in November of the US House of Representatives.

"I was very pleased to have both of our congressional representatives in the same room at the same time," Kingston Mayor Troy Beets said of Tuesday's event.

Despite warning that deep cuts must be made in the federal budget to stem the deficit, Fleischmann also said he has a "steadfast commitment" to Oak Ridge National Laboratory, the Y-12 nuclear weapons plant and the ongoing cleanup of the former K-25 uranium enrichment site.

"We're fortunate to have two congressmen ... that have great interest in what is going on here," said Bob Eby, manager of USEC's Oak Ridge site.

USEC provides uranium for commercial nuclear power plants and has a testing facility at the former K-25 site, now called East Tennessee Technology Park.

Jim Gann, president of Roane Medical Center, was one of the 40 attendees at Tuesday's luncheon. He said the two lawmakers "are committed to controlling the government's financial problems, primarily by controlling unnecessary spending."

Malloy Opposes Millstone Nuclear Tax (HARTBZ)

By Brad Kane

Hartford Business, April 20, 2011

Gov. Dannel Malloy says he opposes the proposed tax of the Millstone nuclear plant in Waterford, which forced the facilities owners to consider closing Connecticut's largest producer of electricity.

The proposed electric generators tax in Senate Bill 1176 would have raised \$340 million in taxes annually, with \$332 million of that money coming only from Millstone. The proposal passed the Energy & Technology Committee in a 12-9 vote and was being considered as part of the larger tax package in the state budget.

Dominion, the owner of Millstone, said the tax would have been passed onto consumers in their electric bills and eventually would have forced the shutdown of the two nuclear reactors in Waterford. The plant employs more than 1,500 and generates half of the electricity produced in Connecticut.

"We are encouraged to hear that the governor does not support Senate Bill 1176," Millstone spokesman Ken Holt said. "This massive tax will result in higher electricity rates and will send a terrible signal to businesses within the state and those considering moving here."

Malloy still favors a tax on electricity generation, although much smaller and spread out over all the electricity generators in Connecticut, which includes natural gas, coal and oil plants as well. Malloy's proposed tax would generate \$60 million per year, with half coming from Millstone.

Dominion officials have expressed their concerns to Malloy about the smaller tax, as well, Holt said. Any tax will result in the costs being passed onto the consumer.

Defeat Tax On Power Plants (HARTC)

Hartford Courant, April 20, 2011

A bill that would multiply by 10 the tax burden on the Millstone nuclear power plants is the legislative equivalent of a tax-policy Hail Mary that would generate \$342 million in taxes, but would be extraordinarily punitive to one corporation and send a bad message about the state's friendliness to business. It should be defeated.

Under the proposed measure, Millstone would be charged 2 cents per kilowatt hour for the electricity it produces, for a tax of about \$335 million annually. Another \$7 million would come from coal and oil-fired power generators, which would be taxed at a lower rate. Gas and alternative fuels plants would be exempt.

Millstone's tax burden would equal nearly half the total "corporation business taxes" (the largest of business taxes) paid by all companies in Connecticut. To expect one company to shoulder that much of the state's revenue burden flunks the fairness test. This proposed tax is based on a new law that was expressly aimed at skimming nuclear generation profits.

Millstone's parent company, Dominion, purchased the three nuclear generation stations in Waterford in 2001 for \$1.3 billion. Dominion has spent more than \$600 million on improvements, with an expectation of market and tax conditions remaining stable.

Proponents of the new tax argue that the Millstone plants benefit from arcane pricing rules, set by government regulations, that pay nuclear generators the same high price for their low-cost nuclear-generated power as is paid to generators using more expensive fuel.

Dominion has long refused to open its books, but its profitability is unquestioned. Even so, a business should not be singled out for operating successfully within the existing rules. The regulations on the pricing of electricity should be modified in a way that would allow market forces to determine the price paid to Millstone, rather than an artificially inflated price.

Millstone currently pays about \$35 million yearly in state and local taxes, which includes \$19.2 million in property taxes annually to Waterford. (If the new tax is approved, it would lower the plants' net income, and the property tax would go down.)

Backers of the new tax insist that the cost would not be passed along to customers in higher rates. Millstone's existing contracts for electricity may keep rates steady for a year or two. But after that, ratepayers may feel the increase, according to the legislature's nonpartisan Office of Fiscal Analysis. Such a tax may inevitably end up on ratepayers' bills, driving Connecticut's highest-in-the-nation electric rates even higher – which is friendly neither to businesses nor consumers.

Dominion officials, aware of this state's budget problems, seem willing to go along with a significantly smaller tax proposed by Gov. Dannel P. Malloy that would cost Millstone about \$33 million. That would still double Millstone's current state and local tax payments – but at least it's not a ten-fold tax. Although more palatable, this remains a generation tax, which a number of states have considered and rejected. Should this lower tax rate be approved, the law should include a provision to revisit its implementation when the next two-year budget is being drawn.

Pull Nuke Tax Plug (NLDAY)

New London (CT) Day, April 20, 2011

Amid all the heated debate over the state budget, we're pleased to learn that Gov. Dannel P. Malloy is keeping a cool head in opposing an ill-conceived plan to impose a new tax of about \$335 million a year on nuclear electricity generation at Waterford's Millstone Power Station.

The proposed legislation, intended to increase revenues and therefore lower tax bills, would have produced the exact opposite effect by driving up costs for Millstone's owner, Dominion Resources Inc., that eventually would be passed on to residential, industrial and commercial consumers.

The business community has long faulted Connecticut for high operating costs compared to other states, and rising electric rates would have driven many to scale back, cut jobs or, even worse, move elsewhere in the country. Dominion itself had warned that the tax, if approved, would force it to close one or more of Millstone's operating reactors.

Proponents of the new tax had unfairly lumped nuclear power with "dirty" and "dangerous" oil- and coal-powered electric generators they said should be penalized to reward such "good" sources as natural gas, wind and solar power.

We're all for increasing the development of renewable sources of electricity, but also insist that nuclear power must remain a significant component of any plan to reduce our dependence on oil and coal.

In light of the ongoing crisis at Japan's Fukushima Dai-ichi plant that was damaged during last month's earthquake and tsunami, authorities must pay even closer attention to nuclear-power safety. We cannot afford otherwise - just as we cannot afford to drive away existing businesses or discourage new ones from relocating to Connecticut.

Meanwhile, Gov. Malloy, who voiced his objections to the new nuclear tax during a radio interview Monday, has proposed a smaller tax on nearly all electric-generating plants that would raise about \$50 million. While this newspaper is not completely sold on the new tax, we at least support the idea that the burden of any additional levy be shared by other power generators.

Concerns About Taxation (HARTC)

Hartford Courant, April 20, 2011

After reading the April 19 Courant, here are three concerns:

Page A12 carries a full page ad from Millstone Power Station telling us that we already pay the highest electricity rates in the region.

Page B1: Gov. Dannel P. Malloy is explaining how he wants to tax Millstone nuclear plant [CTNow, "Malloy: 'Millstone Tax' Won't Be Passed"].

This will mean another tax on everyone.

Page A9: Standard & Poor's tells us that our nation's credit rating is about to be lowered below the AAA rating [Business, "S&P Warns Of Potential Cut In US Credit Rating"].

Although the S&P part is national problem, it, along with the other two points, shows a profound mindset to tax every thing possible to cure our problems. Total taxation does not work. Meanwhile France, Germany and the United Kingdom have all got their financial houses in order without laying on extra taxes.

Donald V. Clark,

East Lyme

Editorial: Tax Grab From South Of The Border (NORAND)

North Andover (MA) Eagle Tribune, April 20, 2011

We're used to New Hampshire residents tweaking Bay Staters' noses over the fact we pay an income and sales tax and they don't. But now our neighbor to the south, Connecticut, is asking at least some Massachusetts consumers to pay a tax from which its own residents would be exempt.

According to the Massachusetts Municipal Wholesale Electric Co., whose members include utilities in Peabody, Danvers, Georgetown, Ipswich, Marblehead, and Middleton, the Connecticut General Assembly is considering a new tax on the power generated at the Millstone nuclear power plant. They say the revenue is needed to close a gaping hole in the state budget. MMWEC owns 4.8 percent of Millstone Unit 3, and officials estimate the tax would cost consumers in its member communities an additional \$9.3 million a year.

Connecticut's privately owned utilities have said the tax would be absorbed within the current rate structure and thus have no impact on consumers there.

"Such a tax is at the very least unfair," MMWEC spokesman David Tuohey declared in a release issued last week. "Massachusetts public entities are not responsible for Connecticut's budget problems and they should not be responsible for paying to correct those problems."

MMWEC communities have financial problems of their own. Their residents should not be expected to help Connecticut deal with its fiscal woes as well.

Proposed Millstone Tax Is Discriminatory (NLDAY)

By Bill Forrestt

New London (CT) Day, April 20, 2011

As a reactor operator at Millstone Power Station I am disappointed with The Day's continued inadequate coverage of a proposed state generation tax that would cost the company about \$330 million annually.

Senate Bill 1176 represents a gross abuse of legislative power. No other state has ever enacted such a discriminatory, crippling tax. Dominion has come into our state and turned Millstone station around while being a model corporate citizen. It has

worked hard at improving operations while minimizing environmental impact, operated within the rules the state wanted (deregulation) and now certain legislators are trying to steal as much profit as they can. If this was Google or General Electric the legislators would not be doing this. But since the legislators realize that Dominion can't move the plant, they are going to stick it to the company. This bill is an embarrassment to the entire state. Consider:

◆ The legislators who wrote this bill claim the Millstone tax would not be passed to ratepayers. This couldn't be more wrong. Millstone is one of the cheapest energy sources and comprises more than one-third of state generation. If Millstone stops generating because of this tax, the laws of supply and demand will take over and electricity prices will go up.

◆ Millstone brings \$1.2 billion into the region and state every year. Plant closure would be devastating. Up to 4,000 jobs would be lost, yet there has been insufficient coverage on this.

◆ Connecticut has the highest electricity prices in New England because we tax the most. All of New England is in a common power pool called ISO New England. So, why is it that surrounding states have cheaper rates with the same bidding pool? The answer is in all the additions to our monthly energy bills. One addition was set to go away last year, but the state kept taking the money. Rather than let the charge expire, the state grabbed the money and kept the charge going.

◆ The added \$330 million per year isn't earmarked toward paying off the budget shortfall, but to fund developing green energy sources in state. Because a few legislators want to go green, Millstone should be forced out of business by a \$330 million tax? Are you kidding?

The Day should use investigative reporting and produce all the facts about this bad proposal. It is clear that certain members of the Energy and Technology Committee have an agenda to develop green energy sources at any cost. Are we sure that the people of Connecticut want this? Furthermore, what are the qualifications of the people making these decisions?

Bill Forrestt works at the Millstone Power Station in Waterford.

Crowded, Complicated Agenda Awaits New Nuclear Chief (GWIRE)

By Hannah Northey

Greenwire, April 20, 2011

The Department of Energy's new assistant secretary for nuclear energy yesterday started his job, which will force him to help craft a US response to an international nuclear crisis, help jump-start the US nuclear industry and wrestle with a long-standing question of where to put America's nuclear waste.

Assistant Secretary Peter Lyons will oversee research with significant implications for the development of new reactors, the life span of the existing fleet, the choice of fuels and the storage of wastes.

The Obama administration has stood firm in support of nuclear power, even as questions about the safety of US reactors surfaced in the wake of the crippling of Japan's Fukushima Daiichi nuclear complex by a March 11 earthquake and tsunami.

A slowdown in US nuclear permitting or increased regulation could hinder what little momentum the American nuclear-power industry has seen in past years. The last new US nuclear plant to come online was Unit 1 of the Tennessee Valley Authority's Watts Bar nuclear plant, which came online in 1996.

Lyons said during an interview last Friday that he believes nuclear power is a clean fuel and hopes to ramp up deployment of small modular reactors. The administration is requesting \$67 million for fiscal 2012 for a cost-share program with industry to deploy the technology, adaptations of the mammoth traditional nuclear plant that would be smaller and more interchangeable and would potentially cost less.

"We're extremely optimistic that the small modular reactors could offer a new paradigm for nuclear power," Lyons said.

Even so, industry giants like General Electric Co. say the modular reactors are more politically charged than economically sensible, and have cast doubt on widespread production of the plants (Greenwire, March 10).

Lyons said research at DOE's Office of Nuclear Energy could be relevant in addressing safety concerns that emerge from the Nuclear Regulatory Commission's nationwide review of nuclear plants.

The NRC launched a short-term review of the regulatory requirements, programs and processes for US nuclear plants in response to the Japanese crisis. The agency will report its findings throughout the summer and conduct a longer-term review once more information is known about the situation in Japan.

DOE is researching fuel claddings -- the outer layer of the fuel rods -- that use silicon carbide, material that is stronger and more durable at high temperatures than traditional materials.

The department is also investigating fuels with different "shapes" and conductivities, from which heat could be more easily extracted.

Lyons has a long history of overseeing such programs and providing science-based advice to policymakers.

He served as DOE's acting assistant secretary of Energy since Warren "Pete" Miller left the position last November, and as the agency's principal deputy assistant secretary since September 2009(Greenwire, Dec. 10, 2010).

Before that, Lyons served from 2005 to 2009 as a member of the Nuclear Regulatory Commission, where he focused on the safety of operating reactors and on lessons from operating experience.

Lyons was also a science adviser to former Sen. Pete Domenici (R-N.M.), who chaired the Senate Energy and Natural Resources Committee from 2003 to 2007. Domenici was known as a staunch supporter of nuclear power, the "father of the nuclear renaissance."

Yucca Mountain

Lyons, in line with the shared opinion of the Obama administration, is an outspoken critic of using Yucca Mountain in Nevada as a deep geologic nuclear waste repository.

President Obama zeroed out financial support for constructing the repository at Yucca Mountain in the fiscal 2011 budget proposal, and DOE last year began to pull its site-development application from before the Nuclear Regulatory Commission.

House Republicans have since challenged the administration's abandonment of Yucca, a site the federal government studied for more than 20 years (E&ENews PM, March 31).

Without a national repository to store nuclear waste, plant operators now store the material on-site at nuclear power plants in wet pools or dry storage casks, and Lyons said he's confident the material is safe.

Lyons, who was raised in the Las Vegas area, criticized the Yucca Mountain project for not having the level of local and national support that nuclear waste repositories in Sweden and Finland enjoy.

The United States needs a solution formed with a high level of public involvement and widespread support, Lyons said, adding that "if we don't have that solution, it's hard to see how much nuclear can contribute to [the country's] clean energy future."

Lyons said he has spent a fair share of his time researching alternatives to using Yucca Mountain – including almost three decades working at the Los Alamos National Laboratory from 1969 to 1996. During that time, he spent more than a decade supporting nuclear test diagnostics.

DOE will take direction on nuclear waste from a draft report Obama's Blue Ribbon Commission is expected to submit to Energy Secretary Steven Chu in July on alternatives for storing, processing and disposing of spent nuclear fuel and waste, Lyons said.

The White House assembled the commission last year, and the group is scheduled to submit a separate, final report on its findings in January 2012.

Nuclear Dead End: It's The Economics, Stupid (NAT)

By Christian Parenti

The Nation, April 19, 2011

For about a decade now, nuclear boosters have been telling us that a "nuclear renaissance" is underway thanks to the advent of cheaper, safer and faster-built "third-" and "fourth-generation" reactors. Their ranks have been swelled lately by green champions of nuclear power like George Monbiot, who has recently embraced nuclear energy as an alternative to fossil fuels in the quest to mitigate climate change. Anti-nuke activists like Helen Caldicott have responded with dire warnings of nuclear apocalypse and radiation-induced cancer (see their exchange on a recent episode of Democracy Now!).

But for all its moral urgency, this debate usually ignores the economics of nuclear power. It is economic factors like costs, supply chains, financing and profitability that will determine our future energy mix. And so far, the dollars and cents calculations for nuclear power just do not add up.

The argument for nukes gets even weaker when one considers the compressed time frame of climate change: carbon emissions must drop sooner and faster than the long, slow, costly process of building new nuclear plants would allow. The boosters of nuclear power, including greens like Monbiot, seem to forget the reactors don't build themselves. They are built and operated by specific institutions under concrete economic circumstances like the price of capital, special metals, insurance and the availability of skilled labor. Once the economic arguments get to that level of specificity, the viability of atomic power falls apart.

Moreover, casting a nuclear renaissance as the panacea for climate change is dangerous because it threatens to delay the shift to clean energy. Continually pushing nukes has opportunity costs; every dollar, euro or RMB spent on nuclear power is one not spent on clean technology like wind, solar, hydro or tidal kinetics.

First, a bit of history: The initial wave of nuclear power reached its zenith after the Arab oil embargo of 1973. That political and economic shock sent many developed economies on a reactor construction spree. The logic here was fundamentally geostrategic, not economic: better to have power from nukes that operated at a loss and were subsidized by the rest of the

economy than to have your whole economy collapse because you could not import oil. In particular, Japan and France went nuclear; France converted the majority of its electrical supply from fossil fuels to nuclear.

But these second-generation reactors, which make up the majority of the world's current fleet of 443 nuclear power stations, soon proved to be prohibitively expensive and slow to build. After the Three Mile Island accident, hundreds of planned plants in the United States were canceled and construction around the world slowed. Bankruptcies associated with nuclear power rose, and investors began to turn away from it.

Even in France and Japan, building new reactors mostly halted. France became the most nuclear-powered country in the world, in part because its system is fundamentally socialized; the various companies associated with construction and operation of nuclear plants never had to turn a profit and managed to offload most of their debts onto the public. Japan's reactors are also heavily subsidized.

In the US and the UK cost overruns on nuclear plants helped bankrupt several utility companies. In the US these losses helped usher in the debacle of energy deregulation in the mid-'90s that saw rising rates and power blackouts in California. When the UK began privatizing utilities its nuclear reactors were so unprofitable they could not be sold. Eventually in 1996, the government gave them away. But the company that took them over, British Energy, had to be bailed out in 2004 to the tune of 3.4 billion pounds.

It was around the turn of the millennium that people like British Prime Minister Tony Blair and Senator Pete Domenici of New Mexico began championing the second coming of the atom. Yes, they agreed, the critiques of the old equipment were correct. But the new third- and fourth-generation reactors would be safe, cheap and quick to build.

In February 2002, the Bush administration tried to jump-start nuclear construction with its "Nuclear Power 2010 program," a package of subsidies and streamlined planning procedures. It was expected that these incentives would lead to at least one "Generation III+ unit" being operational by 2010.

It is true that Generation III reactors are safer than older reactors like the GE MAC 1 at Fukushima, Vermont Yankee and other plants around the world. But the new technology is not cheap, nor is it quick to construct. After a decade in which the federal government did all it could to boost this new version of nuclear power, only one Generation III+ reactor project has even been approved. Work on it has just begun in Georgia, and already there are conflicts between the utility, Southern Company and the Nuclear Regulatory Commission. Moreover, this project is going forward only because it is in one of the few regions of the United States (the Southeast) where electricity markets were not deregulated. That means the utility, operating on cost-plus basis, can pass on to rate-payers all its expense over-runs.

Another US reactor is being assembled at the Tennessee Valley Authority's Watts Bar plant. But construction on this second-generation, Westinghouse-designed Pressurized Water Reactor, designed in the 1960s, was begun in 1972. After long delays, the unit should be up and running in 2012.

In Western Europe the situation is very similar. Only two Generation III+ reactors are under construction. The plant closest to completion is Olkiluoto 3 in Finland. This 1,600-megawatt European Pressurized Reactor (EPR) is being built by Areva, the French government-controlled nuclear construction firm. The reactor was scheduled to take four years and cost about \$5 billion. But now construction will take at least eight years and is 68 percent over budget, at a projected final cost of \$8.4 billion. Some fear that the Olkiluoto 3 could bankrupt its owner, TVO. The other EPR under construction is in Flamanville, France. It began in 2007 and is now two years late and at least 50 percent over budget. In the best-case scenario, it will open in 2012.

In the United States, the Nuclear Regulatory Commission's review process to certify the safety of the EPR is itself two years behind schedule.

There are sixty-four, mostly old-style nuclear plants under construction worldwide, and most of these are in Asia. Sixty-plus reactors might sound like a lot, but when you compare that to the overall size of the world appetite for energy, it's not much. If all of these nuclear power plants are completed they will add 62.56 gigawatts of capacity, which is less than one-third of already-existing wind capacity worldwide, which was at 196.63 gigawatts at the end of 2010.

Of the sixty-four nuclear plants under construction worldwide, twenty-seven are in China and eleven are in India. China already has thirteen operating reactors, which produce less than 2 percent of its total electricity. India gets a little more than 2 percent of its electricity from existing nuclear plants. If China finishes building all of the nuclear plants under construction there, nuclear power will still only account for 9 percent of the country's total electricity.

Even in China wind is outpacing nuclear power. China's total installed wind capacity, which has been roughly doubling every year for the past several years, was 44.7 gigawatts at the end of 2010. The Chinese wind sector is set to reach as much as 200 gigawatts by 2020, according to the China Wind Power Outlook 2010 report. That figure dwarfs the 10.06 gigawatts of nuclear power online now, which will increase by only 27 gigawatts if all of China's planned plants get built. "China is not going nuclear they way France did the 1970s," says Stephen Thomas, professor of business at the University of Greenwich in the UK.

An analysis by economist Mark Cooper, senior fellow for economic analysis at the Vermont Law School, found that adding 100 new reactors to the US power grid would cost \$1.9 to \$4.1 trillion. And the problem is not simply this direct investment.

"Once a utility embraces a huge nuclear project, their finances are completely tied up. The company's management is completely tied up. They begin to look at all other alternatives—efficiency and renewables, which you can buy in smaller bites—as threats to their big project," said Cooper. "They become very hostile to sensible policy. And then you end up with extremely expensive power."

In a comparative analysis of US states, Cooper found that the states that invested heavily in nuclear power had worst track records on efficiency and developing renewables than those that did not have large nuclear programs. In other words, investing in nuclear technology crowded out developing clean energy. That's dangerous because the primary problem facing clean alternative energy is the "price gap"—they are still more expensive than fossil fuels. As I've outlined in these pages previously (see "The Big Green Buy"), economies of scale, along with subsidies and planning, will help close this price gap.

Only when clean technologies—like wind, solar, hydropower and electric vehicles—are cheaper than other options will global capitalism make the switch away from fossil fuels. The good news is that clean tech is catching up. An authoritative study by the investment bank Lazard Ltd. found that wind beat nuclear and that nuclear essentially tied with solar. So the race is tight. The Worldwatch Institute reports that between 2004 and 2009, electricity from wind (not capacity but actual power output) grew by 27 percent, while solar grew by 54 percent. Over the same time, nuclear power output actually declined by half a percent.

Another danger with pursuing the myth of a nuclear renaissance is the overall timing of climate change. Science tells us that aggressive emissions reductions need to start immediately. Emissions need to peak by 2015 and then decline precipitously if we are to avoid catastrophic climate change.

A massive industrial-scale build out of fourth-generation nukes—the ones that are supposed to be safe, cheap and easy to build—would arrive too late to stave off climate change's tipping points. The US Department of Energy (DoE), a major booster of all things nuclear, gives 2021 as the earliest possible date for a fourth-generation nuclear plant to open. Keep in mind, no American nuclear plant has yet been built on time or within budget, so the DoE's forecast is very optimistic.

Nuclear power is simply not going to sweep in over the next handful of years and change the energy mix and save us from these tipping points. The catastrophically tight timeframe of climate tipping points means we must scale up actually existing clean technology. That will take massive investments and serious planning—but that project has already begun. Alternatives are slightly cheaper than nukes, come online faster and are growing robustly.

In other words, nuclear power is not only physically dangerous; it is also economically wasteful and slow, especially when built in market economies. Quite simply, it is a stupid way to address climate change.

As the wags like to say: "Nuclear power is the energy source of the future. And it always will be."

Japan's Fukushima Nuclear Meltdown Forces US To Rethink Its Disaster Preparation (UCLA)

By Suzy Strutner

Daily Bruin, April 20, 2011

The effects of the Fukushima nuclear power plant damage in Japan could span a century, Glen MacDonald announced at a panel discussion on Monday.

Following the 9.0 magnitude earthquake in Japan, the Fukushima nuclear power plant suffered a partial meltdown, releasing dangerous amounts of radiation into surrounding Japanese towns.

MacDonald, a director of the UCLA Institute of the Environment and Sustainability, said the Japanese government has categorized the incident in the same sector as the 1986 Chernobyl disaster.

Researchers and professors from an array of UCLA departments assessed the intensity of the disaster during Monday's discussion.

Japanese officials have urged residents living within 18 miles of the reactor to evacuate, and recently-installed robots have confirmed that radioactivity is probably still leaking from one reactor, MacDonald said.

Though the radioactive contamination has not yet caused sicknesses or deaths, many Japanese citizens will eventually die from radiation-related illnesses, said Albert Carnesale, UCLA chancellor emeritus and a professor of public policy and of aerospace engineering.

Fear erupting from the crisis will impede production of nuclear power in the United States, Carnesale said. Japan's meltdown, he added, serves as a warning for American power plants.

"We need to plan for unlikely events and come up with realistic responses to accidents," Carnesale said. "People need evacuation plans that they can actually follow."

Because California is not located near a subduction plate, the state's supposedly imminent "big quake" won't involve a magnitude as big as Japan's. Yet the potential event still merits preparation with regard to nuclear power, said Jon Stewart, vice chair of the department of civil and environmental engineering at the UCLA Henry Samueli School of Engineering.

Japan experienced an unusual series of smaller quakes prior to its 9.0 shake on March 11, Stewart said. He spoke about the importance of recognizing similarly strange patterns in California and consistently updating reactors in response to developments in nuclear science.

Japan's recent incident has brought some viable concerns to light, said Sean Hecht, executive director of UCLA's Environmental Law Center.

Experts have taken a closer look at the expenses of nuclear power production and the risks involved with placing plants in such proximity to metropolitan areas as San Onofre, Carnesale said.

The Nuclear Regulatory Commission is currently increasing regulations for American nuclear plants, likely in an effort to reassure the public that reactors are secure, Hecht added.

The Nuclear Regulatory Commission has not analyzed the effects of a terrorist attack on nuclear plants, deeming the event "not reasonably foreseeable." Japan's crisis has prompted some groups to lobby for a change in this policy as well, Hecht said.

"Fukushima is a warning to use vigilance," Carnesale told the audience. "Though it's rare, nuclear power can cause some pretty bad things to happen."

After Fukushima (CHIT)

Chicago Tribune, April 20, 2011

A few days ago, Japanese officials declared that the accident at the Fukushima Dai-ichi power complex rated a "7" on a ranking with a scary name: the International Nuclear and Radiological Event Scale. That's the same rating as the Chernobyl accident of 1986.

Some experts convincingly disputed that dire evaluation, arguing that the release of radiation from Chernobyl was much worse than the situation in Japan — which to date has killed no one. But there's no denying that the ongoing disaster has shaken the nuclear industry worldwide. Six in 10 Americans oppose building new nuclear power plants, a recent AP-GfK poll says. That's up from 48 percent in November 2009. overshadowing an earthquake and tsunami with a death toll approaching 14,000 — with a like number missing — is no easy feat. But such is the level of public fear of nuclear energy.

It's urgent that governments and power providers take a fresh look at nuclear power in light of this crisis. Example: The Tennessee Valley Authority said Thursday it is considering millions of dollars in improvements to protect its six nuclear reactors from earthquakes and floods.

But curbing or abandoning nuclear power plants, as some reinvigorated critics are proposing, is shortsighted. Nuclear power supplies about 20 percent of this nation's electricity. Renewable energy sources such as wind and solar are gaining importance, but nuclear remains a key component in electrical generation that releases minimal carbon emissions.

For the industry, the timing of the Japanese disaster couldn't be worse. In recent years, nuclear energy started to gain momentum, even among some environmentalists, as a viable alternative to fossil fuel generation. Now Fukushima raises the specter of earlier nuclear accidents: not only Chernobyl but the less severe Three Mile Island. That 1979 accident similarly occurred at a time when nuclear power was gaining popularity in the aftermath of the Arab oil embargo. A cooling malfunction at that plant in Pennsylvania led to a partial evacuation — and screaming headlines about a potential meltdown. In the end, the main casualty was America's faith in nuclear energy. Planning for new plants stopped. Then came Chernobyl. "Nuclear power = high risk" was entrenched in the American psyche.

That legacy is reflected in America's aging nuclear fleet. More than half the 104 operating power reactors in the US are at least 30 years old. Only three have been built in the past 20 years, the last coming online in 1996. As a way to boost output, utilities are turning to a technique called "uprating," in which existing plants are run at higher capacity to produce more power. Retrofitting existing plants is a more cost-effective alternative to building new ones. But it carries added safety concerns.

Even before Fukushima, the cost of building new nuclear plants had become all but prohibitive. The price tag for a new 1,000-megawatt facility: around \$6 billion, and now likelier to rise than to decline.

Nuclear power is not risk free. But we need to weigh those risks against the known costs associated with fossil fuel use. Among them: environmental accidents such as last year's Gulf of Mexico oil spill and lethal industrial accidents in coal extraction — not to mention the carbon impact of burning fossil fuels.

As emotions cool and acceptance of nuclear power re-emerges, power providers and regulators will focus intently on modern designs for future plants. This we know: No one will be building any more plants from 40-year-old engineering plans like those used at Fukushima.

Cyberattack Fears On The Rise: Study (AFP)

By Chris Lefkow

AFP, April 19, 2011

WASHINGTON — Cyber threats such as Stuxnet pose an increasing risk to critical infrastructure worldwide but many facilities are unprepared to face the danger, according to a report released on Tuesday.

"We found that the adoption of security measures in important civilian industries badly trailed the increase in threats over the last year," said Stewart Baker of the Center for Strategic and International Studies (CSIS), releasing a report conducted with computer security firm McAfee.

For the report, "In the Dark: Crucial Industries Confront Cyberattacks," McAfee surveyed 200 information technology executives charged with security at power, oil, gas and water facilities in 14 countries.

"What we found is that they are not ready," the McAfee-CSIS report said. "The professionals charged with protecting these systems report that the threat has accelerated -- but the response has not."

"The fact is that most critical infrastructure systems are not designed with cybersecurity in mind, and organizations need to implement stronger network controls, to avoid being vulnerable to cyberattacks," McAfee vice president Phyllis Schneck said.

Forty percent of the critical infrastructure executives surveyed said they believed that their industry's vulnerability had increased and 30 percent said their company was not prepared for a cyberattack.

Forty percent said they expect a major cyberattack within the next year — defined as one that causes severe loss of services for at least 24 hours, a loss of life or personal injury, or the failure of a company.

Nearly 70 percent said they frequently found malware designed to sabotage their systems and nearly half of the respondents in the electricity industry sector said they had found Stuxnet on their systems.

A top Iranian military officer last week accused the United States and Israel of being behind the computer worm designed to sabotage Iran's nuclear program.

Stuxnet targets computer control systems made by German industrial giant Siemens and commonly used to manage water supplies, oil rigs, power plants and other critical infrastructure.

Stuxnet reportedly targeted Iran's Bushehr nuclear power plant, where technical problems have been blamed for delays in getting the facility fully operational, but it also hit systems in other countries.

Eighty percent of the respondents said they have faced a large-scale denial of service attack (DDoS), in which a large number of computers are commanded to simultaneously visit a website, overwhelming its servers.

About one in four of the IT executives surveyed reported daily or weekly DDoS attacks and the same number said they have been victims of extortion through cyberattacks or threatened cyberattacks.

The 14 countries surveyed were Australia, Brazil, Britain, China, France, Germany, India, Italy, Japan, Mexico, Russia, Spain, the United Arab Emirates and the United States.

India and Mexico have the highest rate of extortion attempts with 60 percent to 80 percent of executives in those countries reporting extortion bids.

The report said Brazil, France and Mexico are lagging in their security measures, adopting only half as many as leaders China, Italy and Japan.

China was the country most recently cited as the major source of concern for government-sponsored cyber sabotage or espionage, followed by Russia, the United States, North Korea and India.

Over half of the executives surveyed said they believe that foreign governments have been involved in network probes against their domestic critical infrastructure.

To counter the growing cyber threat, the report recommended increased use of tokens and biometric identifiers instead of passwords, better encryption and network monitoring and greater oversight of connections to the Internet and mobile devices.

Execs: Electrical Companies Moving Slowly To Address Cyber Threats (NATJO)

By Josh Smith, National Journal

National Journal, April 20, 2011

In the summer of 2010, analysts identified Stuxnet, a complex computer virus that targeted industrial control systems and opened up a whole new range of cyber threats. Almost a year later, however, the security response from companies that protect vital electrical grids remains woefully slow, according to a new report by the Center for International and Strategic Studies and Internet security firm McAfee.

Cybersecurity experts warn that more electrical infrastructure is being connected to the Internet or other networks, opening up the whole system to cyber attacks. A targeted attack could plunge millions of Americans into darkness, or worse.

This year's study polled 200 electrical infrastructure industry executives from 14 countries. The team's researchers found that Stuxnet "transformed the threat landscape," with 40 percent of respondents reporting that the virus had infected their networks.

"The emergence of Stuxnet points to an overriding need for critical infrastructure companies to acknowledge the changes in the cyberthreat landscape," the report states.

Despite the threat, the adoption rate for security systems has grown only incrementally.

"Overall, we found little good news about cybersecurity in the electric grid and other crucial services that depend on information technology and industrial control systems," the report concludes. "Security improvements are modest and overmatched by the threat."

Not only are private companies moving slowly to address the potential problem, the US government has yet to get involved in a serious way, according to the 40 percent of American executives who said they do not interact with government officials on cybersecurity or defense issues. Just over 10 percent of American respondents said their cybersecurity plans had been audited by the government, versus 100 percent of Japanese executives.

"As a country, we are going to have to decide what our government and private industry response looks like," said Kevin Gronberg, senior counsel for the House Homeland Security Committee. "The only way to decide how much government is involved is to engage in debate over it."

Compared to western nations and India, countries in East Asia seem to be pursuing a more concerted campaign to secure their networks, the researchers found.

The report calls for "true infrastructure protection policies" around the world, including improved authentication measures; more encryption and detection technology; increased oversight of industrial control systems; and effective partnerships with governments.

Senate Democrats have introduced legislation designed to safeguard critical infrastructure, including the electric grid, military assets, the financial sector, and telecommunications networks. It outlines federal authority and establishes incentives for private industry to protect their systems.

"Today we rely more heavily than ever on technology to run everything from power plants to missile systems to personal computers. In a rapidly changing world it's important that we adapt new to threats to our security," said Senate Majority Leader Harry Reid, D-Nev., when the plan was announced in January.

Electricity Grid Vulnerable To Cyber Attacks (FT)

By Joseph Menn, San Francisco

Financial Times, April 20, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

EXCLUSIVE-Anti-bomb Plan For Pentagon Annex Posted Online (REU)

Reuters, April 20, 2011

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

Report: US National Lab Needs More Cyber Controls (AP)

By Garance Burke

Associated Press, April 20, 2011

Lawrence Livermore National Laboratory failed to set up adequate cyber security controls for classified information, including details about the nation's nuclear stockpile, according to a federal report released Tuesday.

Livermore is one of the federal government's top science labs and maintains several national security systems, including supercomputers that process sensitive and classified information about the safety and reliability of nuclear weapons along with homeland security matters.

Rickey R. Hass, deputy inspector general for audits and inspections at the Energy Department, said in the report that outside contractors had made changes to one system meant to monitor nuclear explosions without first getting approval from the proper federal officials.

That and other site-level problems have persisted in part because the government hasn't ensured that changes to its information systems are in line with potential risks, the department's internal watchdog's office said.

"Without improvements, the weaknesses identified may limit program and site-level officials' ability to make informed risk-based decisions that support the protection of classified information and the systems on which it resides," the audit concluded.

No classified information was compromised, said Damien LaVera, a spokesman for the Energy Department's National Nuclear Security Administration, which operates the labs.

In a written response to the inspector general, a top ranking administration official said the paper-based compliance review did not factor in the lab's additional strategies to counter a constantly changing set of threats.

"We do not believe conclusions documented in this report can be extrapolated to determine the state of the entire risk management program," wrote Gerald Talbot, Jr., the administration's associate director for management and administration. "Furthermore, the general recommendations made by the IG were already in place."

Lawrence Livermore has long served as one of the nation's key labs for nuclear research. More recently the lab has focused on monitoring radiation from the ongoing nuclear crisis in Japan and on devising measures to counter possible chemical and biological terrorist attacks.

"We feel we have a good strong cyber security system at the lab," said Don Johnston, a spokesman for the lab. "That said, we're always looking to improve it and make it better."

INTERNATIONAL NUCLEAR NEWS:

Water Pumping Begins At Japan Nuclear Reactor (NYT)

By Keith Bradsher And Hiroko Tabuchi

New York Times, April 20, 2011

TOKYO — The difficult task of pumping highly radioactive water out of the basement of a turbine building at a damaged Japanese nuclear power plant began Tuesday, but officials cautioned that the work would be slow and difficult.

The Japanese government, meanwhile, said it was considering a plan to further restrict access to the evacuated area within 12 miles of the plant, the Fukushima Daiichi Nuclear Power Station. Some families have been re-entering the area to remove belongings, and dozens of people have never left.

At the plant itself, the Tokyo Electric Power Company said that it planned to pump 10,000 metric tons of water into a storage building at a rate of 480 tons a day, which would take nearly three weeks. The company is still working on ways to remove an additional 57,500 tons of heavily contaminated water at the same building, next to Reactor No. 2, and at other nearby buildings.

The cautious pace of the pumping and the volume of water to be moved are further signs of the complexity of the undertaking that faces Tokyo Electric. Removing the water is one of the 63 tasks that the company outlined Sunday in its plan to fully shut down the stricken reactors, halt all releases of radioactive material and restore reliable cooling and electricity roughly by the end of the year.

Michael Friedlander, a former senior nuclear power plant operator in the United States, said that while the pumping might be proceeding slowly, a faster pace could prove dangerous.

"If a pipe breaks and you're pumping hundreds of gallons a minute, you're going to make a huge mess," he said.

Hidehiko Nishiyama, the deputy director general of Japan's Nuclear and Industrial Safety Agency, said that the heavily contaminated water that had accumulated in basements and trenches at the site is two million times as radioactive as the less contaminated water that workers pumped into the ocean from April 4 to April 10. Workers pumped 10,393 tons of the less contaminated water into the ocean in order to make room in storage areas for the far more highly radioactive water from inside the reactor buildings.

Pumping contaminated water into the ocean has provoked considerable dismay from Japanese fishermen and from nearby countries, particularly South Korea and China. Mr. Nishiyama said Tuesday that Japan had no plans and no need to do so anymore.

Plans are being made for the installation of water-purification equipment and heat exchangers so that the same water can be pumped repeatedly through the reactors.

Anne Lauvergeon, the chief executive of Areva, France's nuclear-power equipment provider, said at a news conference in Tokyo on Tuesday evening that it would probably take until the end of May to set up a water treatment station at the plant. Once running, she said, it should be able to handle 50 metric tons of water an hour and should almost entirely remove the radiation.

The technology, called "co-precipitation," uses chemical agents to remove radioactive elements from water. The treatment station itself will be provided by Veolia Water, a British water and waste management service. Areva and Tokyo Electric have not discussed the cost of the services, Ms. Lauvergeon said.

Areva, together with Veolia Water, will also provide three lines of desalination equipment to enable Tokyo Electric to convert seawater into fresh water for cooling the reactors. Fresh water provides better cooling; the spaces between the fuel rods have started to become congested with salt from seawater.

She also said that Areva was not preparing an overall plan to decommission the troubled plant, though she said the company was prepared to cooperate with any long-term process to eventually dismantle Fukushima Daiichi. Toshiba and Hitachi have submitted competing plans to dismantle the plant; the work could take decades.

In a further effort to improve cooling, Mr. Nishiyama said Tuesday that a decision had been made to flood the primary containment vessels of the No. 1 and No. 3 reactors with enough water to cover up the sides of the reactor pressure vessels up to the level of the uranium fuel rods.

This was not done sooner because only now have workers been able to determine that the primary containment vessels are sufficiently watertight. The vessel at the No. 2 reactor is damaged and leaking gases, and the leak or leaks need to be plugged before it can be flooded, Mr. Nishiyama said.

The No. 2 reactor has posed some of the greatest challenges in recent days, including another leak that spewed radioactive water until plugged two weeks ago.

Robots entered Reactors Nos. 1 and 3 on Sunday and measured the radiation inside. But when two robots entered Reactor No. 2 on Monday, the steam inside was so dense that a robot mounted with a camera was unable to get a clear image of a radiation sensor carried by the other robot, Japanese officials said.

Japan Nuke Plants Start Pumping Radioactive Water (USAT/AP)

USA Today, April 20, 2011

The operator of Japan's crippled nuclear plant began pumping highly radioactive water from the basement of one of its buildings to a makeshift storage area Tuesday in a crucial step toward easing the nuclear crisis.

Removing the 25,000 metric tons (about 6.6 million gallons) of contaminated water that has collected in the basement of a turbine building at Unit 2 of the Fukushima Dai-ichi plant will help allow access for workers trying to restore vital cooling systems that were knocked out in the March 11 tsunami.

It is but one of many steps in a lengthy process to resolve the crisis. Tokyo Electric Power Co. projected in a road map released over the weekend that it would take up to nine months to reach a cold shutdown of the plant. But government officials acknowledge that setbacks could slow the timeline.

The water will be removed in stages, with the first third of it to be handled over the coming 20 days, said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency. In all, there are 70,000 tons (about 18.5 million gallons) of contaminated water to be removed from the plant's reactor and turbine buildings and nearby trenches, and the entire process could take months.

TEPCO is bringing the water to a storage building that was flooded during the tsunami with lightly contaminated water that was later pumped into the ocean to make room for the highly contaminated water.

The operator plans to use technology developed by French nuclear engineering giant Areva to reduce radioactivity and remove salt from the contaminated water so that it can be reused to cool the plant's reactors, Nishiyama said, adding that this process would take "several months."

Once the contaminated water in the plant buildings is safely removed and radioactivity levels decline, workers can begin repairing the cooling systems for the reactors of Units 1, 2 and 3, which were in operation at the time of the tsunami. Workers must also restore cooling functions at the plant's six spent fuel pools and a joint pool for all six units.

When the tsunami struck, units 5 and 6 were going through a regular inspection. On March 20, they were put in cold shutdown, which is when a reactor's core is stable at temperatures below 212 Fahrenheit (100 Celsius).

With the nuclear crisis dragging on, public frustration with the government is growing. Opinion polls show more than two-thirds of Japanese are unhappy with the leadership of Prime Minister Naoto Kan, who was grilled for hours Monday by opposition politicians, many demanding he resign.

TEPCO has offered residents forced to evacuate from homes around the plant about \$12,000 per household as interim compensation. People elsewhere in the disaster zone who lost houses to the tsunami — which also left more than 27,000 dead or missing — say help has been slow to materialize.

"I don't understand what the politicians are doing, there are new committees and meetings everyday," said Hiroshi Sato, who lost his house in Kesennuma and now lives in a fabric warehouse from his old business.

"We need support, financial assistance, and nothing has come yet," he said.

In TEPCO's blueprint for stabilizing the reactors, the utility aims to cool the reactors and spent fuel pools and reduce radiation leaks over the next three months. Within 6-9 months, the goal is achieve a cold shutdown of the reactors and cover the buildings, possibly with a form of industrial cloth, to further tamp down any possible radiation leaks.

Two remote-controlled robots sent into the reactor buildings of Unit 1 and Unit 3 on Sunday showed that radiation levels inside — up to 57 millisieverts per hour — were still too high for humans to realistically enter.

The US-made Packbots, which resemble drafting lamps on tank-like treads, also were briefly sent into Unit 2 on Monday, officials said, and the radiation level was found to be a much lower 4.1 millisieverts per hour.

But the high level of humidity inside the reactor building fogged up the robot's camera lens, making it difficult to see conditions inside. They were pulled out after less than an hour, officials said.

"We didn't want to lose sight of where the robot was and then not be able to retrieve it," TEPCO manager Hikaru Kuroda said.

The reason for the higher humidity wasn't clear, but it suggests that workers — if they were to go inside — also would have difficulty seeing through their masks, Kuroda said.

Removal Of Radioactive Water Starts (WSJ)

By Mitsuru Obe

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

Japan Mulls Restricting Access To Evacuation Zone Near Crippled Nuclear Plant (AP)

Associated Press, April 20, 2011

Authorities may for the first time ban access to the evacuation zone around Japan's crippled nuclear plant, citing concerns Wednesday over radiation risks for residents who may be returning to check on their homes.

About 70,000-80,000 people were living in the 10 towns and villages within 12 miles (20 kilometers) of the Fukushima Daiichi plant, which has been leaking radiation after a March 11 earthquake and tsunami wrecked its power and cooling systems.

Virtually all left after being advised to do so, but some occasionally have returned, defying warnings from police who have set up roadblocks on only a few major roads in the area.

"We are considering setting up 'caution areas' as an option for effectively limiting entry" to the zone, Chief Cabinet Secretary Yukio Edano said.

Noriyuki Shikata, one of Edano's deputies, said the government was still considering details of how to control access to the immediate vicinity of the nuclear plant while also responding to demands from residents to check their homes and collect belongings.

Now that the situation at the plant appears to have stabilized somewhat, both residents and the authorities are considering how to best weather a protracted evacuation. Only a few warning signs, mainly about road conditions, have been erected in the area so far.

"There are a number of people who may be entering the area. Under the current regime, we are not in a position to legally enforce — there's no penalty for entering into the area. There is a realization of a need to have a stronger enforcement of the area," Shikata said.

At present, police just keep track of people entering the evacuation zone by noting down their license plate numbers. Officials say one chief concern is that if there were a major accident, tracking down those inside would be difficult if not impossible.

It was unclear when the restrictions on entry into the area might be imposed.

In a step toward restoring the crippled nuclear plant's cooling systems, Tokyo Electric Power Co., the nuclear plant's operator, is pumping highly radioactive water from the basement of one of its turbine buildings to a makeshift storage area.

Removal of the first 10,000 metric tons (2.6 million gallons) of 25,000 metric tons (about 6.6 million gallons) of contaminated water that has collected just in the basement of the turbine building at Unit 2 of the plant began Tuesday and is expected to take at least 20 days, nuclear safety officials say. Fully ridding the plant of 70,000 tons (about 18.5 million gallons) of contaminated water in its turbine buildings and nearby trenches could take months.

Still, a senior official at the U.N. nuclear agency suggested the worst of the radiation leaks may be over in the worst nuclear power accident since the 1986 catastrophe in Chernobyl.

The total amount of radiation released is expected to be only a "small increase from what it is today" if "things go as foreseen," said Dennis Flory, a deputy director general at the International Atomic Energy Agency in Vienna.

IAEA experts are discussing ways to help Japan meet targets laid out in a blueprint for ending the crisis that TEPCO released over the weekend. Its plans call for achieving a cold shutdown of the plant within nine months. But government officials acknowledge that setbacks could slow the timeline.

In the meantime, TEPCO is continuing to spray water into the reactors and their spent fuel storage pools to help prevent them from overheating and releasing still more radiation.

TEPCO plans to use technology developed by French nuclear engineering giant Areva to reduce radioactivity and remove salt from the contaminated water inside the plant so that it can be reused to cool the reactors, said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency.

This process would take "several months," he said.

TEPCO said Wednesday it has begun distributing applications for compensation to residents forced to evacuate from their homes around the plant. The company is offering about \$12,000 per household as interim compensation.

People elsewhere in the disaster zone who lost homes and suffered from other damage say help has been slow to materialize.

Shikata did not provide exact details about how the government might enforce restricted access to the evacuation zone.

"Both the issue of ... strong enforcement of the area and a realization of temporarily going back home is something we have to closely coordinate with local municipalities," he said, noting that for now there is no penalty for entering the area.

"There are also issues surrounding non-residents who are entering the area. There are people who may steal things. There are various issues involved," he said.

Police said Wednesday they had identified 11,715 of the more than 27,000 people reported dead or missing in the disasters.

Meanwhile, trade figures showed Japan's exports fell for the first time in 16 months in March, hit by the fallout from last month's massive earthquake and tsunami, which destroyed factories and damaged ports.

Auto exports especially took a beating, falling by 28 percent, as the twin disasters forced Toyota Motor Corp., Honda Motor Co. and Nissan Motor Co. to suspend their all Japanese production due to shortages of components.

Japan Considers Banning Entry Into Evacuation Zone (WSJ)

By Toko Sekiguchi

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

US Engineers Cite Lengthy Cleanup In Japan (NYT)

By Matthew L. Wald

New York Times, April 20, 2011

Veterans of the Three Mile Island cleanup said that a much larger task faced the Japanese engineers who are trying contain and secure the damaged Fukushima Daiichi reactors. And Three Mile Island took 14 years.

Lake Barrett, the senior Nuclear Regulatory Commission engineer at Three Mile Island during the early phases of the cleanup said by comparison, "it was a walk in the park compared to what they've got."

The Fukushima Daiichi reactors are similar to those in Pennsylvania — "the cores are probably really similar, partially melted," Mr. Barrett said — but engineers pointed out several key differences in the aftermath of the accidents. In Japan, four separate reactors are damaged, and fixing each one is complicated by the presence of its leaking neighbors. It will also require a major infusion of equipment to replace parts far from the reactor's core, like pumps and switchgear that were destroyed by the tsunami.

In the short term, weather is a factor: according to engineers who managed the American cleanup, which ran from 1979 to 1993, Tokyo Electric Power has only a few weeks to patch up the three smashed secondary containments before the coming rainy season, when downpours could wash more contamination into the environment. And the company will have to carefully watch that the number of workers with the necessary skills do not burn out under the size of the task, or absorb so much radiation that they have to quit.

Still, Mr. Barrett and others say that the mess at Fukushima Daiichi can be contained, cleaned up and even securely wrapped up for long-term disposal. The plant may benefit from past experience, because it is the second major accident worldwide in a big water-cooled reactor, they say.

The first task, they agree, is to fill the reactors and the spent fuel pool with water that can be pumped out again, cooled and then returned to the reactors. That would sharply reduce the possibility of generating new hydrogen and new explosions, and would go a long way toward declaring that the plants were stable, a point that the N.R.C. observed recently that Fukushima Daiichi had not reached.

Right now the reactors are in "feed and bleed" mode, adding clean water and cooling the fuel by letting that water boil off or dribble out, but such bleeding allows radiation leakage. "Whatever you bleed is letting cesium out," said Mr. Barrett, referring to the radioactive isotope. Cooling with recirculating water could end releases of radioactive materials, but will require new pumps and possibly new piping, experts said.

Before that new equipment can be installed, engineers will have to clean up the water in the basements of the reactor buildings, the turbine buildings and other structures. At Three Mile Island, water in the reactor building and the primary auxiliary building gave radiation doses as high as 1,000 rem an hour, said Ronald L. Freemeran, a Bechtel engineer who was the project manager of the cleanup. That meant a worker would hit the N.R.C.'s annual limit in about a minute. The water can be pumped through filters that will strain out the radioactive elements.

Engineers from Three Mile Island laid out the three next steps:

First, decontaminate the walls and floors, to hold down the potential radiation dose. "They have to economize on how they expose these people," Mr. Freemeran said, or the company will run out of trained workers.

Second, rebuild the secondary containments of units 1, 2 and 4, and fix or replace the heavy cranes just beneath their ceilings. That would allow workers to defuel the reactor. That step alone took five years at Three Mile Island, where no buildings had to be rebuilt.

Third, peek inside the reactor vessel and figure out what tools will be needed to remove the wrecked fuel in the core. Three Mile Island was a surprise, Mr. Freemeran said, because so much of the core had melted and flowed beneath a support made of five plates of thick steel. Another veteran of the cleanup, Michael McGough, said only then did they realize they would need new remote-controlled tools to cut through the metal, to get to the material below.

Mr. McGough's technicians worked from a trailer outside the containment vessel, manipulating a cutting tool that was operating under about 40 feet of water. They also used long-handled picks and scoops to break apart the fused mass of ceramic fuel pellets and metal. "Basically we dug our way down through that debris until we got everything removed," Mr. McGough said.

At Three Mile Island, technicians then painstakingly loaded debris into shielded casks, under water to shield themselves from radiation, and then brought the casks to the surface. Eventually about 150 tons of radioactive rubble was shipped to an Energy Department laboratory in Idaho Springs, Idaho, where it still sits, waiting, as all used American fuel does, for a final resting place.

Japan may have another option if the wrecked core isn't too thoroughly mixed with other materials. It already has a reprocessing plant, where old fuel is chopped up, dissolved in acid, and then sorted, with its plutonium being removed, and the uranium sorted out for possible re-use. But that process is likely years away.

UN Nuclear Agency Expects Little New Radiation Release If All Goes According To Plan (AP)

Associated Press, April 20, 2011

A senior official at the U.N. nuclear agency is suggesting the worst may be over as far as radiation leaks at Japan's stricken reactor complex are concerned.

Denis Flory says he expects the total amount of radiation releases to be only a "small increase from what it is today" if "things go as foreseen." Flory, a deputy director general at the International Atomic Energy Agency, emphasized Tuesday that his forecast was based on an estimate of the situation.

Tokyo Electric Power Co. projected in a road map made public over the weekend that it would take up to nine months to reach a cold shutdown of its Fukushima Dai-ichi plant. But government officials acknowledge that setbacks could slow the timeline.

Flory told reporters the IAEA would work in a consultative role with Japan to help meet its road map targets and details of that role are being discussed.

Radiation Release From Fukushima Won't Increase Much: IAEA (AFP)

AFP, April 20, 2011

The overall release of radiation from Japan's tsunami-hit nuclear plant will not increase much between now and when it is finally brought under control, the UN atomic watchdog said Tuesday.

Japan has been working feverishly to bring the Fukushima Daiichi nuclear power plant, 250 kilometres (155 miles) northeast of Tokyo, into safe shutdown since it was hit by a 14-metre (46-foot) tsunami on March 11, triggering the world's worst nuclear accident since Chernobyl.

The plant's operator, Tokyo Electric Power Company (TEPCO), said on Sunday it aims to reduce radiation leaks within three months and to achieve a so-called "cold shutdown" within six to nine months.

So far, the overall radioactivity release has been around 10 percent of that seen at Chernobyl 25 years ago, the Japanese authorities have said.

And the International Atomic Energy Agency's head of nuclear safety, Denis Flory, said the amount would not increase much further.

"There has been high bursts of radioactivity from the beginning," Flory told a regular news briefing here.

Currently, radioactivity was still leaking "at low level" but those leaks were decreasing.

"So, taking into account all the measures that are foreseen, the new amount of release will be decreasing and decreasing, and the total amount would not be much different from what it is today," the expert said.

According to Japanese estimates, the total radiation release at Fukushima so far has been 370,000 terrabecquerels, compared with 5.2 million terrabecquerels at Chernobyl.

Asked whether TEPCO's six-to-nine-month timeframe for achieving a cold shutdown was realistic, Flory replied: "Whether they will be able to keep (to) this ... will be shown by the facts."

Nevertheless, it was "very positive" that such a timetable had been set out at all, the expert added.

The IAEA's role over the next six to nine months would remain what it has been so far, that is to "share information," Flory continued.

The watchdog would, however, send a team of international experts on a first fact-finding mission to Fukushima before June, he said.

And further follow-up missions would follow, Flory added.

The IAEA is to host a ministerial-level summit from June 20-24 to try to examine the lessons learned from the Fukushima crisis.

Chernobyl Donors Conference Falls Short Of Goal (AP)

Associated Press, April 20, 2011

KIEV, Ukraine (AP) — A donors conference seeking euro740 million (\$1.1 billion) to clean up the Chernobyl disaster site fell well short of its goal Tuesday, but officials remained optimistic that money will be found to make the world's worst nuclear accident site environmentally safe.

Pledges from nations and organizations at the conference totaled about euro550 million (\$785 million), along with euro29 million (\$41 million) from Ukraine.

The money is being sought to complete the construction of a gargantuan long-term shelter to cover the nuclear reactor that exploded April 26, 1986, and to build a facility to store waste from the plant's three other decommissioned reactors.

Japan had been one of the top donors in previous years, contributing euro72 million (\$103 million) in total. But this year, after last month's devastating earthquake, tsunami and ensuing crisis at the Fukushima nuclear power plant, Japan held back from pledging money.

Several other major donors in the past also did not announce pledges Tuesday, citing their own economic difficulties or impending national elections. Among them were Ireland, Spain and Canada.

But "undoubtedly, the countries that were not ready to offer today are still with us," said French Prime Minister Francois Fillon, whose country pledged euro47 million (\$67 million). France is the strongest defender of using nuclear power in Europe.

Ukrainian President Viktor Yanukovych reached out to countries not at the conference, saying, "We will always be thankful for timely assistance."

Other top pledging countries at the conference included the United States, promising \$123 million, Germany with euro42.4 million (\$60.5 million) and Russia, a latecomer to decades of Chernobyl contributions, pledging euro45 million (\$64 million). Russia's pledge doubled the amount it has donated since it began contributing in 2005.

The European Commission pledged euro110 million (\$157 million) and the European Bank for Reconstruction and Development, which is directing the Chernobyl projects, promised euro120 million (\$171 million).

The international community already has poured euro864 million (\$1.2 billion) into the fund to build the shelter over the reactor. In the months after the blast, workers hastily built a so-called sarcophagus to block off the radiation being spewed from the reactor, but it has already exceeded its proposed service life and has been plagued by structural problems.

The new shelter, which will look like a giant Quonset hut, is to be assembled adjacent to the reactor building and then slid over it on rails. The shelter, designed to last 100 years, is supposed to be in place in 2015, after which the reactor can be disassembled.

The separate spent-fuel storage facility is to hold the waste fuel from the plant's other reactors, which were phased out of service after the blast.

The donors' conference kicked off a week of meetings on the 1986 explosion that spewed a cloud of radiation over much of Europe.

In Ukraine, an area of 30 kilometers (19 miles) radius around the plant remains blocked off by guards and is largely uninhabited except for some rotating maintenance workers at the idle plant and a few hundred residents who moved back to their homes despite advice to stay away.

It was followed in the afternoon by a "summit" on the safe and innovative use of nuclear energy, at which participants including some heads of state called for improved international cooperation and more rigorous international standards for nuclear power plants.

United Nations Secretary-General Ban Ki-moon told the summit that "the time has come to strengthen the IAEA," the UN's nuclear energy agency and called for "a top-to-bottom review of nuclear safety standards."

The need for tightened universal standards was underlined by a dispute at the summit between Lithuania and Russia.

Lithuanian Prime Minister Andrus Kubilis complained that plants planned by Russia and Belarus near the Lithuanian border had not had sufficient safety reviews. But Russian Deputy Prime Minister Igor Sechin responded that the plants would be so sophisticated that "something like Fukushima is just not possible."

At a separate conference in Kiev, one U.N. expert said ecological conditions in some of the fallout-affected areas have improved considerably.

"In most of the territories, background radiation nowadays is not different to many places where there were no similar catastrophes, and in fact there can be normal life there. The health risks are much smaller than they used to be 20 years ago or 15 years ago," said Jerzy Osiatinski of the U.N. Development Program.

Associated Press Writer Anna Melnichuk in Kiev contributed to this report.

Pledges For New Chernobyl Cleanup Fall Short (WSJ)

By James Marson

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

With Eye To Japan, World Pledges Cash For Chernobyl (NYT/REU)

Reuters, April 20, 2011

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

IAEA Chief Defends Nuclear Energy (AP)

Associated Press, April 20, 2011

CHERNOBYL NUCLEAR POWER PLANT, Ukraine – The head of the International Atomic Energy Agency, speaking at the site of the Chernobyl nuclear power plant explosion, says that accident and the Japanese nuclear crisis do not undermine the value of nuclear power.

Yukiya Amano spoke Wednesday at the site of the world's worst nuclear accident. He was accompanied by U.N. Secretary-General Ban Ki-moon and Ukrainian President Viktor Yanukovych.

Amano says many countries will continue to find nuclear power an important option for energy diversification but that the global community must do its utmost to ensure its safety.

His visit comes just days before the 25th anniversary of the Chernobyl disaster.

Mob Sets Fires In Protest Of India Nuclear Plant (AP)

By Nirmala George

Associated Press, April 20, 2011

NEW DELHI – A mob opposing a government plan to build a nuclear plant in the western Indian state of Maharashtra ransacked a hospital and set buses on fire Tuesday during a protest strike.

Residents of Jaitapur have been protesting the proposed plant since the government's plans became public four years ago. The opposition has grown since Japan's nuclear crisis, with critics noting that Jaitapur is in a seismic zone.

The general strike was called after police fired to disperse protesters who attacked a police station Monday, killing one person.

The town's streets were mostly deserted as the strike took effect. But by midday, groups of people converged on the street, shouting slogans against the government. The mob later ransacked a government-run hospital and set at least three public transport buses on fire, police said.

Construction is to start this year on the first of six units at the proposed \$10 billion plant, billed as the biggest in the world. The project by the French nuclear energy company Areva will generate 9,900 megawatts of power when completed. The first unit is expected to start producing power in 2018.

India's Environment Minister Jairam Ramesh has said additional safeguards will be taken in light of the troubles at the Fukushima nuclear power plant. The Fukushima plant's cooling systems were destroyed by an earthquake and tsunami last month, and the Japanese operator has struggled to get the plant back under control.

Ramesh described the events unfolding at Fukushima as a "wake-up call," but said India could not abandon nuclear energy in its quest for clean energy to fuel its rapid economic growth.

The government has countered protesters by asserting that the site is safe and the plant's location on a high cliff would save it from being hit by a tsunami.

Jaitapur is about 260 miles (420 kilometers) south of Mumbai, India's financial hub and the Maharashtra state capital.

Anti-nuclear protesters plan to march Saturday from a nuclear power plant near Mumbai to Jaitapur to oppose the new project.

At present, nuclear energy forms only 3 percent of power available in India. The government has announced plans to increase the share of its nuclear power generation to 13 percent of its energy basket by 2030 to meet the rising demand for electricity.

Second Day Of Violent Protests Over India Atomic Plant (AFP)

AFP, April 20, 2011

MUMBAI (AFP) – Mobs attacked a hospital and blocked a highway in western India on Tuesday in a second day of violent protests against a planned nuclear power plant, after a protester was shot dead a day earlier.

The renewed violence prompted police to ban large public gatherings and political rallies, local television channels reported, with anger seething over the proposed power station amid Japan's nuclear emergency.

A furious crowd targeted a hospital in Ratnagiri town in Maharashtra state, while state transport buses were pelted with stones and a district highway road blocked with burning tyres, the Press Trust of India news agency said.

The Hindu nationalist Shiv Sena party called a shutdown in Ratnagiri town, 350 kilometres (220 miles) south of state capital Mumbai, television channels said.

"The situation is calm and under control," a police official at the Ratnagiri police control room told AFP, asking not to be identified.

Anger has been brewing in the area since national environment minister Jairam Ramesh last week ruled out a "rethink" on the planned six-reactor, 9,900-megawatt facility in Jaitapur in Ratnagiri district.

On Monday police shot a man dead during clashes with protesters, later saying they had "no choice" but to fire live bullets at the crowd.

Demonstrators set a police station ablaze after the killing, and at least 20 were arrested.

The power plant is to be constructed with technical help from the French energy giant Areva.

But environmental campaigners argue the location is prone to earthquakes, while local people who are dependent on fishing and farming say the plant will rob them of their livelihoods and nuclear waste could pollute the soil and sea.

Nuclear industry insiders have also cast doubt on India's ability to deal with a crisis on the scale of that faced by Japan at its Fukushima Daiichi plant after a devastating earthquake and tsunami last month.

Anti-nuclear activists had been planning further protests on Sunday in Maharashtra state to demand that the nuclear power plant be scrapped.

Energy-hungry India currently sources three percent of its electricity from nuclear power, but the government wants to increase that to six percent by the end of the decade and 13 percent by 2030.

Protests Against India Nuclear Plant Turn Violent (REU)

Reuters, April 20, 2011

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

Italy Indefinitely Shelves Nuclear Plans After Japan Quake, Opposition Cries Foul (WP/AP)

Associated Press, April 20, 2011

ROME — Italy's government proposed on Tuesday to shelve indefinitely its nuclear plans following radiation leaks at Japan's nuclear plant.

The government presented an amendment to legislation under consideration in the Senate that would call off plans to find, build and activate nuclear plants in the country. The amendment says the government plans to define a new energy strategy instead.

Economic Development Minister Paolo Romani said the leaks at Japan's Fukushima plant had changed everything and that Italy was merely taking the same steps as Germany and others in altering energy strategies following the disaster.

"Such important choices for our future can't be taken based on emotional waves or political maneuvering," he said in a statement.

Critics and lawmakers opposed to nuclear energy said the government's decision was merely designed to imperil a popular referendum set for later this year on the government's nuclear plans. They said with the issue off the political agenda, Italians will be less likely to go to the polls in June to vote.

In a 1987 referendum following the Chernobyl disaster, Italians overwhelmingly rejected nuclear power.

The government in November began taking steps to introduce nuclear energy into the country, naming a board of directors to look at the issue. Premier Silvio Berlusconi had wanted to go nuclear to reduce Italy's energy-dependency on foreign nations.

Some 86 percent of Italy's energy comes from outside the country, well above the EU average of 53 percent, according to the International Energy Agency, a Paris-based group that advises member countries on energy matters.

The nuclear crisis in Japan, however, emboldened opponents and prompted even supporters to concede that there's a need for further reflection.

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Italy Scraps Nuclear Power Preparations (REU)

By Giuseppe Fonte

Reuters, April 20, 2011

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

Italy Freezes Return To Nuclear Power (FT)

By Guy Dinmore, Rome

Financial Times, April 20, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

Italy: Nuclear Plants On Hold (NYT)

By Gaia Pianigiani

New York Times, April 20, 2011

Less than three years after embracing nuclear power, the government proposed a measure that would indefinitely delay plans to develop a nuclear energy strategy, including the building of plants. Italy had already announced a one-year moratorium on site selection and the construction of plants, but an amendment presented Tuesday in the Senate would scrap all the rules governing their construction. The Senate was to vote Wednesday on the measure.

Russian Nuclear Chief Says Plants To Grow Costlier (REU)

By Alissa De Carbonnel

Reuters, April 20, 2011

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

Protesters Call For Halt To Nuclear Development (TORST)

By David Olive

Toronto Star, April 19, 2011

Greenpeace protesters spent several hours Tuesday in the office of energy minister Brad Duguid calling for a halt to new nuclear development in Ontario.

The four protesters, linked together by a heavy chain, were cut free by police after several hours, and charged with trespassing.

But Duguid said he has no intention of deviating from plans to continue getting about half Ontario's electricity from nuclear plants, calling that an "appropriate level."

Ontario Power Generation is currently seeking permission to build new nuclear reactors at its Darlington station.

Shawn-Patrick Stensil, one of the protesters, said Ontario's current commitment to nuclear dates back to policies drawn up in 2005.

"At the time what we were told is that new reactors would be cheap, the radioactive waste problem was solved, and safety was completely under control," he said.

"What we have learned over the past five years is it's not cheap ... (and) the radioactive waste problem hasn't been solved. And Fukushima reminds us of the dangers that come with using nuclear reactors."

He said Ontario needs to supply its future needs through renewable energy.

Duguid said in an interview that Ontario is the "leading jurisdiction in the world" in developing renewable energy.

"We're building a new clean energy industry in this province," he said.

Ontario is not adding to its nuclear supply, Duguid said. The new reactors will replace those at Pickering, which are nearing the end of their lives.

Can Nuclear Power Plants Float? (REU)

By Alissa De Carbonnel

Reuters, April 19, 2011

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



NUCLEAR REGULATORY COMMISSION NEWS CLIPS

WEDNESDAY, APRIL 20, 2011 7:00 AM EDT

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TODAY'S EDITION

NRC News:

Obama Nominates Ostendorff For Second Term (GWIRE)	2	State Readies For Legal Showdown With Vt. Yankee (WCAX) . 13	
Alexander Reassures On Nuclear Energy, Sees Earthquake Simulation At Watts Bar Plant (KNOXNS)	2	Former PSB Chair Says Vermont In Position Of Strength In Lawsuit (VTPR).....14	
NRG Abandons Project For 2 Reactors In Texas (NYT)	3	Shumlin Disputes Entergy Claims (BR).....14	
NRG To Write Down South Texas Nuclear Investment (AP)	3	Entergy Sues Vermont To Keep Yankee Going (RUTHER).....16	
NRG To Write Down South Texas Nuclear Investment (AP)	4	Vermont Yankee Nuclear Station Takes Vt. To Court (WBUR).. 17	
NRG Drops Plan For Texas Reactors (WSJ).....	4	How A Federal Court Battle In Vermont Could Recast Nuclear Power (CSM)	18
NRG Ends Project To Build New Nuclear Reactors (DMN).....	4	Entergy Files Suit To Keep Plant Open (WorldNuclearNews)....19	
NRG Suspends Investment In South Texas Nuclear Expansion (SAEN).....	5	Shumlin Up For Showdown (KEENE)	19
NRG Pulls Financial Support For South Texas Nuclear Plant Expansion (AUSTIN)	5	Vt. Has Ways To Pressure Yankee (RUTHER)	20
NRG Stops Investing In South Texas Project Units 3 And 4 (VICTORA)	6	Entergy Files Suit To Keep Vermont Yankee Open (ENERCOL)21	
NRG To Write Down Texas Nuclear Investment After Japan (2) (BLOOM)	7	Entergy's Half Truths (RUTHER).....22	
NRG Energy Provides Clarity On Nuclear Project: No More Money (GIGAOM)	8	Security Exercises Planned For Indian Point (MIDHUD).....22	
NRG To Take 1Q Charge Of \$481 Million On Texas Nuclear- Power Project (DJNews)	8	AZ Nuke Plant Offers Look Inside (ADS)	23
UPDATE 3-NRG Energy Abandons Texas Nuclear Expansion Plan (REU).....	9	Turkey Point: Congressional Members Tour FPL's South Florida Nuclear Power Plant (FLSUNSEN).....24	
NRG Energy Set For \$481m Writedown Charge (FT)	9	Beyond Nuclear Petitions US NRC For Suspension Of 21 Atomic Reactor Licenses In Wake Of Japanese Nuclear Catastrophe (Common Dreams)	24
NRC Halts Monitoring Of Surry Power Plant (VAGAZ).....	9	Fleischmann, DesJarlais Endorse Nuclear Facility (KNOXNS).. 26	
NRC Concludes Emergency Monitoring At Surry Nuclear Plant (WILYDAILY)	9	Malloy Opposes Millstone Nuclear Tax (HARTBZ).....26	
Surry Units Shut Down After Power Station Damaged (VAGAZ) . 9		Defeat Tax On Power Plants (HARTC)	27
Nuclear Regulators To Discuss Ameren's Callaway Plant (STLBIZ)	10	Pull Nuke Tax Plug (NLDAY).....27	
Federal Nuclear Regulators Issue Last Environmental Report On Proposed South Carolina Reactors (AP)	10	Concerns About Taxation (HARTC)	28
Final Environmental Impact Statement Issued For Two Nuclear Reactors (POWGENWLD)	10	Editorial: Tax Grab From South Of The Border (NORAND)	28
Business Briefs - Commission To Release Report On Nuclear Plant (WILMIN)	10	Proposed Millstone Tax Is Discriminatory (NLDAY)	28
Time To Lift Ban On Uranium Mining Near Grand Canyon? Deadline Nears. (CSM)	11	Crowded, Complicated Agenda Awaits New Nuclear Chief (GWIRE)	29
Vt Nuke Plant Appeals To Public In Newspaper Ads (BOS)	12	Nuclear Dead End: It's The Economics, Stupid (NAT)	30
Vermont Yankee Appeals To Public In Newspaper Ads (WPTZ)13		Japan's Fukushima Nuclear Meltdown Forces US To Rethink Its Disaster Preparation (UCLA).....32	
Entergy Takes Its Message To Ads (RUTHER).....13		After Fukushima (CHIT).....33	
		Cyberattack Fears On The Rise: Study (AFP)	33
		Execs: Electrical Companies Moving Slowly To Address Cyber Threats (NATJO)	34
		Electricity Grid Vulnerable To Cyber Attacks (FT)	35
		EXCLUSIVE-Anti-bomb Plan For Pentagon Annex Posted Online (REU)	35
		Report: US National Lab Needs More Cyber Controls (AP).....35	

International Nuclear News:	
Water Pumping Begins At Japan Nuclear Reactor (NYT)	36
Japan Nuke Plants Start Pumping Radioactive Water (USAT/AP)	37
Removal Of Radioactive Water Starts (WSJ)	38
Japan Mulls Restricting Access To Evacuation Zone Near Crippled Nuclear Plant (AP)	38
Japan Considers Banning Entry Into Evacuation Zone (WSJ) ...	39
US Engineers Cite Lengthy Cleanup In Japan (NYT).....	39
UN Nuclear Agency Expects Little New Radiation Release If All Goes According To Plan (AP)	40
Radiation Release From Fukushima Won't Increase Much: IAEA (AFP)	40
Chernobyl Donors Conference Falls Short Of Goal (AP)	41
Pledges For New Chernobyl Cleanup Fall Short (WSJ)	42
With Eye To Japan, World Pledges Cash For Chernobyl (NYT/REU).....	42
IAEA Chief Defends Nuclear Energy (AP)	42
Mob Sets Fires In Protest Of India Nuclear Plant (AP).....	42
Second Day Of Violent Protests Over India Atomic Plant (AFP) 43	43
Protests Against India Nuclear Plant Turn Violent (REU)	43
Italy Indefinitely Shelves Nuclear Plans After Japan Quake, Opposition Cries Foul (WP/AP).....	43
Italy Scraps Nuclear Power Preparations (REU)	44
Italy Freezes Return To Nuclear Power (FT)	44
Italy: Nuclear Plants On Hold (NYT).....	44
Russian Nuclear Chief Says Plants To Grow Costlier (REU)	44
Protesters Call For Halt To Nuclear Development (TORST)....	44
Can Nuclear Power Plants Float? (REU)	45

NRC NEWS:

Obama Nominates Ostendorff For Second Term (GWIRE)

By Hannah Northey

Greenwire, April 19, 2011

President Obama has nominated William Ostendorff to a second term as commissioner on the Nuclear Regulatory Commission.

Ostendorff has been serving the commission since April 2010. His term expires June 30.

The Nuclear Energy Institute applauded the nomination, calling Ostendorff a qualified candidate with experience as an engineer, lawyer, policy adviser and naval officer.

"We hope for a speedy confirmation because a full complement of experienced commissioners is essential as the agency reviews operation of US reactors in light of events in Japan and judges certifications for reactor designs and licenses for new reactors and fuel facilities," NEI Senior Vice President Tony Pietrangelo said.

Ostendorff served as the principal deputy administrator at the National Nuclear Security Administration from 2007 to 2009, and was a staffer for the House Armed Services Committee from 2003 to 2007.

Alexander Reassures On Nuclear Energy, Sees Earthquake Simulation At Watts Bar Plant (KNOXNS)

"A Mountainview" blog

By Greg Johnson

Knoxville News Sentinel (TN), April 20, 2011

Alexander reassures on nuclear energy, sees earthquake simulation at Watts Bar Plant

Sen. Lamar Alexander, R-Tenn., has been an unapologetic advocate for nuclear power, last year calling for the construction of 100 new nuclear plants in the United States. After the disaster at Japan's Fukushima Nuclear plant in Japan, Alexander still endorses nuclear as a source of clean energy. From a 30 March press release:

"I think it's very important that as a country we learn to honestly ask questions and continuously improve what we're doing," Alexander said. "But it's important that we keep in perspective that the safety record of nuclear power in the United States really couldn't be better."

"The 104 civilian reactors we have in the United States have never produced a fatality, and the navy ships that have had nuclear reactors since the 1950s have never had a fatality from a reactor accident. While we've heard a lot about Three Mile Island, the worst nuclear accident we've had in our country, no one was hurt. ...So the nuclear industry has a safety record in the United States that's not surpassed by any other form of energy production."

On Monday, Alexander was in Rhea County visiting the Watts Bar Nuclear Plant with Bill Ostendorff of Nuclear Regulatory Commission. A report in the Rhea Herald-News (by my son, Reed Johnson) said Alexander and Ostendorff said Watts Bar "is

not in danger of succumbing to natural disasters." Alexander and media watched an earthquake simulation at the plant. Click here to watch Reed's video of the simulation.

NRG Abandons Project For 2 Reactors In Texas (NYT)

By Matthew L. Wald

New York Times, April 20, 2011

The company planning the largest nuclear project in the United States, two giant reactors in South Texas, announced on Tuesday that it was giving up and writing off its investment of \$331 million after uncertainties created by the accident in Japan.

But the project — planned by NRG, a New Jersey-based independent power producer, and its minority partner, Toshiba — was in considerable doubt even before the accident at Fukushima began on March 11. Texas has a surplus of electricity and low prices for natural gas, which sets the price of electricity on the market there.

The project could go forward if circumstances changed, said David Crane, the chief executive of NRG, but he said the prospect of that occurring was "extremely daunting and at this point not particularly likely."

The plan was for the South Texas Project 3 and 4 reactors, and was identified more than two years ago by the Energy Department as one of the four candidates for loan guarantees that were authorized by the 2005 Energy Act.

It is the second of the four to die; Calvert Cliffs 3, in Maryland, seems unlikely at this point, because Constellation Energy could not reach financial terms with the Energy Department. The department has granted a conditional loan guarantee to one project in Georgia and may give another to a project in South Carolina.

In a conference call with investment analysts on Tuesday evening, Mr. Crane said that to proceed with the project, the federal government would probably have to institute a "clean energy standard" that would create quotas for nuclear power, as states have already done for wind and solar.

He said that Toshiba, which is writing off \$150 million for the project, would continue to pay to proceed with a license application with the Nuclear Regulatory Commission for the time being, on the chance that a new investor could be found. But, he said, "we have concluded that financially, this is the end of the line for us." If the plant goes forward, he said, "it will have to be funded by somebody else's resources."

The public's appetite for nuclear power projects resembles the situation right after the Three Mile Island accident of 1979, said Charles A. Zielinski, a lawyer in Washington who is a former chairman of the New York State Public Service Commission. Companies now factor in the prospect of higher construction costs, mixed with a slack demand.

The South Texas Project "may have been on the fence already, and Fukushima pushed it over," Mr. Zielinski said.

Tom Smith, an organizer in Austin with Public Citizen and a longtime campaigner against the project, cited higher construction costs and uncertainty after the Fukushima accident.

"The wheels are starting to fall off the nuclear renaissance," he said.

NRG To Write Down South Texas Nuclear Investment (AP)

By Jonathan Fahey

Associated Press, April 20, 2011

NEW YORK — Blaming uncertainties arising from the nuclear crisis in Japan, NRG Energy says it will write down its \$481 million investment in two planned new nuclear reactors in South Texas.

NRG Chief Executive David Crane said Tuesday it was unlikely the two reactors could be completed in a timely fashion.

Support for new nuclear projects in the US has eroded in the aftermath of the nuclear crisis in Japan, according to an Associated Press-GfK poll conducted earlier this month. One of NRG's partners was to be TEPCO, the Japanese utility that owns the reactor complex crippled by last month's earthquake and tsunami.

NRG, based in Princeton, N.J., hoped to build two new reactors at its South Texas Project nuclear station, an operating two-reactor power plant 90 miles southwest of Houston. The project is in line for a federal loan guarantee, but low electricity prices had clouded prospects for the plan even before the incident in Japan.

When prices of natural gas and electricity were high in the middle of the last decade, dozens of proposals for new nuclear reactors were submitted to the Nuclear Regulatory Commission. Now just a handful of projects remain active.

Southern Co. has begun work on a two-reactor project near Augusta, Ga. SCANA is preparing to build two reactors in South Carolina, about 20 miles northwest of Columbia. The Tennessee Valley Authority has resumed construction of a reactor in Eastern Tennessee that was abandoned in 1988 when it was nearly complete.

Crane said Tuesday he still believes the construction of new nuclear reactors in the US is an "absolute necessity." He said NRG will continue to seek an operating license and the loan guarantee in hopes that the project can be revived. Last month NRG announced it would suspend engineering and pre-construction work on the project.

NRG expects to record a pretax charge of \$481 million in the first quarter of this year. That includes \$331 million contributed by NRG to the joint venture that was to build the project and \$150 million from a partner, Toshiba American Nuclear Energy Corp., a unit of the Japanese industrial giant Toshiba.

Toshiba was to supply the design for the reactor and build the station. Toshiba will be responsible for future licensing costs.

NRG To Write Down South Texas Nuclear Investment (AP)

Associated Press, April 20, 2011

NEW YORK (AP) - NRG Energy will write down its \$481 million investment in two planned new nuclear reactors in South Texas.

NRG Chief Executive David Crane said Tuesday that the nuclear crisis in Japan has reduced the probability that the two reactors could be completed in a timely fashion.

1 of NRG's partners on the project was to be TEPCO, the Japanese utility that owns the reactor complex crippled by last month's earthquake and tsunami.

NRG, based in Princeton, N.J., hoped to build two new reactors at its South Texas Project nuclear station, which currently has two working reactors. The project was in line for a loan guarantee from the federal government, but low electricity prices had clouded prospects for the plan even before the incident in Japan.

NRG Drops Plan For Texas Reactors (WSJ)

By Rebecca Smith

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

NRG Ends Project To Build New Nuclear Reactors (DMN)

By Elizabeth Souder

Dallas Morning News, April 20, 2011

NRG Energy Inc. officially ended plans to build more nuclear power reactors in Texas.

The second-largest power generator in the state said Tuesday it will stop spending money on plans to build two more reactors at the South Texas Project, outside of Houston. The project was doomed when a financial partner, Tokyo Electric Power Co., saw its reactors in Japan explode after the earthquake.

"We have concluded that, financially, this is the end of the line for us," said NRG chief executive David Crane. And even if the project is resurrected, "it will have to be fueled by somebody else's financial resources."

The decision means the one Texas nuclear project close to getting a license and federal loan guarantees won't get built anytime soon. And it is evidence that the Japanese disaster has the potential to derail the budding US nuclear power renaissance.

NRG has already struggled to finance the plant. Crane said the persistently low wholesale power prices in Texas were weighing on the project, and investors had been urging him to scale back.

The nuclear explosions in Japan mean that Tokyo Electric and the Japanese government, which had considered offering its own loan guarantees for the project, must focus on domestic problems, Crane said.

Also, he said, the US Nuclear Regulatory Commission's reaction to the Japanese explosions is to start its own safety review. Crane said that's the right decision, but it delays his project.

"Until that safety review was over and our project was given a clean bill of health, you couldn't move it forward," he said. "Nothing was going to happen except we were going to continue to spend money, month after month, which we've been doing for five years."

NRG will take a \$481 million pretax charge in the first quarter to write down the value of the investment so far. Since NRG began the project in 2006, it spent \$331 million on the project, and its joint venture partner Toshiba, spent \$150 million.

Toshiba agreed to continue funding the project until it receives licenses to build and operate the new plants.

The decision by NRG leaves one Texas nuclear project with the potential to eventually break ground. Energy Future Holdings Corp. seeks a license to expand the Comanche Peak plant near Glen Rose.

NRG had planned for the first reactor to go online in 2016. The Electric Reliability Council of Texas hadn't been counting on the reactors for its official calculations of whether Texas has enough power plants to keep the lights on.

"I think it's a shame," said Bruce Bullock, director of Southern Methodist University's Maguire Energy Institute.

Shelving nuclear power projects might resolve concerns about safety, but those plants will be replaced by something else, and probably something with another environmental consequence, he said.

"At this rate you're looking at coal, which is not environmentally friendly, or natural gas, which would be the preferred fuel, but the environmental community has raised issues regarding it as well," Bullock said. Some environmental advocates say the process of drilling for natural gas pollutes air and water.

Plus, natural gas and coal plants don't take nearly as long to build as nuclear. Consider this: Today is the fifth anniversary of the announcement by EFH that it would build a new fleet of coal-fired plants. Those plants have been permitted and built, while the NRG reactors, announced a few months later, still lack licenses.

"Look at our situation. We responded to the [federal] inducements back in 2005. We spent \$331 million of our shareholders' money for five years. And we had a year to go of permitting and five years of construction, and what do we have for it?" Crane said.

NRG Suspends Investment In South Texas Nuclear Expansion (SAEN)

By Tracy Idell Hamilton

San Antonio Express-News, April 20, 2011

NRG Energy announced Tuesday it would no longer invest in the South Texas Project nuclear expansion and will write down its investment in it because of diminished prospects for the project after Japan's worst-ever nuclear accident.

The company plans to record a first-quarter pre-tax charge of roughly \$481 million for its joint venture with Toshiba Corp., NRG said in a statement Tuesday afternoon.

NRG CEO David Crane said in the statement that the company continues to believe in the necessity of a US nuclear renaissance and that the expansion of STP is still one of the best development projects in the country.

"However, the extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development of the STP project," he said.

NRG announced last month that it had suspended indefinitely all detailed engineering work and other pre-construction activities, a move that reduced the project work force from 1,000 workers to about 350.

Going forward the joint venture, called Nuclear Innovation North America, will be focused solely on securing an operating license from the Nuclear Regulatory Commission and on obtaining a loan guarantee from the US Department of Energy, "two assets that are absolutely essential to the success of any future project development," according to the statement.

Toshiba will be responsible for funding ongoing costs to continue the licensing process.

CPS Energy, which retains a 7.6 percent stake in the expansion, said it will continue to support NRG in its efforts to secure the federal loan guarantee and an operating license. It will not invest more than the roughly \$386 million it has already sunk into the project.

San Antonio's utility stands to gain an \$80 million payment from NRG if the project receives the loan guarantee.

NRG recognized last month that it likely lost a major investor — up to \$280 million — in the proposed expansion after the earthquake and tsunami sparked Japan's worst-ever nuclear accident.

Tokyo Electric Power Co.'s president confirmed Monday the company will reconsider its overseas business strategy, according to a story in Nikkei.com, as it focuses on bringing the damaged plants under control.

Previously, Tepco had said it was ready to spend roughly billions over the next decade on nuclear and liquefied natural gas projects around the world, including the STP investment.

The Japan Export Bank was also expected to provide financing, since Japanese firms Tepco and Toshiba were investing so heavily in the project.

NRG Pulls Financial Support For South Texas Nuclear Plant Expansion (AUSTIN)

By Asher Price And Marty Toohey

Austin American Statesman, April 20, 2011

A multibillion-dollar expansion of a South Texas nuclear facility appears to have been derailed by last month's tsunami in Japan.

NRG Energy, the company orchestrating the expansion plans — and hoping Austin would partner with it in some capacity — said Tuesday that it was pulling its financial support, leaving a multibillion-dollar gap other partners would have to fill.

NRG President and CEO David Crane said the expansion faces "diminished prospects" in the aftermath of the tsunami that devastated Japan last month and caused the world's biggest nuclear crisis since Chernobyl at the damaged Fukushima nuclear plant.

"In the wake of Fukushima, the confluence of events that would have to occur in NRG's view in order to get (reactors) 3 and 4 truly back on track is extremely daunting and at this point not particularly likely," Crane said in a conference call with investors Tuesday.

NRG has spent \$331 million so far on planning and permitting of the expansion, but the company "could not justify further financial participation," Crane said.

NRG is the majority owner and operator of the South Texas Project, a facility in Matagorda County with two reactors that were opened in the 1980s. The City of Austin owns 16 percent of those reactors, which generate about a quarter of the city's electricity.

NRG had hoped to double the size of the plant, from two reactors to four, and persuade Austin and others to buy power from the new reactors. The company estimates that the project would cost about \$10 billion.

Toshiba, which is a 12 percent partner in the expansion, has committed to pursuing it even without NRG's financial backing, NRG officials said. Crane said NRG also will continue to seek the necessary federal licenses because the facility is more valuable with permits in hand.

"It's simply good asset management," he said.

But NRG's absence leaves a significant funding gap. Even if NRG can find enough partners to shrink its ownership share to 40 percent, as the company was planning, it would be responsible for at least \$4 billion of the project's construction costs.

Another partner, Tokyo Electron, which had committed to covering up to 20 percent of the project costs, faces its own difficulties because it operates the Fukushima plant.

The City of San Antonio is a 7.6 percent owner, after having tried to pull out of the project.

Swami Venkataraman, senior director of utilities and infrastructure ratings at Standard and Poor's, said the expansion already had faced hurdles and was put in an even more uncertain position by the events in Japan.

"It's not clear what the new safety regulations will be that any new plants will be required to undertake," he said.

"It doesn't mean they can never restart it," Venkataraman said. "But under the original schedule, they planned to get a license by the end of 2012. Now we don't know. Once they get a license, they have to find out how much more it will cost, and then they will know how much time they need to proceed."

Tom "Smitty" Smith, a nuclear critic and head of the Texas chapter of Public Citizen, said that "all that's left is for the (justice of the peace) to be called in and pronounce the expansion dead."

Because of the tsunami, talks already had been put on hold with Austin, San Antonio and other Texas cities that NRG had been hoping to partner with.

"If they get back on the path of moving the project forward, we will meet with them and be interested in what they have to say," Austin Energy spokesman Ed Clark said.

NRG Stops Investing In South Texas Project Units 3 And 4 (VICTORA)

By Adriana Acosta

Victoria (TX) Advocate, April 20, 2011

BAY CITY - NRG Energy announced on Tuesday it will drop its investment in the South Texas Project development of Units 3 and 4.

NRG, the plant's main investor, had invested \$481 million into the development of units 3 and 4.

This comes as a result of the ongoing nuclear incident in Japan, after the earthquake and tsunami brought down the Fukushima Nuclear Power Plant in March.

"The tragic nuclear incident in Japan has introduced multiple uncertainties around new nuclear development in the United States, which have had the effect of dramatically reducing the probability that STP 3 and 4 can be successfully developed in a timely fashion," said David Crane, president and chief operating officer of NRG.

Ed Halpin, president and chief operating officer for STP, said they remain committed top operating the plant as safely as possible.

"Our team's commitment and focus remain unchanged - the continued safe and reliable operation of our existing units," he said.

STP employs about 1,200 people.

Crane said they continue to believe in the necessity of a US nuclear renaissance and STP being the best new nuclear development project in the country.

But the challenges facing US nuclear development now and the large financial resources spent by NRG on the project over the past five years make it impossible for them to continue financial participation in the development of the STP project, he said.

NRG will cooperate with and support its current partners and any future prospective partners in attempt to develop units 3 and 4 successfully, he said.

In order for the project to get back on track, the following would have to happen:

The Nuclear Regulatory Commission give STP a clean bill of health, ending current regulatory uncertainty.

The Department of Energy award a conditional loan guarantee;

Find an investor to replace NRG.

Find energy companies to purchase future power.

"Despite today's announcement, project activity continues on obtaining a combined construction and operating license and in securing a federal loan guarantee," said Buddy Eller, director of communication for STP.

Last month, Nuclear Innovation North America, the company's nuclear development joint venture with Toshiba American Nuclear Energy Corp., suspended indefinitely all detailed engineering work and pre-construction activities, including reducing project work force at STP.

Crane said NINA will continue its focus in securing a combined operating license from the Nuclear Regulatory Commission and on obtaining a loan guarantee from the US Department of Energy.

The news was not good for Bay City officials who have worked with STP to benefit from the expansion.

"The expectations of job and community growth through the expansion of 3 and 4 were something that we were looking forward to although we have known for years that this was a complicated process with many things that could go wrong," said Mitch Thames, Bay City Chamber of Commerce president.

NRG To Write Down Texas Nuclear Investment After Japan (2) (BLOOM)

By Edward Klump

Bloomberg News, April 20, 2011

April 19 (Bloomberg) – NRG Energy Inc., the largest US independent power producer, won't invest more money to build two reactors in Texas and will write down its investment in the project because of diminished prospects following Japan's nuclear crisis.

The company plans to record a first-quarter charge of about \$481 million before taxes for its nuclear joint venture with Toshiba Corp., Princeton, New Jersey-based NRG said in a statement today. Some engineering work was halted on the project last month and Tokyo-based Toshiba will fund ongoing efforts to get a license for Units 3 and 4 at the South Texas Project, according to the statement.

Tokyo Electric Power Co., which had an option to buy into the Texas project, has been battling a meltdown of damaged units at its Fukushima Dai-Ichi nuclear plant in Japan since a March 11 earthquake and tsunami. The accident, which crippled four of six reactors at the site north of Tokyo, has a severity level of 7, the same as the 1986 Chernobyl disaster.

"The tragic nuclear incident in Japan has introduced multiple uncertainties around new nuclear development in the United States which have had the effect of dramatically reducing the probability that STP 3&4 can be successfully developed in a timely fashion," NRG Chief Executive Officer David Crane said in the statement.

NRG and Toshiba own Nuclear Innovation North America LLC, the development company that proposed to build two reactors at the site about 80 miles (130 kilometers) southwest of Houston. The two units would cost about \$10 billion, Crane has said.

Writing on Wall

"The writing's been on the wall here," said James Dobson, an analyst at Wunderlich Securities in New York who has a "buy" rating on NRG shares and owns none. "The question was when management was going to fully decide they were ready to make an announcement."

The price of natural gas, a power-plant fuel that can compete with reactors to generate electricity, already had created questions about the economics of the project, Dobson said. Gas prices have averaged \$4.197 per million British thermal units this year on the New York Mercantile Exchange, a 53 percent drop from the average price in 2008.

"The extraordinary challenges facing US nuclear development in the present circumstance and the very considerable financial resources expended by NRG on the project over the past five years make it impossible for us to justify to our shareholders any further financial participation in the development," Crane said.

Nuclear Review

The Nuclear Regulatory Commission last month announced a 90-day review of US facilities to identify areas for further study following the Japan incident. The industry may be forced to spend more than \$10 billion to address long-standing safety concerns including fire safety and storage of spent fuel that have gained new urgency following the accident, according to estimates by Bloomberg Government.

NRG expects to incur as much as \$20 million in costs associated with the expansion project in the second quarter, according to the release. The company owns about 88 percent and Toshiba owns about 12 percent of Nuclear Innovation North America. San Antonio utility CPS Energy owns 7.6 percent of the project.

NRG fell 22 cents, or 1 percent, to \$21.66 at 5:02 p.m. in after-hours trading in New York.

NRG Energy Provides Clarity On Nuclear Project: No More Money (GIGAOM)

By Katie Fehrenbacher

GigaOm, April 20, 2011

When I last chatted with NRG Energy CEO David Crane, he explained to me how the nuclear disaster in Japan had created an environment of uncertainty for US nuclear projects, and specifically for the expansion of NRG's own South Texas nuclear plant. That's partly because Tokyo Electric Power Company (TEPCO), the beleaguered utility that owns the damaged nuclear plants in Japan, was supposed to be an investor in NRG's nuclear project. Well, this afternoon in a note to investors, NRG Energy says it will be providing no more money for the development of the South Texas Project units 3&4, and will be recording a first quarter 2011 pretax charge of about \$481 million.

Ouch. NRG said in a statement that given the "diminished prospects" of the South Texas nuclear project it "will not invest additional capital in the STP development effort." At the same time, NRG said it would fully support any of its current or future partners if they want to continue to develop STP 3&4 units. (Crane will be speaking at our Green:Net 2011 event this Thursday April 21, in San Francisco).

The design work for the project had already essentially been halted, as NRG Energy waited for a review of the industry by the Nuclear Regulatory Commission (NRC) in the wake of the incident at the Fukushima reactors in Japan. The NRC is reviewing all nuclear projects built and under construction in the US to see if there could be any lessons learned from the Japanese nuclear incident. Nuclear industry executives fear the NRC review process will be very lengthy and will paralyze any new nuclear projects in the pipeline, which was what happened in the aftermath of the nuclear incident at Three Mile Island in 1979. Crane told me last month that he hoped a NRC review process wouldn't last any longer than 3 months.

CPS Energy, which had been in discussions to purchase the nuclear power from NRG's expanded plants, had already suspended its talks to buy the power. CPS also owns over 7 percent in the expansion project.

The US hasn't built any new nuclear reactors in decades, thanks to fears after Chernobyl and Three Mile Island. The short-term costs of nuclear construction after the Japanese nuclear disaster is expected to soar in the short term, and development of new nuclear technologies from some startups could be stalled as well. Nuclear technology has also crept along because of the low price of natural gas.

NRG's decision to cut its losses so to speak, is an even greater indication that the Japanese nuclear disaster has set back development of nuclear power in the US by many years. Other countries, like Germany, are moving even more swiftly to halt the construction of nuclear plants.

NRG will be holding a conference call later today to provide more details on its decision.

NRG To Take 1Q Charge Of \$481 Million On Texas Nuclear-Power Project (DJNews)

By Naureen S. Malik

Dow Jones Newswires, April 20, 2011

NEW YORK -(Dow Jones)- NRG Energy Corp. (NRG) won't make any additional capital investments to build two nuclear reactors in South Texas and will book a \$481 million pre-tax charge for the project in the first quarter.

The Princeton-based company said it isn't withdrawing from the project. However, it has become "impossible for us to justify to our shareholders any further financial participation" in developing the South Texas project, Chief Executive David Crane said in a statement.

The move isn't a complete surprise. The project, estimated to cost \$13.5 billion, has been on shaky ground because of weak power prices and demand. Texas is a competitive market and low natural-gas prices has made it difficult to justify expending billions of dollars on power plants. In the past month, financial and regulatory challenges have heightened with the ongoing Japanese nuclear crisis. It may be months before officials can contain radiation at Tokyo Electric Power Co.'s (9501.TO)

Fukushima Daiichi plant that was rattled by a magnitude-9.0 earthquake and subsequent tsunami last month. The Japanese accident has added new uncertainties to new nuclear-power development in the US and has "had the effect of dramatically reducing the probability" that the two Texas reactors can be developed in a timely fashion, Crane said.

NRG has a 44% stake in the project to build two additional reactors at an existing site in South Texas. The power company and its partners—Toshiba Corp. (6502.TO, TOSYY) and Tokyo Electric—are seeking a loan guarantee from the US Department of Energy to help raise financing. Uncertainties around the project include whether Tokyo Electric will back out of the deal, whether the project will be granted a loan guarantee at favorable rates and the timing of federal regulatory approval for the project.

NRG had already announced it is halting pre-construction work on the South Texas project. In addition to the charge in the first-quarter, NRG said it expects to incur a one-time expense of no more than \$20 million from the project, mostly in the second quarter.

UPDATE 3-NRG Energy Abandons Texas Nuclear Expansion Plan (REU)

By Eileen O'Grady

Reuters, April 20, 2011

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

NRG Energy Set For \$481m Writedown Charge (FT)

By Sheila McNulty

Financial Times, April 20, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

NRC Halts Monitoring Of Surry Power Plant (VAGAZ)

Virginia Gazette, April 20, 2011

SURRY — The Nuclear Regulatory Commission announced Tuesday that it has discontinued monitoring mode status related to the weekend storms that hit the Surry nuclear power plant.

NRC resident inspectors continue to review the events, and the agency is evaluating whether additional follow up will be needed. The plant lost offsite power Saturday when an apparent tornado touched down in the adjacent switchyard. The facility's emergency diesel generators immediately started up, providing emergency power until offsite power was restored.

NRC Concludes Emergency Monitoring At Surry Nuclear Plant (WILYDAILY)

Williamsburg Yorktown Daily, April 20, 2011

The Nuclear Regulatory Commission discontinued its monitoring mode status Tuesday morning that arose after Saturday's storm in which an apparent tornado touched down nearby the Surry nuclear power plant.

Dominion, which operates the two-unit facility near Surry, exited its unusual event, which was the lowest of four NRC emergency classifications.

The NRC's resident inspectors continue to review the events and the agency is evaluating whether additional followup will be needed.

The plant lost offsite power on Saturday when an apparent tornado touched down in the adjacent switchyard. The facility's emergency diesel generators immediately started up, providing emergency power until offsite power was restored.

In an earlier press release, an NRC spokesman said all safety systems operated as needed.

Surry Units Shut Down After Power Station Damaged (VAGAZ)

Tornado hits offsite electric switchyard

Virginia Gazette, April 19, 2011

SURRY — The US Nuclear Regulatory Commission is monitoring the Surry nuclear power plant after the site lost offsite power around 7 p.m. Saturday.

In a press release issued Sunday morning, the NRC said a tornado affected an electrical switchyard next to the plant. The NRC is monitoring the event through resident inspectors at the site and in the Atlanta regional office.

The two units at the Surry plant automatically shut down after losing offsite power. Four diesel generators kicked in to power the units' emergency loads. Plant operators have partially restored offsite power to both plants. Safety systems have operated as needed. Dominion notified the NRC soon after it happened and the agency dispatched inspectors to the site as well as staffed its incident response center in Atlanta.

Nuclear Regulators To Discuss Ameren's Callaway Plant (STLBIZ)

By Kelsey Volkmann

St. Louis Business Journal, April 20, 2011

Nuclear regulators plan to publicly discuss next week the findings of their inspection of Ameren's Callaway County plant.

The Nuclear Regulatory Commission said Tuesday that Callaway operated safely during 2010. The plant did receive heightened oversight during the first half of 2010, but a subsequent inspection determined that appropriate corrective actions were implemented, NRC officials said. Inspections are performed by two NRC resident inspectors assigned to the plant and by inspection specialists from the Region IV Office in Arlington, Texas.

NRC staff will hold an open house in Fulton, Mo., on April 26 to discuss the agency's 2010 assessment of safety performance for the Callaway nuclear power plant. The open house will begin at 6 p.m. at the Burton Business Building, Classroom 6, William Woods University, One University Ave., in Fulton. Members of the public will have an opportunity to meet informally with the NRC staff, ask questions and learn about the agency's role in ensuring safe plant operation.

"The NRC continually reviews the performance of Callaway and the nation's other commercial nuclear power facilities," NRC Region IV Administrator Elmo Collins said. "This informal meeting will provide members of the public with an opportunity to learn about our annual assessment of safety performance at the plant."

Read a letter sent from the NRC Region IV office to plant officials addressing the performance of the plant during 2010. The NRC holds public meetings annually about each nuclear plant it oversees.

Coincidentally, the open house will occur on the 25th anniversary of the Chernobyl nuclear disaster.

Next week's forum is unrelated to the NRC inspection that was announced last month at Callaway. Inspectors were sent to the plant in March to determine whether an auxiliary feedwater pump is properly lubricated. The pump is used to supply water to the plant's steam generators, which cool the reactors during accidents. A final report about that inspection is due out in May.

Federal Nuclear Regulators Issue Last Environmental Report On Proposed South Carolina Reactors (AP)

Associated Press, April 20, 2011

JENKINSVILLE, S.C. — Federal nuclear regulators say there are no environmental impacts from two proposed nuclear reactors in Jenkinsville that would prevent South Carolina Electric & Gas from getting a license to operate the plants.

The Nuclear Regulatory Commission and the US Army Corps of Engineers said in a news release Tuesday that the environmental review began in January 2009 and included input from several public meetings.

The final statement is part of a long process for approval for the reactors that will be among the first built in the US in a generation.

SCE&G and state-owned utility Santee Cooper want to operate two 1,100-megawatt reactors at the V.C. Summer Nuclear Station about 25 miles northwest of Columbia. Officials expect the first reactor to generate power by 2016, and the second in 2019.

Final Environmental Impact Statement Issued For Two Nuclear Reactors (POWGENWLD)

Power-Gen Worldwide, April 20, 2011

No environmental factors preclude issuing combined licenses for two nuclear reactors proposed to be built at the Summer nuclear station in South Carolina, federal regulators have found.

South Carolina Electric & Gas (SCE&G) and Santee Cooper are applying for licenses to build and operate two Westinghouse AP1000 reactors adjacent to the existing Summer nuclear power plant. The companies submitted the application March 27, 2008. The AP1000 is a 1,100 MWe pressurized-water reactor design the Nuclear Regulatory Commission certified in 2006. The agency is reviewing Westinghouse's May 2007 application to amend the certified design.

The NRC and the US Army Corps of Engineers, Charleston District, completed the Final Environmental Impact Statement for the combined licenses. The Corps of Engineers will use the information in making its federal permit decision.

The decision is part of the overall Summer application review. NRC staff continues to compile its final safety evaluation report, which will include recommendations from the NRC's Advisory Committee on Reactor Safeguards, an independent group of nuclear safety experts. The NRC's final licensing decision will be based on the final environmental impact statement and the safety evaluation findings, along with a ruling from the five-member Commission.

Business Briefs - Commission To Release Report On Nuclear Plant (WILMIN)

By Wayne Faulkner

Wilmington Star News, April 20, 2011

CASTLE HAYNE | Federal regulators will present results of a performance review of Global Nuclear Fuel-America's commercial nuclear fuel fabrication plant at a public meeting April 26 in Wilmington.

The Nuclear Regulatory Commission (NRC) will meet with management of the Wilmington-based company during a meeting at 10 a.m. in the Azalea Coast Room A of UNCW's Fisher Student Center, the NRC said.

NRC officials will be available following the business portion of the meeting at the University of North Carolina Wilmington to answer questions.

The NRC staff assessed performance at Global from May 23, 2009 to Dec. 31, 2010, on safety operations, radiological controls, facility support and special topics.

The NRC staff review determined that Global continued to conduct its activities safely and securely, protecting public health and the environment.

But "management attention is still warranted to improve the identification and implementation of safety controls," the NRC said in a statement.

It will continue inspections to monitor the company's corrective actions.Ten entrepreneurs named finalists for award.

Time To Lift Ban On Uranium Mining Near Grand Canyon? Deadline Nears. (CSM)

Obama administration must decide by midsummer whether to extend a freeze on uranium mining claims near the Grand Canyon. A recent report cites 10 national 'treasures' at risk.

By Mark Clayton

Christian Science Monitor, April 20, 2011

In the past decade, interest in mining for uranium has surged, with prices for the metal soaring in world markets a few years ago. Uranium prospecting and mining-project plans have been popping up like jack rabbits across the western United States.

But for at least one of America's iconic natural landmarks, the Obama administration has put the brakes on thousands of new mining plans or claims. In 2009, it blocked claims for uranium and other mining on about 1 million acres of public land bordering the Grand Canyon.

Now, the administration is nearing a decision point: whether to allow the mining-claims process to move forward or extend its moratorium for up to 20 years. The decision could set a precedent for other natural landmarks also being hedged in by uranium and other mining claims, observers say.

More than 8,300 uranium and other mining claims, their development frozen by the government moratorium, are staked on the public lands near the Grand Canyon, according to a new study by the Pew Environment Group, an environmental watchdog based in Washington, D.C.

The report labels the Grand Canyon, as well as nine other national "treasures" in the West, as "at risk" from surging industrial mining claims on nearby public lands. More than 4,400 mining claims have been staked near those nine other sites.

In the middle of the storm is the Department of Interior's Bureau of Land Management (BLM), which controls much land around the 10 sites. Also getting involved is Congress, which is unhappy about growing foreign ownership of many uranium mining claims and a lack of revenue for the government from any resulting mines. The legislation regulating these activities needs updating, say some lawmakers.

As for the Grand Canyon, environmentalists and water managers from Los Angeles to Las Vegas decry any uranium mining near the land-mark, citing visual impacts, flash floods, and radioactivity leaching into ground water that feeds the vital Colorado River.

"These are national parks and other special places Americans hold dear – and they're now at risk thanks to mining claims staked in close proximity to them," says Jane Danowitz, director of the Pew public-land program that produced the report. "It's all due largely to the fact that we have this outdated mining law, so anyone who wants to mine and take minerals from US soil can do it no matter how much damage it does."

Such fears are overblown, industry experts say, with predictions of only 1 in 10 mining claims, if that, being developed into a mine.

"The uranium mining industry in this area has had a stellar environmental track record," says Pamela Hill, executive director of the American Clean Energy Resources Trust, a coalition of uranium exploration and mining companies based in Kanab, Utah. "A lot of these concerns are without basis in science or history of uranium mining in this area."

May 4 will mark the end of a public-comment period on the environmental impact statement that has been drawn up about mining by the Grand Canyon. A decision by the government on whether to lift its moratorium is expected by July 20.

Even with the Obama administration's moratorium, one mining claim near the Grand Canyon, deemed to have existing rights, was allowed to go forward, and a mine is now in operation. Also, as many as 11 existing uranium claims near the Grand Canyon could be eligible for permits whether or not newer claims are blocked, the BLM says.

Although the Obama administration has not blocked mining claims in other areas, such claims are just starting to reach fruition. Earlier this month, a uranium mine in Wyoming announced its opening. Other sites are expected to be developed, too, according to the Nuclear Regulatory Commission (NRC).

Congress has been watching closely. Some lawmakers have zeroed in on the 1872 Mining Law, under which the US government does not receive any mineral royalties.

Earlier this month, legislation was introduced by Reps. Martin Heinrich and Ben Ray Luján, both Democrats from New Mexico, to shift regulation of uranium mining from "the antiquated 1872 Mining Law" to the Mineral Leasing Act. The latter would allow uranium mining to be managed through a competitive leasing program.

Others also worry that most of America's best uranium mining prospects – including those by the Grand Canyon – are now controlled by Canadian, Korean, Russian, and other foreign companies. In November, the NRC approved transfer of control of licenses from Uranium One USA Inc. and Uranium One Americas Inc., which are Canadian entities, to JSC Atomredmetzoloto (ARMZ), a Russian corporation.

"This transaction would give the Russian government control over a sizable portion of America's uranium production capacity," complained Sen. John Barrasso (R) of Wyoming in a December letter to President Obama. Russia has aided Iranian nuclear ambitions, he wrote.

"I remain concerned with any attempt to grant an export license to ARMZ which would allow the Russian government to ship US uranium overseas," Senator Barrasso added.

Gregory Jaczko, chairman of the NRC, assured Barrasso in a letter that ARMZ had not applied for an export license, so it could not send any US uranium overseas.

In the March 21 letter, Mr. Jaczko also touts expected robust growth in US uranium mining, despite the Fukushima crisis in Japan.

"We are now expecting as many as 16 new applications by 2013 for new recovery facilities or for expanding existing uranium recovery facilities, in addition to those we have already received," he wrote.

One key reason that new US uranium production is needed, Ms. Hill and other advocates say, is to lessen US dependence on foreign energy. About 90 percent of uranium fuel for US nuclear plants today is imported.

But according to a draft BLM study of uranium mining impacts on the Grand Canyon, such mining would do little to boost domestic uranium supplies.

"Currently there are no laws in place that would require domestic uranium to be solely purchased and consumed within the United States," the draft BLM study concluded. "Uranium mined and produced within the parcels would not necessarily move the United States toward energy independence and thus would not represent an impact to national energy resources."

Vt Nuke Plant Appeals To Public In Newspaper Ads (BOS)

Boston Globe, April 20, 2011

The Vermont Yankee nuclear plant, which is suing the state of Vermont in a bid to stay open past next year, is taking its case to newspaper readers.

In full page newspaper advertisements taken out Tuesday in nine Vermont newspapers, the CEO of plant owner Entergy Corp. says the company wishes it didn't have to go to court but that it had no choice. J. Wayne Leonard's signed letter says Vermont Yankee's owners have a responsibility -- to the plant's employees, the company's investors and electricity consumers -- to stake its claim to operating past March 2012, when the state wants it shut down.

The suit, filed Monday in US District Court in Burlington, says the US Nuclear Regulatory Commission has jurisdiction over Vermont Yankee -- not the state of Vermont -- and that it has granted the plant a new license.

"We mean no disrespect by this action," Leonard wrote. "We seek only a resolution of our disagreement with the state and we will abide by the results of the judicial process."

Entergy contends that Vermont lawmakers overstepped their bounds when they passed a 2006 law giving the Legislature a say in whether the plant is allowed to operate past the scheduled March 2012 expiration of its state operating permit.

State officials say Entergy expressed support for the law when it was passed but that now that the state doesn't want to renew the permit, it wants the law declared unconstitutional because the US Nuclear Regulatory Commission has jurisdiction over nuclear plants.

Vermont Yankee Appeals To Public In Newspaper Ads (WPTZ)

WPTZ-TV Burlington, VT, April 20, 2011

The Vermont Yankee nuclear plant, which is suing the state of Vermont in a bid to stay open past next year, is taking its case to newspaper readers.

In full page newspaper advertisements taken out Tuesday in nine Vermont newspapers, the CEO of plant owner Entergy Corp. said the company wishes it didn't have to go to court but that it had no choice. J. Wayne Leonard's signed letter says Vermont Yankee's owners have a responsibility - to the plant's employees, the company's investors and electricity consumers - to stake its claim to operating past March 2012, when the state wants it shut down.

Larry Smith, a Vermont Yankee spokesman, said Leonard wanted to have a conversation about the issue with the people of Vermont.

Entergy Takes Its Message To Ads (RUTHER)

By Susan Smallheer

Rutland Herald, April 20, 2011

BRATTLEBORO — Entergy Corp., took its battle to win the minds — if not the hearts — of Vermonters with a stack of full-page advertisements Tuesday in nine Vermont newspapers.

In a lengthy letter addressed to "Dear Vermonters," J. Wayne Leonard, chairman and chief executive officer of Entergy Corp., outlined his company's reasons for suing the state of Vermont, Gov. Peter Shumlin and the Public Service Board, in order to keep Vermont Yankee open beyond its projected closing date of March 21, 2012.

"I know that Vermonters are deeply divided on the subject of nuclear power," Leonard wrote.

But Leonard had his harshest criticism for some unnamed "public officials," and the Vermont Legislature, which he said changed the rules of the regulatory game Entergy agreed to in 2002.

"We agreed to a process in which an independent expert agency would decide Vermont Yankee's future based on evidence and facts developed through an impartial process with the possibility, if necessary, of court review," he wrote.

The full-page advertisements came a day after Entergy and two of its subsidiaries, sued the state in US District Court in Burlington, claiming the state has violated the Atomic Energy Act by trying to block Vermont Yankee's continued operation.

Leonard, reiterating many of the arguments made by Entergy executive Richard Smith Monday with reporters on a conference call, said that Entergy tried to avoid a costly and lengthy lawsuit.

Entergy Nuclear spokesman Larry Smith said Entergy placed the advertisements in nine Vermont newspapers in an effort to "open a conversation" with the people of Vermont.

The full-page ads come after a long series of advertisements promoting Yankee as "safe, clean and reliable" that Entergy has been running in Vermont media — television, radio and newspapers.

On Monday, there was a large ad featuring Michael Colomb, the site vice president of Entergy Nuclear at Vermont Yankee, addressing issues raised by the nuclear disaster at the Fukushima Daiichi nuclear plant.

Smith said that the company was having a positive response to the ad campaign.

"His message is receiving positive response from members of the business community in the state and supporters of Vermont Yankee," he said, while adding he could not answer questions about the federal lawsuit.

State Readies For Legal Showdown With Vt. Yankee (WCAX)

By Jennifer Reading

WCAX-TV Burlington, VT, April 20, 2011

The swords are drawn. Both Vermont and Vermont Yankee are ready to go to war over the future of the aging nuclear power plant in Vernon.

"They've finally started the battle and we're ready to fight," said Bill Sorrell, D-Vt. Attorney General.

On Monday Entergy-- the New Orleans-based company that owns Vermont Yankee— sued the state. It wants a court order blocking Vermont from shutting Yankee down next year.

"We believe the general assembly changed the rules and left us with no other choice. We had a judgment call to make. Seek relief in the courts or shut the plant down at the end of the current license," said Richard Smith, the president of Entergy.

"We're going to try very hard in court to say that this is not the kind of case in which an injunction should be issued and that we should be able to enforce our laws," Sorrell said.

This is a legal battle over jurisdiction. Does the federal government or the state of Vermont have the authority to close Yankee's doors? Vermont is the only state with a law requiring legislative approval for a license extension. But Entergy now

claims that the Atomic Energy Act and the Federal Power Act—two federal laws—pre-empt state control over Yankee's license and power sales. This case is expected to draw national attention. And the battle's not expected to be brief.

"This case could drag on for years. Easily," Sorrell said.

And that could mean hundreds of thousands of dollars if not more in legal fees for the state. Sorrell says he has the governor's financial support, explaining the case will be paid for through attorney general's office budget and a special appropriation if necessary.

"I don't really care which pot it comes from as long as we have it available to expend to defending this important case," Sorrell said.

A fight he says is worth every penny.

If Entergy wins its injunction it would be allowed to continue operating despite state law while the case is litigated and that gives Entergy little motivation to speed things along.

Former PSB Chair Says Vermont In Position Of Strength In Lawsuit (VTPR)

By Mitch Wertlieb

Vermont Public Radio, April 20, 2011

The owner of Vermont Yankee nuclear power plant has sued the state, asking a federal judge to block the state from shutting the plant down next year.

Yankee's original 40-year operating license was scheduled to expire next March. But, the Nuclear Regulatory Commission has approved extending the license for another 20 years.

So will Vermont Yankee be able to keep operating? VPR's Mitch Wertlieb gets some perspective from Michael Dworkin, a former chairman of the Vermont Public Service Board who now heads the Institute for Energy and the Environment at Vermont Law School.

Shumlin Disputes Entergy Claims (BR)

By Bob Audette

Brattleboro Reformer, April 20, 2011

BRATTLEBORO -- During a press conference in Montpelier on Monday, Gov. Peter Shumlin disputed Entergy's contention that the Legislature's approval of Act 160 "changed the rules" of an agreement reached when Entergy bought Vermont Yankee power plant in 2002.

Act 160 may not have been part of the memorandum of understanding signed in 2002, said Shumlin, but Entergy's lobbyists, executives and lawyers all participated in the process of reviewing Act 160.

"Indeed, Entergy expressed its support of that law at the time," he said.

During an interview with the Reformer

on April 7, Shumlin said if Entergy sued the state, it would have a hard time justifying its position before a federal judge.

"I think it's a tough argument to make to a judge — 'Your honor, we didn't tell the truth about the underground pipes, we didn't tell the truth about supporting the legislation that [former Gov. James] Douglas signed that gave the Legislature the authority to determine whether or not the power company's a public good,'" he said. "How many times are they going to tell us they didn't mean what they said?"

In a statement issued on Monday, Shumlin said as governor he has taken an oath to uphold and protect the laws of Vermont. He also stated that Entergy's decision to sue "flies in the face" of the commitments it made to the state.

"Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law," stated Shumlin. "Instead of following Vermont law, Entergy seeks to subject the taxpayers of Vermont to an expensive legal proceeding."

Entergy clearly agreed that it would not attempt to claim preemption regarding the state's licensing decision, he stated.

"The Public Service Board relied upon that promise when it allowed Entergy to purchase the plant," stated Shumlin. "Later, Entergy supported the law passed by the Legislature and signed by my predecessor giving the Legislature a role in the state licensing process."

Larry Smith, director of communications for Yankee, said he had no comment on Shumlin's contention that Entergy did not oppose the enactment of Act 160.

Ray Shadis, spokesman for the New England Coalition, which is opposed to Yankee's continued operation, agreed with the Governor's characterization of Entergy's position on Act 160.

When Entergy dropped its opposition to the legislation it gave "tacit approval to its affirmative vote out of committee and to passage," wrote Shadis in an e-mail to the media.

Entergy dropped its opposition to the act because it was confident that the Legislature would never vote against Yankee's continued operation, he stated.

Rep. Sarah Edwards, P-Brattleboro, also asserted Entergy's position on Act 160 was clear at the time the Legislature passed it.

Vernon Selectboard member Patty O'Donnell, who formerly represented Vernon in the Legislature and supports Yankee's continued operation, said she wasn't surprised by Entergy's decision.

"They have every right to do what they are doing," she said, adding the state will be spending millions of dollars on defending itself in federal court, money that would be better spent elsewhere.

"It's a shame we are putting our resources into a court case instead of in the vulnerable people in Vermont," said O'Donnell.

Attorney General Bill Sorrell said his office has been preparing for well over a month for the possibility that either Entergy would be suing the state or it would continue operating the plant, forcing the state to sue Entergy.

"We've known this was going to end up in court," he said. "The governor authorized us to get more resources, both in staffing and expert witnesses. We've got a lot of work to do, but we're not scrambling woefully behind."

He said the judge who will be hearing the case will decide on a schedule in the next few weeks, but he expects a decision will be rendered sometime between the end of spring and mid-fall.

Despite which way the federal judge rules, Sorrell said he expected the case to wend its way to the federal appeals court in New York City and most likely to the US Supreme Court.

"I would be shocked if the litigation ended in district court," he said.

He also said Entergy's filing will not delay the release of a report his office has been working on investigating whether Entergy representatives knowingly gave false or misleading testimony to the state about the nature of underground and buried pipes at Yankee.

However, said Sorrell, he would not release the date on when he expects that report to be available to the public.

In a letter to Shumlin and Sorrell, State Auditor Tom Salmon stated no one was surprised by the filing of the lawsuit.

"It has been a relationship scheduled for failure," he wrote.

In the letter, he wrote that Vermonters "deserve professionalism, transparency and a lack of nonsense more than ever. Please keep that in mind as you proceed."

Salmon asked that Shumlin and Sorrell detail how much the state will spend defending its position in court, how many experts it will hire and if the matter had been directed to the Public Service Board, would the costs of that process incurred be billed back to Entergy?

"This process creates a risk to the financial stability of the state. According to the Pew Center on the States, Vermont has demonstrated its inability to plan ahead and was given low marks for attaining traction in strategic directions," wrote Salmon. "Posturing and out-messaging ... does nothing to promote a stable and attractive business climate."

He stated that policy-makers might consider focusing on making Vermont a no-income tax state by 2021.

"Instead, we seek to expend energy and resources in a fight ... that we created ..." he wrote.

In an e-mail update to his constituents, Rep. Oliver Olsen, R-Jamaica, wrote Vermont has no jurisdiction over radiological safety issues, which is why the state has taken care to frame any formal discussions about the nuclear plant within the context of reliability and economic benefit.

"But, in offering their case, the owners point to actions of the Vermont Legislature and statements by elected officials in support of their claim that Vermont's real focus has been concern over radiological safety," he wrote. "It would not be surprising to find public statements from elected officials that might lead one to conclude that Vermont's unwillingness to authorize continued operation of the plant has been motivated by concerns about radiological safety."

Olsen asserted that the Legislature's "politicization of the process through the post-2002 enactments" and repeated statements by Shumlin and other elected officials crossed the line into concerns over safety and public health.

Vermont's congressional delegation also stepped into the fray.

"It appears that Entergy has developed a bad case of corporate amnesia in refusing to honor an agreement it signed with the state in 2002," stated Senators Patrick Leahy and Bernie Sanders and Rep. Peter Welch. "Entergy agreed to waive any claim that federal law preempts the jurisdiction of Vermont. The company also agreed to comply with the terms of the agreement and Vermont laws. Now, reversing course, Entergy is seeking in federal litigation to avoid complying with Vermont law and the agreement. We look forward to the court system resolving this case in Vermont's favor."

If Entergy wins the suit, said O'Donnell, the state's utilities will lose the ability to negotiate a power purchase agreement with Entergy, but even without a power purchase agreement, said Steve Costello, spokesman for Central Vermont Public Service, the state will continue to benefit via a revenue sharing agreement.

"Under that agreement, if the plant operates after March 2012, Entergy must share with our affiliate, Vermont Yankee nuclear power corporation, 50 percent of any revenues derived from sales above an escalating strike price of \$61/MwH for 10 years," said Costello.

Entergy Sues Vermont To Keep Yankee Going (RUTHER)

By Susan Smallheer

Rutland Herald, April 20, 2011

BRATTLEBORO — Finally ending the guessing over its future, Entergy Corp. filed suit Monday against the state of Vermont in a bid to keep the Vermont Yankee nuclear plant operating past 2012.

In a 57-page filing in US District Court in Vermont, Entergy claimed that Vermont was violating the Atomic Energy Act by impinging on federal authority over nuclear power plants. It also said the state was withholding its approval of continued operation in order to extract a lower price power contract from Entergy.

"We have made every reasonable effort to accommodate the state of Vermont and its officials," said Richard Smith, president of Entergy Wholesale Commodities, in a morning statement.

Smith said Entergy had no choice but to file suit in order to protect not just its shareholders but its 650 employees.

"We believe that the state of Vermont changed the rules on us," Smith said, referring to Act 160, a 2006 law.

Gov. Peter Shumlin said the state was well-prepared to fight Entergy over Vermont Yankee's future operation.

Shumlin said Entergy's lawsuit was one more example of Entergy's corporate untrustworthiness.

"Entergy is now attempting to rewrite history, breaking its own promises and its own support of Vermont law," Shumlin said at a Montpelier afternoon news conference.

Shumlin, joined by Attorney General William Sorrell, said the state was ready to defend the 2006 state law, which established the Legislature as the gatekeeper of state approval.

Last year, the Vermont Senate, led by then-Sen. Shumlin, soundly defeated a move toward relicensing, in the wake of underground radioactive tritium leaks at the plant and misstatements by plant executives under oath about the existence of underground pipes carrying radioactive materials.

Shumlin noted that in 1970, it took a vote of the Vermont Legislature before Vermont Yankee could be given its original certificate of public good, so it was keeping with that precedent that the 2006 law set up another legislative vote.

Shumlin, pointing to a 2006 Rutland Herald article, noted that Entergy itself supported Act 160 at the time, which gave the Legislature a key role in the issuing of any new certificate of public good for Vermont Yankee.

Under the law, the Legislature had to vote in favor of Vermont Yankee's continued operation before the Public Service Board could render its final decision on a proposed certificate of public good.

Sorrell said that a team of lawyers from his office had been working on the state's response to a federal pre-emption issue challenge. He said he expected Entergy to file for an injunction to keep Yankee open while the lawsuit was pending later this week.

Sorrell said that the case is not just important to Vermont, and that it has national repercussions.

"This is a case of potentially national significance, not only with the nuclear power industry watching this case closely, but an awful lot of states and state legislatures will be watching this case very closely," said Sorrell.

Sorrell scoffed at the Entergy contention that Vermont's strategy was an attempt to get a better price on a power contract.

Smith told reporters that he had met personally with Shumlin on March 30 to discuss if there was any room for a compromise and to keep the plant open.

Some legal observers said that Entergy was not on firm ground in challenging the state's oversight on Yankee's reliability, its economics, and its environmental impact.

Michael Dworkin, the director of the Vermont Law School Institute for Energy and the Environment, was chairman of the Vermont Public Service Board in 2002 when the board approved the sale of Vermont Yankee to Entergy.

Dworkin said Monday that Entergy overlooked half of the US Supreme Court 1983 case it cited on the issue of federal pre-emption, which granted states a role in nuclear power plants, with the exception of safety.

Dworkin said that Entergy's obvious omission of half of the Pacific Gas & Electric case was another strike against its credibility.

"I find it very troubling they would change this," said Dworkin, who added that Entergy had supported the law back in 2006 and "five years of silence" on the law would not go well in a court of law.

Entergy had benefitted from Act 160 for those five years, he said.

In 2002, Entergy officials said under oath that they would not challenge state regulatory authority, he said, noting the state had long been interested in having a concrete role in its energy future.

"It wasn't just an abstract idea," he said.

Environmental and anti-nuclear groups said the Entergy lawsuit was not a surprise.

James Moore of the Vermont Public Interest Research Group, noted that Entergy was now challenging legislation it had supported.

"Just on its face, it is remarkably questionable," said Moore. "It would be a heck of a lot better if Entergy would just recognize this facility's time has come, and that they should close it down and clean it up."

And Moore said Entergy's claim that the state was "trying to gouge" Entergy over power contract deals "just doesn't fly."

Moore said VPIRG would likely file for intervenor status in the court case.

"This is the legal version of an attempted home invasion," said Raymond Shadis, technical advisor to the New England Coalition, who said the coalition would do "whatever is necessary to support the state in its opposition to imposed Entergy occupation."

On the other side of the discussion came William Driscoll of Associated Industries of Vermont.

"It has been a failure of leadership and responsibility on the part of the administration and legislative leaders that this issue has come to this point," he said in a statement.

"The legislative interference with the Public Service Board doing its job in deciding on Vermont Yankee's future has undermined the

credibility of our regulatory system. Unfortunately, with the Legislature and the governor blocking any decision on the part of the

Public Service Board, Vermont Yankee would seem to have had little other choice than to take the action that they have."

Vermont Yankee Nuclear Station Takes Vt. To Court (WBUR)

By Fred Bever

WBUR FM Boston, April 20, 2011

The owners of the Vermont Yankee nuclear power station are taking the state of Vermont to court. Depending on the outcome of the case, the plant could shut down next year or stay in service for another two decades.

Vermont Yankee's federal license was due to expire in less than a year, but last month the Nuclear Regulatory Commission approved a two-decade license extension. But Vermont legislators, its governor and others who want the plant closed say a state law — unique in the nation — gives the legislature what amounts to veto power over the future of the plant after next year.

Now Richard Smith, an executive at Yankee's owner, the Entergy Corp., has announced a lawsuit seeking federal preemption of Vermont's law.

"We came to one conclusion. We had no choice. We believe that the state of Vermont changed the rules on us," Smith said.

The 650-megawatt plant sits next to the Connecticut River, just north of the Massachusetts border, and it supplies relatively low-cost electricity to the New England power grid. Entergy's suit cites the supremacy and commerce clauses of the US Constitution. And Smith cited the needs of neighboring states.

"This issue is not just about Vermont. Retiring the plant would have an impact on the cost and reliability of service in New Hampshire and Massachusetts, which receive power from Vermont Yankee on the wholesale market," Smith said. "Those states deserve consideration in this discussion."

"Entergy has said, and said repeatedly, that they would abide by Vermont law, and obviously they don't want to now," said William Sorrell, Vermont's attorney general.

Sorrell said the state will fight to make sure the plant closes next March, whether or not the federal judiciary has reached a final decision on the suit.

"Among other things that we will be litigating is that one, Vermont's lie is appropriate and legal, and that two, when Entergy bought the plant, and subsequent to that, they made statements that they had every intention of abiding by Vermont law," Sorrell said.

Sorrell said if Vermont wins the case, that would set significant precedent for other state legislatures that may want to assert their own authority over nuclear power plants. And, he said, the state continues to pursue a separate criminal investigation

concerning allegedly false statements Entergy officials made under oath about the existence of underground pipes at the plant, pipes which last year proved to be leaking irradiated water.

Fred Bever is news director of WFCR-FM in Amherst.

How A Federal Court Battle In Vermont Could Recast Nuclear Power (CSM)

By Mark Clayton

Christian Science Monitor, April 20, 2011

A utility company has challenged a state's sovereignty over nuclear power plants within its borders, in a case whose eventual outcome could ripple across the nation.

The owner of the Vermont Yankee nuclear power plant – a subsidiary of New Orleans-based Entergy Corporation – sued Vermont yesterday in federal court, to prevent the state from forcing the 39-year-old power plant to cease operation next March.

Whoever prevails, the precedent could affect the relicensing process for aging reactors nationwide, legal experts agree. There are 104 nuclear reactors, now operating in 31 states across the country, that collectively provide about 20 percent of the nation's electricity. As costs for new construction of a nuclear power plant skyrocket, Entergy is only one of a long line of utilities seeking federal permits to extend – by 20 years – the 40-year licenses held by more than three-quarters of existing reactors.

"This will likely be a landmark case, establishing a dividing line between federal government and states over nuclear issues," says Boris Mamlyuk, an assistant professor at Ohio Northern University College of Law, who has written about the case. "It also holds potential – if the ruling goes for Vermont – to help revive the nuclear safety debate in the US on a major scale."

The case, he and others note, is heightened by public concern over the Fukushima accident and the safety of 28 existing plants in the US with the same design as the Japanese plant – including the Vermont Yankee plant. Some question whether federal oversight is adequate, since the Nuclear Regulatory Commission (NRC) granted a new federal license to the plant – over Vermont's protests – even as the Fukushima crisis was unfolding.

"NRC violated the law by re-licensing the Vermont Yankee reactor at the same time it launched an investigation into whether US safety and environmental standards are strong enough, in light of the Fukushima accident," says Diane Curran, a Washington attorney representing several groups seeking an NRC review of relicensing.

Under existing law, states have definite – if strictly limited – rights regarding nuclear power plants. These included a say in the siting, economics, transmission, aesthetics and other issues. States do not have authority over safety and licensing. That resides squarely with the federal government.

The Vermont case could reinforce those states' rights, expand them – or see them overturned entirely. Entergy argues the federal government has near-complete control over the licensing of nuclear power plants. If the case rises to the US Supreme Court, as some suspect it might, the ruling could sharply curb federal say on nuclear power plants inside state lines.

"Litigation is by far the least-preferred approach," said Richard Smith, president of Entergy Wholesale Commodities, in a statement. "But it is clear our disagreement with the state of Vermont on the scope of its authority over Vermont Yankee cannot be resolved between the two parties."

There are unique issues, too. Unlike other states, Vermont negotiated a 2002 agreement with Entergy, which it amended in 2006, giving the state authority to grant – or not – a state permit, if the company sought to relicense the plant. Last year, the state senate voted 26 to 4 to refuse a new state permit, citing radioactive leaks that went unreported and the collapse of a Vermont Yankee cooling tower in 2007, among other concerns.

Despite these unique elements, Mr. Mamlyuk, Ms. Curran, and other experts say the decision appears to fall under precedent set by a 1983 Supreme Court case in which California succeeded in blocking Pacific Gas & Electric (PG&E) from building new nuclear plants, due to lack of nuclear-waste storage. The case also established "federal preemption" – and the supremacy of federal oversight of nuclear licensing and safety matters.

"If this case were to change the 1983 court decision, then every state would lose the power they've had since joining the union," says Michael Dworkin, former chairman of the Vermont Public Service Board. "We're talking about a state's power over land use and all powers not expressly taken away by Congress. That's what's at stake if the company convinces the Supreme Court to take away those powers currently granted."

Peter Bradford is less sure the case outcome could broaden state power, but agrees it could provoke Congress to set new terms for the collision between nuclear-power jurisdiction and states' rights.

"This is probably the first major litigation involving [federal] preemption in years," says Mr. Bradford, a former NRC member and former chair of the Maine and New York utility commissions. "It will present some big questions for Congress to solve, no matter the outcome of this case."

Entergy Files Suit To Keep Plant Open (WorldNuclearNews)

World Nuclear News, April 20, 2011

Entergy Corporation has filed a complaint with the US District Court in a bid to prevent the state of Vermont from forcing the closure of the Vermont Yankee nuclear power plant in 2012.

The suit filed by Entergy subsidiaries Entergy Nuclear Vermont Yankee and Entergy Nuclear Operations follows the March 2011 decision by the US Nuclear Regulatory Commission (NRC) to renew the plant's operating licence to March 2032. The single boiling water reactor plant has been in operation since 1972. The state of Vermont remains opposed to the operation of the plant beyond the expiry of its original licence, in March 2012.

The NRC's licence renewal decision, reached after an in-depth review, would normally be sufficient to ensure that a plant could continue to operate. However, in the case of Vermont Yankee, state approval is also needed for it to extend operations – a condition of the purchase of the plant by Entergy in 2002. Under a memorandum of understanding (MoU) signed at the time, the two Entergy subsidiaries had agreed they would seek a certificate of public good from the Vermont Public Service Board if seeking to operate the plant beyond 21 March 2012. Entergy contests that a law passed by the Vermont General Assembly in 2006 repudiated the MoU, breaching the agreement and excusing the two Entergy subsidiaries' obligation to further comply with that specific provision.

"The 2006 state law took the decision about Vermont Yankee's future away from the Public Service Board, a quasi-judicial expert decision-maker, independent of legislative control," said Entergy Wholesale Commodities president Richard Smith. In so doing, it "placed Vermont Yankee's fate in the hands of political decision-makers," who could deny the plant's continued operation for unsupported or arbitrary reasons. "This is not what we signed up for in 2002," Smith added.

Entergy says it has made considerable efforts to achieve the necessary state approvals to allow the continued operation of the plant without resorting to litigation, including filing for a certificate of public good, offering Vermont utilities favourable terms for long-term power purchase agreements, offering to negotiate a date for commencement of decommissioning activities at Vermont Yankee earlier than the 60-year SAFSTOR period permitted by NRC regulations, and exploring the potential sale of the plant. The company says its recent attempts to sell the plant were stymied by political uncertainty in the state, and "more specifically, due to the stated intent of Vermont officials to shut down the plant."

Smith described litigation as by far the last preferred approach, but the action was taken following a 30 March meeting between Entergy and state governor Peter Shumlin in which the governor reiterated his opposition to the continued operation of Vermont Yankee beyond March 2012.

The suit contends that the state of Vermont is violating the Atomic Energy Act in asserting that it can close a federally licensed and operating nuclear power plant, and the Federal Power Act in making an agreement to provide power to Vermont utilities at preferential wholesale rates a condition of continued operation.

Meanwhile, Governor Shumlin accused Entergy of "attempting to rewrite history." Shumlin states that the 2006 law clearly outlined the requirements for continued operation of a nuclear power plant in the state. "When it purchased Vermont Yankee, Entergy clearly agreed that it must obtain a new state licence to operate beyond March 2012, and that it would not attempt to claim preemption regarding the state's licensing decision," he said. "Vermont has a proper role in granting or denying state approval for Vermont Yankee," he added.

Shumlin Up For Showdown (KEENE)

By Kyle Jarvis, Sentinel Staff

Keene (NH) Sentinel, April 20, 2011

The battle over whether to extend the Vermont Yankee nuclear power plant's operating license beyond March 2012 advanced Monday, as plant owner Entergy Corp. filed suit against the state.

But Vermont officials, including Gov. Peter Shumlin, are crying foul, claiming Entergy is doing exactly what it promised not to do when it signed an agreement after purchasing the plant in 2002.

The lawsuit, an attempt to keep the state from forcing a shutdown of the plant next year, comes on the heels of the federal Nuclear Regulatory Commission's renewal of Vermont Yankee's license for 20 years, allowing the plant to remain online through March 21, 2032.

"They (Entergy) signed a memorandum of understanding to follow all Vermont laws," Shumlin said Monday in a telephone interview. "They supported the legislation passed in 2006 that they're now complaining about."

The legislation Shumlin referred to involves a 2002 agreement between Entergy and state officials that said Entergy would need approval from the Vermont Public Service Board if it hoped to operate the Vernon, Vt., plant beyond March 21, 2012.

In 2006, state officials revisited the law, requiring approval from the Legislature in addition to the Vermont Public Service Board.

Last year, the state Senate voted 26-4 against renewing Vermont Yankee's license.

By doing so, Vermont broke its deal with Entergy, making it more difficult for it to be approved for continued operation, Entergy argued in its suit, because it would need approval from the Vermont Public Service Board as well as the state Legislature.

But Vermont officials said Entergy was onboard with the 2006 legislation, making its suit all the more curious.

"Entergy's lobbyists, executives, and lawyers all participated in that process — indeed, Entergy expressed its support of that law at the time," Shumlin said in a statement released Monday. "Entergy is now attempting to rewrite history, breaking its own promise and its own support of Vermont law."

Shumlin said he's concerned by the Entergy suit because "it flies in the face of commitments made by Entergy."

Entergy's suit cites federal law under the Atomic Energy Act and the Federal Power Act, which says states have no authority over nuclear power plant licensing and prevents states from interfering in regulation of rates in the wholesale power market.

Shumlin said Entergy agreed it would not cite this provision when it came to licensing matters.

In a statement Monday, the Vermont delegation agreed.

"It appears that Entergy has developed a bad case of corporate amnesia in refusing to honor an agreement it signed with the state in 2002," officials said in the statement. "Entergy agreed to waive any claim that federal law preempts the jurisdiction of Vermont."

Entergy said it has done everything in its power to appease the state, including filing a petition for a certificate of public good in 2008 required by the state, offering Vermont utilities a 20-year power purchase agreement at reduced rates, offering to establish a "date certain" for starting the plant's shutdown process and trying to sell the property.

Entergy said it has been unable to sell the property due to the uncertain political climate in Vermont, and because of the stated intent by Vermont officials to have the plant closed next year.

Shumlin said he's confident about what's to come.

"We'll make sure the Attorney General's Office has all the resources it needs to argue this case in court," he said.

Vt. Has Ways To Pressure Yankee (RUTHER)

By Peter Hirschfeld

Rutland Herald, April 20, 2011

MONTPELIER — When Entergy Corp. sued in US District Court on Monday to keep Vermont Yankee operating, the fate of the nuclear plant appeared to have been placed in the hands of a federal judge.

However, lawmakers say that even if the plant's owners emerge victorious, the Legislature and state regulators will retain considerable power over the facility's ability to operate beyond 2012.

From new taxes to more burdensome regulations, Vermont could undermine Vermont Yankee's ability to profitably run its 660-megawatt reactor in Vernon.

"The state has a whole lot of ways in which they could make it more expensive for Entergy to continue to operate the plant in the event the Supreme Court eventually rules the state has no authority to actually shut the plant down," said Patrick Parenteau, a Vermont Law School professor who formerly headed the school's Environmental Law Center and the Environmental and Natural Resources Law Clinic.

Legal observers say the case is likely headed for the Supreme Court, where justices will determine whether the federal Atomic Energy Act of 1954 supersedes states' ability to reject nuclear power plants.

"I do think the case could end up in the Supreme Court," Parenteau said. "And we could get into that question: Does federal law totally and absolutely pre-empt state law?"

Parenteau said it's unlikely the Supreme Court would reach that conclusion, especially in light of a 1983 decision in which the court upheld states' authority over certain aspects of nuclear oversight.

Even if the court did grant absolute authority over nuclear power to the federal government, Parenteau said, "it certainly doesn't pre-empt states' regulation over things like water quality."

Rep. David Deen, D-Westminster, chairman of the House Committee on Fish, Wildlife and Water Resources, said Vermont's authority over "thermal discharges" into the Connecticut River lends it considerable influence over the cost at which Yankee is able to produce nuclear power.

Thermal discharges are governed by a National Pollution Discharge Elimination System permit, issued by the state of Vermont.

Water-quality standards, according to Deen, stipulate that industrial operations cannot raise ambient water temperatures in Class B waterways like the Connecticut River more than 1 degree.

Under an exemption allowed in the federal Clean Water Act, the state allows Vermont Yankee, which uses water from the river to cool its reactor, to raise river temperatures by 6 degrees.

"But that does not mean we have to issue that exemption," Deen said.

The exemption allows Vermont Yankee to keep idle the 22 cooling towers that would otherwise cool the reactor. Revoking that exemption, according to Deen and Parenteau, could increase Yankee's operating expenses dramatically.

"The state could insist Vermont Yankee use its cooling towers year-round, instead of allowing them to shut down," Parenteau said. "Entergy claims it costs \$1 million a day to run those towers. I don't know if that's true, but certainly that could impose significant new costs."

Deen said "there are a couple of ways Entergy could be forced to be a better neighbor, and they could be very expensive."

Reducing the "shine" — a term that refers to levels of radioactivity — at the boundary of the plant property to zero, for instance, could force costly additions of lead cladding, Deen said.

"The Department of Health could say they have to go to zero, and that would be a huge retrofit," Deen said. New restrictions might not make it financially impossible for Yankee to continue to operate beyond 2012, Deen said.

"'Impossible' is a big word," he said. "But it could certainly make operations much more expensive and more demanding."

Lawmakers also could levy additional taxes, a tool Parenteau said the state would retain regardless of the outcome of the court case.

"(Gov. Peter Shumlin) has proposed in the past a waste storage tax, and there is nothing in the Atomic Energy Act that prohibits that," Parenteau said.

Sen. Ginny Lyons of Chittenden County, chairwoman of the Senate Committee on Natural Resources, said if Vermont Yankee is to continue operating, the communities near which it stores radioactive waste should be compensated handsomely.

"And I feel strongly that all communities in the state should benefit financially from allowing the owners of Vermont Yankee to store their spent fuel here," Lyons said.

Shumlin has said he's readying a proposal for a tax on radioactive waste for consideration in next year's legislative session.

Parenteau said the state could impose other financial burdens on Entergy. According to recent projections, the company's decommissioning fund — money needed to retire the plant when it does shut down — is short by as much as \$400 million.

"The state is free to impose additional decommissioning costs on operating nuclear power plants beyond what the Nuclear Regulatory Commission would require," Parenteau said.

Vermont could also seek monetary damages for groundwater contamination caused by tritium leaks.

"The state could certainly require a total cleanup, and that's an expensive proposition," Parenteau said.

Entergy Files Suit To Keep Vermont Yankee Open (ENERCOL)

Energy Collective, April 20, 2011

This morning, Entergy filed suit to keep the Vermont Yankee plant open by requiring Vermont to honor its signed contracts. The State of Vermont signed a Memorandum of Understanding with Entergy in 2002. The State has attempted to amend that contract on a one-sided basis. Entergy's lawsuit was described in a Burlington Free Press article this morning. You can also download the filed lawsuit [here](#).

According to the Memorandum of Understanding (page 6) the parties "expressly and irrevocably decree that the Board (Public Service Board)(1) has jurisdiction under current law to grant or deny approval of operation of VYNPS beyond March 12, 2011."

However, in 2006, the legislature voted that the PSB could not issue such a certificate without legislative approval (Act 160). This was basically a one-sided change to a written contract. There are tons of precedents that one side cannot change a contract without the other side's approval. Let's see the list of such precedents.

According to the Vermont Yankee press release, there are further precedents, not closely related to Act 160. (Note, the precedents cited above are my opinions, not taken from Entergy documents.) Here's a quote from that release about some nuclear and interstate commerce law precedents.

The Governor

Not surprisingly, it comes down to Shumlin again.

Another quote from the press release:

In a meeting with Entergy representatives on March 30, 2011, the governor reiterated his firm opposition to the operation of Vermont Yankee after March 21, 2012.

Ah well. At least he's consistent, I suppose. He campaigned against Vermont Yankee; and he was losing. Then he began campaigning on reproductive rights and healthcare and sneaked to victory.

Was I Behind the Curve on This?

Sometimes, I think I am the last person to know these things. Do you remember this chart of Vermont's Committed Resources that I put in my blog several weeks ago? The chart comes from a Department of Public Service presentation from March of this year. Note that Vermont Yankee electricity supply doesn't end on March 21, 2012, but continues for a while. If there's a lawsuit, the plant can almost certainly keep running while the suit continues. Why didn't I notice this aspect of the chart before?

Entergy's Half Truths (RUTHER)

Rutland Herald, April 20, 2011

Entergy's bag of tricks is empty so it has had to resort to bullying and half truths.

That is the conclusion that must be drawn from the company's decision to sue the state of Vermont in an effort to set aside Vermont law concerning its bid to renew the license of the Vermont Yankee nuclear power plant for another 20 years.

When Entergy bought Vermont Yankee in 2002, it signed an agreement stating it would not seek to operate beyond 2012 without approval from the state Public Service Board. It also stated expressly that it would not seek to undo that commitment by arguing that federal law pre-empted state law on the operation of the plant. But that is exactly the argument Entergy is making.

In 2006 the Vermont Legislature passed a law approving storage of nuclear waste in dry casks, and as one condition of that approval established that the PSB would not have the power to grant a license extension to Vermont Yankee without approval of the Legislature.

Since then Entergy's stewardship of Vermont Yankee has been a fiasco. Physical problems at the plant have included the collapse of cooling towers, a highly visible sign of the inadequate resources devoted to the plant's upkeep, as described by the report of an independent review panel. And there was the leakage of radioactive water into the groundwater from pipes whose existence the company originally denied.

Physical problems at the plant have been compounded by the mistrust generated by company policy and the lack of truthfulness of company officials. It was not lost on Vermonters that the company had failed to contribute to the decommissioning fund it would need to pay for the closing and cleanup of the plant. Then when Entergy sought to spin off ownership of Yankee to a highly indebted independent corporate entity, it was a warning sign that the company was seeking to escape its responsibilities through shady Wall Street-style maneuvering.

The company has since abandoned its proposed spin-off, and it has also failed to sell the plant to another potential owner. Further, the likelihood that the Legislature will approve continued operation of the plant is nil. Last year, the Senate voted decisively not to extend Vermont's license to operate, and without approval from both houses of the Legislature and the signature of the governor, the PSB has no authority to consider Entergy's request for a license extension. In a desperate gesture before the Senate vote last year the company dangled the possibility of a favorable contract for Vermont utilities, but the Senate did not fall for it. Peter Shumlin, then a senator and now the governor, has said Vermont cannot be bought.

Entergy argues that Vermont has changed the rules of the game. It believes the 2006 law abrogated the 2002 agreement, though it raised no objections at the time. What it did for the next five years was collect millions of dollars in profits on the basis of the 2002 agreement. Michael Dworkin, professor of law and former chairman of the PSB, says that Entergy's silence on that issue for five years will be telling in a court of law.

Entergy's legal arguments depend on half truths. It argues correctly that a 1983 US Supreme Court case established that the Nuclear Regulatory Commission is the body that rules on nuclear safety and that state laws on nuclear safety are pre-empted by federal law. What Entergy does not say is that the same Supreme Court decision found that states have the right to regulate nuclear power plants on other issues, such as reliability, land use, and rates.

Entergy has agreed to submit to the findings of the PSB, a state board whose powers are established by the Legislature. Now Entergy is seeking to renege on its agreement. It is acting like a corporate bully in an attempt to salvage its bad investment in Vermont Yankee. The state of Vermont must mount a strong defense of Vermont law as a rebuff to Entergy's arrogant evasion of responsibility and disregard for the truth.

Security Exercises Planned For Indian Point (MIDHUD)

Mid-Hudson News, April 20, 2011

Entergy will be conducting security training drills at the Indian Point Energy Center the evening of April 19 and April 28 using simulated weaponry that sounds like actual gunfire.

During the drills, persons near the site may hear the sound of simulated gunfire as participants carry out simulated attack scenarios that are intended to be as realistic as possible.

Local law enforcement agencies have been informed of the events.

Entergy will be using a technical innovation for the exercise known as "MILES" gear, or Multiple Integrated Laser Engagement Systems. They use laser "bullets" and vests with laser detection equipment, and duplicate the effects, including the sound, of live ammunition. MILES gear is used for military and counter-terrorism training across the country to be as realistic as possible without using real bullets.

AZ Nuke Plant Offers Look Inside (ADS)

By Griselda Nevarez

Arizona Daily Star, April 19, 2011

WINTERSBURG - When this reactor at Palo Verde Nuclear Generating Station is operating, no one, let alone a group of reporters, is allowed into this viewing area overlooking its core.

But on this day, when Unit 2's reactor is having its fuel rods replaced, plant officials are using the opportunity to show how Palo Verde is different from the Japanese nuclear power plant that's leaking radiation after a devastating earthquake and tsunami.

The differences start, they say, with the containment walls towering above the core. Much thicker than those in the Fukushima Dai-ichi plant, the steel-reinforced concrete walls can withstand the impact of a jumbo jet or a 300 mph tornado.

The interior of the containment dome is 10 times more spacious than the containment buildings in Japan, meaning they would be better able to absorb energy during an emergency, plant officials say.

While the general public isn't allowed this far inside the plant, Bob Bement, senior vice president of site operations, said Arizonans should understand that Palo Verde was engineered to maximize safety.

"It is important that the public learn about nuclear power," he said. "Nuclear power, I believe, is part of our future."

Palo Verde, which Arizona Public Service runs on behalf of several power companies, is the largest nuclear generating facility in the US and supplies electricity to about 4 million customers in Arizona, California, New Mexico and Texas.

While concerns about Japan weren't the only reason for the tour, events there are informing how Palo Verde's operators prepare for emergencies.

In the plant's response room, workers were going through responses to scenarios involving a power outage similar to the one that occurred at the Japanese plant.

During a power outage, Bement said, Palo Verde would have access to multiple sources of backup electricity, including emergency diesel generators and sets of batteries in each unit.

Palo Verde officials now are modifying procedures so the plant can operate on battery power for up to 72 hours if backup generators malfunction, Bement said.

"Now that we've seen a plant that lost off-site power and lost all of their backup AC power for an extended period of time, we will train on that," he said.

Employees in the response room also have been monitoring the Japanese plant and are working with the US Nuclear Regulatory Commission and the Institute of Nuclear Power Operations to improve ways the plant would share information with the public in an emergency, said Michael Powell, who is part of the plant's crisis team.

As the reporters cross a four-story-high walkway into the turbine building at Unit 1, the sweeping desert view illustrates the operators' primary argument that this plant is nothing like the one in Japan.

Palo Verde, which is about 50 miles west of downtown Phoenix, is located far from the ocean and away from areas prone to major earthquakes.

"This is an excellent location, and it was picked looking at how to design a plant and where to design it," Bement said.

Although the plant isn't close to a large body of water, it has enough water on-site - treated effluent - to cool its reactors for a year.

The plant's biggest risks include an earthquake, the possibility of a 100-year flood and dust storms, but Dwayne Carnes, a communications consultant who was recently the assistant plant manager for Unit 2, said Palo Verde is prepared to withstand all of those.

And while the federal government has frozen efforts to build a central repository for spent nuclear fuel from plants across the nation, Palo Verde is in a good position to store its fuel, Carnes said. Tall storage cylinders with 28-inch-thick concrete walls house the waste, and the plant has enough land to keep increasing its storage capacity indefinitely, he said.

Turkey Point: Congressional Members Tour FPL's South Florida Nuclear Power Plant (FLSUNSEN)

South Florida Sun-Sentinel, April 20, 2011

MIAMI DADE COUNTY—

In the wake of the ongoing nuclear meltdown in Japan, members of a congressional delegation on Monday toured FPL's Turkey Point nuclear power plant, and said they are reassured the South Florida facility is safe.

US Reps. Ileana Ros-Lehtinen, Frederica Wilson, Mario Diaz-Balart and David Rivera said they still support nuclear energy but promised to keep vigilant.

"We understand how different this facility is from the facility in Japan," Ros-Lehtinen said. "So we have a responsibility to reach out to our constituents, explain what the dangers, and the problems, and the challenges are — and allay their fears."

One of the differences between the two plants, said FPL spokesman Michael Waldron, is a backup cooling process that runs on steam when generators fail, which is what happened in Japan.

Delegation members still had concerns. Wilson questioned the safety of the storage of the facility's spent fuel.

"I am concerned that no matter how secure that waste is kept in a sealed room, or container, or box — or how many levels of cement that they have put there — there's always some way," Wilson said. "Some terrorist, some kind of activity [could] take place that would destroy that."

At the Turkey Point plant, spent fuel is stored in cooling pools. The plant is building a "dry" storage facility, which would store the material in airtight steel-and-concrete canisters, according to the power company. FPL says both storage methods have been used safely for more than 20 years.

Security measures to enter the facility also were an issue, Wilson said. The plant is guarded by screened personnel, features concrete barriers and a crash-resistant gate, according to FPL. But while an armed guard stood at the plant's entrance on Monday, Wilson said the gate was unstaffed the day before on a pre-visit.

The congressional delegates were given a safety briefing and toured the facility. Then the delegates packed into a control room simulator, with wall-to-wall gauges, switches and flashing lights. Plant officials ran a simulation of what would happen should the plant lose power, which happened in Japan.

In less than 30 seconds, the simulation showed the plant had switched to its diesel generators and was producing power again. Officials were assured that the generators are protected in buildings meant to withstand earthquakes, floods and hurricanes.

"This plant is designed for anything way beyond anything that is expected in this area — as far as an earthquake, as far as flooding," said Greg Laughlin, operation training supervisor with FPL.

Beyond Nuclear Petitions US NRC For Suspension Of 21 Atomic Reactor Licenses In Wake Of Japanese Nuclear Catastrophe (Common Dreams)

Watchdog group alleges General Electric Boiling Water Reactor Mark 1 design's weak containment, inadequate experimental venting back fit, and radioactive waste storage pool are accidents waiting to happen

Common Dreams, April 20, 2011

Today the US Nuclear Regulatory Commission (NRC) docketed an emergency enforcement petition filed by the environmental watchdog group Beyond Nuclear. Beyond Nuclear's petition calls for the suspension of operating licenses at 21 General Electric Boiling Water Reactors of the Mark 1 design (GE BWR Mark 1s). Beyond Nuclear has filed the petition in the wake of catastrophic failure of just such containment systems at identical atomic reactors in Fukushima, Japan at the Dai-Ichi nuclear power plant. In addition, Beyond Nuclear has highlighted the extreme risk posed by GE BWR Mark 1 high-level radioactive waste storage pools, at a total of 24 such reactors in the US, which lack emergency backup power supplies for circulating cooling water in the event of a loss of electricity from the primary grid. Lack of cooling water circulation in high-level radioactive waste storage pools can result in boil off, subsequent irradiated nuclear fuel fire, and large-scale releases of hazardous radioactivity directly into the environment, as has occurred at Fukushima Dai-Ichi Unit 4.

Beyond Nuclear's Reactor Oversight Project Director, Paul Gunter, has identified 21 GE Mark 1 BWRs in the United States that utilize the Fukushima Dai-Ichi style, free-standing primary containment structure composed of a carbon steel drywell, connected by large diameter piping to the carbon steel suppression chamber referred to as the wet well or torus, which altogether

comprises the safety-credited pressure suppression containment system. The 21 GE BWR Mark 1 atomic reactors at risk of catastrophic containment failure in the US are, in alphabetical order: Browns Ferry Units 1, 2, and 3 in Alabama; Cooper Unit 1 in Nebraska; Dresden Units 2 and 3 in Illinois; Duane Arnold Unit 1 in Iowa; Fermi Unit 2 in Michigan; Fitzpatrick Unit 1 in New York; Hatch Units 1 and 2 in Georgia; Hope Creek Unit 1 in New Jersey; Monticello Unit 1 in Minnesota; Nine Mile Point Unit 1 in New York; Oyster Creek Unit 1 in New Jersey; Peach Bottom Units 2 and 3 in Pennsylvania; Pilgrim Unit 1 in Massachusetts; Quad Cities Units 1 and 2 in Illinois; and Vermont Yankee Unit 1 in Vermont.

"The Fukushima Dai-Ichi nuclear catastrophe in Japan has dramatically illuminated the grave risks and unforgiving consequences of a severe accident combined with the fundamental failures of the GE BWR Mark 1 containment concept, design, construction, and subsequent experimental retrofit which unsuccessfully attempted to mitigate these significant flaws," said Gunter. "Any loss of cooling to the reactor core could lead to pressure build up that could breach these old, small, weak, badly designed and built containment structures," he added.

Gunter recounted that high-level US nuclear power regulators have long identified the undue risks associated with GE BWR Mark 1 type containments. In 1972, Dr. Stephen Hanauer of the US Atomic Energy Commission (AEC) warned about the buildup of explosive hydrogen gas during a reactor core accident in such relatively small containment structures, and urged that "the AEC adopt a policy of discouraging further use of pressure suppression containments....".

At Fukushima Dai-Ichi Units 1, 3, and 4, such hydrogen explosions severely damaged or entirely destroyed the secondary containment buildings. This happened despite attempts, in the earliest days of the Fukushima Dai-Ichi nuclear catastrophe, to vent radioactive steam into the environment in an effort to prevent catastrophic rupture of the containment structures.

Also, at Fukushima Dai-Ichi Unit 2, failure of the containment venting system led to a large hydrogen explosion within the primary containment structure which has very likely severely damaged the wet well/torus, creating a direct pathway to the environment for hazardous radioactivity releases. This is made all the worse by the likelihood that the Fukushima Dai-Ichi Unit 2 nuclear fuel core has melted through the bottom of the reactor pressure vessel.

"It is unreasonable to back fit an identified severe design flaw with a venting system to deliberately defeat the purpose of a leak tight containment in order to save it from catastrophic failure based on the unlikelihood that the task will be required," Gunter surmised.

In addition, safety concerns over the substandard Mark I pressure suppression containment system were again affirmed in 1986 by Dr. Harold Denton, Director of Nuclear Reactor Regulation at NRC. Denton told a nuclear industry conference that this flawed reactor containment type has as high as a 90% chance of failure if challenged by severe accident conditions.

Beyond Nuclear's emergency enforcement petition, brought under Title 10, Part 2.206 of the Code of Federal Regulations, also calls for emergency diesel generators and backup batteries to be connected to 24 GE BWR Mark 1 reactor units' storage pools for high-level radioactive waste. Currently, these elevated storage pools for irradiated nuclear fuel are located outside of credited primary containment structures and lack "Class E1" safety-related backup power supply systems in the event of a loss of electricity from the primary grid for running cooling water circulation pumps. These 24 pools include those at the permanently closed Millstone Unit 1 atomic reactor in Connecticut, as well as the Brunswick Units 1 and 2 atomic reactors in North Carolina.

"It is incredible that pools for storing high-level radioactive wastes in the US are not connected to emergency backup power supplies," said Kevin Kamps, Radioactive Waste Watchdog at Beyond Nuclear. "Any loss of the electrical grid – whether due to tornadoes, hurricanes, ice storms, or even wildlife or tree branches touching power lines – could begin pool boiling within hours, leading to complete boil off within a day or two, followed by a radioactive waste inferno within hours of the irradiated nuclear fuel losing its cooling water cover," Kamps added.

"Whereas Fukushima Dai-Ichi Unit 4's pool contained around 130 tons of high-level radioactive waste, pools in the US are crammed with significantly more," Kamps added. "For example, Fermi Unit 2 in Michigan – the largest GE BWR Mark 1 in the world – has well over 500 tons of high-level radioactive waste crammed into its pool. This means that without the primary electrical grid, the pool could begin boiling in just over four hours, could boil dry and catch fire all that much more quickly, and the consequences downwind would be multiple times worse than the still-unfolding catastrophe at Fukushima Dai-Ichi Unit 4's pool," Kamps concluded.

A 1997 study commissioned by the NRC estimated the median consequences of a high-level radioactive waste storage pool fire, which included: 54,000 to 143,000 latent cancer deaths downwind; 770 to 2,700 square miles of agricultural land condemned; and economic costs due to evacuation of \$117 to 566 billion (\$158 to 765 billion when adjusted for inflation to current dollar values).

Beyond Nuclear's 2.206 emergency enforcement petition, and NRC's docketing announcement, are posted at the top of Beyond Nuclear's homepage, www.beyondnuclear.org, and can be provided upon request.

Fleischmann, DesJarlais Endorse Nuclear Facility (KNOXNS)

By Bob Fowler

Knoxville News Sentinel (TN), April 20, 2011

KINGSTON — The two US congressmen who represent Roane County voiced support Tuesday for plans by TVA to build a modular nuclear power plant at the old Clinch River Breeder Reactor site.

Freshmen Republican lawmakers Scott DesJarlais and Chuck Fleischmann gave their endorsements Tuesday during a get-together in the headquarters of the Roane Alliance.

The first-ever event offered local officials and Roane Alliance members a chance to "get to know our congressmen," said Leslie Henderson, president and CEO of the county's economic development organization.

Fleischmann called the modular reactor proposal the "wave of the future."

"We've got to have nuclear power," he said, calling it part of the solution to the country's long-term energy needs.

While TVA's concept is now seen as something that could happen in 10 years, "I'd like to see it expedited," DesJarlais said.

The breeder reactor site is a 1,364-acre tract owned by TVA next to the Clinch River in Roane County. That cutting-edge reactor project was abandoned in the 1980s.

DesJarlais represents all or parts of 24 counties in the 4th Congressional District, which includes parts of Middle and East Tennessee.

Fleischmann's 3rd Congressional District includes 11 East Tennessee counties in a narrow swath that stretches from Kentucky to Georgia.

They each represent part of Roane County.

Both men were swept into office in the Republican takeover in November of the US House of Representatives.

"I was very pleased to have both of our congressional representatives in the same room at the same time," Kingston Mayor Troy Beets said of Tuesday's event.

Despite warning that deep cuts must be made in the federal budget to stem the deficit, Fleischmann also said he has a "steadfast commitment" to Oak Ridge National Laboratory, the Y-12 nuclear weapons plant and the ongoing cleanup of the former K-25 uranium enrichment site.

"We're fortunate to have two congressmen ... that have great interest in what is going on here," said Bob Eby, manager of USEC's Oak Ridge site.

USEC provides uranium for commercial nuclear power plants and has a testing facility at the former K-25 site, now called East Tennessee Technology Park.

Jim Gann, president of Roane Medical Center, was one of the 40 attendees at Tuesday's luncheon. He said the two lawmakers "are committed to controlling the government's financial problems, primarily by controlling unnecessary spending."

Malloy Opposes Millstone Nuclear Tax (HARTBZ)

By Brad Kane

Hartford Business, April 20, 2011

Gov. Dannel Malloy says he opposes the proposed tax of the Millstone nuclear plant in Waterford, which forced the facilities owners to consider closing Connecticut's largest producer of electricity.

The proposed electric generators tax in Senate Bill 1176 would have raised \$340 million in taxes annually, with \$332 million of that money coming only from Millstone. The proposal passed the Energy & Technology Committee in a 12-9 vote and was being considered as part of the larger tax package in the state budget.

Dominion, the owner of Millstone, said the tax would have been passed onto consumers in their electric bills and eventually would have forced the shutdown of the two nuclear reactors in Waterford. The plant employs more than 1,500 and generates half of the electricity produced in Connecticut.

"We are encouraged to hear that the governor does not support Senate Bill 1176," Millstone spokesman Ken Holt said. "This massive tax will result in higher electricity rates and will send a terrible signal to businesses within the state and those considering moving here."

Malloy still favors a tax on electricity generation, although much smaller and spread out over all the electricity generators in Connecticut, which includes natural gas, coal and oil plants as well. Malloy's proposed tax would generate \$60 million per year, with half coming from Millstone.

Dominion officials have expressed their concerns to Malloy about the smaller tax, as well, Holt said. Any tax will result in the costs being passed onto the consumer.

Defeat Tax On Power Plants (HARTC)

Hartford Courant, April 20, 2011

A bill that would multiply by 10 the tax burden on the Millstone nuclear power plants is the legislative equivalent of a tax-policy Hail Mary that would generate \$342 million in taxes, but would be extraordinarily punitive to one corporation and send a bad message about the state's friendliness to business. It should be defeated.

Under the proposed measure, Millstone would be charged 2 cents per kilowatt hour for the electricity it produces, for a tax of about \$335 million annually. Another \$7 million would come from coal and oil-fired power generators, which would be taxed at a lower rate. Gas and alternative fuels plants would be exempt.

Millstone's tax burden would equal nearly half the total "corporation business taxes" (the largest of business taxes) paid by all companies in Connecticut. To expect one company to shoulder that much of the state's revenue burden flunks the fairness test. This proposed tax is based on a new law that was expressly aimed at skimming nuclear generation profits.

Millstone's parent company, Dominion, purchased the three nuclear generation stations in Waterford in 2001 for \$1.3 billion. Dominion has spent more than \$600 million on improvements, with an expectation of market and tax conditions remaining stable.

Proponents of the new tax argue that the Millstone plants benefit from arcane pricing rules, set by government regulations, that pay nuclear generators the same high price for their low-cost nuclear-generated power as is paid to generators using more expensive fuel.

Dominion has long refused to open its books, but its profitability is unquestioned. Even so, a business should not be singled out for operating successfully within the existing rules. The regulations on the pricing of electricity should be modified in a way that would allow market forces to determine the price paid to Millstone, rather than an artificially inflated price.

Millstone currently pays about \$35 million yearly in state and local taxes, which includes \$19.2 million in property taxes annually to Waterford. (If the new tax is approved, it would lower the plants' net income, and the property tax would go down.)

Backers of the new tax insist that the cost would not be passed along to customers in higher rates. Millstone's existing contracts for electricity may keep rates steady for a year or two. But after that, ratepayers may feel the increase, according to the legislature's nonpartisan Office of Fiscal Analysis. Such a tax may inevitably end up on ratepayers' bills, driving Connecticut's highest-in-the-nation electric rates even higher – which is friendly neither to businesses nor consumers.

Dominion officials, aware of this state's budget problems, seem willing to go along with a significantly smaller tax proposed by Gov. Dannel P. Malloy that would cost Millstone about \$33 million. That would still double Millstone's current state and local tax payments -- but at least it's not a ten-fold tax. Although more palatable, this remains a generation tax, which a number of states have considered and rejected. Should this lower tax rate be approved, the law should include a provision to revisit its implementation when the next two-year budget is being drawn.

Pull Nuke Tax Plug (NLDAY)

New London (CT) Day, April 20, 2011

Amid all the heated debate over the state budget, we're pleased to learn that Gov. Dannel P. Malloy is keeping a cool head in opposing an ill-conceived plan to impose a new tax of about \$335 million a year on nuclear electricity generation at Waterford's Millstone Power Station.

The proposed legislation, intended to increase revenues and therefore lower tax bills, would have produced the exact opposite effect by driving up costs for Millstone's owner, Dominion Resources Inc., that eventually would be passed on to residential, industrial and commercial consumers.

The business community has long faulted Connecticut for high operating costs compared to other states, and rising electric rates would have driven many to scale back, cut jobs or, even worse, move elsewhere in the country. Dominion itself had warned that the tax, if approved, would force it to close one or more of Millstone's operating reactors.

Proponents of the new tax had unfairly lumped nuclear power with "dirty" and "dangerous" oil- and coal-powered electric generators they said should be penalized to reward such "good" sources as natural gas, wind and solar power.

We're all for increasing the development of renewable sources of electricity, but also insist that nuclear power must remain a significant component of any plan to reduce our dependence on oil and coal.

In light of the ongoing crisis at Japan's Fukushima Dai-ichi plant that was damaged during last month's earthquake and tsunami, authorities must pay even closer attention to nuclear-power safety. We cannot afford otherwise - just as we cannot afford to drive away existing businesses or discourage new ones from relocating to Connecticut.

Meanwhile, Gov. Malloy, who voiced his objections to the new nuclear tax during a radio interview Monday, has proposed a smaller tax on nearly all electric-generating plants that would raise about \$50 million. While this newspaper is not completely sold on the new tax, we at least support the idea that the burden of any additional levy be shared by other power generators.

Concerns About Taxation (HARTC)

Hartford Courant, April 20, 2011

After reading the April 19 Courant, here are three concerns:

Page A12 carries a full page ad from Millstone Power Station telling us that we already pay the highest electricity rates in the region.

Page B1: Gov. Dannel P. Malloy is explaining how he wants to tax Millstone nuclear plant [CTNow, "Malloy: 'Millstone Tax' Won't Be Passed"].

This will mean another tax on everyone.

Page A9: Standard & Poor's tells us that our nation's credit rating is about to be lowered below the AAA rating [Business, "S&P Warns Of Potential Cut In US Credit Rating"].

Although the S&P part is national problem, it, along with the other two points, shows a profound mindset to tax every thing possible to cure our problems. Total taxation does not work. Meanwhile France, Germany and the United Kingdom have all got their financial houses in order without laying on extra taxes.

Donald V. Clark,
East Lyme

Editorial: Tax Grab From South Of The Border (NORAND)

North Andover (MA) Eagle Tribune, April 20, 2011

We're used to New Hampshire residents tweaking Bay Staters' noses over the fact we pay an income and sales tax and they don't. But now our neighbor to the south, Connecticut, is asking at least some Massachusetts consumers to pay a tax from which its own residents would be exempt.

According to the Massachusetts Municipal Wholesale Electric Co., whose members include utilities in Peabody, Danvers, Georgetown, Ipswich, Marblehead, and Middleton, the Connecticut General Assembly is considering a new tax on the power generated at the Millstone nuclear power plant. They say the revenue is needed to close a gaping hole in the state budget. MMWEC owns 4.8 percent of Millstone Unit 3, and officials estimate the tax would cost consumers in its member communities an additional \$9.3 million a year.

Connecticut's privately owned utilities have said the tax would be absorbed within the current rate structure and thus have no impact on consumers there.

"Such a tax is at the very least unfair," MMWEC spokesman David Tuohey declared in a release issued last week. "Massachusetts public entities are not responsible for Connecticut's budget problems and they should not be responsible for paying to correct those problems."

MMWEC communities have financial problems of their own. Their residents should not be expected to help Connecticut deal with its fiscal woes as well.

Proposed Millstone Tax Is Discriminatory (NLDAY)

By Bill Forrestt

New London (CT) Day, April 20, 2011

As a reactor operator at Millstone Power Station I am disappointed with The Day's continued inadequate coverage of a proposed state generation tax that would cost the company about \$330 million annually.

Senate Bill 1176 represents a gross abuse of legislative power. No other state has ever enacted such a discriminatory, crippling tax. Dominion has come into our state and turned Millstone station around while being a model corporate citizen. It has worked hard at improving operations while minimizing environmental impact, operated within the rules the state wanted (deregulation) and now certain legislators are trying to steal as much profit as they can. If this was Google or General Electric the legislators would not be doing this. But since the legislators realize that Dominion can't move the plant, they are going to stick it to the company. This bill is an embarrassment to the entire state. Consider:

◆ The legislators who wrote this bill claim the Millstone tax would not be passed to ratepayers. This couldn't be more wrong. Millstone is one of the cheapest energy sources and comprises more than one-third of state generation. If Millstone stops generating because of this tax, the laws of supply and demand will take over and electricity prices will go up.

◆ Millstone brings \$1.2 billion into the region and state every year. Plant closure would be devastating. Up to 4,000 jobs would be lost, yet there has been insufficient coverage on this.

◆ Connecticut has the highest electricity prices in New England because we tax the most. All of New England is in a common power pool called ISO New England. So, why is it that surrounding states have cheaper rates with the same bidding pool? The answer is in all the additions to our monthly energy bills. One addition was set to go away last year, but the state kept taking the money. Rather than let the charge expire, the state grabbed the money and kept the charge going.

◆ The added \$330 million per year isn't earmarked toward paying off the budget shortfall, but to fund developing green energy sources in state. Because a few legislators want to go green, Millstone should be forced out of business by a \$330 million tax? Are you kidding?

The Day should use investigative reporting and produce all the facts about this bad proposal. It is clear that certain members of the Energy and Technology Committee have an agenda to develop green energy sources at any cost. Are we sure that the people of Connecticut want this? Furthermore, what are the qualifications of the people making these decisions?

Bill Forrestt works at the Millstone Power Station in Waterford.

Crowded, Complicated Agenda Awaits New Nuclear Chief (GWIRE)

By Hannah Northey

Greenwire, April 20, 2011

The Department of Energy's new assistant secretary for nuclear energy yesterday started his job, which will force him to help craft a US response to an international nuclear crisis, help jump-start the US nuclear industry and wrestle with a long-standing question of where to put America's nuclear waste.

Assistant Secretary Peter Lyons will oversee research with significant implications for the development of new reactors, the life span of the existing fleet, the choice of fuels and the storage of wastes.

The Obama administration has stood firm in support of nuclear power, even as questions about the safety of US reactors surfaced in the wake of the crippling of Japan's Fukushima Daiichi nuclear complex by a March 11 earthquake and tsunami.

A slowdown in US nuclear permitting or increased regulation could hinder what little momentum the American nuclear-power industry has seen in past years. The last new US nuclear plant to come online was Unit 1 of the Tennessee Valley Authority's Watts Bar nuclear plant, which came online in 1996.

Lyons said during an interview last Friday that he believes nuclear power is a clean fuel and hopes to ramp up deployment of small modular reactors. The administration is requesting \$67 million for fiscal 2012 for a cost-share program with industry to deploy the technology, adaptations of the mammoth traditional nuclear plant that would be smaller and more interchangeable and would potentially cost less.

"We're extremely optimistic that the small modular reactors could offer a new paradigm for nuclear power," Lyons said.

Even so, industry giants like General Electric Co. say the modular reactors are more politically charged than economically sensible, and have cast doubt on widespread production of the plants (Greenwire, March 10).

Lyons said research at DOE's Office of Nuclear Energy could be relevant in addressing safety concerns that emerge from the Nuclear Regulatory Commission's nationwide review of nuclear plants.

The NRC launched a short-term review of the regulatory requirements, programs and processes for US nuclear plants in response to the Japanese crisis. The agency will report its findings throughout the summer and conduct a longer-term review once more information is known about the situation in Japan.

DOE is researching fuel claddings -- the outer layer of the fuel rods -- that use silicon carbide, material that is stronger and more durable at high temperatures than traditional materials.

The department is also investigating fuels with different "shapes" and conductivities, from which heat could be more easily extracted.

Lyons has a long history of overseeing such programs and providing science-based advice to policymakers.

He served as DOE's acting assistant secretary of Energy since Warren "Pete" Miller left the position last November, and as the agency's principal deputy assistant secretary since September 2009(Greenwire, Dec. 10, 2010).

Before that, Lyons served from 2005 to 2009 as a member of the Nuclear Regulatory Commission, where he focused on the safety of operating reactors and on lessons from operating experience.

Lyons was also a science adviser to former Sen. Pete Domenici (R-N.M.), who chaired the Senate Energy and Natural Resources Committee from 2003 to 2007. Domenici was known as a staunch supporter of nuclear power, the "father of the nuclear renaissance."

Yucca Mountain

Lyons, in line with the shared opinion of the Obama administration, is an outspoken critic of using Yucca Mountain in Nevada as a deep geologic nuclear waste repository.

President Obama zeroed out financial support for constructing the repository at Yucca Mountain in the fiscal 2011 budget proposal, and DOE last year began to pull its site-development application from before the Nuclear Regulatory Commission.

House Republicans have since challenged the administration's abandonment of Yucca, a site the federal government studied for more than 20 years (E&ENews PM, March 31).

Without a national repository to store nuclear waste, plant operators now store the material on-site at nuclear power plants in wet pools or dry storage casks, and Lyons said he's confident the material is safe.

Lyons, who was raised in the Las Vegas area, criticized the Yucca Mountain project for not having the level of local and national support that nuclear waste repositories in Sweden and Finland enjoy.

The United States needs a solution formed with a high level of public involvement and widespread support, Lyons said, adding that "if we don't have that solution, it's hard to see how much nuclear can contribute to [the country's] clean energy future."

Lyons said he has spent a fair share of his time researching alternatives to using Yucca Mountain – including almost three decades working at the Los Alamos National Laboratory from 1969 to 1996. During that time, he spent more than a decade supporting nuclear test diagnostics.

DOE will take direction on nuclear waste from a draft report Obama's Blue Ribbon Commission is expected to submit to Energy Secretary Steven Chu in July on alternatives for storing, processing and disposing of spent nuclear fuel and waste, Lyons said.

The White House assembled the commission last year, and the group is scheduled to submit a separate, final report on its findings in January 2012.

Nuclear Dead End: It's The Economics, Stupid (NAT)

By Christian Parenti

The Nation, April 19, 2011

For about a decade now, nuclear boosters have been telling us that a "nuclear renaissance" is underway thanks to the advent of cheaper, safer and faster-built "third-" and "fourth-generation" reactors. Their ranks have been swelled lately by green champions of nuclear power like George Monbiot, who has recently embraced nuclear energy as an alternative to fossil fuels in the quest to mitigate climate change. Anti-nuke activists like Helen Caldicott have responded with dire warnings of nuclear apocalypse and radiation-induced cancer (see their exchange on a recent episode of Democracy Now!).

But for all its moral urgency, this debate usually ignores the economics of nuclear power. It is economic factors like costs, supply chains, financing and profitability that will determine our future energy mix. And so far, the dollars and cents calculations for nuclear power just do not add up.

The argument for nukes gets even weaker when one considers the compressed time frame of climate change: carbon emissions must drop sooner and faster than the long, slow, costly process of building new nuclear plants would allow. The boosters of nuclear power, including greens like Monbiot, seem to forget the reactors don't build themselves. They are built and operated by specific institutions under concrete economic circumstances like the price of capital, special metals, insurance and the availability of skilled labor. Once the economic arguments get to that level of specificity, the viability of atomic power falls apart.

Moreover, casting a nuclear renaissance as the panacea for climate change is dangerous because it threatens to delay the shift to clean energy. Continually pushing nukes has opportunity costs; every dollar, euro or RMB spent on nuclear power is one not spent on clean technology like wind, solar, hydro or tidal kinetics.

First, a bit of history: The initial wave of nuclear power reached its zenith after the Arab oil embargo of 1973. That political and economic shock sent many developed economies on a reactor construction spree. The logic here was fundamentally geostrategic, not economic: better to have power from nukes that operated at a loss and were subsidized by the rest of the economy than to have your whole economy collapse because you could not import oil. In particular, Japan and France went nuclear; France converted the majority of its electrical supply from fossil fuels to nuclear.

But these second-generation reactors, which make up the majority of the world's current fleet of 443 nuclear power stations, soon proved to be prohibitively expensive and slow to build. After the Three Mile Island accident, hundreds of planned plants in the United States were canceled and construction around the world slowed. Bankruptcies associated with nuclear power rose, and investors began to turn away from it.

Even in France and Japan, building new reactors mostly halted. France became the most nuclear-powered country in the world, in part because its system is fundamentally socialized; the various companies associated with construction and operation

of nuclear plants never had to turn a profit and managed to offload most of their debts onto the public. Japan's reactors are also heavily subsidized.

In the US and the UK cost overruns on nuclear plants helped bankrupt several utility companies. In the US these losses helped usher in the debacle of energy deregulation in the mid-'90s that saw rising rates and power blackouts in California. When the UK began privatizing utilities its nuclear reactors were so unprofitable they could not be sold. Eventually in 1996, the government gave them away. But the company that took them over, British Energy, had to be bailed out in 2004 to the tune of 3.4 billion pounds.

It was around the turn of the millennium that people like British Prime Minister Tony Blair and Senator Pete Domenici of New Mexico began championing the second coming of the atom. Yes, they agreed, the critiques of the old equipment were correct. But the new third- and fourth-generation reactors would be safe, cheap and quick to build.

In February 2002, the Bush administration tried to jump-start nuclear construction with its "Nuclear Power 2010 program," a package of subsidies and streamlined planning procedures. It was expected that these incentives would lead to at least one "Generation III+ unit" being operational by 2010.

It is true that Generation III reactors are safer than older reactors like the GE MAC 1 at Fukushima, Vermont Yankee and other plants around the world. But the new technology is not cheap, nor is it quick to construct. After a decade in which the federal government did all it could to boost this new version of nuclear power, only one Generation III+ reactor project has even been approved. Work on it has just begun in Georgia, and already there are conflicts between the utility, Southern Company and the Nuclear Regulatory Commission. Moreover, this project is going forward only because it is in one of the few regions of the United States (the Southeast) where electricity markets were not deregulated. That means the utility, operating on cost-plus basis, can pass on to rate-payers all its expense over-runs.

Another US reactor is being assembled at the Tennessee Valley Authority's Watts Bar plant. But construction on this second-generation, Westinghouse-designed Pressurized Water Reactor, designed in the 1960s, was begun in 1972. After long delays, the unit should be up and running in 2012.

In Western Europe the situation is very similar. Only two Generation III+ reactors are under construction. The plant closest to completion is Olkiluoto 3 in Finland. This 1,600-megawatt European Pressurized Reactor (EPR) is being built by Areva, the French government-controlled nuclear construction firm. The reactor was scheduled to take four years and cost about \$5 billion. But now construction will take at least eight years and is 68 percent over budget, at a projected final cost of \$8.4 billion. Some fear that the Olkiluoto 3 could bankrupt its owner, TVO. The other EPR under construction is in Flamanville, France. It began in 2007 and is now two years late and at least 50 percent over budget. In the best-case scenario, it will open in 2012.

In the United States, the Nuclear Regulatory Commission's review process to certify the safety of the EPR is itself two years behind schedule.

There are sixty-four, mostly old-style nuclear plants under construction worldwide, and most of these are in Asia. Sixty-plus reactors might sound like a lot, but when you compare that to the overall size of the world appetite for energy, it's not much. If all of these nuclear power plants are completed they will add 62.56 gigawatts of capacity, which is less than one-third of already-existing wind capacity worldwide, which was at 196.63 gigawatts at the end of 2010.

Of the sixty-four nuclear plants under construction worldwide, twenty-seven are in China and eleven are in India. China already has thirteen operating reactors, which produce less than 2 percent of its total electricity. India gets a little more than 2 percent of its electricity from existing nuclear plants. If China finishes building all of the nuclear plants under construction there, nuclear power will still only account for 9 percent of the country's total electricity.

Even in China wind is outpacing nuclear power. China's total installed wind capacity, which has been roughly doubling every year for the past several years, was 44.7 gigawatts at the end of 2010. The Chinese wind sector is set to reach as much as 200 gigawatts by 2020, according to the China Wind Power Outlook 2010 report. That figure dwarfs the 10.06 gigawatts of nuclear power online now, which will increase by only 27 gigawatts if all of China's planned plants get built. "China is not going nuclear they way France did the 1970s," says Stephen Thomas, professor of business at the University of Greenwich in the UK.

An analysis by economist Mark Cooper, senior fellow for economic analysis at the Vermont Law School, found that adding 100 new reactors to the US power grid would cost \$1.9 to \$4.1 trillion. And the problem is not simply this direct investment.

"Once a utility embraces a huge nuclear project, their finances are completely tied up. The company's management is completely tied up. They begin to look at all other alternatives—efficiency and renewables, which you can buy in smaller bites—as threats to their big project," said Cooper. "They become very hostile to sensible policy. And then you end up with extremely expensive power."

In a comparative analysis of US states, Cooper found that the states that invested heavily in nuclear power had worst track records on efficiency and developing renewables than those that did not have large nuclear programs. In other words, investing

in nuclear technology crowded out developing clean energy. That's dangerous because the primary problem facing clean alternative energy is the "price gap"—they are still more expensive than fossil fuels. As I've outlined in these pages previously (see "The Big Green Buy"), economies of scale, along with subsidies and planning, will help close this price gap.

Only when clean technologies—like wind, solar, hydropower and electric vehicles—are cheaper than other options will global capitalism make the switch away from fossil fuels. The good news is that clean tech is catching up. An authoritative study by the investment bank Lazard Ltd. found that wind beat nuclear and that nuclear essentially tied with solar. So the race is tight. The Worldwatch Institute reports that between 2004 and 2009, electricity from wind (not capacity but actual power output) grew by 27 percent, while solar grew by 54 percent. Over the same time, nuclear power output actually declined by half a percent.

Another danger with pursuing the myth of a nuclear renaissance is the overall timing of climate change. Science tells us that aggressive emissions reductions need to start immediately. Emissions need to peak by 2015 and then decline precipitously if we are to avoid catastrophic climate change.

A massive industrial-scale build out of fourth-generation nukes—the ones that are supposed to be safe, cheap and easy to build—would arrive too late to stave off climate change's tipping points. The US Department of Energy (DoE), a major booster of all things nuclear, gives 2021 as the earliest possible date for a fourth-generation nuclear plant to open. Keep in mind, no American nuclear plant has yet been built on time or within budget, so the DoE's forecast is very optimistic.

Nuclear power is simply not going to sweep in over the next handful of years and change the energy mix and save us from these tipping points. The catastrophically tight timeframe of climate tipping points means we must scale up actually existing clean technology. That will take massive investments and serious planning—but that project has already begun. Alternatives are slightly cheaper than nukes, come online faster and are growing robustly.

In other words, nuclear power is not only physically dangerous; it is also economically wasteful and slow, especially when built in market economies. Quite simply, it is a stupid way to address climate change.

As the wags like to say: "Nuclear power is the energy source of the future. And it always will be."

Japan's Fukushima Nuclear Meltdown Forces US To Rethink Its Disaster Preparation (UCLA)

By Suzy Strutner

Daily Bruin, April 20, 2011

The effects of the Fukushima nuclear power plant damage in Japan could span a century, Glen MacDonald announced at a panel discussion on Monday.

Following the 9.0 magnitude earthquake in Japan, the Fukushima nuclear power plant suffered a partial meltdown, releasing dangerous amounts of radiation into surrounding Japanese towns.

MacDonald, a director of the UCLA Institute of the Environment and Sustainability, said the Japanese government has categorized the incident in the same sector as the 1986 Chernobyl disaster.

Researchers and professors from an array of UCLA departments assessed the intensity of the disaster during Monday's discussion.

Japanese officials have urged residents living within 18 miles of the reactor to evacuate, and recently-installed robots have confirmed that radioactivity is probably still leaking from one reactor, MacDonald said.

Though the radioactive contamination has not yet caused sicknesses or deaths, many Japanese citizens will eventually die from radiation-related illnesses, said Albert Carnesale, UCLA chancellor emeritus and a professor of public policy and of aerospace engineering.

Fear erupting from the crisis will impede production of nuclear power in the United States, Carnesale said. Japan's meltdown, he added, serves as a warning for American power plants.

"We need to plan for unlikely events and come up with realistic responses to accidents," Carnesale said. "People need evacuation plans that they can actually follow."

Because California is not located near a subduction plate, the state's supposedly imminent "big quake" won't involve a magnitude as big as Japan's. Yet the potential event still merits preparation with regard to nuclear power, said Jon Stewart, vice chair of the department of civil and environmental engineering at the UCLA Henry Samueli School of Engineering.

Japan experienced an unusual series of smaller quakes prior to its 9.0 shake on March 11, Stewart said. He spoke about the importance of recognizing similarly strange patterns in California and consistently updating reactors in response to developments in nuclear science.

Japan's recent incident has brought some viable concerns to light, said Sean Hecht, executive director of UCLA's Environmental Law Center.

Experts have taken a closer look at the expenses of nuclear power production and the risks involved with placing plants in such proximity to metropolitan areas as San Onofre, Carnesale said.

The Nuclear Regulatory Commission is currently increasing regulations for American nuclear plants, likely in an effort to reassure the public that reactors are secure, Hecht added.

The Nuclear Regulatory Commission has not analyzed the effects of a terrorist attack on nuclear plants, deeming the event "not reasonably foreseeable." Japan's crisis has prompted some groups to lobby for a change in this policy as well, Hecht said.

"Fukushima is a warning to use vigilance," Carnesale told the audience. "Though it's rare, nuclear power can cause some pretty bad things to happen."

After Fukushima (CHIT)

Chicago Tribune, April 20, 2011

A few days ago, Japanese officials declared that the accident at the Fukushima Dai-ichi power complex rated a "7" on a ranking with a scary name: the International Nuclear and Radiological Event Scale. That's the same rating as the Chernobyl accident of 1986.

Some experts convincingly disputed that dire evaluation, arguing that the release of radiation from Chernobyl was much worse than the situation in Japan — which to date has killed no one. But there's no denying that the ongoing disaster has shaken the nuclear industry worldwide. Six in 10 Americans oppose building new nuclear power plans, a recent AP-GfK poll says. That's up from 48 percent in November 2009. Overshadowing an earthquake and tsunami with a death toll approaching 14,000 — with a like number missing — is no easy feat. But such is the level of public fear of nuclear energy.

It's urgent that governments and power providers take a fresh look at nuclear power in light of this crisis. Example: The Tennessee Valley Authority said Thursday it is considering millions of dollars in improvements to protect its six nuclear reactors from earthquakes and floods.

But curbing or abandoning nuclear power plants, as some reinvigorated critics are proposing, is shortsighted. Nuclear power supplies about 20 percent of this nation's electricity. Renewable energy sources such as wind and solar are gaining importance, but nuclear remains a key component in electrical generation that releases minimal carbon emissions.

For the industry, the timing of the Japanese disaster couldn't be worse. In recent years, nuclear energy started to gain momentum, even among some environmentalists, as a viable alternative to fossil fuel generation. Now Fukushima raises the specter of earlier nuclear accidents: not only Chernobyl but the less severe Three Mile Island. That 1979 accident similarly occurred at a time when nuclear power was gaining popularity in the aftermath of the Arab oil embargo. A cooling malfunction at that plant in Pennsylvania led to a partial evacuation — and screaming headlines about a potential meltdown. In the end, the main casualty was America's faith in nuclear energy. Planning for new plants stopped. Then came Chernobyl. "Nuclear power = high risk" was entrenched in the American psyche.

That legacy is reflected in America's aging nuclear fleet. More than half the 104 operating power reactors in the US are at least 30 years old. Only three have been built in the past 20 years, the last coming online in 1996. As a way to boost output, utilities are turning to a technique called "uprating," in which existing plants are run at higher capacity to produce more power. Retrofitting existing plants is a more cost-effective alternative to building new ones. But it carries added safety concerns.

Even before Fukushima, the cost of building new nuclear plants had become all but prohibitive. The price tag for a new 1,000-megawatt facility: around \$6 billion, and now likelier to rise than to decline.

Nuclear power is not risk free. But we need to weigh those risks against the known costs associated with fossil fuel use. Among them: environmental accidents such as last year's Gulf of Mexico oil spill and lethal industrial accidents in coal extraction — not to mention the carbon impact of burning fossil fuels.

As emotions cool and acceptance of nuclear power re-emerges, power providers and regulators will focus intently on modern designs for future plants. This we know: No one will be building any more plants from 40-year-old engineering plans like those used at Fukushima.

Cyberattack Fears On The Rise: Study (AFP)

By Chris Lefkow

AFP, April 19, 2011

WASHINGTON — Cyber threats such as Stuxnet pose an increasing risk to critical infrastructure worldwide but many facilities are unprepared to face the danger, according to a report released on Tuesday.

"We found that the adoption of security measures in important civilian industries badly trailed the increase in threats over the last year," said Stewart Baker of the Center for Strategic and International Studies (CSIS), releasing a report conducted with computer security firm McAfee.

For the report, "In the Dark: Crucial Industries Confront Cyberattacks," McAfee surveyed 200 information technology executives charged with security at power, oil, gas and water facilities in 14 countries.

"What we found is that they are not ready," the McAfee-CSIS report said. "The professionals charged with protecting these systems report that the threat has accelerated -- but the response has not."

"The fact is that most critical infrastructure systems are not designed with cybersecurity in mind, and organizations need to implement stronger network controls, to avoid being vulnerable to cyberattacks," McAfee vice president Phyllis Schneck said.

Forty percent of the critical infrastructure executives surveyed said they believed that their industry's vulnerability had increased and 30 percent said their company was not prepared for a cyberattack.

Forty percent said they expect a major cyberattack within the next year -- defined as one that causes severe loss of services for at least 24 hours, a loss of life or personal injury, or the failure of a company.

Nearly 70 percent said they frequently found malware designed to sabotage their systems and nearly half of the respondents in the electricity industry sector said they had found Stuxnet on their systems.

A top Iranian military officer last week accused the United States and Israel of being behind the computer worm designed to sabotage Iran's nuclear program.

Stuxnet targets computer control systems made by German industrial giant Siemens and commonly used to manage water supplies, oil rigs, power plants and other critical infrastructure.

Stuxnet reportedly targeted Iran's Bushehr nuclear power plant, where technical problems have been blamed for delays in getting the facility fully operational, but it also hit systems in other countries.

Eighty percent of the respondents said they have faced a large-scale denial of service attack (DDoS), in which a large number of computers are commanded to simultaneously visit a website, overwhelming its servers.

About one in four of the IT executives surveyed reported daily or weekly DDoS attacks and the same number said they have been victims of extortion through cyberattacks or threatened cyberattacks.

The 14 countries surveyed were Australia, Brazil, Britain, China, France, Germany, India, Italy, Japan, Mexico, Russia, Spain, the United Arab Emirates and the United States.

India and Mexico have the highest rate of extortion attempts with 60 percent to 80 percent of executives in those countries reporting extortion bids.

The report said Brazil, France and Mexico are lagging in their security measures, adopting only half as many as leaders China, Italy and Japan.

China was the country most recently cited as the major source of concern for government-sponsored cyber sabotage or espionage, followed by Russia, the United States, North Korea and India.

Over half of the executives surveyed said they believe that foreign governments have been involved in network probes against their domestic critical infrastructure.

To counter the growing cyber threat, the report recommended increased use of tokens and biometric identifiers instead of passwords, better encryption and network monitoring and greater oversight of connections to the Internet and mobile devices.

Execs: Electrical Companies Moving Slowly To Address Cyber Threats (NATJO)

By Josh Smith, National Journal

National Journal, April 20, 2011

In the summer of 2010, analysts identified Stuxnet, a complex computer virus that targeted industrial control systems and opened up a whole new range of cyber threats. Almost a year later, however, the security response from companies that protect vital electrical grids remains woefully slow, according to a new report by the Center for International and Strategic Studies and Internet security firm McAfee.

Cybersecurity experts warn that more electrical infrastructure is being connected to the Internet or other networks, opening up the whole system to cyber attacks. A targeted attack could plunge millions of Americans into darkness, or worse.

This year's study polled 200 electrical infrastructure industry executives from 14 countries. The team's researchers found that Stuxnet "transformed the threat landscape," with 40 percent of respondents reporting that the virus had infected their networks.

"The emergence of Stuxnet points to an overriding need for critical infrastructure companies to acknowledge the changes in the cyberthreat landscape," the report states.

Despite the threat, the adoption rate for security systems has grown only incrementally.

"Overall, we found little good news about cybersecurity in the electric grid and other crucial services that depend on information technology and industrial control systems," the report concludes. "Security improvements are modest and overmatched by the threat."

Not only are private companies moving slowly to address the potential problem, the US government has yet to get involved in a serious way, according to the 40 percent of American executives who said they do not interact with government officials on cybersecurity or defense issues. Just over 10 percent of American respondents said their cybersecurity plans had been audited by the government, versus 100 percent of Japanese executives.

"As a country, we are going to have to decide what our government and private industry response looks like," said Kevin Gronberg, senior counsel for the House Homeland Security Committee. "The only way to decide how much government is involved is to engage in debate over it."

Compared to western nations and India, countries in East Asia seem to be pursuing a more concerted campaign to secure their networks, the researchers found.

The report calls for "true infrastructure protection policies" around the world, including improved authentication measures; more encryption and detection technology; increased oversight of industrial control systems; and effective partnerships with governments.

Senate Democrats have introduced legislation designed to safeguard critical infrastructure, including the electric grid, military assets, the financial sector, and telecommunications networks. It outlines federal authority and establishes incentives for private industry to protect their systems.

"Today we rely more heavily than ever on technology to run everything from power plants to missile systems to personal computers. In a rapidly changing world it's important that we adapt new to threats to our security," said Senate Majority Leader Harry Reid, D-Nev., when the plan was announced in January.

Electricity Grid Vulnerable To Cyber Attacks (FT)

By Joseph Menn, San Francisco

Financial Times, April 20, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

EXCLUSIVE-Anti-bomb Plan For Pentagon Annex Posted Online (REU)

Reuters, April 20, 2011

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

Report: US National Lab Needs More Cyber Controls (AP)

By Garance Burke

Associated Press, April 20, 2011

Lawrence Livermore National Laboratory failed to set up adequate cyber security controls for classified information, including details about the nation's nuclear stockpile, according to a federal report released Tuesday.

Livermore is one of the federal government's top science labs and maintains several national security systems, including supercomputers that process sensitive and classified information about the safety and reliability of nuclear weapons along with homeland security matters.

Rickey R. Hass, deputy inspector general for audits and inspections at the Energy Department, said in the report that outside contractors had made changes to one system meant to monitor nuclear explosions without first getting approval from the proper federal officials.

That and other site-level problems have persisted in part because the government hasn't ensured that changes to its information systems are in line with potential risks, the department's internal watchdog's office said.

"Without improvements, the weaknesses identified may limit program and site-level officials' ability to make informed risk-based decisions that support the protection of classified information and the systems on which it resides," the audit concluded.

No classified information was compromised, said Damien LaVera, a spokesman for the Energy Department's National Nuclear Security Administration, which operates the labs.

In a written response to the inspector general, a top ranking administration official said the paper-based compliance review did not factor in the lab's additional strategies to counter a constantly changing set of threats.

"We do not believe conclusions documented in this report can be extrapolated to determine the state of the entire risk management program," wrote Gerald Talbot, Jr., the administration's associate director for management and administration. "Furthermore, the general recommendations made by the IG were already in place."

Lawrence Livermore has long served as one of the nation's key labs for nuclear research. More recently the lab has focused on monitoring radiation from the ongoing nuclear crisis in Japan and on devising measures to counter possible chemical and biological terrorist attacks.

"We feel we have a good strong cyber security system at the lab," said Don Johnston, a spokesman for the lab. "That said, we're always looking to improve it and make it better."

INTERNATIONAL NUCLEAR NEWS:

Water Pumping Begins At Japan Nuclear Reactor (NYT)

By Keith Bradsher And Hiroko Tabuchi

New York Times, April 20, 2011

TOKYO — The difficult task of pumping highly radioactive water out of the basement of a turbine building at a damaged Japanese nuclear power plant began Tuesday, but officials cautioned that the work would be slow and difficult.

The Japanese government, meanwhile, said it was considering a plan to further restrict access to the evacuated area within 12 miles of the plant, the Fukushima Daiichi Nuclear Power Station. Some families have been re-entering the area to remove belongings, and dozens of people have never left.

At the plant itself, the Tokyo Electric Power Company said that it planned to pump 10,000 metric tons of water into a storage building at a rate of 480 tons a day, which would take nearly three weeks. The company is still working on ways to remove an additional 57,500 tons of heavily contaminated water at the same building, next to Reactor No. 2, and at other nearby buildings.

The cautious pace of the pumping and the volume of water to be moved are further signs of the complexity of the undertaking that faces Tokyo Electric. Removing the water is one of the 63 tasks that the company outlined Sunday in its plan to fully shut down the stricken reactors, halt all releases of radioactive material and restore reliable cooling and electricity roughly by the end of the year.

Michael Friedlander, a former senior nuclear power plant operator in the United States, said that while the pumping might be proceeding slowly, a faster pace could prove dangerous.

"If a pipe breaks and you're pumping hundreds of gallons a minute, you're going to make a huge mess," he said.

Hidehiko Nishiyama, the deputy director general of Japan's Nuclear and Industrial Safety Agency, said that the heavily contaminated water that had accumulated in basements and trenches at the site is two million times as radioactive as the less contaminated water that workers pumped into the ocean from April 4 to April 10. Workers pumped 10,393 tons of the less contaminated water into the ocean in order to make room in storage areas for the far more highly radioactive water from inside the reactor buildings.

Pumping contaminated water into the ocean has provoked considerable dismay from Japanese fishermen and from nearby countries, particularly South Korea and China. Mr. Nishiyama said Tuesday that Japan had no plans and no need to do so anymore.

Plans are being made for the installation of water-purification equipment and heat exchangers so that the same water can be pumped repeatedly through the reactors.

Anne Lauvergeon, the chief executive of Areva, France's nuclear-power equipment provider, said at a news conference in Tokyo on Tuesday evening that it would probably take until the end of May to set up a water treatment station at the plant. Once running, she said, it should be able to handle 50 metric tons of water an hour and should almost entirely remove the radiation.

The technology, called "co-precipitation," uses chemical agents to remove radioactive elements from water. The treatment station itself will be provided by Veolia Water, a British water and waste management service. Areva and Tokyo Electric have not discussed the cost of the services, Ms. Lauvergeon said.

Areva, together with Veolia Water, will also provide three lines of desalination equipment to enable Tokyo Electric to convert seawater into fresh water for cooling the reactors. Fresh water provides better cooling; the spaces between the fuel rods have started to become congested with salt from seawater.

She also said that Areva was not preparing an overall plan to decommission the troubled plant, though she said the company was prepared to cooperate with any long-term process to eventually dismantle Fukushima Daiichi. Toshiba and Hitachi have submitted competing plans to dismantle the plant; the work could take decades.

In a further effort to improve cooling, Mr. Nishiyama said Tuesday that a decision had been made to flood the primary containment vessels of the No. 1 and No. 3 reactors with enough water to cover up the sides of the reactor pressure vessels up to the level of the uranium fuel rods.

This was not done sooner because only now have workers been able to determine that the primary containment vessels are sufficiently watertight. The vessel at the No. 2 reactor is damaged and leaking gases, and the leak or leaks need to be plugged before it can be flooded, Mr. Nishiyama said.

The No. 2 reactor has posed some of the greatest challenges in recent days, including another leak that spewed radioactive water until plugged two weeks ago.

Robots entered Reactors Nos. 1 and 3 on Sunday and measured the radiation inside. But when two robots entered Reactor No. 2 on Monday, the steam inside was so dense that a robot mounted with a camera was unable to get a clear image of a radiation sensor carried by the other robot, Japanese officials said.

Japan Nuke Plants Start Pumping Radioactive Water (USAT/AP)

USA Today, April 20, 2011

The operator of Japan's crippled nuclear plant began pumping highly radioactive water from the basement of one of its buildings to a makeshift storage area Tuesday in a crucial step toward easing the nuclear crisis.

Removing the 25,000 metric tons (about 6.6 million gallons) of contaminated water that has collected in the basement of a turbine building at Unit 2 of the Fukushima Dai-ichi plant will help allow access for workers trying to restore vital cooling systems that were knocked out in the March 11 tsunami.

It is but one of many steps in a lengthy process to resolve the crisis. Tokyo Electric Power Co. projected in a road map released over the weekend that it would take up to nine months to reach a cold shutdown of the plant. But government officials acknowledge that setbacks could slow the timeline.

The water will be removed in stages, with the first third of it to be handled over the coming 20 days, said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency. In all, there are 70,000 tons (about 18.5 million gallons) of contaminated water to be removed from the plant's reactor and turbine buildings and nearby trenches, and the entire process could take months.

TEPCO is bringing the water to a storage building that was flooded during the tsunami with lightly contaminated water that was later pumped into the ocean to make room for the highly contaminated water.

The operator plans to use technology developed by French nuclear engineering giant Areva to reduce radioactivity and remove salt from the contaminated water so that it can be reused to cool the plant's reactors, Nishiyama said, adding that this process would take "several months."

Once the contaminated water in the plant buildings is safely removed and radioactivity levels decline, workers can begin repairing the cooling systems for the reactors of Units 1, 2 and 3, which were in operation at the time of the tsunami. Workers must also restore cooling functions at the plant's six spent fuel pools and a joint pool for all six units.

When the tsunami struck, units 5 and 6 were going through a regular inspection. On March 20, they were put in cold shutdown, which is when a reactor's core is stable at temperatures below 212 Fahrenheit (100 Celsius).

With the nuclear crisis dragging on, public frustration with the government is growing. Opinion polls show more than two-thirds of Japanese are unhappy with the leadership of Prime Minister Naoto Kan, who was grilled for hours Monday by opposition politicians, many demanding he resign.

TEPCO has offered residents forced to evacuate from homes around the plant about \$12,000 per household as interim compensation. People elsewhere in the disaster zone who lost houses to the tsunami — which also left more than 27,000 dead or missing — say help has been slow to materialize.

"I don't understand what the politicians are doing, there are new committees and meetings everyday," said Hiroshi Sato, who lost his house in Kesennuma and now lives in a fabric warehouse from his old business.

"We need support, financial assistance, and nothing has come yet," he said.

In TEPCO's blueprint for stabilizing the reactors, the utility aims to cool the reactors and spent fuel pools and reduce radiation leaks over the next three months. Within 6-9 months, the goal is achieve a cold shutdown of the reactors and cover the buildings, possibly with a form of industrial cloth, to further tamp down any possible radiation leaks.

Two remote-controlled robots sent into the reactor buildings of Unit 1 and Unit 3 on Sunday showed that radiation levels inside — up to 57 millisieverts per hour — were still too high for humans to realistically enter.

The US-made Packbots, which resemble drafting lamps on tank-like treads, also were briefly sent into Unit 2 on Monday, officials said, and the radiation level was found to be a much lower 4.1 millisieverts per hour.

But the high level of humidity inside the reactor building fogged up the robot's camera lens, making it difficult to see conditions inside. They were pulled out after less than an hour, officials said.

"We didn't want to lose sight of where the robot was and then not be able to retrieve it," TEPCO manager Hikaru Kuroda said.

The reason for the higher humidity wasn't clear, but it suggests that workers — if they were to go inside — also would have difficulty seeing through their masks, Kuroda said.

Removal Of Radioactive Water Starts (WSJ)

By Mitsuru Obe

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

Japan Mulls Restricting Access To Evacuation Zone Near Crippled Nuclear Plant (AP)

Associated Press, April 20, 2011

Authorities may for the first time ban access to the evacuation zone around Japan's crippled nuclear plant, citing concerns Wednesday over radiation risks for residents who may be returning to check on their homes.

About 70,000-80,000 people were living in the 10 towns and villages within 12 miles (20 kilometers) of the Fukushima Dai-ichi plant, which has been leaking radiation after a March 11 earthquake and tsunami wrecked its power and cooling systems.

Virtually all left after being advised to do so, but some occasionally have returned, defying warnings from police who have set up roadblocks on only a few major roads in the area.

"We are considering setting up 'caution areas' as an option for effectively limiting entry" to the zone, Chief Cabinet Secretary Yukio Edano said.

Noriyuki Shikata, one of Edano's deputies, said the government was still considering details of how to control access to the immediate vicinity of the nuclear plant while also responding to demands from residents to check their homes and collect belongings.

Now that the situation at the plant appears to have stabilized somewhat, both residents and the authorities are considering how to best weather a protracted evacuation. Only a few warning signs, mainly about road conditions, have been erected in the area so far.

"There are a number of people who may be entering the area. Under the current regime, we are not in a position to legally enforce — there's no penalty for entering into the area. There is a realization of a need to have a stronger enforcement of the area," Shikata said.

At present, police just keep track of people entering the evacuation zone by noting down their license plate numbers. Officials say one chief concern is that if there were a major accident, tracking down those inside would be difficult if not impossible.

It was unclear when the restrictions on entry into the area might be imposed.

In a step toward restoring the crippled nuclear plant's cooling systems, Tokyo Electric Power Co., the nuclear plant's operator, is pumping highly radioactive water from the basement of one of its turbine buildings to a makeshift storage area.

Removal of the first 10,000 metric tons (2.6 million gallons) of 25,000 metric tons (about 6.6 million gallons) of contaminated water that has collected just in the basement of the turbine building at Unit 2 of the plant began Tuesday and is expected to take at least 20 days, nuclear safety officials say. Fully ridding the plant of 70,000 tons (about 18.5 million gallons) of contaminated water in its turbine buildings and nearby trenches could take months.

Still, a senior official at the U.N. nuclear agency suggested the worst of the radiation leaks may be over in the worst nuclear power accident since the 1986 catastrophe in Chernobyl.

The total amount of radiation released is expected to be only a "small increase from what it is today" if "things go as foreseen," said Dennis Flory, a deputy director general at the International Atomic Energy Agency in Vienna.

IAEA experts are discussing ways to help Japan meet targets laid out in a blueprint for ending the crisis that TEPCO released over the weekend. Its plans call for achieving a cold shutdown of the plant within nine months. But government officials acknowledge that setbacks could slow the timeline.

In the meantime, TEPCO is continuing to spray water into the reactors and their spent fuel storage pools to help prevent them from overheating and releasing still more radiation.

TEPCO plans to use technology developed by French nuclear engineering giant Areva to reduce radioactivity and remove salt from the contaminated water inside the plant so that it can be reused to cool the reactors, said Hidehiko Nishiyama of Japan's Nuclear and Industrial Safety Agency.

This process would take "several months," he said.

TEPCO said Wednesday it has begun distributing applications for compensation to residents forced to evacuate from their homes around the plant. The company is offering about \$12,000 per household as interim compensation.

People elsewhere in the disaster zone who lost homes and suffered from other damage say help has been slow to materialize.

Shikata did not provide exact details about how the government might enforce restricted access to the evacuation zone.

"Both the issue of ... strong enforcement of the area and a realization of temporarily going back home is something we have to closely coordinate with local municipalities," he said, noting that for now there is no penalty for entering the area.

"There are also issues surrounding non-residents who are entering the area. There are people who may steal things. There are various issues involved," he said.

Police said Wednesday they had identified 11,715 of the more than 27,000 people reported dead or missing in the disasters.

Meanwhile, trade figures showed Japan's exports fell for the first time in 16 months in March, hit by the fallout from last month's massive earthquake and tsunami, which destroyed factories and damaged ports.

Auto exports especially took a beating, falling by 28 percent, as the twin disasters forced Toyota Motor Corp., Honda Motor Co. and Nissan Motor Co. to suspend their all Japanese production due to shortages of components.

Japan Considers Banning Entry Into Evacuation Zone (WSJ)

By Toko Sekiguchi

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

US Engineers Cite Lengthy Cleanup In Japan (NYT)

By Matthew L. Wald

New York Times, April 20, 2011

Veterans of the Three Mile Island cleanup said that a much larger task faced the Japanese engineers who are trying contain and secure the damaged Fukushima Daiichi reactors. And Three Mile Island took 14 years.

Lake Barrett, the senior Nuclear Regulatory Commission engineer at Three Mile Island during the early phases of the cleanup said by comparison, "it was a walk in the park compared to what they've got."

The Fukushima Daiichi reactors are similar to those in Pennsylvania — "the cores are probably really similar, partially melted," Mr. Barrett said — but engineers pointed out several key differences in the aftermath of the accidents. In Japan, four separate reactors are damaged, and fixing each one is complicated by the presence of its leaking neighbors. It will also require a major infusion of equipment to replace parts far from the reactor's core, like pumps and switchgear that were destroyed by the tsunami.

In the short term, weather is a factor: according to engineers who managed the American cleanup, which ran from 1979 to 1993, Tokyo Electric Power has only a few weeks to patch up the three smashed secondary containments before the coming rainy season, when downpours could wash more contamination into the environment. And the company will have to carefully watch that the number of workers with the necessary skills do not burn out under the size of the task, or absorb so much radiation that they have to quit.

Still, Mr. Barrett and others say that the mess at Fukushima Daiichi can be contained, cleaned up and even securely wrapped up for long-term disposal. The plant may benefit from past experience, because it is the second major accident worldwide in a big water-cooled reactor, they say.

The first task, they agree, is to fill the reactors and the spent fuel pool with water that can be pumped out again, cooled and then returned to the reactors. That would sharply reduce the possibility of generating new hydrogen and new explosions, and would go a long way toward declaring that the plants were stable, a point that the N.R.C. observed recently that Fukushima Daiichi had not reached.

Right now the reactors are in "feed and bleed" mode, adding clean water and cooling the fuel by letting that water boil off or dribble out, but such bleeding allows radiation leakage. "Whatever you bleed is letting cesium out," said Mr. Barrett, referring to the radioactive isotope. Cooling with recirculating water could end releases of radioactive materials, but will require new pumps and possibly new piping, experts said.

Before that new equipment can be installed, engineers will have to clean up the water in the basements of the reactor buildings, the turbine buildings and other structures. At Three Mile Island, water in the reactor building and the primary auxiliary building gave radiation doses as high as 1,000 rem an hour, said Ronald L. Freemerman, a Bechtel engineer who was the project manager of the cleanup. That meant a worker would hit the N.R.C.'s annual limit in about a minute. The water can be pumped through filters that will strain out the radioactive elements.

Engineers from Three Mile Island laid out the three next steps:

First, decontaminate the walls and floors, to hold down the potential radiation dose. "They have to economize on how they expose these people," Mr. Freemerman said, or the company will run out of trained workers.

Second, rebuild the secondary containments of units 1, 2 and 4, and fix or replace the heavy cranes just beneath their ceilings. That would allow workers to defuel the reactor. That step alone took five years at Three Mile Island, where no buildings had to be rebuilt.

Third, peek inside the reactor vessel and figure out what tools will be needed to remove the wrecked fuel in the core. Three Mile Island was a surprise, Mr. Freemerman said, because so much of the core had melted and flowed beneath a support made of five plates of thick steel. Another veteran of the cleanup, Michael McGough, said only then did they realize they would need new remote-controlled tools to cut through the metal, to get to the material below.

Mr. McGough's technicians worked from a trailer outside the containment vessel, manipulating a cutting tool that was operating under about 40 feet of water. They also used long-handled picks and scoops to break apart the fused mass of ceramic fuel pellets and metal. "Basically we dug our way down through that debris until we got everything removed," Mr. McGough said.

At Three Mile Island, technicians then painstakingly loaded debris into shielded casks, under water to shield themselves from radiation, and then brought the casks to the surface. Eventually about 150 tons of radioactive rubble was shipped to an Energy Department laboratory in Idaho Springs, Idaho, where it still sits, waiting, as all used American fuel does, for a final resting place.

Japan may have another option if the wrecked core isn't too thoroughly mixed with other materials. It already has a reprocessing plant, where old fuel is chopped up, dissolved in acid, and then sorted, with its plutonium being removed, and the uranium sorted out for possible re-use. But that process is likely years away.

UN Nuclear Agency Expects Little New Radiation Release If All Goes According To Plan (AP)

Associated Press, April 20, 2011

A senior official at the U.N. nuclear agency is suggesting the worst may be over as far as radiation leaks at Japan's stricken reactor complex are concerned.

Denis Flory says he expects the total amount of radiation releases to be only a "small increase from what it is today" if "things go as foreseen." Flory, a deputy director general at the International Atomic Energy Agency, emphasized Tuesday that his forecast was based on an estimate of the situation.

Tokyo Electric Power Co. projected in a road map made public over the weekend that it would take up to nine months to reach a cold shutdown of its Fukushima Dai-ichi plant. But government officials acknowledge that setbacks could slow the timeline.

Flory told reporters the IAEA would work in a consultative role with Japan to help meet its road map targets and details of that role are being discussed.

Radiation Release From Fukushima Won't Increase Much: IAEA (AFP)

AFP, April 20, 2011

The overall release of radiation from Japan's tsunami-hit nuclear plant will not increase much between now and when it is finally brought under control, the UN atomic watchdog said Tuesday.

Japan has been working feverishly to bring the Fukushima Daiichi nuclear power plant, 250 kilometres (155 miles) northeast of Tokyo, into safe shutdown since it was hit by a 14-metre (46-foot) tsunami on March 11, triggering the world's worst nuclear accident since Chernobyl.

The plant's operator, Tokyo Electric Power Company (TEPCO), said on Sunday it aims to reduce radiation leaks within three months and to achieve a so-called "cold shutdown" within six to nine months.

So far, the overall radioactivity release has been around 10 percent of that seen at Chernobyl 25 years ago, the Japanese authorities have said.

And the International Atomic Energy Agency's head of nuclear safety, Denis Flory, said the amount would not increase much further.

"There has been high bursts of radioactivity from the beginning," Flory told a regular news briefing here.

Currently, radioactivity was still leaking "at low level" but those leaks were decreasing.

"So, taking into account all the measures that are foreseen, the new amount of release will be decreasing and decreasing, and the total amount would not be much different from what it is today," the expert said.

According to Japanese estimates, the total radiation release at Fukushima so far has been 370,000 terrabecquerels, compared with 5.2 million terrabecquerels at Chernobyl.

Asked whether TEPCO's six-to-nine-month timeframe for achieving a cold shutdown was realistic, Flory replied: "Whether they will be able to keep (to) this ... will be shown by the facts."

Nevertheless, it was "very positive" that such a timetable had been set out at all, the expert added.

The IAEA's role over the next six to nine months would remain what it has been so far, that is to "share information," Flory continued.

The watchdog would, however, send a team of international experts on a first fact-finding mission to Fukushima before June, he said.

And further follow-up missions would follow, Flory added.

The IAEA is to host a ministerial-level summit from June 20-24 to try to examine the lessons learned from the Fukushima crisis.

Chernobyl Donors Conference Falls Short Of Goal (AP)

Associated Press, April 20, 2011

KIEV, Ukraine (AP) — A donors conference seeking euro740 million (\$1.1 billion) to clean up the Chernobyl disaster site fell well short of its goal Tuesday, but officials remained optimistic that money will be found to make the world's worst nuclear accident site environmentally safe.

Pledges from nations and organizations at the conference totaled about euro550 million (\$785 million), along with euro29 million (\$41 million) from Ukraine.

The money is being sought to complete the construction of a gargantuan long-term shelter to cover the nuclear reactor that exploded April 26, 1986, and to build a facility to store waste from the plant's three other decommissioned reactors.

Japan had been one of the top donors in previous years, contributing euro72 million (\$103 million) in total. But this year, after last month's devastating earthquake, tsunami and ensuing crisis at the Fukushima nuclear power plant, Japan held back from pledging money.

Several other major donors in the past also did not announce pledges Tuesday, citing their own economic difficulties or impending national elections. Among them were Ireland, Spain and Canada.

But "undoubtedly, the countries that were not ready to offer today are still with us," said French Prime Minister Francois Fillon, whose country pledged euro47 million (\$67 million). France is the strongest defender of using nuclear power in Europe.

Ukrainian President Viktor Yanukovych reached out to countries not at the conference, saying, "We will always be thankful for timely assistance."

Other top pledging countries at the conference included the United States, promising \$123 million, Germany with euro42.4 million (\$60.5 million) and Russia, a latecomer to decades of Chernobyl contributions, pledging euro45 million (\$64 million). Russia's pledge doubled the amount it has donated since it began contributing in 2005.

The European Commission pledged euro110 million (\$157 million) and the European Bank for Reconstruction and Development, which is directing the Chernobyl projects, promised euro120 million (\$171 million).

The international community already has poured euro864 million (\$1.2 billion) into the fund to build the shelter over the reactor. In the months after the blast, workers hastily built a so-called sarcophagus to block off the radiation being spewed from the reactor, but it has already exceeded its proposed service life and has been plagued by structural problems.

The new shelter, which will look like a giant Quonset hut, is to be assembled adjacent to the reactor building and then slid over it on rails. The shelter, designed to last 100 years, is supposed to be in place in 2015, after which the reactor can be disassembled.

The separate spent-fuel storage facility is to hold the waste fuel from the plant's other reactors, which were phased out of service after the blast.

The donors' conference kicked off a week of meetings on the 1986 explosion that spewed a cloud of radiation over much of Europe.

In Ukraine, an area of 30 kilometers (19 miles) radius around the plant remains blocked off by guards and is largely uninhabited except for some rotating maintenance workers at the idle plant and a few hundred residents who moved back to their homes despite advice to stay away.

It was followed in the afternoon by a "summit" on the safe and innovative use of nuclear energy, at which participants including some heads of state called for improved international cooperation and more rigorous international standards for nuclear power plants.

United Nations Secretary-General Ban Ki-moon told the summit that "the time has come to strengthen the IAEA," the UN's nuclear energy agency and called for "a top-to-bottom review of nuclear safety standards."

The need for tightened universal standards was underlined by a dispute at the summit between Lithuania and Russia.

Lithuanian Prime Minister Andrus Kubilis complained that plants planned by Russia and Belarus near the Lithuanian border had not had sufficient safety reviews. But Russian Deputy Prime Minister Igor Sechin responded that the plants would be so sophisticated that "something like Fukushima is just not possible."

At a separate conference in Kiev, one U.N. expert said ecological conditions in some of the fallout-affected areas have improved considerably.

"In most of the territories, background radiation nowadays is not different to many places where there were no similar catastrophes, and in fact there can be normal life there. The health risks are much smaller than they used to be 20 years ago or 15 years ago," said Jerzy Osiatinski of the U.N. Development Program.

Associated Press Writer Anna Melnichuk in Kiev contributed to this report.

Pledges For New Chernobyl Cleanup Fall Short (WSJ)

By James Marson

Wall Street Journal, April 20, 2011

Full-text stories from the Wall Street Journal are available to Journal subscribers by clicking the link.

With Eye To Japan, World Pledges Cash For Chernobyl (NYT/REU)

Reuters, April 20, 2011

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

IAEA Chief Defends Nuclear Energy (AP)

Associated Press, April 20, 2011

CHERNOBYL NUCLEAR POWER PLANT, Ukraine – The head of the International Atomic Energy Agency, speaking at the site of the Chernobyl nuclear power plant explosion, says that accident and the Japanese nuclear crisis do not undermine the value of nuclear power.

Yukiya Amano spoke Wednesday at the site of the world's worst nuclear accident. He was accompanied by U.N. Secretary-General Ban Ki-moon and Ukrainian President Viktor Yanukovych.

Amano says many countries will continue to find nuclear power an important option for energy diversification but that the global community must do its utmost to ensure its safety.

His visit comes just days before the 25th anniversary of the Chernobyl disaster.

Mob Sets Fires In Protest Of India Nuclear Plant (AP)

By Nirmala George

Associated Press, April 20, 2011

NEW DELHI – A mob opposing a government plan to build a nuclear plant in the western Indian state of Maharashtra ransacked a hospital and set buses on fire Tuesday during a protest strike.

Residents of Jaitapur have been protesting the proposed plant since the government's plans became public four years ago. The opposition has grown since Japan's nuclear crisis, with critics noting that Jaitapur is in a seismic zone.

The general strike was called after police fired to disperse protesters who attacked a police station Monday, killing one person.

The town's streets were mostly deserted as the strike took effect. But by midday, groups of people converged on the street, shouting slogans against the government. The mob later ransacked a government-run hospital and set at least three public transport buses on fire, police said.

Construction is to start this year on the first of six units at the proposed \$10 billion plant, billed as the biggest in the world. The project by the French nuclear energy company Areva will generate 9,900 megawatts of power when completed. The first unit is expected to start producing power in 2018.

India's Environment Minister Jairam Ramesh has said additional safeguards will be taken in light of the troubles at the Fukushima nuclear power plant. The Fukushima plant's cooling systems were destroyed by an earthquake and tsunami last month, and the Japanese operator has struggled to get the plant back under control.

Ramesh described the events unfolding at Fukushima as a "wake-up call," but said India could not abandon nuclear energy in its quest for clean energy to fuel its rapid economic growth.

The government has countered protesters by asserting that the site is safe and the plant's location on a high cliff would save it from being hit by a tsunami.

Jaitapur is about 260 miles (420 kilometers) south of Mumbai, India's financial hub and the Maharashtra state capital.

Anti-nuclear protesters plan to march Saturday from a nuclear power plant near Mumbai to Jaitapur to oppose the new project.

At present, nuclear energy forms only 3 percent of power available in India. The government has announced plans to increase the share of its nuclear power generation to 13 percent of its energy basket by 2030 to meet the rising demand for electricity.

Second Day Of Violent Protests Over India Atomic Plant (AFP)

AFP, April 20, 2011

MUMBAI (AFP) – Mobs attacked a hospital and blocked a highway in western India on Tuesday in a second day of violent protests against a planned nuclear power plant, after a protester was shot dead a day earlier.

The renewed violence prompted police to ban large public gatherings and political rallies, local television channels reported, with anger seething over the proposed power station amid Japan's nuclear emergency.

A furious crowd targeted a hospital in Ratnagiri town in Maharashtra state, while state transport buses were pelted with stones and a district highway road blocked with burning tyres, the Press Trust of India news agency said.

The Hindu nationalist Shiv Sena party called a shutdown in Ratnagiri town, 350 kilometres (220 miles) south of state capital Mumbai, television channels said.

"The situation is calm and under control," a police official at the Ratnagiri police control room told AFP, asking not to be identified.

Anger has been brewing in the area since national environment minister Jairam Ramesh last week ruled out a "rethink" on the planned six-reactor, 9,900-megawatt facility in Jaitapur in Ratnagiri district.

On Monday police shot a man dead during clashes with protesters, later saying they had "no choice" but to fire live bullets at the crowd.

Demonstrators set a police station ablaze after the killing, and at least 20 were arrested.

The power plant is to be constructed with technical help from the French energy giant Areva.

But environmental campaigners argue the location is prone to earthquakes, while local people who are dependent on fishing and farming say the plant will rob them of their livelihoods and nuclear waste could pollute the soil and sea.

Nuclear industry insiders have also cast doubt on India's ability to deal with a crisis on the scale of that faced by Japan at its Fukushima Daiichi plant after a devastating earthquake and tsunami last month.

Anti-nuclear activists had been planning further protests on Sunday in Maharashtra state to demand that the nuclear power plant be scrapped.

Energy-hungry India currently sources three percent of its electricity from nuclear power, but the government wants to increase that to six percent by the end of the decade and 13 percent by 2030.

Protests Against India Nuclear Plant Turn Violent (REU)

Reuters, April 20, 2011

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

Italy Indefinitely Shelves Nuclear Plans After Japan Quake, Opposition Cries Foul (WP/AP)

Associated Press, April 20, 2011

ROME — Italy's government proposed on Tuesday to shelve indefinitely its nuclear plans following radiation leaks at Japan's nuclear plant.

The government presented an amendment to legislation under consideration in the Senate that would call off plans to find, build and activate nuclear plants in the country. The amendment says the government plans to define a new energy strategy instead.

Economic Development Minister Paolo Romani said the leaks at Japan's Fukushima plant had changed everything and that Italy was merely taking the same steps as Germany and others in altering energy strategies following the disaster.

"Such important choices for our future can't be taken based on emotional waves or political maneuvering," he said in a statement.

Critics and lawmakers opposed to nuclear energy said the government's decision was merely designed to imperil a popular referendum set for later this year on the government's nuclear plans. They said with the issue off the political agenda, Italians will be less likely to go to the polls in June to vote.

In a 1987 referendum following the Chernobyl disaster, Italians overwhelmingly rejected nuclear power.

The government in November began taking steps to introduce nuclear energy into the country, naming a board of directors to look at the issue. Premier Silvio Berlusconi had wanted to go nuclear to reduce Italy's energy-dependency on foreign nations.

Some 86 percent of Italy's energy comes from outside the country, well above the EU average of 53 percent, according to the International Energy Agency, a Paris-based group that advises member countries on energy matters.

The nuclear crisis in Japan, however, emboldened opponents and prompted even supporters to concede that there's a need for further reflection.

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Italy Scraps Nuclear Power Preparations (REU)

By Giuseppe Fonte

Reuters, April 20, 2011

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

Italy Freezes Return To Nuclear Power (FT)

By Guy Dinmore, Rome

Financial Times, April 20, 2011

Full-text stories from the Financial Times are available to FT subscribers by clicking the link.

Italy: Nuclear Plants On Hold (NYT)

By Gaia Pianigiani

New York Times, April 20, 2011

Less than three years after embracing nuclear power, the government proposed a measure that would indefinitely delay plans to develop a nuclear energy strategy, including the building of plants. Italy had already announced a one-year moratorium on site selection and the construction of plants, but an amendment presented Tuesday in the Senate would scrap all the rules governing their construction. The Senate was to vote Wednesday on the measure.

Russian Nuclear Chief Says Plants To Grow Costlier (REU)

By Alissa De Carbonnel

Reuters, April 20, 2011

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

Protesters Call For Halt To Nuclear Development (TORST)

By David Olive

Toronto Star, April 19, 2011

Greenpeace protesters spent several hours Tuesday in the office of energy minister Brad Duguid calling for a halt to new nuclear development in Ontario.

The four protesters, linked together by a heavy chain, were cut free by police after several hours, and charged with trespassing.

But Duguid said he has no intention of deviating from plans to continue getting about half Ontario's electricity from nuclear plants, calling that an "appropriate level."

Ontario Power Generation is currently seeking permission to build new nuclear reactors at its Darlington station.

Shawn-Patrick Stensil, one of the protesters, said Ontario's current commitment to nuclear dates back to policies drawn up in 2005.

"At the time what we were told is that new reactors would be cheap, the radioactive waste problem was solved, and safety was completely under control," he said.

"What we have learned over the past five years is it's not cheap ... (and) the radioactive waste problem hasn't been solved. And Fukushima reminds us of the dangers that come with using nuclear reactors."

He said Ontario needs to supply its future needs through renewable energy.

Duguid said in an interview that Ontario is the "leading jurisdiction in the world" in developing renewable energy.

"We're building a new clean energy industry in this province," he said.

Ontario is not adding to its nuclear supply, Duguid said. The new reactors will replace those at Pickering, which are nearing the end of their lives.

Can Nuclear Power Plants Float? (REU)

By Alissa De Carbonnel

Reuters, April 19, 2011

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

From: Garchow, Steve
Sent: Sunday, April 10, 2011 11:42 AM
To: ET02 Hoc
Subject: RE: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

I will also need a Blackberry and am in R-IV. I will check tomorrow and see if I can get that through the region.

*Steve Garchow
Chief Examiner
817-276-4426
SMG@NRC.gov*

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

666/227

From: Virgilio, Rosetta
To: Rakovan, Lance; Barkley, Richard; Bonaccorso, Amy; Cai, June; Croston, Sean; Culp, Lisa; Ellmers, Glenn; Farnholtz, Thomas; Gold, Meg; Goldberg, Francine; Hayden, Elizabeth; Heck, Jared; Jasinski, Robert; Joosten, Sandy; Landau, Mindy; Loyd, Susan; Medina, Veronika; Montes, David; Mroz (Sahm), Sara; Pedersen, Renee; Rihm, Roger; Ryan, Michelle; Sall, Basia; Salter, Susan; Shane, Raeann; Steger (Tucci), Christine; Woodruff, Gena; Wright, Lisa (Gibney); Robbins, Emily
Cc: Donaldson, Leslie; Harrington, Holly; English, Kimberly; Oklesson, Edward; Chan, Deborah
Subject: RE: Nuclear Boy Link
Date: Wednesday, April 20, 2011 12:08:41 PM

Quite the video!

From: Rakovan, Lance
Sent: Wednesday, April 20, 2011 11:08 AM
To: Barkley, Richard; Bonaccorso, Amy; Cai, June; Croston, Sean; Culp, Lisa; Ellmers, Glenn; Farnholtz, Thomas; Gold, Meg; Goldberg, Francine; Hayden, Elizabeth; Heck, Jared; Jasinski, Robert; Joosten, Sandy; Landau, Mindy; Loyd, Susan; Medina, Veronika; Montes, David; Mroz (Sahm), Sara; Pedersen, Renee; Rakovan, Lance; Rihm, Roger; Ryan, Michelle; Sall, Basia; Salter, Susan; Shane, Raeann; Steger (Tucci), Christine; Virgilio, Rosetta; Woodruff, Gena; Wright, Lisa (Gibney); Robbins, Emily
Cc: Donaldson, Leslie; Harrington, Holly; English, Kimberly; Oklesson, Edward; Chan, Deborah
Subject: Nuclear Boy Link

As I mentioned in today's Communications Council meeting, this links to a Japanese video cartoon that apparently seeks to explain the Fukushima nuclear power plant to children. I apologize in advance if you are somehow offended by the material.

<http://www.youtube.com/watch?v=5sakN2hSVxA>

-Lance

666/228

From: LIA08 Hoc
Sent: Friday, April 22, 2011 4:32 AM
To: OST01 HOC
Subject: RE:
Attachments: Japan One Pager 0700 EDT 4-22-11.doc

Updated edits on One Pager.

Liaison Team Coordinator
US Nuclear Regulatory Commission
email: lia08.hoc@nrc.gov
Desk Ph: 301-816-5185

From: OST01 HOC
Sent: Friday, April 22, 2011 1:46 AM
To: RST01 Hoc; Hoc, PMT12; Holonich, Joseph; LIA08 Hoc
Subject:

Please provide updates to the Japan One-Pager (0700 EDT 4-22-11) by 5:00 a.m. If you make changes electronically, please use highlight feature in Word to note the change. Pen and ink changes are also acceptable.

Thank You,
Tia Pope

Executive Support Team
US Nuclear Regulatory Commission
email: ost01hoc@nrc.gov
Ph: 301-816-5100

GGGG/229

From: OST01 HOC
Sent: Friday, April 22, 2011 5:08 AM
To: Hoc, PMT12
Subject: Japan One Pager
Attachments: Japan One Pager 0700 EDT 4-22-11.doc

From: OST01 HOC
Sent: Friday, April 22, 2011 1:46 AM
To: RST01 Hoc; Hoc, PMT12; Holonich, Joseph; LIA08 Hoc
Subject:

Please provide updates to the Japan One-Pager (0700 EDT 4-22-11) by 5:00 a.m. If you make changes electronically, please use highlight feature in Word to note the change. Pen and ink changes are also acceptable.

Thank You,
Tia Pope

Executive Support Team
US Nuclear Regulatory Commission
email: ost01hoc@nrc.gov
Ph: 301-816-5100

From: LIA08 Hoc
Sent: Thursday, April 28, 2011 9:07 PM
To: OST01 HOC
Subject: Japan One Pager 2300 EDT 4-28-11.docx
Attachments: Japan One Pager 2300 EDT 4-28-11.docx

Categories: FOIA Forwarded

Just one addition...

From: LIA08 Hoc
Sent: Friday, April 29, 2011 8:09 AM
To: RST01 Hoc; RST02 Hoc; Hoc, PMT12
Cc: LIA08 Hoc
Subject: Request for Status Update: USNRC Earthquake-Tsunami
Attachments: USNRC Earthquake-Tsunami Update 042911 Revision 0, 1200 EDT.docx

Categories: FOIA Forwarded

Good Morning Everyone,

Please provide all updates to me by 1000 (EDT).

Thanks

Janelle

From: Hayden, Elizabeth
To: CommissionCalendar Resource
Subject: Accepted: Hearing: Japan - Senate Committee on Environment and Public Works (Time and Location TBD)

666/233

From: Hayden, Elizabeth
To: Landau, Mindy
Subject: Accepted: Discuss speaking engagements on Japan

GIGIGI/234

From: Hayden, Elizabeth
To: Landau, Mindy
Subject: Accepted: Discuss speaking engagements on Japan

6666/235

From: Hayden, Elizabeth
To: CommissionCalendar Resource
Subject: Accepted: BRIEFING ON TASK FORCE REVIEW (60-DAY STATUS) FOLLOWING THE EVENTS IN JAPAN (Public Meeting)

GGGG/236

From: Hayden, Elizabeth
To: CommissionCalendar Resource
Subject: Accepted: BRIEFING ON TASK FORCE REVIEW (30-DAY STATUS) FOLLOWING THE EVENTS IN JAPAN (Public Meeting)

61666/237

茨城県におけるモニタリング状況(1/1)

文部科学省

H23.4.28 19:00

$\mu\text{Sv}/\text{h}$ (マイクロシーベルト毎時)

日時	日本原子力研究開発機構 原子力科学研究所 (茨城県東海村)	日本原子力研究開発機構 核燃料サイクル工学研究所 (茨城県東海村)	東京大学弥生 (茨城県東海村)
4月28日			
0:00	0.91	0.46	0.89
1:00	0.91	0.46	0.79
2:00	0.91	0.46	0.79
3:00	0.91	0.46	0.75
4:00	0.90	0.46	0.80
5:00	0.90	0.46	0.80
6:00	0.90	0.46	0.80
7:00	0.90	0.46	0.85
8:00	0.90	0.46	0.83
9:00	0.90	0.46	0.88
10:00	0.89	0.46	0.82
11:00	0.89	0.46	0.84
12:00	0.89	0.46	0.78
13:00	0.89	0.46	0.72
14:00	0.89	0.46	0.71
15:00	0.90	0.45	0.80
16:00	0.90	0.46	0.85
17:00	0.90	0.46	0.78
18:00	0.90	0.46	

※このデータは、表記の3カ所における空間線量率を1時間毎に計測したもの。日本原子力研究開発機構原子力科学研究所及び日本原子力研究開発機構核燃料サイクル工学研究所のデータは、それぞれ以下のホームページでも掲載されている。

日本原子力研究開発機構原子力科学研究所

<http://erms.jaea.go.jp/Chart.htm>

日本原子力研究開発機構核燃料サイクル工学研究所

http://www.jaea.go.jp/04/ztokai/kankyo/realtime/tbl_10mStPo01.html

676666/238

福島第一原子力発電所の20km以遠のモニタリング結果について

平成23年4月28日 19時00分現在
文 部 科 学 省

○文部科学省が集計した結果

注)太下線データが今回追加分

- * 1 GM(ガイガーミューラー計数管)における値
- * 2 電離箱における値
- * 3 NaI(ヨウ化ナトリウム)シンチレータにおける値
- * 4 測定時間内における測定値の変動範囲

測定場所 (福島第一発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置の備考	天候	実施者
測定エリア【1】 福島市杉葉町 (62km北西)	4月28日19時35分	1.1 ^{*2}	N: 37° 04' E: 140° 28'	12.8 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【1】 福島市杉葉町 (62km北西)	4月28日8時24分	1.0 ^{*2}	N: 37° 04' E: 140° 28'	12.6 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【2】 福島市大波瀬ノ入 (56km北西)	4月28日9時22分	2.0 ^{*2}	N: 37° 41' E: 140° 33'	12.7 [*] 20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【3】 伊達市雪山町彦平 (46km北西)	4月28日10時30分	2.1 ^{*2}	N: 37° 41' E: 140° 33'	12.7 [*] 20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【4】 伊達郡川俣町大字鶴沢字川端 (47km北西)	4月28日9時12分	1.0 ^{*2}	N: 37° 39' E: 140° 54'	30.0 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【5】 相馬市中野寺前 (42km北北西)	4月28日11時22分	0.5 ^{*2}	N: 37° 45' E: 140° 29'	06.7 [*] 20110426距離・方位のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【6】 南相馬市鹿島区西町 (32km北)	4月28日11時47分	0.7 ^{*2}	N: 37° 29' E: 140° 54'	24.1 [*] 20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【7】 南相馬市鹿島区寺内本屋敷 (32km北北西)	4月28日12時10分	0.6 ^{*2}	N: 37° 29' E: 140° 54'	24.2 [*] 20110426距離・方位のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【10】 二本松市道延中島 (44km西北西)	4月28日13時05分	0.4 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離・方位のみ修正	降雨なし	文部科学省
測定エリア【11】 二本松市太田字下田 (43km西北西)	4月28日13時11分	0.8 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離・方位のみ修正	降雨なし	文部科学省
測定エリア【12】 田村市船引町船引字小沢川代 (39km西)	4月28日14時05分	0.1 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【13】 田村市常葉町西向屋形 (37km西)	4月28日14時11分	0.2 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【14】 田村市常葉町常葉内町 (34km西)	4月28日14時32分	0.1 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【15】 田村市常葉町山根鹿島 (32km西)	4月28日14時42分	0.4 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【20】 田村市船引町新館下 (41km西)	4月28日12時47分	0.1 ^{*2}	N: 37° 29' E: 140° 34'	24.2 [*] 20110426距離・方位のみ修正	降雨なし	文部科学省
測定エリア【21】 双葉郡葛尾村上野川 (32km西北西)	4月28日12時23分	1.9 ^{*2}	N: 37° 45' E: 140° 29'	06.7 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【22】 田村市船引町上移字後田 (35km西北西)	4月28日12時35分	0.0 ^{*2}	N: 37° 45' E: 140° 29'	05.7 [*] (修正不要でした)	降雨なし	文部科学省
測定エリア【23】 田村市船引町南移水中内 (39km西北西)	4月28日12時40分	0.7 ^{*2}	N: 37° 45' E: 140° 41'	06.7 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【31】 双葉郡浪江町津島仲沖 (30km西北西)	4月28日9時49分	6.6 ^{*2}	N: 37° 41' E: 140° 33'	12.7 [*] 20110426方位・距離のみ確認 (修正不要でした)	降雨なし	文部科学省
測定エリア【32】 双葉郡浪江町赤木手七郎 (31km北西)	4月28日10時07分	17.5 ^{*2}	N: 37° 35' E: 140° 41'	42.0 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【33】 相馬郡飯舘村長泥 (33km北西)	4月28日10時19分	13.5 ^{*2}	N: 37° 36' E: 140° 45'	34.6 [*] 20110426距離のみ修正	降雨なし	文部科学省
測定エリア【34】 双葉郡浪江町津島大高木 (30km西北西)	4月28日11時56分	4.0 ^{*2}	N: 37° 45' E: 140° 29'	06.7 [*] 20110426方位のみ修正	降雨なし	文部科学省
測定エリア【36】 伊達郡川俣町山木屋大洪 (40km西北西)	4月28日9時37分	2.5 ^{*2}	N: 37° 41' E: 140° 33'	12.7 [*] 20110426方位・距離のみ確認 (修正不要でした)	降雨なし	文部科学省
測定エリア【37】 伊達市霧山町石田宝司沢 (48km北西)	4月28日10時15分	3.3 ^{*2}	N: 37° 41' E: 140° 33'	12.7 [*] 20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【38】 いわき市四倉町白岩保木田 (34km南南西)	4月28日11時34分	0.3 ^{*2}	N: 37° 33' E: 140° 44'	03.2 [*] 20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【39】 相馬市山上上並木 (41km北北西)	4月28日10時56分	0.3 ^{*2}	N: 37° 41' E: 140° 33'	12.7 [*] 20110426方位・距離修正	降雨なし	日本原子力研究開発機構
測定エリア【41】 田村市都路町古道 (21km西)	4月28日12時55分	0.6 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【41】 田村市都路町古道 (21km西)	4月28日9時35分	0.6 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【42】 田村市常葉町山根富岡 (33km西)	4月28日13時20分	0.2 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【42】 田村市常葉町山根富岡 (33km西)	4月28日10時10分	0.7 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【43】 双葉郡川内下川内宮渡 (22km西南西)	4月28日15時00分	0.4 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【43】 双葉郡川内下川内宮渡 (22km西南西)	4月28日11時00分	0.4 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【44】 いわき市大久町大久矢ノ目沢 (28km南南西)	4月28日13時00分	0.4 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【44】 いわき市大久町大久矢ノ目沢 (28km南南西)	4月28日10時00分	0.4 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【45】 双葉郡柳葉町山岡美し森 (20km南)	4月28日13時06分	0.7 ^{*2}			20110426方位・距離のみ確認 (修正不要でした)	降雨なし
測定エリア【45】 双葉郡柳葉町山岡美し森 (20km南)	4月28日9時51分	0.7 ^{*2}			20110426方位・距離のみ確認 (修正不要でした)	降雨なし
測定エリア【46】 伊達郡川俣町山木屋向山 (34km西北西)	4月28日13時00分	3.7 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【46】 伊達郡川俣町山木屋向山 (34km西北西)	4月28日10時00分	3.7 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【51】 田村郡小野町小野新町館原 (39km西南西)	4月28日14時00分	0.2 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【51】 田村郡小野町小野新町館原 (39km西南西)	4月28日10時39分	0.2 ^{*2}			20110426方位・距離修正	降雨なし
測定エリア【52】 田村郡船引町船引馬場川原 (41km西)	4月28日14時50分	0.2 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【52】 田村郡船引町船引馬場川原 (41km西)	4月28日12時00分	0.2 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【61】 相馬郡飯舘村八木沢 (38km北西)	4月28日14時04分	4.1 ^{*2}			20110426距離のみ修正	降雨なし
測定エリア【61】 相馬郡飯舘村八木沢 (38km北西)	4月28日12時17分	4.0 ^{*2}			20110426距離のみ修正	降雨なし

* 1 GM(ガイガーミューラー計数管)における値
 * 2 電離箱における値
 * 3 Nal(ヨウ化ナトリウム)シンチレータにおける値
 * 4 測定時間内における測定値の変動範囲

測定場所 (福島第一発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	測定位置	測定位置の備考	天候	実施者
測定エリア【62】 相馬郡飯館村草野大師堂 (39km北西)	4月28日14時15分	5.2 [±] 0.3		20110426距離のみ修正	降雨なし	福島県
測定エリア【62】 相馬郡飯館村草野大師堂 (39km北西)	4月28日12時05分	5.3 [±] 0.3		20110426距離のみ修正	降雨なし	福島県
測定エリア【63】 相馬郡飯館村二牧槽 (44km北西)	4月28日14時44分	1.5 [±] 0.3		20110426距離のみ修正	降雨なし	福島県
測定エリア【63】 相馬郡飯館村二牧槽 (44km北西)	4月28日10時48分	1.5 [±] 0.3		20110426距離のみ修正	降雨なし	福島県
測定エリア【71】 双葉郡広野町下北迫苗代替(注) (23km南)	4月28日12時31分	0.7 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【71】 双葉郡広野町下北迫苗代替(注) (23km南)	4月28日8時25分	0.7 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	警察(NBC対策部隊)
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (31km南)	4月28日12時10分	0.4 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (31km南)	4月28日9時00分	0.7 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	警察(NBC対策部隊)
測定エリア【73】 いわき市四倉町 (35km南)	4月28日11時55分	0.6 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	日本原子力研究開発機構
測定エリア【73】 いわき市四倉町 (35km南)	4月28日9時18分	0.5 [±] 0.2		20110426方位・距離のみ確認 (修正不要でした)	降雨なし	警察(NBC対策部隊)
測定エリア【74】 いわき市小川町高萩 (38km南南西)	4月28日11時02分	0.2 [±] 0.2		20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【74】 いわき市小川町高萩 (38km南南西)	4月28日10時35分	0.4 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	警察(NBC対策部隊)
測定エリア【75】 いわき市内郷御厩町 (43km南南西)	4月28日10時40分	0.2 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【75】 いわき市内郷御厩町 (43km南南西)	4月28日9時47分	0.2 [±] 0.2		20110426方位・距離のみ修正	降雨なし	警察(NBC対策部隊)
測定エリア【76】 双葉郡川内村上川内早瀬 (22km西南西)	4月28日15時16分	0.5 [±] 0.2	N: 37° 25.3" E: 140° 48° 25.7"	20110426方位・距離のみ修正	降雨なし	文部科学省
測定エリア【79】 双葉郡浪江町下津島音深 (29km西北西)	4月28日10時46分	6.0 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ修正	降雨なし	文部科学省
測定エリア【80】 南相馬市原町区高見町 (24km北)	4月28日13時17分	0.3 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【80】 南相馬市原町区高見町 (24km北)	4月28日8時10分	0.3 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	警察(NBC対策部隊)
測定エリア【83】 双葉郡浪江町赤字木柄平 (24km北)	4月28日11時01分	34.0 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	文部科学省
測定エリア【84】 いわき市三和町差塩 (39km南西)	4月28日9時54分	0.5 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	日本原子力研究開発機構
測定エリア【85】 福島市荒井原宿 (66km西北西)	4月28日6時00分	0.3 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ修正	降雨あり	防衛省
測定エリア【86】 郡山市大槻町長右工門林 (63km西)	4月28日6時00分	0.7 [±] 0.2	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110426距離のみ修正	降雨あり	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内 (29km西南西)	4月28日6時00分	0.6 [±] 0.2	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110426距離のみ修正	降雨あり	防衛省
測定エリア【88】 福島市光が丘 (55km西北西)	4月27日17時00分	0.8 [±] 0.2	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	防衛省
測定エリア【89】 郡山市豊田町 (60km西)	4月27日17時00分	2.5 [±] 0.2	N: 37° 23' 57.0" E: 140° 19' 35.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	防衛省
測定エリア【101】 伊達市磐山町大字石三ノ輪 (55km北)	4月28日9時50分	0.8 [±] 0.2	N: 37° 41' 12.7" E: 140° 33' 29.3"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	日本原子力研究開発機構
測定エリア【102】 伊達市月館町月館字町 (50km北)	4月28日15時16分	0.4 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	日本原子力研究開発機構
測定エリア【103】 南相馬市原町区高字大豆柄内 (20km北)	4月28日13時41分	0.5 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	日本原子力研究開発機構
測定エリア【104】 双葉郡葛尾村大字落合字落合 (25km北)	4月28日12時12分	0.8 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位のみ修正	降雨なし	文部科学省
測定エリア【105】 田村市鶴路町古道字寺ノ前 (25km西)	4月28日15時02分	0.2 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426距離のみ修正	降雨なし	文部科学省
測定エリア【106】 いわき市川前町小白井字毬監小屋 (30km南西)	4月28日15時42分	0.5 [±] 0.2	N: 37° 41' 12.7" E: 140° 33' 29.3"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	文部科学省
測定エリア【107】 南相馬市原町区反原字中内 (25km北北西)	4月28日14時04分	2.0 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	日本原子力研究開発機構
測定エリア【108】 南相馬市原町区大原台烟 (30km北北西)	4月28日14時24分	2.5 [±] 0.2	N: 37° 33' 03.2" E: 140° 44' 25.0"	20110426方位・距離のみ確認 (修正不要でした)	降雨なし	日本原子力研究開発機構

(注)【71】同じ地区であるが数百メートル離れた地点である。

H23.4.28 19:00

環境放射能水準調査結果

 $\mu\text{Sv}/\text{h}$ (マイクロシーベルト毎時))

都道府県名	4月27日							4月28日							過去の平常値の範囲
	17-18	18-19	19-20	20-21	21-22	22-23	23-24	0-1	1-2	2-3	3-4	4-5	5-6	6-7	
1 北海道(札幌市)	0.029	0.028	0.029	0.029	0.029	0.032	0.033	0.035	0.038	0.039	0.040	0.039	0.038	0.038	0.02~0.105
2 胜浦県(勝浦市)	0.031	0.032	0.031	0.028	0.032	0.033	0.030	0.028	0.027	0.029	0.032	0.034	0.034	0.033	0.017~0.102
3 岩手県(盛岡市)	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.028	0.033	0.035	0.032	0.039	0.014~0.084
4 宮城県(仙台市)	0.076	0.076	0.076	0.076	0.077	0.076	0.076	0.076	0.077	0.077	0.078	0.085	0.085	0.086	0.0176~0.0513
5 秋田県(秋田市)	0.036	0.036	0.036	0.038	0.036	0.035	0.035	0.036	0.040	0.045	0.047	0.045	0.045	0.043	0.022~0.086
6 山形県(山形市)	0.049	0.049	0.048	0.049	0.049	0.049	0.049	0.049	0.049	0.051	0.054	0.058	0.060	0.056	0.025~0.082
7 福島県(福島市)	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	0.037~0.046
8 茨城県(水戸市)	0.116	0.116	0.115	0.115	0.115	0.115	0.116	0.117	0.117	0.117	0.118	0.120	0.119	0.115	0.038~0.056
9 栃木県(宇都宮市)	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.067	0.066	0.064	0.030~0.067
10 群馬県(前橋市)	0.034	0.034	0.034	0.034	0.034	0.035	0.036	0.035	0.035	0.035	0.039	0.041	0.037	0.035	0.017~0.049
11 埼玉県(さいたま市)	0.056	0.056	0.057	0.057	0.056	0.058	0.057	0.058	0.057	0.057	0.056	0.058	0.057	0.056	0.031~0.060
12 千葉県(市原市)	0.048	0.048	0.048	0.048	0.049	0.051	0.052	0.050	0.049	0.049	0.050	0.049	0.050	0.050	0.022~0.044
13 東京都(新宿区)	0.069	0.069	0.069	0.069	0.070	0.070	0.069	0.070	0.070	0.070	0.070	0.072	0.070	0.069	0.028~0.079
14 神奈川県(茅ヶ崎市)	0.054	0.054	0.054	0.054	0.055	0.054	0.055	0.055	0.055	0.059	0.059	0.058	0.056	0.055	0.035~0.069
15 新潟県(新潟市)	0.047	0.046	0.047	0.049	0.048	0.047	0.051	0.053	0.059	0.060	0.062	0.058	0.050	0.047	0.031~0.153
16 富山県(射水市)	0.055	0.059	0.062	0.063	0.063	0.063	0.059	0.064	0.067	0.060	0.051	0.049	0.048	0.049	0.029~0.147
17 石川県(金沢市)	0.056	0.060	0.060	0.057	0.057	0.057	0.055	0.060	0.058	0.051	0.048	0.047	0.048	0.048	0.0291~0.1275
18 福井県(福井市)	0.059	0.057	0.057	0.056	0.058	0.056	0.053	0.053	0.051	0.046	0.045	0.045	0.045	0.044	0.032~0.097
19 山梨県(甲府市)	0.043	0.043	0.043	0.043	0.044	0.045	0.044	0.043	0.045	0.048	0.052	0.050	0.045	0.044	0.040~0.066
20 長野県(長野市)	0.041	0.042	0.042	0.045	0.045	0.048	0.051	0.050	0.053	0.057	0.056	0.046	0.041	0.041	0.0299~0.0974
21 岐阜県(各務原市)	0.063	0.064	0.065	0.067	0.067	0.069	0.069	0.068	0.070	0.065	0.061	0.061	0.060	0.061	0.057~0.110
22 静岡県(静岡市)	0.038	0.038	0.040	0.044	0.041	0.043	0.046	0.046	0.044	0.047	0.049	0.041	0.038	0.037	0.0281~0.0765
23 愛知県(名古屋市)	0.043	0.044	0.045	0.047	0.047	0.047	0.049	0.048	0.049	0.044	0.041	0.040	0.039	0.039	0.035~0.074
24 三重県(四日市市)	0.053	0.059	0.061	0.061	0.057	0.052	0.052	0.057	0.055	0.049	0.047	0.046	0.046	0.046	0.0416~0.0789
25 滋賀県(大津市)	0.034	0.035	0.037	0.039	0.037	0.042	0.046	0.046	0.037	0.034	0.033	0.032	0.033	0.033	0.031~0.061
26 京都府(京都市)	0.039	0.042	0.048	0.046	0.043	0.048	0.052	0.051	0.042	0.039	0.038	0.038	0.037	0.038	0.033~0.087
27 大阪府(大阪市)	0.042	0.043	0.046	0.048	0.049	0.052	0.055	0.049	0.044	0.043	0.042	0.043	0.042	0.042	0.042~0.061
28 兵庫県(神戸市)	0.036	0.037	0.045	0.047	0.049	0.047	0.047	0.040	0.037	0.037	0.037	0.037	0.036	0.036	0.035~0.076
29 奈良県(奈良市)	0.049	0.053	0.056	0.055	0.057	0.061	0.061	0.059	0.051	0.048	0.048	0.047	0.048	0.048	0.046~0.080
30 和歌山县(和歌山市)	0.032	0.032	0.038	0.047	0.047	0.047	0.046	0.037	0.033	0.032	0.031	0.031	0.031	0.031	0.031~0.056
31 鳥取県(東伯郡)	0.073	0.077	0.078	0.070	0.066	0.064	0.064	0.064	0.063	0.063	0.063	0.065	0.068	0.065	0.036~0.110
32 島根県(松江市)	0.052	0.054	0.048	0.046	0.045	0.045	0.045	0.045	0.045	0.050	0.052	0.050	0.047	0.045	0.037~0.131
33 岡山県(岡山市)	0.065	0.060	0.059	0.058	0.066	0.058	0.051	0.049	0.048	0.048	0.048	0.048	0.048	0.048	0.043~0.104
34 広島県(広島市)	0.054	0.057	0.056	0.049	0.047	0.046	0.046	0.046	0.047	0.047	0.046	0.046	0.046	0.048	0.035~0.069
35 山口県(山口市)	0.095	0.091	0.090	0.091	0.091	0.090	0.090	0.090	0.090	0.091	0.093	0.092	0.090	0.090	0.084~0.128
36 徳島県(徳島市)	0.039	0.046	0.050	0.048	0.048	0.048	0.042	0.039	0.038	0.038	0.037	0.038	0.038	0.037	0.037~0.067
37 香川県(高松市)	0.068	0.072	0.070	0.066	0.073	0.075	0.066	0.062	0.061	0.061	0.060	0.060	0.060	0.060	0.051~0.077
38 愛媛県(松山市)	0.054	0.053	0.057	0.056	0.051	0.049	0.049	0.048	0.048	0.048	0.047	0.048	0.048	0.048	0.045~0.074
39 高知県(高知市)	0.037	0.032	0.028	0.034	0.037	0.031	0.027	0.025	0.025	0.025	0.025	0.025	0.026	0.025	0.019~0.054
40 福岡県(太宰府市)	0.041	0.037	0.037	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.034~0.079
41 佐賀県(佐賀市)	0.044	0.041	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.037~0.086
42 長崎県(大村市)	0.033	0.030	0.029	0.029	0.028	0.029	0.029	0.028	0.029	0.029	0.029	0.029	0.028	0.029	0.027~0.069
43 熊本県(宇土市)	0.037	0.032	0.028	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.021~0.067
44 大分県(大分市)	0.052	0.059	0.053	0.051	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.050	0.048~0.085
45 宮崎県(宮崎市)	0.032	0.040	0.032	0.028	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.0243~0.0664
46 鹿児島県(鹿児島市)	0.051	0.045	0.038	0.036	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.0306~0.0943
47 沖縄県(うるま市)	0.020	0.020	0.021	0.021	0.020	0.021	0.021	0.020	0.021	0.021	0.021	0.021	0.021	0.021	0.0133~0.0575

*宮城県では、可搬型モニタリングポストによる測定。

また、過去の平常値の範囲については、仙台市に設置していた固定型モニタリングポストの値を記載。

*福島県では、双葉郡のモニタリングポストが避難区域に入っていたり、測定が困難であるため、代替地として福島市紅葉山局モニタリングポストで測定。

また、福島県のデータは本日19時まで入手したものと掲載。

*島根県では、機器点検のため、4月14日17時から代替機器により測定。

*本データは、 $1\mu\text{Gy}/\text{h}$ (マイクログレイ每時)= $1\mu\text{Sv}/\text{h}$ (マイクロシーベルト每時)と換算して算出

*文部科学省が各都道府県等からの報告に基づき作成

*過去の平常値の範囲は、震災発生前の観測値における上限値と下限値を示したもの。

*群馬県、山梨県、高知県の過去の平常値の範囲の値は4月9日19時発表分より訂正。

H23.4.28 19:00

環境放射能水準調査結果

 $\mu\text{Sv}/\text{h}$ (マイクロシーベルト毎時)

	都道府県名	4月28日										過去の平常値の範囲
		7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	
1 北海道(札幌市)	0.035	0.034	0.034	0.031	0.029	0.029	0.029	0.029	0.029	0.029	0.029	0.02~0.105
2 青森県(青森市)	0.031	0.028	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.017~0.102
3 岩手県(盛岡市)	0.042	0.031	0.026	0.024	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.014~0.084
4 宮城県(仙台市)	0.081	0.078	0.077	0.078	0.079	0.079	0.078	0.078	0.076	0.076	0.076	0.0176~0.0513
5 秋田県(秋田市)	0.038	0.036	0.035	0.035	0.035	0.035	0.035	0.036	0.036	0.036	0.036	0.022~0.086
6 山形県(山形市)	0.051	0.049	0.048	0.048	0.048	0.048	0.047	0.048	0.047	0.047	0.047	0.025~0.082
7 福島県(福島市)	1.7	1.7	1.7	1.7	1.7	1.7	1.7					0.037~0.046
8 茨城県(水戸市)	0.115	0.114	0.114	0.115	0.116	0.116	0.117	0.115	0.113	0.110	0.110	0.036~0.056
9 栃木県(宇都宮市)	0.063	0.063	0.063	0.063	0.063	0.063	0.063	0.064	0.063	0.062	0.062	0.030~0.067
10 群馬県(前橋市)	0.035	0.035	0.035	0.035	0.034	0.034	0.034	0.034	0.034	0.034	0.034	0.017~0.049
11 埼玉県(さいたま市)	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.056	0.031~0.060
12 千葉県(市原市)	0.049	0.048	0.048	0.048	0.048	0.048	0.047	0.047	0.048	0.048	0.048	0.022~0.044
13 東京都(新宿区)	0.068	0.069	0.069	0.069	0.069	0.069	0.069	0.069	0.068	0.068	0.068	0.028~0.079
14 神奈川県(茅ヶ崎市)	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.054	0.035~0.069
15 新潟県(新潟市)	0.046	0.047	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.031~0.153
16 富山県(射水市)	0.049	0.054	0.056	0.051	0.049	0.048	0.049	0.048	0.047	0.047	0.047	0.029~0.147
17 石川県(金沢市)	0.052	0.056	0.053	0.054	0.051	0.051	0.050	0.048	0.047	0.047	0.047	0.0291~0.1275
18 福井県(福井市)	0.047	0.052	0.048	0.046	0.045	0.045	0.045	0.044	0.044	0.044	0.044	0.032~0.097
19 山梨県(甲府市)	0.044	0.043	0.043	0.043	0.043	0.043	0.042	0.043	0.043	0.043	0.043	0.040~0.066
20 長野県(長野市)	0.041	0.041	0.041	0.041	0.044	0.051	0.044	0.041	0.041	0.041	0.041	0.0299~0.0974
21 岐阜県(各務原市)	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.060	0.057~0.110
22 静岡県(静岡市)	0.037	0.037	0.037	0.037	0.038	0.038	0.039	0.039	0.039	0.039	0.039	0.0281~0.0765
23 愛知県(名古屋市)	0.039	0.040	0.039	0.039	0.039	0.040	0.039	0.039	0.039	0.039	0.039	0.035~0.074
24 三重県(四日市市)	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.050	0.048	0.047	0.047	0.0416~0.0789
25 滋賀県(大津市)	0.033	0.032	0.032	0.033	0.033	0.033	0.036	0.038	0.044	0.039	0.039	0.031~0.061
26 京都府(京都市)	0.038	0.038	0.038	0.038	0.038	0.039	0.040	0.047	0.050	0.042	0.042	0.033~0.087
27 大阪府(大阪市)	0.042	0.042	0.043	0.043	0.043	0.043	0.046	0.043	0.043	0.043	0.043	0.042~0.061
28 兵庫県(神戸市)	0.037	0.037	0.037	0.037	0.037	0.038	0.040	0.038	0.037	0.037	0.037	0.035~0.076
29 奈良県(奈良市)	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.048	0.048	0.048	0.046~0.080
30 和歌山県(和歌山市)	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031~0.056
31 鳥取県(東伯郡)	0.063	0.063	0.067	0.069	0.065	0.066	0.067	0.065	0.064	0.063	0.063	0.036~0.110
32 鳥取県(松江市)	0.046	0.045			0.048	0.049	0.046	0.044	0.044	0.044	0.044	0.037~0.131
33 岡山県(岡山市)	0.049	0.048	0.048	0.049	0.064	0.062	0.055	0.049	0.048	0.048	0.048	0.043~0.104
34 広島県(広島市)	0.048	0.046	0.046	0.046	0.046	0.046	0.046	0.046	0.045	0.046	0.046	0.035~0.069
35 山口県(山口市)	0.090	0.090	0.090	0.089	0.089	0.090	0.090	0.090	0.090	0.090	0.090	0.084~0.128
36 徳島県(徳島市)	0.037	0.038	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.037~0.067
37 香川県(高松市)	0.053	0.053	0.054	0.054	0.053	0.053	0.054	0.055	0.055	0.054	0.054	0.051~0.077
38 愛媛県(松山市)	0.048	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.047	0.045~0.074
39 高知県(高知市)	0.025	0.025	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.019~0.054
40 福岡県(太宰府市)	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.036	0.034~0.079
41 佐賀県(佐賀市)	0.040	0.040	0.040	0.039	0.039	0.040	0.039	0.040	0.040	0.040	0.040	0.037~0.086
42 長崎県(大村市)	0.029	0.028	0.028	0.029	0.028	0.029	0.028	0.028	0.029	0.029	0.029	0.027~0.069
43 熊本県(宇土市)	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.027	0.021~0.067
44 大分県(大分市)	0.050	0.050	0.049	0.049	0.049	0.049	0.049	0.050	0.050	0.049	0.049	0.048~0.085
45 宮崎県(宮崎市)	0.027	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.026	0.0243~0.0664
46 鹿児島県(鹿児島市)	0.035	0.035	0.035	0.034	0.035	0.035	0.035	0.035	0.035	0.035	0.035	0.0306~0.0943
47 沖縄県(うるま市)	0.020	0.021	0.021	0.021	0.021	0.021	0.021	0.021	0.020	0.020	0.020	0.0133~0.0575

*宮城県では、可搬型モニタリングポストによる測定。

また、過去の平常値の範囲については、仙台市に設置していた固定型モニタリングポストの値を記載。

*福島県では、双葉郡のモニタリングポストが避難区域に入っており、測定が困難であるため、代替地として福島市紅葉山局モニタリングポストで測定。

また、福島県のデータは本日19時まで入手したものを掲載。

*島根県では、機器点検のため、4月4日17時から代替機器により測定。

*本データは、 $1\mu\text{Gy}/\text{h}$ (マイクログレイ/毎時)= $1\mu\text{Sv}/\text{h}$ (マイクロシーベルト毎時)と換算して算出

*文部科学省が各都道府県等からの報告に基づき作成

*過去の平常値の範囲は、震災発生前の観測値における上限値と下限値を示したもの。

*群馬県、山梨県、高知県の過去の平常値の範囲の値は4月9日19時発表分より訂正。

*空欄については機器点検等による欠測等。

全国大学等の協力による空間放射線量

上段: 24時間の積算値
下段: 上段の値を1時間あたりに換算した参考値

都道府県名	測定地点番号	地区名	4月27日～4日28日
北海道	1	室蘭市	2 μ Sv (0.08 μ Sv/h)
	2	帯広市	1 μ Sv (0.04 μ Sv/h)
	3	旭川市	1 μ Sv (0.04 μ Sv/h)
	4	北見市	1 μ Sv (0.04 μ Sv/h)
	5	釧路市	1 μ Sv (0.04 μ Sv/h)
	6	函館市	1 μ Sv (0.04 μ Sv/h)
青森県	7	弘前市	1 μ Sv (0.04 μ Sv/h)
	8	八戸市	1 μ Sv (0.04 μ Sv/h)
宮城県	9	仙台市	3 μ Sv (0.13 μ Sv/h)
山形県	10	米沢市	2 μ Sv (0.08 μ Sv/h)
	11	鶴岡市	2 μ Sv (0.08 μ Sv/h)
福島県	12	福島市	7 μ Sv (0.29 μ Sv/h)
茨城県	13	つくば市	3 μ Sv (0.13 μ Sv/h)
栃木県	14	小山市	3 μ Sv (0.13 μ Sv/h)
群馬県	15	桐生市	2 μ Sv (0.08 μ Sv/h)
千葉県	16	千葉市	3 μ Sv (0.13 μ Sv/h)
	17	木更津市	2 μ Sv (0.08 μ Sv/h)
東京都	18	文京区	4 μ Sv (0.17 μ Sv/h)
	19	府中市	2 μ Sv (0.08 μ Sv/h)
	20	目黒区	1 μ Sv (0.04 μ Sv/h)
	21	港区	3 μ Sv (0.13 μ Sv/h)
	22	八王子市	3 μ Sv (0.13 μ Sv/h)
神奈川県	23	横浜市	2 μ Sv (0.08 μ Sv/h)
新潟県	24	長岡市	2 μ Sv (0.08 μ Sv/h)
長野県	25	松本市	2 μ Sv (0.08 μ Sv/h)
	26	上田市	2 μ Sv (0.08 μ Sv/h)

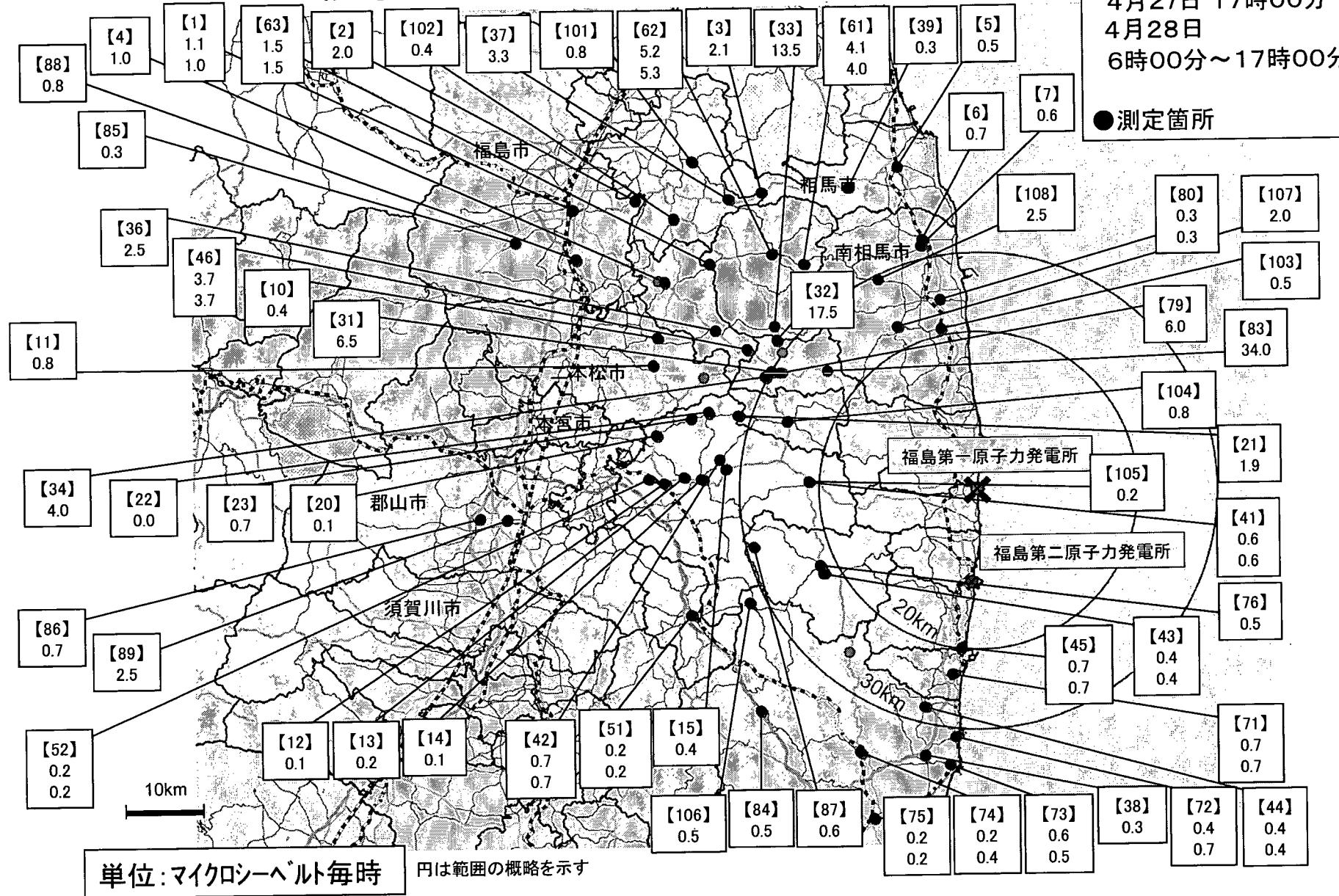
富山県	27	高岡市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
石川県	28	能美市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
福井県	29	吉田郡永平寺町	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
岐阜県	30	岐阜市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
静岡県	31	浜松市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
	32	沼津市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
愛知県	33	豊橋市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
三重県	34	津市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
滋賀県	35	彦根市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
京都府	36	宇治市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
大阪府	37	吹田市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
兵庫県	38	明石市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
奈良県	39	生駒市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
和歌山県	40	御坊市	$3 \mu \text{Sv}$ (0.13 $\mu \text{Sv}/\text{h}$)
鳥取県	41	鳥取市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
岡山県	42	津山市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
広島県	43	東広島市	$3 \mu \text{Sv}$ (0.13 $\mu \text{Sv}/\text{h}$)
山口県	44	宇部市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
徳島県	45	阿南市	$3 \mu \text{Sv}$ (0.13 $\mu \text{Sv}/\text{h}$)
香川県	46	三豊市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
愛媛県	47	新居浜市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
高知県	48	南国市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
福岡県	49	福岡市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
長崎県	50	長崎市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
熊本県	51	熊本市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
宮崎県	52	都城市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
鹿児島県	53	霧島市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
沖縄県	54	中頭郡西原町	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)

* 1 毎日14時前後から翌日にかけて24時間の積算線量を測定

* 2 ポケット線量計の測定範囲の下限値は1 μSv のため、下段は参考値

福島第一原子力発電所周辺のモニタリング結果

測定日時
4月27日 17時00分
4月28日
6時00分～17時00分
●測定箇所



福島第一原子力発電所の20km以遠のモニタリング結果について

平成23年4月28日 19時00分現在
文 部 科 学 省

○文部科学省が集計した結果

注)太下線データが今回追加分

* 1 GM(ガイガーミューラー計数管)における値

* 2 電離箱における値

* 3 NaI(ヨウ化ナトリウム)シンチレータにおける値

* 4 測定時間内における測定値の変動範囲

測定場所 (福島第一発電所からの距離)	測定日時	数値 (マイクロシーベルト／時) (記載のない限り屋外)	天候	実施者
測定エリア【1】 福島市杉妻町 (62km北西)	4月28日15時35分	1.1 *2	降雨なし	文部科学省
測定エリア【1】 福島市杉妻町 (62km北西)	4月28日8時24分	1.0 *2	降雨なし	文部科学省
測定エリア【2】 福島市大波瀧ノ入 (56km北西)	4月28日9時22分	2.0 *2	降雨なし	日本原子力研究開発機構
測定エリア【3】 伊達市靈山町石田彦平 (46km北西)	4月28日10時30分	2.1 *2	降雨なし	日本原子力研究開発機構
測定エリア【4】 伊達郡川俣町大字鶴沢字川端 (47km北西)	4月28日9時12分	1.0 *2	降雨なし	文部科学省
測定エリア【5】 相馬市中野寺前 (42km北北西)	4月28日11時22分	0.5 *2	降雨なし	日本原子力研究開発機構
測定エリア【6】 南相馬市鹿島区西町 (32km北)	4月28日11時47分	0.7 *2	降雨なし	日本原子力研究開発機構
測定エリア【7】 南相馬市鹿島区寺内本屋敷 (32km北北西)	4月28日12時10分	0.6 *2	降雨なし	日本原子力研究開発機構
測定エリア【10】 二本松市針道中島 (44km西北西)	4月28日13時05分	0.4 *2	降雨なし	文部科学省
測定エリア【11】 二本松市太田字下田 (43km西北西)	4月28日13時11分	0.8 *2	降雨なし	文部科学省
測定エリア【12】 田村市船引町船引字小沢川代 (39km西)	4月28日14時05分	0.1 *2	降雨なし	文部科学省
測定エリア【13】 田村市常葉町西向屋形 (37km西)	4月28日14時11分	0.2 *2	降雨なし	文部科学省
測定エリア【14】 田村市常葉町常葉内町 (34km西)	4月28日14時32分	0.1 *2	降雨なし	文部科学省
測定エリア【15】 田村市常葉町山根鹿島 (32km西)	4月28日14時42分	0.4 *2	降雨なし	文部科学省
測定エリア【20】 田村市船引町新館下 (41km西)	4月28日12時47分	0.1 *2	降雨なし	文部科学省
測定エリア【21】 双葉郡葛尾村上野川 (32km西北西)	4月28日12時23分	1.9 *2	降雨なし	文部科学省
測定エリア【22】 田村市船引町上移字後田 (35km西北西)	4月28日12時35分	0.0 *2	降雨なし	文部科学省
測定エリア【23】 田村市船引町南移水中内 (39km西北西)	4月28日12時40分	0.7 *2	降雨なし	文部科学省
測定エリア【31】 双葉郡浪江町津島仲沖 (30km西北西)	4月28日9時49分	6.5 *2	降雨なし	文部科学省
測定エリア【32】 双葉郡浪江町赤字木手七郎 (31km北西)	4月28日10時07分	17.5 *2	降雨なし	文部科学省
測定エリア【33】 相馬郡飯館村長泥 (33km北西)	4月28日10時19分	13.5 *2	降雨なし	文部科学省
測定エリア【34】 双葉郡浪江町津島大高木 (30km西北西)	4月28日11時56分	4.0 *2	降雨なし	文部科学省
測定エリア【36】 伊達郡川俣町山木屋大洪 (40km西北西)	4月28日9時37分	2.5 *2	降雨なし	文部科学省
測定エリア【37】 伊達市靈山町石田宝司沢 (48km北西)	4月28日10時15分	3.3 *2	降雨なし	日本原子力研究開発機構
測定エリア【38】 いわき市四倉町白岩保木田 (34km南南西)	4月28日11時34分	0.3 *2	降雨なし	日本原子力研究開発機構
測定エリア【39】 相馬市山上上並木 (41km北北西)	4月28日10時56分	0.3 *2	降雨なし	日本原子力研究開発機構
測定エリア【41】 田村市都路町古道 (21km西)	4月28日12時55分	0.6 *2	降雨なし	重力会社

* 1 GM(ガイガーミューラー計数管)における値

* 2 電離箱における値

* 3 NaI(ヨウ化ナトリウム)シンチレータにおける値

* 4 測定時間内における測定値の変動範囲

測定場所 (福島第一発電所からの距離)	測定日時	数値 (マイクロシーベルト/時) (記載のない限り屋外)	天候	実施者
測定エリア【41】 田村市都路町古道 (21km西)	4月28日9時35分	0.6 * ²	降雨なし	重力会社
測定エリア【42】 田村市常葉町山根富岡 (33km西)	4月28日13時20分	0.7 * ²	降雨なし	重力会社
測定エリア【42】 田村市常葉町山根富岡 (33km西)	4月28日10時10分	0.7 * ²	降雨なし	重力会社
測定エリア【43】 双葉郡川内村下川内宮渡 (22km西南西)	4月28日15時00分	0.4 * ²	降雨なし	重力会社
測定エリア【43】 双葉郡川内村下川内宮渡 (22km西南西)	4月28日11時00分	0.4 * ²	降雨なし	重力会社
測定エリア【44】 いわき市大久町大久矢ノ目沢 (28km南南西)	4月28日13時00分	0.4 * ²	降雨なし	重力会社
測定エリア【44】 いわき市大久町大久矢ノ目沢 (28km南南西)	4月28日10時00分	0.4 * ²	降雨なし	重力会社
測定エリア【45】 双葉郡楓葉町山田岡美し森 (20km南)	4月28日13時06分	0.7 * ²	降雨なし	重力会社
測定エリア【45】 双葉郡楓葉町山田岡美し森 (20km南)	4月28日9時51分	0.7 * ²	降雨なし	重力会社
測定エリア【46】 伊達郡川俣町山木屋向出山 (34km西北西)	4月28日13時00分	3.7 * ²	降雨なし	重力会社
測定エリア【46】 伊達郡川俣町山木屋向出山 (34km西北西)	4月28日10時00分	3.7 * ²	降雨なし	重力会社
測定エリア【51】 田村郡小野町小野新町館廻 (39km西南西)	4月28日14時00分	0.2 * ³	降雨なし	福島県
測定エリア【51】 田村郡小野町小野新町館廻 (39km西南西)	4月28日10時39分	0.2 * ³	降雨なし	福島県
測定エリア【52】 田村市船引町船引馬場川原 (41km西)	4月28日14時50分	0.2 * ³	降雨なし	福島県
測定エリア【52】 田村市船引町船引馬場川原 (41km西)	4月28日12時00分	0.2 * ³	降雨なし	福島県
測定エリア【61】 相馬郡飯館村八木沢 (36km北西)	4月28日14時04分	4.1 * ³	降雨なし	福島県
測定エリア【61】 相馬郡飯館村八木沢 (36km北西)	4月28日12時17分	4.0 * ³	降雨なし	福島県
測定エリア【62】 相馬郡飯館村草野大師堂 (39km北西)	4月28日14時15分	5.2 * ³	降雨なし	福島県
測定エリア【62】 相馬郡飯館村草野大師堂 (39km北西)	4月28日12時05分	5.3 * ³	降雨なし	福島県
測定エリア【63】 相馬郡飯館村二枚橋 (44km北西)	4月28日14時44分	1.5 * ³	降雨なし	福島県
測定エリア【63】 相馬郡飯館村二枚橋 (44km北西)	4月28日10時48分	1.5 * ³	降雨なし	福島県
測定エリア【71】 双葉郡広野町下北迫苗代替 (注) (23km南)	4月28日12時31分	0.7 * ²	降雨なし	日本原子力研究開発機構
測定エリア【71】 双葉郡広野町下北迫苗代替 (注) (23km南)	4月28日8時25分	0.7 * ²	降雨なし	警察(NBC対策部隊)
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (31km南)	4月28日12時10分	0.4 * ²	降雨なし	日本原子力研究開発機構
測定エリア【72】 いわき市久之浜町久之浜字北荒蒔 (31km南)	4月28日9時00分	0.7 * ²	降雨なし	警察(NBC対策部隊)
測定エリア【73】 いわき市四倉町 (35km南)	4月28日11時55分	0.6 * ²	降雨なし	日本原子力研究開発機構
測定エリア【73】 いわき市四倉町 (35km南)	4月28日9時18分	0.5 * ²	降雨なし	警察(NBC対策部隊)
測定エリア【74】 いわき市小川町高萩 (36km南南西)	4月28日11時02分	0.2 * ²	降雨なし	日本原子力研究開発機構
測定エリア【74】 いわき市小川町高萩 (36km南南西)	4月28日10時35分	0.4 * ²	降雨なし	警察(NBC対策部隊)
測定エリア【75】 いわき市内郷御厩町 (43km南南西)	4月28日10時40分	0.2 * ²	降雨なし	日本原子力研究開発機構
測定エリア【75】 いわき市内郷御厩町 (43km南南西)	4月28日9時47分	0.2 * ²	降雨なし	警察(NBC対策部隊)
測定エリア【76】 双葉郡川内村上川内早瀧 (22km西南西)	4月28日15時16分	0.5 * ²	降雨なし	文部科学省

* 1 GM(ガイガーミューラー計数管)における値

* 2 電離箱における値

* 3 NaI(ヨウ化ナトリウム)シンチレータにおける値

* 4 測定時間内における測定値の変動範囲

測定場所 (福島第一発電所からの距離)	測定日時	数値 (マイクロシーベルト／時) (記載のない限り屋外)	天候	実施者
測定エリア【79】 双葉郡浪江町下津島萱深 (29km西北西)	4月28日10時46分	6.0 *2	降雨なし	文部科学省
測定エリア【80】 南相馬市原町区高見町 (24km北)	4月28日13時17分	0.3 *2	降雨なし	日本原子力研究開発機構
測定エリア【80】 南相馬市原町区高見町 (24km北)	4月28日8時10分	0.3 *2	降雨なし	警察(NBC対策部隊)
測定エリア【83】 双葉郡浪江町赤宇木柄平 (24km北西)	4月28日11時01分	34.0 *2	降雨なし	文部科学省
測定エリア【84】 いわき市三和町差塩 (39km南西)	4月28日9時54分	0.5 *2	降雨なし	日本原子力研究開発機構
測定エリア【85】 福島市荒井原宿 (66km西北西)	4月28日6時00分	0.3 *2	降雨あり	防衛省
測定エリア【86】 郡山市大槻町長右工門林 (63km西)	4月28日6時00分	0.7 *2	降雨あり	防衛省
測定エリア【87】 双葉郡川内村上川内花ノ内 (29km西南西)	4月28日6時00分	0.6 *2	降雨あり	防衛省
測定エリア【88】 福島市光が丘 (55km西北西)	4月27日17時00分	0.8 *2	降雨なし	防衛省
測定エリア【89】 郡山市豊田町 (60km西)	4月27日17時00分	2.5 *2	降雨なし	防衛省
測定エリア【101】 伊達市塙山町大石字三ノ輪 (55km北西)	4月28日9時50分	0.8 *2	降雨なし	日本原子力研究開発機構
測定エリア【102】 伊達市月館町月館字町 (50km北西)	4月28日15時16分	0.4 *2	降雨なし	日本原子力研究開発機構
測定エリア【103】 南相馬市原町区高字大豆柄内 (20km北)	4月28日13時41分	0.5 *2	降雨なし	日本原子力研究開発機構
測定エリア【104】 双葉郡葛尾村大字落合字落合 (25km北西)	4月28日12時12分	0.8 *2	降雨なし	文部科学省
測定エリア【105】 田村市都路町古道字寺ノ前 (25km西)	4月28日15時02分	0.2 *2	降雨なし	文部科学省
測定エリア【106】 いわき市川前町小白井字将監小屋 (30km南西)	4月28日15時42分	0.5 *2	降雨なし	文部科学省
測定エリア【107】 南相馬市原町区馬場字中内 (25km北北西)	4月28日14時04分	2.0 *2	降雨なし	日本原子力研究開発機構
測定エリア【108】 南相馬市原町区大原台畠 (30km北北西)	4月28日14時24分	2.5 *2	降雨なし	日本原子力研究開発機構

(注) 【71】同じ地区であるが数百メートル離れた地点である。

環境放射能水準調査結果(定時降下物)
(4月25日9時～4月26日9時採取)

H23.4.26 19:00

(MBq/km²)

	都道府県名	定時 降 下 物			
		I-131	Cs-134	Cs-137	備考
1	北海道(札幌市)	不検出	不検出	不検出	
2	青森県(青森市)	不検出	不検出	不検出	
3	岩手県(盛岡市)	不検出	不検出	不検出	
4	宮城県	-	-	-	震災被害によって計測不能
5	秋田県(秋田市)	不検出	不検出	不検出	
6	山形県(山形市)	不検出	17	18	
7	福島県(福島市)	不検出	46	36	測定中であったが到着
8	茨城県(ひたちなか市)	不検出	不検出	8.5	
9	栃木県(宇都宮市)	不検出	不検出	不検出	
10	群馬県(前橋市)	不検出	不検出	不検出	
11	埼玉県(さいたま市)	3.3	25	29	
12	千葉県(市原市)	不検出	3.3	不検出	
13	東京都(新宿区)	不検出	不検出	5.5	
14	神奈川県(茅ヶ崎市)	不検出	不検出	不検出	
15	新潟県(新潟市)	不検出	不検出	不検出	
16	富山県(射水市)	不検出	不検出	不検出	
17	石川県(金沢市)	不検出	不検出	不検出	
18	福井県(福井市)	不検出	不検出	不検出	
19	山梨県(甲府市)	不検出	不検出	不検出	
20	長野県(長野市)	不検出	不検出	不検出	
21	岐阜県(各務原市)	不検出	不検出	不検出	
22	静岡県(御前崎市)	不検出	不検出	不検出	
23	愛知県(名古屋市)	不検出	不検出	不検出	
24	三重県(四日市市)	不検出	不検出	不検出	
25	滋賀県(大津市)	不検出	不検出	不検出	
26	京都府(京都市)	不検出	不検出	不検出	
27	大阪府(大阪市)	不検出	不検出	不検出	
28	兵庫県(神戸市)	不検出	不検出	不検出	
29	奈良県(奈良市)	不検出	不検出	不検出	
30	和歌山県(和歌山市)	不検出	不検出	不検出	
31	鳥取県(東伯郡)	不検出	不検出	不検出	
32	島根県(松江市)	不検出	不検出	不検出	
33	岡山県(岡山市)	不検出	不検出	不検出	
34	広島県(広島市)	不検出	不検出	不検出	
35	山口県(山口市)	不検出	不検出	不検出	
36	徳島県(徳島市)	不検出	不検出	不検出	
37	香川県(高松市)	不検出	不検出	不検出	
38	愛媛県(八幡浜市)	不検出	不検出	不検出	
39	高知県(高知市)	不検出	不検出	不検出	
40	福岡県(太宰府市)	不検出	不検出	不検出	
41	佐賀県(佐賀市)	不検出	不検出	不検出	
42	長崎県(大村市)	不検出	不検出	不検出	
43	熊本県(宇土市)	不検出	不検出	不検出	
44	大分県(大分市)	不検出	不検出	不検出	
45	宮崎県(宮崎市)	不検出	不検出	不検出	
46	鹿児島県(鹿児島市)	不検出	不検出	不検出	
47	沖縄県(南城市)	不検出	不検出	不検出	

*文部科学省が各都道府県等からの報告に基づき作成

全国大学等の協力による空間放射線量

上段:24時間の積算値
下段:上段の値を1時間あたりに換算した参考値

都道府県名	測定地点番号	地区名	4月26日～4日27日
北海道	1	室蘭市	1 μ Sv (0.04 μ Sv/h)
	2	帯広市	1 μ Sv (0.04 μ Sv/h)
	3	旭川市	2 μ Sv (0.08 μ Sv/h)
	4	北見市	2 μ Sv (0.08 μ Sv/h)
	5	釧路市	1 μ Sv (0.04 μ Sv/h)
	6	函館市	1 μ Sv (0.04 μ Sv/h)
青森県	7	弘前市	2 μ Sv (0.08 μ Sv/h)
	8	八戸市	1 μ Sv (0.04 μ Sv/h)
宮城県	9	仙台市	3 μ Sv (0.13 μ Sv/h)
山形県	10	米沢市	2 μ Sv (0.08 μ Sv/h)
	11	鶴岡市	1 μ Sv (0.04 μ Sv/h)
福島県	12	福島市	8 μ Sv (0.33 μ Sv/h)
茨城県	13	つくば市	3 μ Sv (0.13 μ Sv/h)
栃木県	14	小山市	2 μ Sv (0.08 μ Sv/h)
群馬県	15	桐生市	3 μ Sv (0.13 μ Sv/h)
千葉県	16	千葉市	3 μ Sv (0.13 μ Sv/h)
	17	木更津市	3 μ Sv (0.13 μ Sv/h)
東京都	18	文京区	3 μ Sv (0.13 μ Sv/h)
	19	府中市	2 μ Sv (0.08 μ Sv/h)
	20	目黒区	2 μ Sv (0.08 μ Sv/h)
	21	港区	2 μ Sv (0.08 μ Sv/h)
	22	八王子市	1 μ Sv (0.04 μ Sv/h)
神奈川県	23	横浜市	2 μ Sv (0.08 μ Sv/h)
新潟県	24	長岡市	2 μ Sv (0.08 μ Sv/h)
長野県	25	松本市	3 μ Sv (0.13 μ Sv/h)
	26	上田市	2 μ Sv (0.08 μ Sv/h)

富山県	27	高岡市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
石川県	28	能美市	$3 \mu \text{Sv}$ (0.13 $\mu \text{Sv}/\text{h}$)
福井県	29	吉田郡永平寺町	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
岐阜県	30	岐阜市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
静岡県	31	浜松市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
	32	沼津市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
愛知県	33	豊橋市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
三重県	34	津市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
滋賀県	35	彦根市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
京都府	36	宇治市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
大阪府	37	吹田市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
兵庫県	38	明石市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
奈良県	39	生駒市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
和歌山県	40	御坊市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
鳥取県	41	鳥取市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
岡山県	42	津山市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
広島県	43	東広島市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
山口県	44	宇部市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
徳島県	45	阿南市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
香川県	46	三豊市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
愛媛県	47	新居浜市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
高知県	48	南国市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
福岡県	49	福岡市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
長崎県	50	長崎市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
熊本県	51	熊本市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
宮崎県	52	都城市	$2 \mu \text{Sv}$ (0.08 $\mu \text{Sv}/\text{h}$)
鹿児島県	53	霧島市	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)
沖縄県	54	中頭郡西原町	$1 \mu \text{Sv}$ (0.04 $\mu \text{Sv}/\text{h}$)

* 1 毎日14時前後から翌日にかけて24時間の積算線量を測定

* 2 ポケット線量計の測定範囲の下限値は1 μSv のため、下段は参考値

* 3 「-」となっている箇所については大学等の協力機関からの報告が未到達

From: Turner, Joseph
Sent: Sunday, April 10, 2011 11:48 AM
To: ET02 Hoc; NOC_Members; Reyes, Debra; Heard, Robert
Cc: Huffert, Anthony; Mitman, Jeffrey; LIA02 Hoc; LIA03 Hoc; Reynolds, Steven; Garchow, Steve; Moore, Carl; Gepford, Heather
Subject: Re: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

Ok. Will deliver the equipment tomorrow at 2pm.
This message was sent via Blackberry.

From: ET02 Hoc
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
Sent: Sun Apr 10 11:39:03 2011
Subject: TRAVELER NEEDS FOR THOSE GOING TO JAPAN THIS WEEK - BLACKBERRY AND LAPTOP

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

G6G6/239



United States Nuclear Regulatory Commission

Protecting People and the Environment

Tōhoku Earthquake and Tsunami

- Earthquake Data*
 - Magnitude 9.0
 - Epicenter: ~109 miles from Fukushima site
 - Peak Ground Acceleration
 - 1.0g up to 2.75g at 80 miles from epicenter
 - ~0.30g to 0.58g in Fukushima Prefecture

*California Coastal Commission. "The Tōhoku Earthquake of March 11, 2011: A preliminary Report on Implications for Coastal California "



Tōhoku Earthquake and Tsunami

- Tsunami Data*
 - Peak amplitude reports vary
 - Reached shore within ~ one hour after the earthquake
 - Up to six miles of run-up in flat regions

*California Coastal Commission. "The Tōhoku Earthquake of March 11, 2011: A preliminary Report on Implications for Coastal California "



United States Nuclear Regulatory Commission

Protecting People and the Environment

Tōhoku Earthquake and Tsunami

- NPP Foundation Accelerations*

Location	Design Japanese Regulatory Guide	Observed g
	g	
Daiichi Unit 2	.45	.56
Daiichi Unit 6	.46	.45
Daini Unit 1	.44	.23
Daini Unit 2	.44	.20

*TEPCO Press Release April 01, 2011: The record of the earthquake intensity observed at Fukushima Daiichi Nuclear Power Station and the Fukushima Daini Nuclear Power Station (Interim Report).

Station Blackout– Background

- NRC issued SBO Rule (10 CFR 50.63) in 1988
- Each plant must be able to withstand for a specified duration and recover from a SBO
- Regulatory Guide (RG) 1.155, “Station Blackout,” - endorsed NUMARC 87-00 industry guidance for SBO rule
- All 104 plants met the SBO rule requirements at the time of the staff’s review
 - Safety Evaluations
 - Pilot Inspections

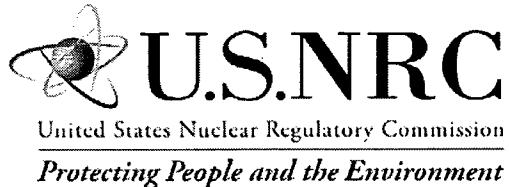


United States Nuclear Regulatory Commission

Protecting People and the Environment

Station Blackout - Implementation

- **Coping Duration**
 - Factors affecting Offsite power design
 - Factors affecting Onsite power system
- **Coping Methods**
 - AC independent
 - Alternate AC
- **Procedures**
 - Restoration of AC power
 - Non essential DC loads for stripping
 - Actions for loss of ventilation
 - Grid Interface



NRC Incident Response

- Response Decisions
- NRC Roles
- Areas of Focus
- Coordination, Support and Outreach
- Current Status of Response

Emergency Planning Zones

- Two emergency planning zones (EPZ) around each nuclear power plant
 - 10 mile EPZ – plume exposure planning zone
 - Response within hours
 - 50 mile EPZ – ingestion exposure planning zone
 - Response within days
- EPZ size established:
 - Encompasses most accident sequences
 - WASH 1400 Reactor Safety Study
 - Conservative Assumptions
 - Provides a substantial basis for expansion of response beyond the EPZ should it be needed

PAR for U.S. Citizens in Japan

- Recommendation for 50 mile evacuation
 - Limited and uncertain data available
 - Significant challenges to 3 units and 4 spent fuel pools
 - Potential for large offsite release existed
 - Rapidly modeled aggregate cores to simulate potential release
 - Decision to expand evacuation was prudent given the uncertain conditions



United States Nuclear Regulatory Commission

Protecting People and the Environment

Questions?



United States Nuclear Regulatory Commission

Protecting People and the Environment

Advisory Committee on Reactor Safeguards

Fukushima Event and Issues

April 7, 2011

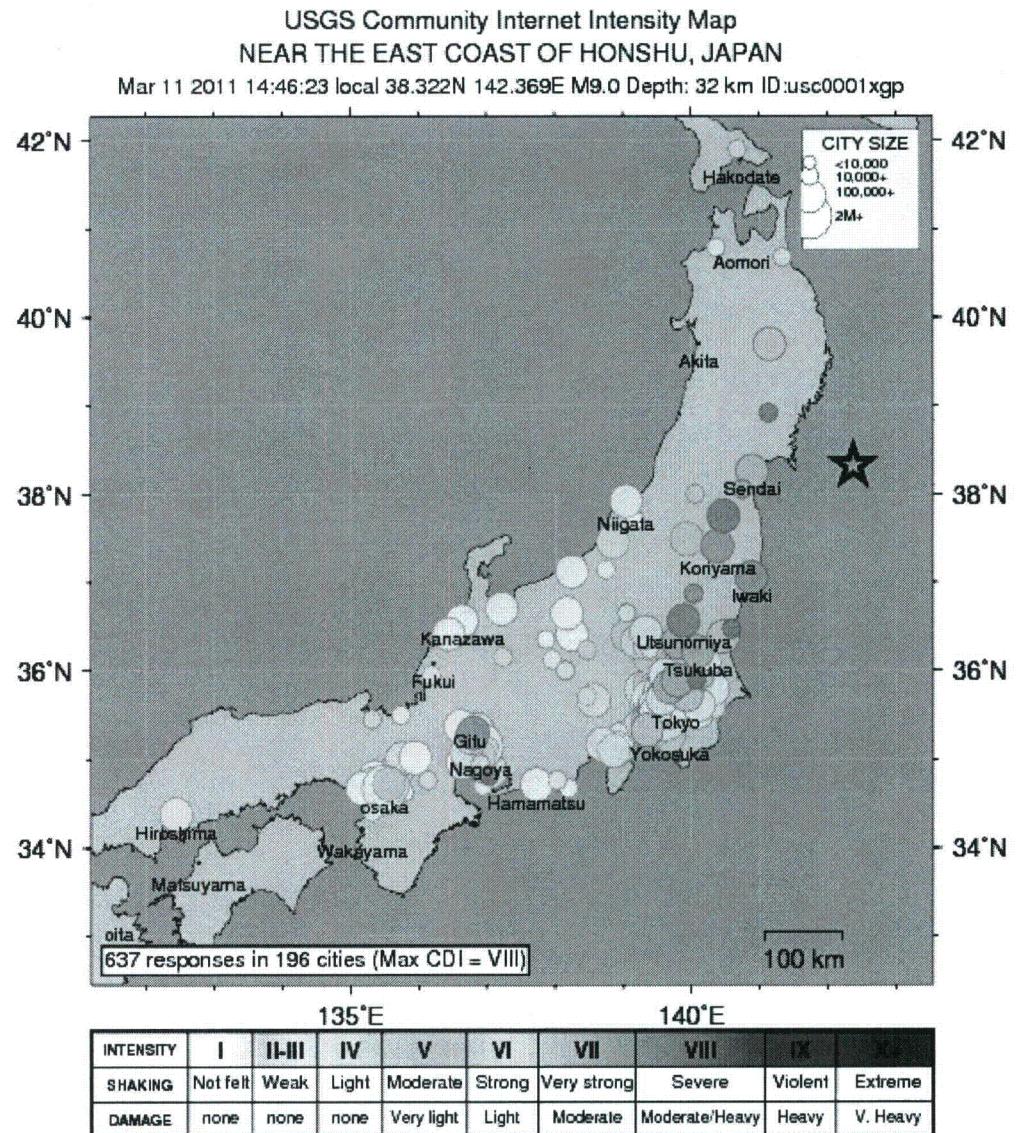
6666/241

Agenda

- Introduction – Bill Ruland (5 min)
- Sequence of Events – John Thorp (10 min)
- Information Notice – Eric Bowman (5 min)
- Industry Actions and Temporary Instruction – Tim Kobetz (5 min)
- Near Term Task Force – Barry Westreich (10 min)
- Seismic Attributes – Syed Ali (5 min)
- Station Blackout – George Wilson (10 min)
- NRC Incident Response – Brian McDermott (10 min)
- Emergency Preparedness – Randy Sullivan (10 min)

- 14:46 (Local) March 11, 2011
- Magnitude 9.0 Earthquake
 - 4th largest in the world since 1900 (USGS)
 - Largest in Japan since modern instrument recordings began 130 years ago (USGS)
- Resulted in a Tsunami that is estimated to have exceeded 32 feet in height (NISA)

Tohoku Pacific Earthquake



Affected Nuclear Power Stations

– Onagawa NPS

- All 3 units scrambled

– Fukushima Dai-ichi (I) NPS

- Units 1, 2, 3 scrambled
- Units 4, 5, 6 already shutdown

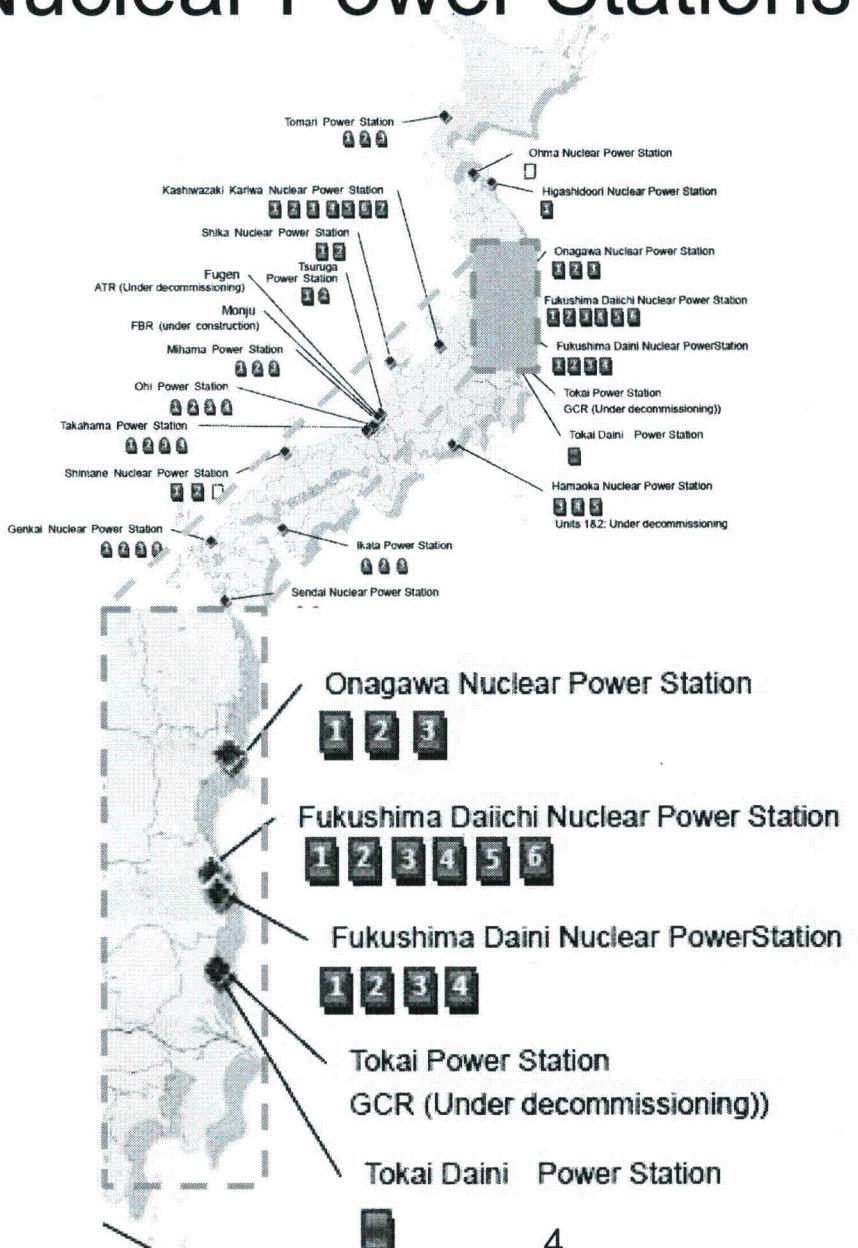
– Fukushima Dai-ni (II) NPS

- All 4 units scrambled

– Tokai

- Scrammed (single unit site)

Source: NISA

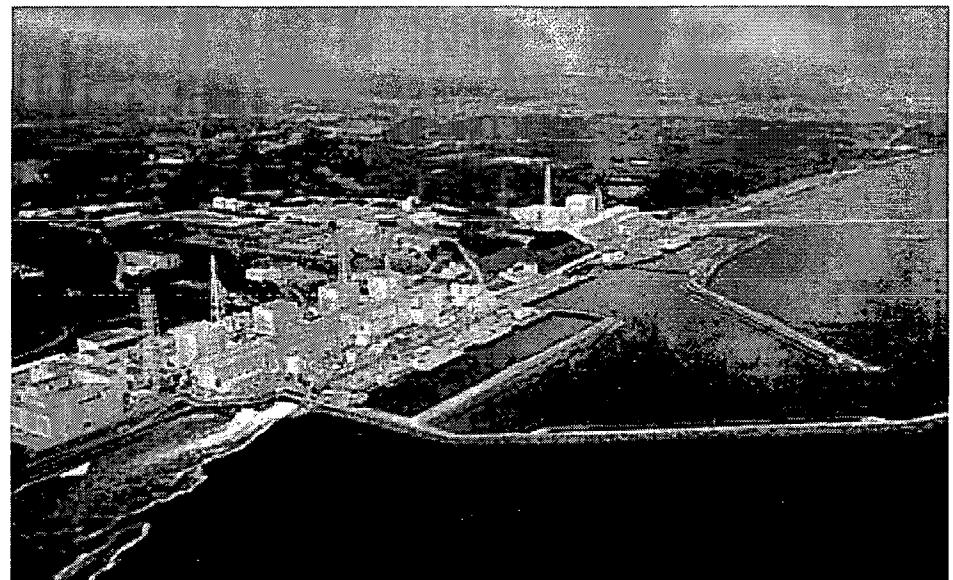




United States Nuclear Regulatory Commission
Protecting People and the Environment

Extended SBO at Fukushima Dai-ichi

- Earthquake
 - Reactor Units 1, 2, and 3 scram
 - Loss of offsite power to all 6 units
- Tsunami
 - Loss of emergency AC power
- Extended Station Blackout



Accident Sequence

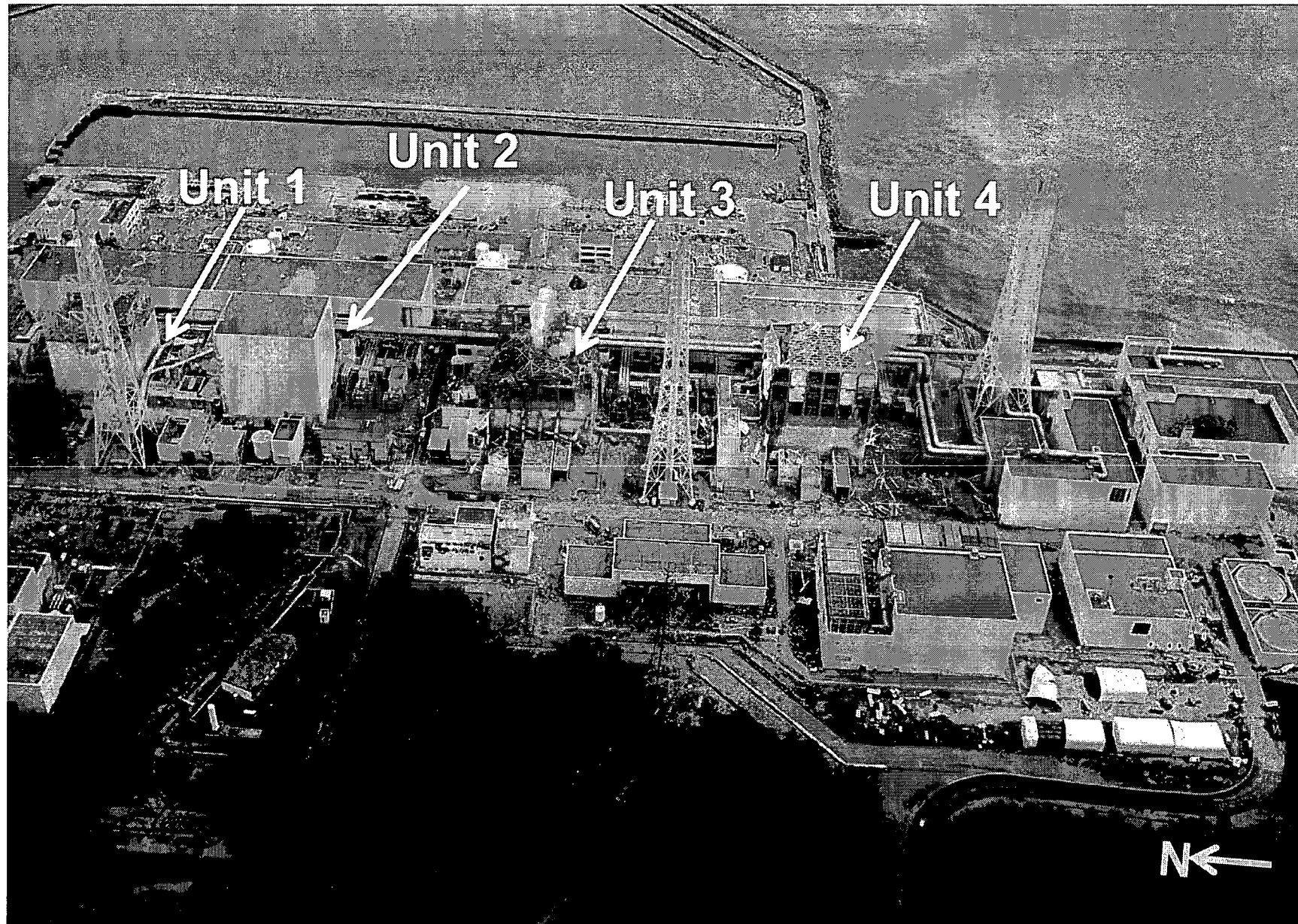
- Reactor coolant flow after SBO
 - Reactor isolation makeup water system
- Loss of coolant flow
 - Utility established seawater injection
- Elevated primary containment pressure
- Explosions
 - Damaged reactor buildings for Units 1, 3 and 4
 - Unit 2 explosion in primary Containment- reactor building not damaged, possible torus damage

5 April Status: Units 1,2 and 3

- Cores reported to be damaged
 - Extent unknown
 - Salt buildup from seawater injection
- All units have offsite AC power available
 - Equipment verification in progress
- Freshwater injection via:
 - Feedwater line
 - Low pressure coolant injection
- High radiation levels in containment and site

Status: Units 4, 5, and 6

- Unit 4
 - Core offloaded to spent fuel pool (SFP)
 - An explosion caused significant damage to Unit 4 reactor building
 - SFP cooling system not functional
 - SFP being cooled periodically by injection of fresh water from a concrete truck pump
- Units 5 and 6
 - On external AC power with core cooling functional
 - SFP cooling is functional on both units



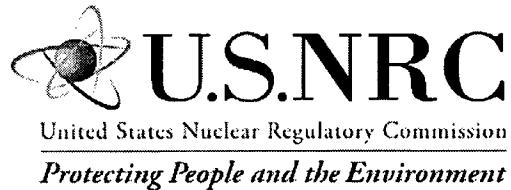
Fukushima Dai'ichi Nuclear Power Station

Information Notice 2011-05

- Purpose: to provide high level discussion of earthquake effects at Fukushima Daiichi and allow licensee review and consideration of actions to avoid similar problems.
- Background discussion of pertinent regulatory requirements
 - General Design Criteria 2 (or similar)
 - “B.5.b Requirements” for beyond design basis events
 - Interim Compensatory Measures Order EA-02-026, Section B.5.b
 - License Conditions
 - 10 CFR 50.54(h)(2)
 - Station Blackout Rule, 10 CFR 50.63

Industry Initiatives

- An industry-wide assessment to verify and validate each plant site's readiness to manage extreme events
- Initiatives include licensee verification of:
 - Each plant's capability to manage major challenges, and losses of large areas of the plant due to natural events, fires or explosions
 - Each plant's capability to manage a total loss of off-site power
 - Verifying the capability to mitigate flooding and the impact of floods
 - Performing walk-downs and inspection of important equipment needed to respond successfully to extreme events like fires and flood including identification of any potential that equipment functions could be lost during seismic events appropriate for the site, and development of strategies to mitigate any potential vulnerabilities.



NRC Inspection Activities

- Temporary Instruction 2515/183, “Followup to the Fukushima Daiichi Nuclear Station Fuel Damage Event
- Inspection uses a combination of assessment of licensee actions and independent inspections
- The inspection is for fact/data gathering to help evaluate whether future regulatory actions may be necessary.

Near-Term Task Force

- Commission Direction for Near-Term Review
 - Conduct a methodical and systematic review of relevant NRC regulatory requirements, programs, and processes, and their implementation, to recommend whether the agency should make near-term improvements to our regulatory system
 - Recommendations for the content, structure, and estimated resource impact for the longer-term review
 - Independent from industry efforts
 - Milestones
 - 30-day Commission meeting (5/12/11)
 - 60-day Commission meeting (6/16/11)
 - 90-day final report, SECY, and Commission meeting (7/19/11)



United States Nuclear Regulatory Commission

Protecting People and the Environment

Longer-Term Review

- Commission Direction for Longer-Term Review
 - Specific information on sequence of events and equipment status
 - Evaluate policy issues
 - Potential interagency issues
 - Lessons learned for facilities other than operating reactors
 - Receive input and interact with all key stakeholders
 - Report within six months after beginning of long-term effort
 - ACRS to review final long-term report (as issued in its final form), and provide letter report to the Commission